Limited Phase II Environmental Site Assessment

KL WATERSIDE PROPERTY
KANNER HIGHWAY
MARTIN COUNTY, FLORIDA

May 24, 2022

Prepared for:
Martin County Board of County Comissoners
2401 S.E. Monterey Road
Stuart, Florida 34996

Prepared by:
Martian Environmental Services, Inc.
Saint Augustine, Florida

Martian Environmental Project No. 052202204

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1.0 INTRODUCTION

Martian Environmental Services, Inc. (Martian) has completed a Limited Phase II Environmental Site Assessment (LESA) for the Martin County 30-acre parcel identified as the KL Waterside Property (KL Waterside Site or Site), located near at or near 2251 Highway 76 (Kanner Highway), Martin County, Florida. The work was performed in accordance with our proposal dated April 22, 2022. A location map showing the site features is included as Figure 1. The purpose of this LESA was to evaluate potential impacts to soil and groundwater due the historic site use as orchards and row crop farming. The land use surrounding the KL Waterside Site consists of agricultural land.

1.1 Physical Setting and History

The site is located in rural Martin County approximately 8 miles south of the City of Stuart. Based on historical aerial images the site has been in use as orchard grove followed by row crop farmed since at least 1994. The site appears level with water supply canals bisecting east-west in the approximate center of the site and north-south on the western protion of the site. Based on the U.S. National Resources Conservation Service (NRCS) the primary soil type at the Site consists of Pineda-Riviera fine sands associations with a 0 to 2% slope. This soil type is consistent with field observations.

The Site lies within the Eastern Flatlands physiographic subdivision of Martin County. The Eastern Flatlands, which are terraces formed during acient high stands of sea level, contain the Orlando Ridge and the Green Ridge. The general Site geology consists of a quartz sand surficial material that extends over most of the county. The sand is several feet thick and comprises the two sea-terrace deposits. Beneath the sand layer are the Fort Thompson and Anastasia Formations and the Caloosahatchee Marl. The site is underlain by the Anastasia Formation which is composed of coquina (limestone composed mainly of shells and shell fragments), sandy limestone, shell marl and sand.

1.2 Scope of Services

A sampling plan was developed based on the information reviewed from historical site investigations, guidance documents from the Florida Department of Environmental Protection (FDEP) and Miami-Dade county Divison of Environmental Resources Management (DERM) Guidance 7G, Site Assessment Guidance for Former Agricultural Sites in Miami-Dade County (included in Appendix C). The samplling plan was developed to provide a general evaluation of the Site. Soil sample and monitoring well locations are indicated on Figure 1. Table 1 indicates the sample numbers and analytical methods for the scope of work.

Table 1. Analytical Methods

Media	Methodology	Sample Numbers
Soil	Organochlorine Pesticides-EPA Method 8081 Organophosphorus Pesticides-EPA Method 8141 Metals: Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Iron, Manganese, Copper.	MCKP-1, MCKP-2, MCKP-3, MCKP-4
Groundwater	Organochlorine Pesticides-EPA Method 8081 Organophosphorus Pesticides-EPA Method 8141 Metals: Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Iron, Manganese, Copper. Nitrate/Nitrite	MCKP-1, MCKP-2, MCKP-3, MCKP-4

2.0 FIELD INVESTIGATION

Field activities were conducted at the Site on May 5 through 7, 2022. The following is a summary of methodology and field activities undertaken for this LESA. All sampling activities were performed in general accordance with the Florida Department of Environmental Protection's (FDEP) *Standard Operating Procedures for Field Activities*, DEP-SOP-001/01, FC1000 and FS3000. Soil and groundwater sample locations were selected to generally evaluate potential impacts from historical site activities that have occurred at the Site. These activities were based on historical aerial images dating to at least 1994.

2.1 Soil Sampling

Soil samples were collected on May 6, 2022, using a decontaminated stainless-steel hand auger and stainless-steel sampling equipment. Four soil samples were collected (MCKP-1, MCKP-2, MCKP-3, MCKP-4) at the locations indicated on Figure 1. At each location a sample was collected from 6" to 1' depth. This depth was selected as being most representative of potential for the accumulation of pesticides that may have been historically used at the site. Because the sampling depth was very shallow, boring logs were not recorded. However, the soil profile consisted of (from surface) 4 to 6 inches of dark brown to dark gray loamy silty sand. The soil below the 4 to 6-inch organic orizion consisted of clean light tan to light gray fine to medium sand to the termination sampling depth of 1 foot. Soil moisture increased at the 1 foot depth indicating proximity to groundwater.

All nonexpendable sampling equipment was decontaminated prior to each soil boring location. Decontamination procedures included a wash with phosphate-free detergent followed by a rinse with distilled water. Each soil boring was abandoned by backfilling following the collection of the soil samples. The soil samples were collected in laboratory provided and preserved sample containers. Following collection, the samples were placed in an iced cooler for transport to the designated laboratory under chain-of-custody protocol.

2.2 Ground Water Sampling

Four shallow ground water samples were collected from temporary monitoring wells installed by Martian. (Figure 1). The monitoring wells (MCKP-1, MCKP-2, MCKP-3, MCKP-4) were installed to a nominal depth of approximately 11 feet bls. The shallow monitoring wells, installed on May 6, 2022, were constructed on 0.75-inch diameter, schedule 40 PVC casing, 10-feet of 0.010-inch machine-slotted well screen with pre-packed filter media. The filter pack secured to the well screen ensured that a filter material was uniform around the well screen.

Large-diameter push rods were advanced into the subsurface to the termination depth of the monitoring well using a track-mounted DPT rig. Once the termination depth of the boring was achieved, the monitoring well casing and screen were installed through the push rods. A 20/30 sand pack was placed in the annular space between the well screen and borehole wall. The sand pack was added as the push rods were slowly pulled from the ground. The sand pack extended approximately 1-foot above the top of the well screen (ground surface).

The monitoring wells were developed following installation on May 6. Development aides in the removal of silt and sediment that accumulates within the well casing and screen during installation. Additionally, development facilitates hydraulic communication between the water-bearing formation and the well screen. Well development consisted of a combination of surging and over-pumping. The well was surged using dedicated polyethylene tubing to get the silt and sediment into suspension. The well was then pumped to remove the sediment. An iterative process of well surging and over-pumping was performed until the discharge water was relatively free of sediment and turbidity. The development water was discharged onsite.

The monitoring wells were purged prior to sampling on May 7, 2022, to facilitate the collection or representative ground water samples. The monitoring wells were purged using a peristaltic pump and low-flow techniques. Field parameters including temperature, pH, specific conductivity, dissolved oxygen, oxidation/reduction potential and turbidity were measured and recorded on ground water sampling logs throughout the purging process. The monitoring wells were purged until the field parameters stabilized pursuant to the FDEP's stabilization criteria. Wells were purged until turbidity measurements were less than 20 Nephelometric Turbidity Units (NTU) as recommend by the FDEP. Once stabilization was achieved, the ground water samples were collected in laboratory provided and preserved containers. Copies of the ground water sampling logs are provided in Appendix A. The ground water samples were placed in an iced cooler following collection and delivered to the designated laboratory under chain-of-custody protocol.

3.0 ANALYTICAL ANALYSIS

The soil and ground water samples collected from the Site were analyzed by Pace Analytical Services, Inc. (Pace) in Ormond Beach, Florida and Mt. Juliet, Illinois. Pace is certified by the state of Florida and accredited by the NELAC[1] Institute. The samples were delivered to Pace for analysis under chain-of-custody protocol.

The soil and ground water samples were analyzed for parameters as indicated in Table 1 above. Copies of the complete analytical data sheets provided by the laboratory are provided in Appendix B.

4.0 RESULTS

The following sections summarize the soil and groundwater analytical results. Constituent concentrations were compared to Florida's Soil Cleanup Target Levels (SCTLs) and Groundwater Cleanup Target Levels (GCTLs) listed in Chapter 62-777, FAC (and indicated on Tables 2 and 3).

4.1 Soil Quality Data

Copies of the laboratory data sheets are provided in Appendix B. A summary of the detected analytes in soil is provided on Table 2.

4.1.1 Soil

Soil analytical results with measurable results are summarized on Table 2. There were no measured detections of chemicals of concern (COCs) that exceeded the SCTLs for Direct Exposure Resiential criteria or Leachability Based on Groundwater Criteria (leachability). However, several pesticide COCs (Diazinon, Dimethoate, EPN (ENT), Fensulfothion, Mevinphos) as listed on Table 2, were indicated because the laboratory Method Detction Limit (MDL) was greater than the Leachability Based on Groundwater Criteria (leachability). The MDL is the smallest quantity that the analytical instrument can detect. Please see Section 4.2 and Section 5.0 for further discussion.

4.1.2 Soil Investigation Summary

As indicated in Table 2, several COCs could not be measured to their respective leachability critiera. This is not uncommon for pesticide compounds with very low CTLs that often are lower than the MDLs. FDEP guidance provides for the the Asseing Data Below Quantifiable Levels in the FDEP Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits, October 12, 2004. The guidance is included in Appendix C. That guidance states the following:

If the analyte is not detected at the MDL or is detected at a level below the PQL, the reviewer should compare the sample-specific PQL reported with the analytical data to determine if an appropriately

[1] National Environmental Laboratory Accreditation Conference

sensitive method was utilized. If the target PQL was not achieved, there may be valid reasons why and the reviewer should refer to justification provided by the laboratory or project manager.

In this case the most sensitive method for analysis of pesticides was used. The results in question are restricted to leachability, which is the potential that the compound will leach into groundwater and cause the Groundwater Clean up Target Level to be exceeded. Based on the groundwater analytical data the COCs in question were not detected in the groundwater, again the MDL was higher than the groundwater cleanup target level, but give the very low target levels the COCs do not appear to be a leaching concern. Section 5 includes a discussion of the FDEP response to this common proplem.

4.2 Ground Water Quality Data

Copies of the laboratory data sheets are included in Appendix B. The ground water field sampling logs are provided in Appendix A. A summary of the analytes detected in ground water is provided on Table 3.

4.2.1 Groundwater

Groundwater constituents detected above Florida's GCTLs listed in Chapter 62-777, FAC are summarized on Table 3 and below;

GCTL exceedances:

MCKP-1: manganese at 190 µg/L,
MCKP-2: iron at 2750 µg/L, manganese at 679 µg/L
MCKP-3: iron at 15500 µg/L, manganese at 208 µg/L
MCKP-4: iron at 1770 µg/L, manganese at 1750 µg/L

GCTLs: manganese (50 µg/L), iron (300 µg/L)

Several pesticide COCs (Total Demeton, Dichlorvos, EPN (ENT), Merphos) listed on Table 3, were indicated where the laboratory Method Detction Limit (MDL) was greater than the GCTL. The MDL is the smallest quantity that the analytical instrument can detect. Please see Section 4.2.2 and Section 5.0 for further discussion.

4.2.2 Groundwater Investigation Summary

GCTLs for iron and manganese are based on Aesthetic and Organoleptic (pertaining to or perceived by a sensory organ, i.e., color, taste or odor) criteria. Therefore, the shallow groundwater may not be sutiable for drinking (poor taste and ordor) or for residential irrigation use (staining of walk ways or structures).

As indicated in Table 3, several COCs could not be evaluated to their respective GCTL. This is not uncommon for compounds with very low criteria that often are lower than the MDLs. FDEP guidance provides for the the Asseing Data Below Quantifiable Levels in the FDEP Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits, October 12, 2004. That guidance states the following:

If the analyte is not detected at the MDL or is detected at a level below the PQL, the reviewer should compare the sample-specific PQL reported with the analytical data to determine if an appropriately sensitive method was utilized. If the target PQL was not achieved, there may be valid reasons why and the reviewer should refer to justification provided by the laboratory or project manager.

In this case the most sensitive method for analysis of pesticides was used.

5.0 CONCLUSIONS

Groundwater COC parameters (iron and manganese) that exceeded FDEP GCTLs exceeded only for Aesthetic/Organoleptic parameters. Therefore, the considerations are for use of the shallow groundwater for drinking or irrigation. Additionally, iron and manganese are common elements that are likely the result of natural conditons (natural background) in the area.

Multilple COCs in both soil and groundwater were reported with a MDL higher than the respective clean up criteria. This is not uncommon for pesticides which have extremely low CTLs. The FDEP guidance letter, "Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits", dated October 12, 2004 (provided as an attachement) provides for alternative target Practical Quantitation Limits (PQLs). PQLs are the concentrations that the laboratory method can determine (or quantify) an acutal concentration of a chemical. These are provided in Table C for groundwater and Table K for groundwater-leachability in soil.

Based on these alternative PQLs all of the data can be qualified to indicate that there are no exceedances of pesticide compounds for leachability (Table K). Additonally, Table C indicates that there are no exceedances for pesticides in groundwater based on the alternative PQL approved by the FDEP.

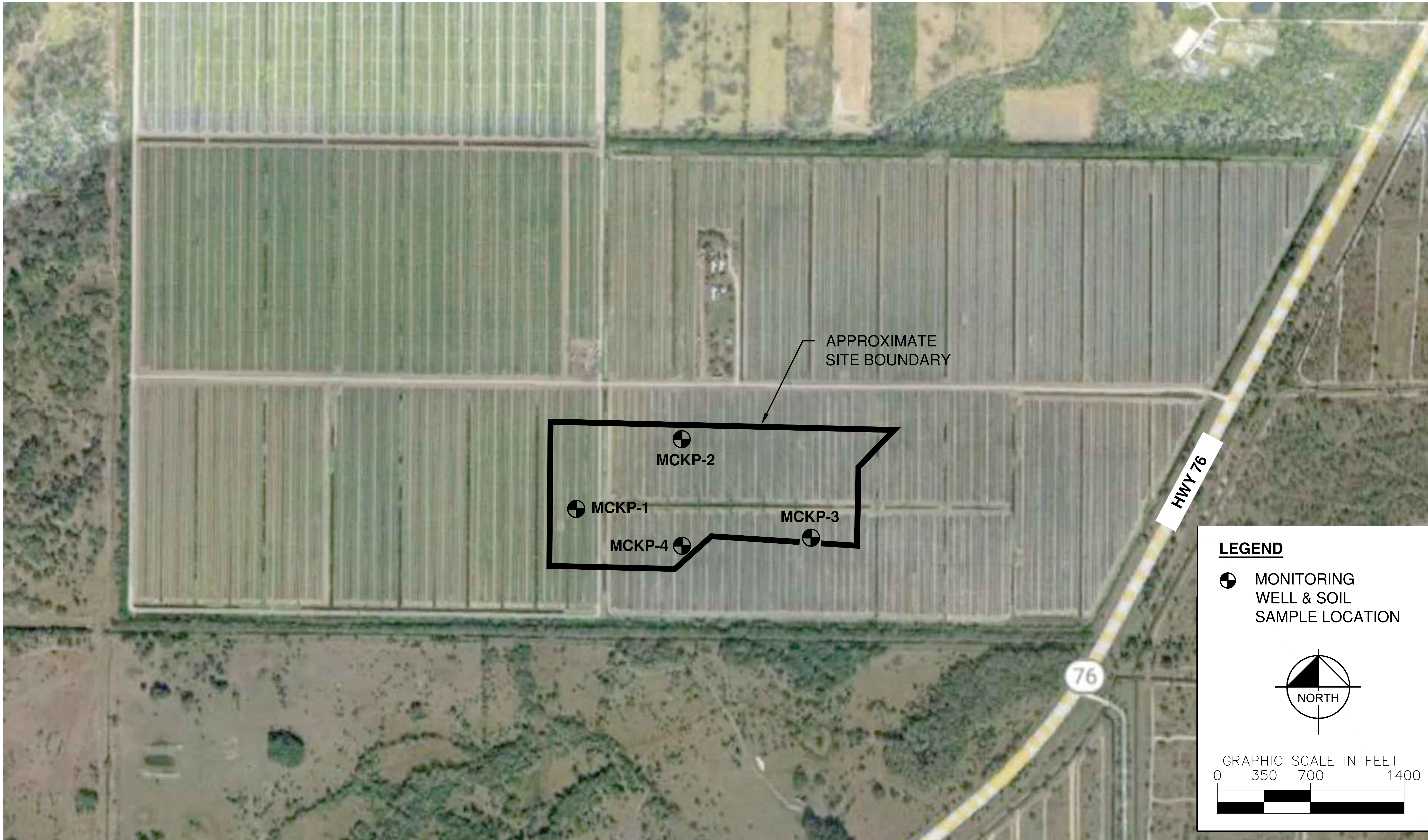
6.0 STANDARD OF CARE

This LESA was performed in accordance with generally accepted practices of this profession, undertaken in similar studies at the same time and in the same geographical area. We have endeavored to meet this standard of care, but may be limited by conditions encountered during performance, a client-driven scope of work, or inability to review information not received by the report date. Where appropriate, these limitations are discussed in the text of the report, and an evaluation of their significance with respect to our findings has been conducted.

LESAs, such as the one performed at this site, are of limited scope and cannot eliminate the potential that hazardous, toxic, or petroleum substances are present or have been released at the site beyond what is identified by the limited scope of this LESA. No LESA can wholly eliminate uncertainty regarding the potential for the presence of soil and/or groundwater that exceed regulatory target levels. Performance of this LESA is intended to reduce, but not eliminate, uncertainty regarding the potential for contamination. No warranties, express or implied, are intended or made. The limitations herein must be considered when the user of this report formulates opinions as to risks associated with the site or otherwise uses the report for any other purpose. These risks may be further evaluated – but not eliminated – through additional research or assessment. We will, upon request, advise you of additional research or assessment options that may be available and associated costs.

This LESA report is prepared for the exclusive use and reliance of Martin County. Use or reliance by any other party is prohibited without the written authorization of Martin County and Martian Environmental Services, Inc. (Martian). Reliance on the LESA by the client and all authorized parties will be subject to the terms, conditions and limitations stated in the proposal, LESA report, and Martian's Agreement for Services. The limitation of liability defined in the Agreement for Services is the aggregate limit of Terracon's liability to the client and all relying parties.

FIGURES



MARTIAN ENVIRONMENTAL SERVICES SAINT AUGUSTINE, FLORIDA martianenvironmental@gmail.com	SCALE: NOTED DESIGNED BY: BST DRAWN BY: GCR CHECKED BY: BST	DESIGN GEOLOGIST BRAD TOMPA FLORIDA REGISTRATION NUMBER: 2720 DATE: MAY, 2022	**MARTIN COUNTY PROPOSED 30 ACRE PARCEL** MARTIN COUNTY, FLORIDA	DATE MAY 18, 2022 PROJECT NO. SHEET NUMBER FIGURE 1

TABLES

TABLE 2: SOIL ANALYTICAL SUMMARY

Site: KL WATERSIDE PROP/MARTIN COUNTY

Sample				OVA	"Laboratory Analyses"																			
Boring / Well No.	Date Collected	Depth to Water (ft)	Sample Interval (fbls)	Net OVA Reading (ppm)	Methoxy chlor	4,4'-DDE	4,4'-DDT	Diazinon	Dichlorvos	Dimethoate	EPN (ENT)	Fensulfothio n	Mevinphos	Aresenic	Barium	Cadmium	Chromium	Copper	Iron	Lead	Manganes e	Mercury	Selenium	
					(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
MCKP-1	5/6/22	1.55	0.5-1'		0.00028 U	0.000076 U	0.00011 U	0.0255 U	0.0340 U	0.0379 U	0.0313 U	0.0400 U	0.0261 U	0.29 I	0.61	0.027 U	0.97	7.8	463	1.7	7.3	0.016	0.40 U	
MCKP-2	5/6/22	1.25	0.5-1'		0.00029 U	0.00095 I	0.0093 I	0.0259 U	0.0345 U	0.0384 U	0.0317 U	0.0406 U	0.0265 U	0.56 I	3.1	0.15	7.3	105	833	16.8	16.4	0.038	0.48 U	
MCKP-3	5/6/22	2.04	0.5-1'		0.00030 U	0.000081 U	0.00011 U	0.0261 U	0.0348 U	0.0388 U	0.0320 U	0.0410 U	0.0267 U	0.31 U	0.25 I	0.031 U	0.18 I	2.7	11.8 i	0.32 I	2.6	0.018	0.46 U	
MCKP-4	5/6/22	1.45	0.5-1'		0.00032 I	0.00022 I	0.002	0.0259 U	0.0345 U	0.0384 U	0.0317 U	0.0406 U	0.0264 U	0.43 I	3.4	0.043 I	5.3	43.9	843	2.2	18.9	0.023	0.39 U	
Leachability Based on Groundwater Criteria (mg/kg)					160	18	11	0.2	0.0006	0.006	0.02	0.01	0.01	**	**	**	**	**	**	**	**	2.1	5.2	
Direct Exposure Residential (mg/kg)					420	2.9	2.9	70	0.3	13	0.8	19	18	2.1	120	82	210	150	53000	400	3500	3	440	
Table K Groundwater-Leachability (Soil) Alternative PQL									0.05	0.07	0.04	0.05	0.03											

Notes:

I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

U = Compound was analyzed for but not detected.

** Leachability values may be derived using the SPLP Test to calculate site-specific SCTLs or may be determined using TCLP in the event oily wastes are present.

Table K = Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits

MDL is greater than the Leachability Based on Groundwater Criteria

Exceeds Leachability Based on Groundwater Criteria Limits

Exceeds Direct Exposure Residential Limits

TABLE 3: GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY

Site: KL WATERSIDE PROP/MARTIN COUNTY

Sample		Aldrin	Total Demeton	Dichlorvos	EPN (ENT)	Merphos	Iron	Managanese
Location	Date	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MCKP-1	5/7/22	0.0038 U	0.626 U	0.196 U	0.129 U	1.32 U	204	190
MCKP-2	5/7/22	0.0038 U	0.626 U	0.196 U	0.129 U	1.32 U	2750	679
MCKP-3	5/7/22	0.0041 U	0.626 U	0.196 U	0.129 U	1.32 U	15500	208
MCKP-4	5/7/22	0.0038 U	0.626 U	0.196 U	0.129 U	1.32 U	1770	1750
GCTLs		0.002	0.3	0.1	0.07	0.2	300	50
Table C Guidance Alternative Target PQL		0.05	1	0.5	0.5	2		

Notes:

GCTLs = Groundwater Cleanup Target Levels specified in Table I of Chapter 62-777, F.A.C

U = Compound was analyzed for but not detected.

I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Table C = Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits

Exceeds GCTL Limit

Method Detection Limit greater than GCTL

APPENDICES

APPENDIX A
Ground Water
Sampling Logs

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: KL WATERSIDE		SITE LOCATION: KANNER HIGHWAY MARTIN COUNTY
WELL NO: MCKP-1	SAMPLE ID:MCKP-1	DATE: 5/7/22

PURGING DATA

WELL DIAMETER (inches):0.75	TUBING DIAMETER (inches):0.3	WELL SCREEN INTERVAL DEPTH: 1 feet to 11 feet	STATIC DEPTH TO WATER (feet): 1.55	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11 feet – 1.55 feet) X 0.02 gallons/foot = 0.189 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0900	0	0			7.14	24.58	639	66.5	NT	TAN	NONE
0904	0.5	0.5			6.03	24.51	700	13.5	48.6	LESS	-
0909	0.5	1.0			5.81	24.48	691	6.8	53.9	NONE	-
0915	0.5	1.5			5.75	24.47	691	5.3	34.4	-	-
0921	0.5	2.0			5.77	24.49	684	4.0	19.4	-	-
0929	0.5	2.5			5.78	24.52	676	3.4	14.6	-	-

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: BRAD TOMPA – MARTIAN ENVIRONMENTAL	SAMPLER(S) SIGNATURE(S): BRAD TOMPA	SAMPLING INITIATED AT:0930	SAMPLING ENDED AT:0945
PUMP OR TUBING DEPTH IN WELL (feet): 9 FT	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: _____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	SEE COC								

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 ºC **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: KL WATERSIDE	SITE LOCATION: KANNER HIGHWAY MARTIN COUNTY	
WELL NO: MCKP-2	SAMPLE ID:MCKP-2	DATE: 5/7/22

PURGING DATA

WELL DIAMETER (inches):0.75	TUBING DIAMETER (inches):0.3	WELL SCREEN INTERVAL DEPTH: 1 feet to 11 feet	STATIC DEPTH TO WATER (feet): 1.25	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11 feet – 1.25 feet) X 0.02 gallons/foot = 0.195 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9FT	PURGING INITIATED AT:1018	PURGING ENDED AT:1039	TOTAL VOLUME PURGED (gallons):2.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1017	0	0			6.35	24.43	829	27.7	-	BROWN	NONE
1022	0.5	0.5			6.38	24.22	836	10.3	106	TAN	-
1027	0.5	1.0			6.36	24.17	844	4.5	24.5	NONE	-
1033	0.5	1.5			6.29	24.21	844	3.5	16.5	-	-
1039	0.5	2.0			6.36	24.17	848	2.4	10.4	-	-

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: BRAD TOMPA – MARTIAN ENVIRONMENTAL	SAMPLER(S) SIGNATURE(S): BRAD TOMPA	SAMPLING INITIATED AT:1040	SAMPLING ENDED AT:1045
PUMP OR TUBING DEPTH IN WELL (feet): 9 FT	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: _____ μm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	SEE COC								

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: KL WATERSIDE	SITE LOCATION: KANNER HIGHWAY MARTIN COUNTY	
WELL NO: MCKP-3	SAMPLE ID:MCKP-3	DATE: 5/7/22

PURGING DATA

WELL DIAMETER (inches):0.75	TUBING DIAMETER (inches):0.3	WELL SCREEN INTERVAL DEPTH: 1 feet to 11 feet	STATIC DEPTH TO WATER (feet): 2.04	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11 feet – 2.04 feet) X 0.02 gallons/foot = 0.18 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9 FT	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9FT	PURGING INITIATED AT:1115	PURGING ENDED AT:1145	TOTAL VOLUME PURGED (gallons):2.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1114	0	0			7.68	24.03	1794	61.3	-	BROWN	NONE
1121	0.5	0.5			6.72	23.88	1867	8.8	79.3	TAN	-
1128	0.5	1.0			6.61	23.79	1864	4.7	16.3	NONE	-
1135	0.5	1.5			6.56	23.80	1858	2.9	7	-	-
1144	0.5	2.0			6.59	23.81	1855	1.9	6	-	-

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: BRAD TOMPA – MARTIAN ENVIRONMENTAL	SAMPLER(S) SIGNATURE(S): BRAD TOMPA	SAMPLING INITIATED AT:1145	SAMPLING ENDED AT:1150
PUMP OR TUBING DEPTH IN WELL (feet): 9 FT	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: _____ μm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	SEE COC								

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: KL WATERSIDE	SITE LOCATION: KANNER HIGHWAY MARTIN COUNTY	
WELL NO: MCKP-4	SAMPLE ID:MCKP-4	DATE: 5/7/22

PURGING DATA

WELL DIAMETER (inches):0.75	TUBING DIAMETER (inches):0.3	WELL SCREEN INTERVAL DEPTH: 1 feet to 11 feet	STATIC DEPTH TO WATER (feet): 2.04	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11 feet – 1.45 feet) X 0.02 gallons/foot = 0.19 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9 FT	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9FT	PURGING INITIATED AT:1223	PURGING ENDED AT:1250	TOTAL VOLUME PURGED (gallons):2.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1224	0	0			6.61	24.96	1575	23.1	-	BROWN	NONE
1229	0.5	0.5			6.62	24.44	1571	5.3	420	TAN	-
1234	0.5	1.0			6.65	24.28	1590	6.0	138	TAN	-
1240	0.5	1.5			6.63	24.33	1597	4.3	86.8	-	-
1245	0.5	2.0			6.60	24.43	1598	3.8	47.5	-	-
1250	0.5	2.5			6.56	24.44	1600	3.2	18	-	-

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: BRAD TOMPA – MARTIAN ENVIRONMENTAL	SAMPLER(S) SIGNATURE(S): BRAD TOMPA	SAMPLING INITIATED AT:1250	SAMPLING ENDED AT:1255
PUMP OR TUBING DEPTH IN WELL (feet): 9 FT	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: _____ μm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	SEE COC								

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

APPENDIX B
LABORATORY REPORTS

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

May 18, 2022

Brad Tompa
Martian Environmental
1109 Carmona Place
Saint Augustine, FL 32092

RE: Project: Martin County BoC
Pace Project No.: 35716198

Dear Brad Tompa:

Enclosed are the analytical results for sample(s) received by the laboratory on May 09, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet
- Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Bill White
bill.white@pacelabs.com
(386) 672-5668
Project Manager

Enclosures

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

CERTIFICATIONS

Project: Martin County BoC
Pace Project No.: 35716198

Pace Analytical Services Ormond Beach

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Ohio DEP 87780
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

CERTIFICATIONS

Project: Martin County BoC
Pace Project No.: 35716198

Pace Analytical Services National

Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 998093910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SAMPLE SUMMARY

Project: Martin County BoC
Pace Project No.: 35716198

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35716198001	**MCKP-1**	Solid	05/06/22 15:30	05/09/22 08:00
35716198002	**MCKP-2**	Solid	05/06/22 16:00	05/09/22 08:00
35716198003	**MCKP-3**	Solid	05/06/22 16:30	05/09/22 08:00
35716198004	**MCKP-4**	Solid	05/06/22 17:00	05/09/22 08:00
35716198005	**MCKP-1**	Water	05/07/22 09:30	05/09/22 08:00
35716198006	**MCKP-2**	Water	05/07/22 10:40	05/09/22 08:00
35716198007	**MCKP-3**	Water	05/07/22 11:45	05/09/22 08:00
35716198008	**MCKP-4**	Water	05/07/22 12:50	05/09/22 08:00

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SAMPLE ANALYTE COUNT

Project: Martin County BoC
Pace Project No.: 35716198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35716198001	**MCKP-1**	EPA 8141	CCW	27	PAN
		EPA 8081	BLM	22	PASI-O
		EPA 6010	AME, KC2	10	PASI-O
		EPA 7471	JNK	1	PASI-O
		ASTM D2974-87	NLC	1	PASI-O
		SM 2540G	JAV	1	PAN
35716198002	**MCKP-2**	EPA 8141	CCW	27	PAN
		EPA 8081	BLM	22	PASI-O
		EPA 6010	AME, KC2	10	PASI-O
		EPA 7471	JNK	1	PASI-O
		ASTM D2974-87	NLC	1	PASI-O
		SM 2540G	CMK	1	PAN
35716198003	**MCKP-3**	EPA 8141	CCW	27	PAN
		EPA 8081	BLM	22	PASI-O
		EPA 6010	AME	10	PASI-O
		EPA 7471	JNK	1	PASI-O
		ASTM D2974-87	NLC	1	PASI-O
		SM 2540G	CMK	1	PAN
35716198004	**MCKP-4**	EPA 8141	CCW	27	PAN
		EPA 8081	BLM	22	PASI-O
		EPA 6010	AME, KC2	10	PASI-O
		EPA 7471	JNK	1	PASI-O
		ASTM D2974-87	NLC	1	PASI-O
		SM 2540G	CMK	1	PAN
35716198005	**MCKP-1**	EPA 8141	CCW	27	PAN
		EPA 8081	CB1	22	PASI-O
		EPA 6010	KC2	10	PASI-O
		EPA 7470	JNK	1	PASI-O
		EPA 353.2	MRC	3	PASI-O
35716198006	**MCKP-2**	EPA 8141	CCW	27	PAN
		EPA 8081	CB1	22	PASI-O
		EPA 6010	KC2	10	PASI-O
		EPA 7470	JNK	1	PASI-O
		EPA 353.2	MRC	3	PASI-O
35716198007	**MCKP-3**	EPA 8141	CCW	27	PAN
		EPA 8081	CB1	22	PASI-O
		EPA 6010	KC2	10	PASI-O

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8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SAMPLE ANALYTE COUNT

Project: Martin County BoC
Pace Project No.: 35716198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	JNK	1	PASI-O
		EPA 353.2	MRC	3	PASI-O
35716198008	**MCKP-4**	EPA 8141	CCW	27	PAN
		EPA 8081	CB1	22	PASI-O
		EPA 6010	KC2	10	PASI-O
		EPA 7470	JNK	1	PASI-O
		EPA 353.2	MRC	3	PASI-O

PAN = Pace National - Mt. Juliet
PASI-O = Pace Analytical Services - Ormond Beach

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SUMMARY OF DETECTION

Project: Martin County BoC
Pace Project No.: 35716198

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
35716198001	**MCKP-1**					
EPA 6010	Arsenic	0.29 I	mg/kg	0.53	05/12/22 12:49	
EPA 6010	Barium	0.61	mg/kg	0.53	05/12/22 12:49	
EPA 6010	Chromium	0.97	mg/kg	0.27	05/12/22 12:49	
EPA 6010	Copper	7.8	mg/kg	0.27	05/12/22 12:49	
EPA 6010	Iron	463	mg/kg	10.6	05/12/22 12:49	
EPA 6010	Lead	1.7	mg/kg	0.53	05/12/22 12:49	
EPA 6010	Manganese	7.3	mg/kg	0.27	05/12/22 12:49	
EPA 7471	Mercury	0.016	mg/kg	0.0099	05/16/22 13:37	
ASTM D2974-87	Percent Moisture	11.9	%	0.10	05/14/22 08:10	
SM 2540G	Total Solids	88.2	%		05/14/22 11:30	
35716198002	**MCKP-2**					
EPA 8081	4,4'-DDE	0.00095 I	mg/kg	0.0020	05/11/22 13:33	
EPA 8081	4,4'-DDT	0.00093 I	mg/kg	0.0020	05/11/22 13:33	
EPA 6010	Arsenic	0.56 I	mg/kg	0.63	05/12/22 12:53	
EPA 6010	Barium	3.1	mg/kg	0.63	05/12/22 12:53	
EPA 6010	Cadmium	0.15	mg/kg	0.063	05/11/22 17:33	
EPA 6010	Chromium	7.3	mg/kg	0.32	05/12/22 12:53	
EPA 6010	Copper	105	mg/kg	1.6	05/12/22 12:56	
EPA 6010	Iron	833	mg/kg	12.7	05/12/22 12:53	
EPA 6010	Lead	16.8	mg/kg	0.63	05/12/22 12:53	
EPA 6010	Manganese	16.4	mg/kg	0.32	05/12/22 12:53	
EPA 7471	Mercury	0.038	mg/kg	0.011	05/16/22 13:40	
ASTM D2974-87	Percent Moisture	15.0	%	0.10	05/14/22 08:10	
SM 2540G	Total Solids	86.9	%		05/14/22 17:49	
35716198003	**MCKP-3**					
EPA 6010	Barium	0.25 I	mg/kg	0.62	05/11/22 17:37	
EPA 6010	Chromium	0.18 I	mg/kg	0.31	05/11/22 17:37	
EPA 6010	Copper	2.7	mg/kg	0.31	05/11/22 17:37	
EPA 6010	Iron	11.8 I	mg/kg	12.3	05/11/22 17:37	
EPA 6010	Lead	0.32 I	mg/kg	0.62	05/11/22 17:37	
EPA 6010	Manganese	2.6	mg/kg	0.31	05/11/22 17:37	
EPA 7471	Mercury	0.018	mg/kg	0.012	05/16/22 13:42	
ASTM D2974-87	Percent Moisture	18.0	%	0.10	05/14/22 08:11	
SM 2540G	Total Solids	86.2	%		05/14/22 17:49	
35716198004	**MCKP-4**					
EPA 8081	4,4'-DDE	0.00022 I	mg/kg	0.0019	05/11/22 13:59	
EPA 8081	4,4'-DDT	0.0020	mg/kg	0.0019	05/11/22 13:59	
EPA 8081	Methoxychlor	0.00032 I	mg/kg	0.0019	05/11/22 13:59	
EPA 6010	Arsenic	0.43 I	mg/kg	0.52	05/12/22 13:00	
EPA 6010	Barium	3.4	mg/kg	0.52	05/12/22 13:00	
EPA 6010	Cadmium	0.043 I	mg/kg	0.052	05/11/22 17:40	
EPA 6010	Chromium	5.3	mg/kg	0.26	05/12/22 13:00	
EPA 6010	Copper	43.9	mg/kg	0.26	05/12/22 13:00	
EPA 6010	Iron	843	mg/kg	10.4	05/12/22 13:00	
EPA 6010	Lead	2.2	mg/kg	0.52	05/12/22 13:00	
EPA 6010	Manganese	18.9	mg/kg	0.26	05/12/22 13:00	

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SUMMARY OF DETECTION

Project: Martin County BoC
Pace Project No.: 35716198

Lab Sample ID / Method	Client Sample ID / Parameters	Result		Units	Report Limit	Analyzed	Qualifiers
35716198004	**MCKP-4**						
EPA 7471	Mercury	0.023		mg/kg	0.011	05/16/22 13:44	
ASTM D2974-87	Percent Moisture	14.1		%	0.10	05/14/22 08:11	
SM 2540G	Total Solids	87.0		%		05/14/22 17:49	
35716198005	**MCKP-1**						
EPA 6010	Cadmium	0.60	I	ug/L	1.0	05/12/22 17:32	
EPA 6010	Copper	50.6		ug/L	5.0	05/12/22 17:32	
EPA 6010	Iron	204		ug/L	40.0	05/12/22 17:32	
EPA 6010	Manganese	190		ug/L	5.0	05/12/22 17:32	
EPA 353.2	Nitrogen, NO2 plus NO3	24.3		mg/L	1.2	05/10/22 13:26	Q
EPA 353.2	Nitrogen, Nitrate	24.3		mg/L	1.2	05/10/22 13:26	Q
35716198006	**MCKP-2**						
EPA 8081	4,4'-DDE	0.0049	I	ug/L	0.0095	05/11/22 11:49	1p,C2
EPA 6010	Arsenic	7.6	I	ug/L	10.0	05/12/22 17:36	
EPA 6010	Barium	31.4		ug/L	10.0	05/12/22 17:36	
EPA 6010	Cadmium	0.51	I	ug/L	1.0	05/12/22 17:36	
EPA 6010	Chromium	1.8	I	ug/L	5.0	05/12/22 17:36	
EPA 6010	Copper	40.6		ug/L	5.0	05/12/22 17:36	
EPA 6010	Iron	2750		ug/L	40.0	05/12/22 17:36	
EPA 6010	Manganese	679		ug/L	5.0	05/12/22 17:36	
EPA 353.2	Nitrogen, NO2 plus NO3	4.3		mg/L	0.050	05/10/22 12:52	Q
EPA 353.2	Nitrogen, Nitrate	4.3		mg/L	0.050	05/10/22 12:52	Q
35716198007	**MCKP-3**						
EPA 6010	Barium	275		ug/L	10.0	05/12/22 17:40	
EPA 6010	Cadmium	0.36	I	ug/L	1.0	05/12/22 17:40	
EPA 6010	Iron	15500		ug/L	40.0	05/12/22 17:40	
EPA 6010	Manganese	208		ug/L	5.0	05/12/22 17:40	
EPA 353.2	Nitrogen, NO2 plus NO3	0.015	I	mg/L	0.050	05/10/22 12:53	Q
35716198008	**MCKP-4**						
EPA 6010	Arsenic	7.4	I	ug/L	10.0	05/12/22 17:43	
EPA 6010	Barium	28.2		ug/L	10.0	05/12/22 17:43	
EPA 6010	Cadmium	0.93	I	ug/L	1.0	05/12/22 17:43	
EPA 6010	Chromium	1.7	I	ug/L	5.0	05/12/22 17:43	
EPA 6010	Copper	57.0		ug/L	5.0	05/12/22 17:43	
EPA 6010	Iron	1770		ug/L	40.0	05/12/22 17:43	
EPA 6010	Manganese	1750		ug/L	25.0	05/13/22 14:26	
EPA 353.2	Nitrogen, NO2 plus NO3	34.0		mg/L	0.75	05/10/22 13:29	Q
EPA 353.2	Nitrogen, Nitrate	34.0		mg/L	0.75	05/10/22 13:29	Q

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ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-1 **Lab ID: 35716198001** Collected: 05/06/22 15:30 Received: 05/09/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141	Analytical Method: EPA 8141 Preparation Method: 3546								
	Pace National - Mt. Juliet								
Azinphos, methyl (Guthion)	**0.0360 U**	mg/kg	0.113	0.0360	1	05/12/22 09:45	05/15/22 22:25	86-50-0	
Bolstar	**0.0169 U**	mg/kg	0.113	0.0169	1	05/12/22 09:45	05/15/22 22:25	35400-43-2	
Chlorpyrifos	**0.0178 U**	mg/kg	0.113	0.0178	1	05/12/22 09:45	05/15/22 22:25	2921-88-2	
Coumaphos	**0.0275 U**	mg/kg	0.113	0.0275	1	05/12/22 09:45	05/15/22 22:25	56-72-4	
Total Demeton	**0.00662 U**	mg/kg	0.0793	0.00662	1	05/12/22 09:45	05/15/22 22:25	8065-48-3	
Diazinon	**0.0255 U**	mg/kg	0.113	0.0255	1	05/12/22 09:45	05/15/22 22:25	333-41-5	
Dichlorvos	**0.0340 U**	mg/kg	0.113	0.0340	1	05/12/22 09:45	05/15/22 22:25	62-73-7	
Dimethoate	**0.0379 U**	mg/kg	0.113	0.0379	1	05/12/22 09:45	05/15/22 22:25	60-51-5	
Disulfoton	**0.0288 U**	mg/kg	0.113	0.0288	1	05/12/22 09:45	05/15/22 22:25	298-04-4	
EPN (ENT)	**0.0313 U**	mg/kg	0.113	0.0313	1	05/12/22 09:45	05/15/22 22:25	2104-64-5	
Ethoprop	**0.0134 U**	mg/kg	0.113	0.0134	1	05/12/22 09:45	05/15/22 22:25	13194-48-4	
Parathion (Ethyl parathion)	**0.0186 U**	mg/kg	0.113	0.0186	1	05/12/22 09:45	05/15/22 22:25	56-38-2	
Fensulfothion	**0.0400 U**	mg/kg	0.113	0.0400	1	05/12/22 09:45	05/15/22 22:25	115-90-2	
Fenthion	**0.0151 U**	mg/kg	0.113	0.0151	1	05/12/22 09:45	05/15/22 22:25	55-38-9	
Malathion	**0.0203 U**	mg/kg	0.113	0.0203	1	05/12/22 09:45	05/15/22 22:25	121-75-5	
Merphos	**0.0263 U**	mg/kg	0.113	0.0263	1	05/12/22 09:45	05/15/22 22:25	150-50-5	
Methyl parathion	**0.0230 U**	mg/kg	0.113	0.0230	1	05/12/22 09:45	05/15/22 22:25	298-00-0	
Mevinphos	**0.0261 U**	mg/kg	0.113	0.0261	1	05/12/22 09:45	05/15/22 22:25	7786-34-7	
Naled	**0.0544 U**	mg/kg	0.113	0.0544	1	05/12/22 09:45	05/15/22 22:25	300-76-5	
Phorate	**0.0238 U**	mg/kg	0.113	0.0238	1	05/12/22 09:45	05/15/22 22:25	298-02-2	
Ronnel	**0.0169 U**	mg/kg	0.113	0.0169	1	05/12/22 09:45	05/15/22 22:25	299-84-3	
Stirophos (Tetrachlorvinphos)	**0.0202 U**	mg/kg	0.113	0.0202	1	05/12/22 09:45	05/15/22 22:25	22248-79-9	
Sulfotepp (Thiodiphosphoric Ac	**0.0112 U**	mg/kg	0.113	0.0112	1	05/12/22 09:45	05/15/22 22:25	3689-24-5	
TEPP	**0.178 U**	mg/kg	1.13	0.178	1	05/12/22 09:45	05/15/22 22:25	107-49-3	
Tokuthion (Prothiofos)	**0.0170 U**	mg/kg	0.113	0.0170	1	05/12/22 09:45	05/15/22 22:25	34643-46-4	
Trichloronate	**0.0228 U**	mg/kg	0.113	0.0228	1	05/12/22 09:45	05/15/22 22:25	327-98-0	
Surrogates									
Triphenylphosphate (S)	90.9	%	36.0-121		1	05/12/22 09:45	05/15/22 22:25	115-86-6	
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3546								
	Pace Analytical Services - Ormond Beach								
Aldrin	**0.00019 U**	mg/kg	0.0019	0.00019	1	05/11/22 00:43	05/11/22 13:20	309-00-2	
alpha-BHC	**0.000052 U**	mg/kg	0.0019	0.000052	1	05/11/22 00:43	05/11/22 13:20	319-84-6	
beta-BHC	**0.00023 U**	mg/kg	0.0019	0.00023	1	05/11/22 00:43	05/11/22 13:20	319-85-7	
delta-BHC	**0.000098 U**	mg/kg	0.0019	0.000098	1	05/11/22 00:43	05/11/22 13:20	319-86-8	
gamma-BHC (Lindane)	**0.000055 U**	mg/kg	0.0019	0.000055	1	05/11/22 00:43	05/11/22 13:20	58-89-9	
Chlordane (Technical)	**0.0058 U**	mg/kg	0.019	0.0058	1	05/11/22 00:43	05/11/22 13:20	57-74-9	
4,4'-DDD	**0.000086 U**	mg/kg	0.0019	0.000086	1	05/11/22 00:43	05/11/22 13:20	72-54-8	
4,4'-DDE	**0.000076 U**	mg/kg	0.0019	0.000076	1	05/11/22 00:43	05/11/22 13:20	72-55-9	
4,4'-DDT	**0.00011 U**	mg/kg	0.0019	0.00011	1	05/11/22 00:43	05/11/22 13:20	50-29-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-1 **Lab ID: 35716198001** Collected: 05/06/22 15:30 Received: 05/09/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3546								
	Pace Analytical Services - Ormond Beach								
Dieldrin	**0.000073 U**	mg/kg	0.0019	0.000073	1	05/11/22 00:43	05/11/22 13:20	60-57-1	
Endosulfan I	**0.00021 U**	mg/kg	0.0019	0.00021	1	05/11/22 00:43	05/11/22 13:20	959-98-8	
Endosulfan II	**0.000086 U**	mg/kg	0.0019	0.000086	1	05/11/22 00:43	05/11/22 13:20	33213-65-9	
Endosulfan sulfate	**0.000076 U**	mg/kg	0.0019	0.000076	1	05/11/22 00:43	05/11/22 13:20	1031-07-8	
Endrin	**0.000096 U**	mg/kg	0.0019	0.000096	1	05/11/22 00:43	05/11/22 13:20	72-20-8	
Endrin aldehyde	**0.00028 U**	mg/kg	0.0038	0.00028	1	05/11/22 00:43	05/11/22 13:20	7421-93-4	
Endrin ketone	**0.000089 U**	mg/kg	0.0019	0.000089	1	05/11/22 00:43	05/11/22 13:20	53494-70-5	
Heptachlor	**0.00020 U**	mg/kg	0.0019	0.00020	1	05/11/22 00:43	05/11/22 13:20	76-44-8	
Heptachlor epoxide	**0.000082 U**	mg/kg	0.0019	0.000082	1	05/11/22 00:43	05/11/22 13:20	1024-57-3	
Methoxychlor	**0.00028 U**	mg/kg	0.0019	0.00028	1	05/11/22 00:43	05/11/22 13:20	72-43-5	
Toxaphene	**0.0083 U**	mg/kg	0.019	0.0083	1	05/11/22 00:43	05/11/22 13:20	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	110	%	53-140		1	05/11/22 00:43	05/11/22 13:20	877-09-8	
Decachlorobiphenyl (S)	119	%	43-157		1	05/11/22 00:43	05/11/22 13:20	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
	Pace Analytical Services - Ormond Beach								
Arsenic	**0.29 I**	mg/kg	0.53	0.27	1	05/11/22 05:43	05/12/22 12:49	7440-38-2	
Barium	**0.61**	mg/kg	0.53	0.089	1	05/11/22 05:43	05/12/22 12:49	7440-39-3	
Cadmium	**0.027 U**	mg/kg	0.053	0.027	1	05/11/22 05:43	05/11/22 17:29	7440-43-9	
Chromium	**0.97**	mg/kg	0.27	0.13	1	05/11/22 05:43	05/12/22 12:49	7440-47-3	
Copper	**7.8**	mg/kg	0.27	0.13	1	05/11/22 05:43	05/12/22 12:49	7440-50-8	
Iron	**463**	mg/kg	10.6	3.2	1	05/11/22 05:43	05/12/22 12:49	7439-89-6	
Lead	**1.7**	mg/kg	0.53	0.27	1	05/11/22 05:43	05/12/22 12:49	7439-92-1	
Manganese	**7.3**	mg/kg	0.27	0.13	1	05/11/22 05:43	05/12/22 12:49	7439-96-5	
Selenium	**0.40 U**	mg/kg	0.80	0.40	1	05/11/22 05:43	05/12/22 12:49	7782-49-2	
Silver	**0.058 U**	mg/kg	0.27	0.058	1	05/11/22 05:43	05/12/22 12:49	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
	Pace Analytical Services - Ormond Beach								
Mercury	**0.016**	mg/kg	0.0099	0.0049	1	05/16/22 10:41	05/16/22 13:37	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87								
	Pace Analytical Services - Ormond Beach								
Percent Moisture	**11.9**	%	0.10	0.10	1		05/14/22 08:10		
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G								
	Pace National - Mt. Juliet								
Total Solids	**88.2**	%			1	05/14/22 11:10	05/14/22 11:30		

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ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-2 **Lab ID: 35716198002** Collected: 05/06/22 16:00 Received: 05/09/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141	Analytical Method: EPA 8141 Preparation Method: 3546 Pace National - Mt. Juliet								
Azinphos, methyl (Guthion)	**0.0366 U**	mg/kg	0.115	0.0366	1	05/12/22 09:45	05/15/22 22:59	86-50-0	
Bolstar	**0.0171 U**	mg/kg	0.115	0.0171	1	05/12/22 09:45	05/15/22 22:59	35400-43-2	
Chlorpyrifos	**0.0181 U**	mg/kg	0.115	0.0181	1	05/12/22 09:45	05/15/22 22:59	2921-88-2	
Coumaphos	**0.0279 U**	mg/kg	0.115	0.0279	1	05/12/22 09:45	05/15/22 22:59	56-72-4	
Total Demeton	**0.00672 U**	mg/kg	0.0805	0.00672	1	05/12/22 09:45	05/15/22 22:59	8065-48-3	
Diazinon	**0.0259 U**	mg/kg	0.115	0.0259	1	05/12/22 09:45	05/15/22 22:59	333-41-5	
Dichlorvos	**0.0345 U**	mg/kg	0.115	0.0345	1	05/12/22 09:45	05/15/22 22:59	62-73-7	
Dimethoate	**0.0384 U**	mg/kg	0.115	0.0384	1	05/12/22 09:45	05/15/22 22:59	60-51-5	
Disulfoton	**0.0292 U**	mg/kg	0.115	0.0292	1	05/12/22 09:45	05/15/22 22:59	298-04-4	
EPN (ENT)	**0.0317 U**	mg/kg	0.115	0.0317	1	05/12/22 09:45	05/15/22 22:59	2104-64-5	
Ethoprop	**0.0136 U**	mg/kg	0.115	0.0136	1	05/12/22 09:45	05/15/22 22:59	13194-48-4	
Parathion (Ethyl parathion)	**0.0189 U**	mg/kg	0.115	0.0189	1	05/12/22 09:45	05/15/22 22:59	56-38-2	
Fensulfothion	**0.0406 U**	mg/kg	0.115	0.0406	1	05/12/22 09:45	05/15/22 22:59	115-90-2	
Fenthion	**0.0153 U**	mg/kg	0.115	0.0153	1	05/12/22 09:45	05/15/22 22:59	55-38-9	
Malathion	**0.0206 U**	mg/kg	0.115	0.0206	1	05/12/22 09:45	05/15/22 22:59	121-75-5	
Merphos	**0.0267 U**	mg/kg	0.115	0.0267	1	05/12/22 09:45	05/15/22 22:59	150-50-5	
Methyl parathion	**0.0233 U**	mg/kg	0.115	0.0233	1	05/12/22 09:45	05/15/22 22:59	298-00-0	
Mevinphos	**0.0265 U**	mg/kg	0.115	0.0265	1	05/12/22 09:45	05/15/22 22:59	7786-34-7	
Naled	**0.0552 U**	mg/kg	0.115	0.0552	1	05/12/22 09:45	05/15/22 22:59	300-76-5	
Phorate	**0.0242 U**	mg/kg	0.115	0.0242	1	05/12/22 09:45	05/15/22 22:59	298-02-2	
Ronnel	**0.0171 U**	mg/kg	0.115	0.0171	1	05/12/22 09:45	05/15/22 22:59	299-84-3	
Stirophos (Tetrachlorvinphos)	**0.0205 U**	mg/kg	0.115	0.0205	1	05/12/22 09:45	05/15/22 22:59	22248-79-9	
Sulfotepp (Thiodiphosphoric Ac	**0.0113 U**	mg/kg	0.115	0.0113	1	05/12/22 09:45	05/15/22 22:59	3689-24-5	
TEPP	**0.181 U**	mg/kg	1.15	0.181	1	05/12/22 09:45	05/15/22 22:59	107-49-3	
Tokuthion (Prothiofos)	**0.0173 U**	mg/kg	0.115	0.0173	1	05/12/22 09:45	05/15/22 22:59	34643-46-4	
Trichloronate	**0.0231 U**	mg/kg	0.115	0.0231	1	05/12/22 09:45	05/15/22 22:59	327-98-0	
Surrogates									
Triphenylphosphate (S)	85.7	%	36.0-121		1	05/12/22 09:45	05/15/22 22:59	115-86-6	
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3546 Pace Analytical Services - Ormond Beach								
Aldrin	**0.00020 U**	mg/kg	0.0020	0.00020	1	05/11/22 00:43	05/11/22 13:33	309-00-2	
alpha-BHC	**0.000054 U**	mg/kg	0.0020	0.000054	1	05/11/22 00:43	05/11/22 13:33	319-84-6	
beta-BHC	**0.00024 U**	mg/kg	0.0020	0.00024	1	05/11/22 00:43	05/11/22 13:33	319-85-7	
delta-BHC	**0.00010 U**	mg/kg	0.0020	0.00010	1	05/11/22 00:43	05/11/22 13:33	319-86-8	
gamma-BHC (Lindane)	**0.000058 U**	mg/kg	0.0020	0.000058	1	05/11/22 00:43	05/11/22 13:33	58-89-9	
Chlordane (Technical)	**0.0060 U**	mg/kg	0.020	0.0060	1	05/11/22 00:43	05/11/22 13:33	57-74-9	
4,4'-DDD	**0.000089 U**	mg/kg	0.0020	0.000089	1	05/11/22 00:43	05/11/22 13:33	72-54-8	
4,4'-DDE	**0.00095 I**	mg/kg	0.0020	0.000079	1	05/11/22 00:43	05/11/22 13:33	72-55-9	
4,4'-DDT	**0.00093 I**	mg/kg	0.0020	0.00011	1	05/11/22 00:43	05/11/22 13:33	50-29-3	
Dieldrin	**0.000076 U**	mg/kg	0.0020	0.000076	1	05/11/22 00:43	05/11/22 13:33	60-57-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-2 **Lab ID: 35716198002** Collected: 05/06/22 16:00 Received: 05/09/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3546								
	Pace Analytical Services - Ormond Beach								
Endosulfan I	**0.00022 U**	mg/kg	0.0020	0.00022	1	05/11/22 00:43	05/11/22 13:33	959-98-8	
Endosulfan II	**0.000089 U**	mg/kg	0.0020	0.000089	1	05/11/22 00:43	05/11/22 13:33	33213-65-9	
Endosulfan sulfate	**0.000079 U**	mg/kg	0.0020	0.000079	1	05/11/22 00:43	05/11/22 13:33	1031-07-8	
Endrin	**0.00010 U**	mg/kg	0.0020	0.00010	1	05/11/22 00:43	05/11/22 13:33	72-20-8	
Endrin aldehyde	**0.00029 U**	mg/kg	0.0040	0.00029	1	05/11/22 00:43	05/11/22 13:33	7421-93-4	
Endrin ketone	**0.000093 U**	mg/kg	0.0020	0.000093	1	05/11/22 00:43	05/11/22 13:33	53494-70-5	
Heptachlor	**0.00021 U**	mg/kg	0.0020	0.00021	1	05/11/22 00:43	05/11/22 13:33	76-44-8	
Heptachlor epoxide	**0.000086 U**	mg/kg	0.0020	0.000086	1	05/11/22 00:43	05/11/22 13:33	1024-57-3	
Methoxychlor	**0.00029 U**	mg/kg	0.0020	0.00029	1	05/11/22 00:43	05/11/22 13:33	72-43-5	
Toxaphene	**0.0086 U**	mg/kg	0.020	0.0086	1	05/11/22 00:43	05/11/22 13:33	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	102	%	53-140		1	05/11/22 00:43	05/11/22 13:33	877-09-8	
Decachlorobiphenyl (S)	139	%	43-157		1	05/11/22 00:43	05/11/22 13:33	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
	Pace Analytical Services - Ormond Beach								
Arsenic	**0.56 I**	mg/kg	0.63	0.32	1	05/11/22 05:43	05/12/22 12:53	7440-38-2	
Barium	**3.1**	mg/kg	0.63	0.11	1	05/11/22 05:43	05/12/22 12:53	7440-39-3	
Cadmium	**0.15**	mg/kg	0.063	0.032	1	05/11/22 05:43	05/11/22 17:33	7440-43-9	
Chromium	**7.3**	mg/kg	0.32	0.16	1	05/11/22 05:43	05/12/22 12:53	7440-47-3	
Copper	**105**	mg/kg	1.6	0.79	5	05/11/22 05:43	05/12/22 12:56	7440-50-8	
Iron	**833**	mg/kg	12.7	3.8	1	05/11/22 05:43	05/12/22 12:53	7439-89-6	
Lead	**16.8**	mg/kg	0.63	0.32	1	05/11/22 05:43	05/12/22 12:53	7439-92-1	
Manganese	**16.4**	mg/kg	0.32	0.16	1	05/11/22 05:43	05/12/22 12:53	7439-96-5	
Selenium	**0.48 U**	mg/kg	0.95	0.48	1	05/11/22 05:43	05/12/22 12:53	7782-49-2	
Silver	**0.070 U**	mg/kg	0.32	0.070	1	05/11/22 05:43	05/12/22 12:53	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
	Pace Analytical Services - Ormond Beach								
Mercury	**0.038**	mg/kg	0.011	0.0057	1	05/16/22 10:41	05/16/22 13:40	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87								
	Pace Analytical Services - Ormond Beach								
Percent Moisture	**15.0**	%	0.10	0.10	1		05/14/22 08:10		
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G								
	Pace National - Mt. Juliet								
Total Solids	**86.9**	%			1	05/14/22 17:27	05/14/22 17:49		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-3 **Lab ID: 35716198003** Collected: 05/06/22 16:30 Received: 05/09/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141	Analytical Method: EPA 8141 Preparation Method: 3546								
	Pace National - Mt. Juliet								
Azinphos, methyl (Guthion)	**0.0369 U**	mg/kg	0.116	0.0369	1	05/12/22 09:45	05/15/22 23:32	86-50-0	
Bolstar	**0.0173 U**	mg/kg	0.116	0.0173	1	05/12/22 09:45	05/15/22 23:32	35400-43-2	
Chlorpyrifos	**0.0182 U**	mg/kg	0.116	0.0182	1	05/12/22 09:45	05/15/22 23:32	2921-88-2	
Coumaphos	**0.0282 U**	mg/kg	0.116	0.0282	1	05/12/22 09:45	05/15/22 23:32	56-72-4	
Total Demeton	**0.00678 U**	mg/kg	0.0812	0.00678	1	05/12/22 09:45	05/15/22 23:32	8065-48-3	
Diazinon	**0.0261 U**	mg/kg	0.116	0.0261	1	05/12/22 09:45	05/15/22 23:32	333-41-5	
Dichlorvos	**0.0348 U**	mg/kg	0.116	0.0348	1	05/12/22 09:45	05/15/22 23:32	62-73-7	
Dimethoate	**0.0388 U**	mg/kg	0.116	0.0388	1	05/12/22 09:45	05/15/22 23:32	60-51-5	
Disulfoton	**0.0295 U**	mg/kg	0.116	0.0295	1	05/12/22 09:45	05/15/22 23:32	298-04-4	
EPN (ENT)	**0.0320 U**	mg/kg	0.116	0.0320	1	05/12/22 09:45	05/15/22 23:32	2104-64-5	
Ethoprop	**0.0137 U**	mg/kg	0.116	0.0137	1	05/12/22 09:45	05/15/22 23:32	13194-48-4	
Parathion (Ethyl parathion)	**0.0190 U**	mg/kg	0.116	0.0190	1	05/12/22 09:45	05/15/22 23:32	56-38-2	
Fensulfothion	**0.0410 U**	mg/kg	0.116	0.0410	1	05/12/22 09:45	05/15/22 23:32	115-90-2	
Fenthion	**0.0154 U**	mg/kg	0.116	0.0154	1	05/12/22 09:45	05/15/22 23:32	55-38-9	
Malathion	**0.0208 U**	mg/kg	0.116	0.0208	1	05/12/22 09:45	05/15/22 23:32	121-75-5	
Merphos	**0.0269 U**	mg/kg	0.116	0.0269	1	05/12/22 09:45	05/15/22 23:32	150-50-5	
Methyl parathion	**0.0236 U**	mg/kg	0.116	0.0236	1	05/12/22 09:45	05/15/22 23:32	298-00-0	
Mevinphos	**0.0267 U**	mg/kg	0.116	0.0267	1	05/12/22 09:45	05/15/22 23:32	7786-34-7	
Naled	**0.0557 U**	mg/kg	0.116	0.0557	1	05/12/22 09:45	05/15/22 23:32	300-76-5	
Phorate	**0.0244 U**	mg/kg	0.116	0.0244	1	05/12/22 09:45	05/15/22 23:32	298-02-2	
Ronnel	**0.0173 U**	mg/kg	0.116	0.0173	1	05/12/22 09:45	05/15/22 23:32	299-84-3	
Stirophos (Tetrachlorvinphos)	**0.0207 U**	mg/kg	0.116	0.0207	1	05/12/22 09:45	05/15/22 23:32	22248-79-9	
Sulfotepp (Thiodiphosphoric Ac	**0.0114 U**	mg/kg	0.116	0.0114	1	05/12/22 09:45	05/15/22 23:32	3689-24-5	
TEPP	**0.182 U**	mg/kg	1.16	0.182	1	05/12/22 09:45	05/15/22 23:32	107-49-3	
Tokuthion (Prothiofos)	**0.0174 U**	mg/kg	0.116	0.0174	1	05/12/22 09:45	05/15/22 23:32	34643-46-4	
Trichloronate	**0.0233 U**	mg/kg	0.116	0.0233	1	05/12/22 09:45	05/15/22 23:32	327-98-0	
Surrogates									
Triphenylphosphate (S)	88.8	%	36.0-121		1	05/12/22 09:45	05/15/22 23:32	115-86-6	
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3546								
	Pace Analytical Services - Ormond Beach								
Aldrin	**0.00021 U**	mg/kg	0.0021	0.00021	1	05/11/22 00:43	05/11/22 13:46	309-00-2	
alpha-BHC	**0.000056 U**	mg/kg	0.0021	0.000056	1	05/11/22 00:43	05/11/22 13:46	319-84-6	
beta-BHC	**0.00025 U**	mg/kg	0.0021	0.00025	1	05/11/22 00:43	05/11/22 13:46	319-85-7	
delta-BHC	**0.00011 U**	mg/kg	0.0021	0.00011	1	05/11/22 00:43	05/11/22 13:46	319-86-8	
gamma-BHC (Lindane)	**0.000059 U**	mg/kg	0.0021	0.000059	1	05/11/22 00:43	05/11/22 13:46	58-89-9	
Chlordane (Technical)	**0.0062 U**	mg/kg	0.021	0.0062	1	05/11/22 00:43	05/11/22 13:46	57-74-9	
4,4'-DDD	**0.000092 U**	mg/kg	0.0021	0.000092	1	05/11/22 00:43	05/11/22 13:46	72-54-8	
4,4'-DDE	**0.000081 U**	mg/kg	0.0021	0.000081	1	05/11/22 00:43	05/11/22 13:46	72-55-9	
4,4'-DDT	**0.00011 U**	mg/kg	0.0021	0.00011	1	05/11/22 00:43	05/11/22 13:46	50-29-3	
Dieldrin	**0.000079 U**	mg/kg	0.0021	0.000079	1	05/11/22 00:43	05/11/22 13:46	60-57-1	

Pace Analytical Services, LLC
8 East Tower Circle
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ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-3 **Lab ID: 35716198003** Collected: 05/06/22 16:30 Received: 05/09/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3546								
	Pace Analytical Services - Ormond Beach								
Endosulfan I	**0.00023 U**	mg/kg	0.0021	0.00023	1	05/11/22 00:43	05/11/22 13:46	959-98-8	
Endosulfan II	**0.000092 U**	mg/kg	0.0021	0.000092	1	05/11/22 00:43	05/11/22 13:46	33213-65-9	
Endosulfan sulfate	**0.000081 U**	mg/kg	0.0021	0.000081	1	05/11/22 00:43	05/11/22 13:46	1031-07-8	
Endrin	**0.00010 U**	mg/kg	0.0021	0.00010	1	05/11/22 00:43	05/11/22 13:46	72-20-8	
Endrin aldehyde	**0.00030 U**	mg/kg	0.0041	0.00030	1	05/11/22 00:43	05/11/22 13:46	7421-93-4	
Endrin ketone	**0.000096 U**	mg/kg	0.0021	0.000096	1	05/11/22 00:43	05/11/22 13:46	53494-70-5	
Heptachlor	**0.00022 U**	mg/kg	0.0021	0.00022	1	05/11/22 00:43	05/11/22 13:46	76-44-8	
Heptachlor epoxide	**0.000088 U**	mg/kg	0.0021	0.000088	1	05/11/22 00:43	05/11/22 13:46	1024-57-3	
Methoxychlor	**0.00030 U**	mg/kg	0.0021	0.00030	1	05/11/22 00:43	05/11/22 13:46	72-43-5	
Toxaphene	**0.0089 U**	mg/kg	0.021	0.0089	1	05/11/22 00:43	05/11/22 13:46	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	71	%	53-140		1	05/11/22 00:43	05/11/22 13:46	877-09-8	
Decachlorobiphenyl (S)	52	%	43-157		1	05/11/22 00:43	05/11/22 13:46	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
	Pace Analytical Services - Ormond Beach								
Arsenic	**0.31 U**	mg/kg	0.62	0.31	1	05/11/22 05:43	05/11/22 17:37	7440-38-2	
Barium	**0.25 I**	mg/kg	0.62	0.10	1	05/11/22 05:43	05/11/22 17:37	7440-39-3	
Cadmium	**0.031 U**	mg/kg	0.062	0.031	1	05/11/22 05:43	05/11/22 17:37	7440-43-9	
Chromium	**0.18 I**	mg/kg	0.31	0.15	1	05/11/22 05:43	05/11/22 17:37	7440-47-3	
Copper	**2.7**	mg/kg	0.31	0.15	1	05/11/22 05:43	05/11/22 17:37	7440-50-8	
Iron	**11.8 I**	mg/kg	12.3	3.7	1	05/11/22 05:43	05/11/22 17:37	7439-89-6	
Lead	**0.32 I**	mg/kg	0.62	0.31	1	05/11/22 05:43	05/11/22 17:37	7439-92-1	
Manganese	**2.6**	mg/kg	0.31	0.15	1	05/11/22 05:43	05/11/22 17:37	7439-96-5	
Selenium	**0.46 U**	mg/kg	0.93	0.46	1	05/11/22 05:43	05/11/22 17:37	7782-49-2	
Silver	**0.068 U**	mg/kg	0.31	0.068	1	05/11/22 05:43	05/11/22 17:37	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
	Pace Analytical Services - Ormond Beach								
Mercury	**0.018**	mg/kg	0.012	0.0058	1	05/16/22 10:41	05/16/22 13:42	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87								
	Pace Analytical Services - Ormond Beach								
Percent Moisture	**18.0**	%	0.10	0.10	1		05/14/22 08:11		
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G								
	Pace National - Mt. Juliet								
Total Solids	**86.2**	%			1	05/14/22 17:27	05/14/22 17:49		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-4 **Lab ID: 35716198004** Collected: 05/06/22 17:00 Received: 05/09/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141	Analytical Method: EPA 8141 Preparation Method: 3546 Pace National - Mt. Juliet								
Azinphos, methyl (Guthion)	**0.0366 U**	mg/kg	0.115	0.0366	1	05/12/22 09:45	05/16/22 00:06	86-50-0	
Bolstar	**0.0171 U**	mg/kg	0.115	0.0171	1	05/12/22 09:45	05/16/22 00:06	35400-43-2	
Chlorpyrifos	**0.0180 U**	mg/kg	0.115	0.0180	1	05/12/22 09:45	05/16/22 00:06	2921-88-2	
Coumaphos	**0.0279 U**	mg/kg	0.115	0.0279	1	05/12/22 09:45	05/16/22 00:06	56-72-4	
Total Demeton	**0.00671 U**	mg/kg	0.0805	0.00671	1	05/12/22 09:45	05/16/22 00:06	8065-48-3	
Diazinon	**0.0259 U**	mg/kg	0.115	0.0259	1	05/12/22 09:45	05/16/22 00:06	333-41-5	
Dichlorvos	**0.0345 U**	mg/kg	0.115	0.0345	1	05/12/22 09:45	05/16/22 00:06	62-73-7	
Dimethoate	**0.0384 U**	mg/kg	0.115	0.0384	1	05/12/22 09:45	05/16/22 00:06	60-51-5	
Disulfoton	**0.0292 U**	mg/kg	0.115	0.0292	1	05/12/22 09:45	05/16/22 00:06	298-04-4	
EPN (ENT)	**0.0317 U**	mg/kg	0.115	0.0317	1	05/12/22 09:45	05/16/22 00:06	2104-64-5	
Ethoprop	**0.0136 U**	mg/kg	0.115	0.0136	1	05/12/22 09:45	05/16/22 00:06	13194-48-4	
Parathion (Ethyl parathion)	**0.0189 U**	mg/kg	0.115	0.0189	1	05/12/22 09:45	05/16/22 00:06	56-38-2	
Fensulfothion	**0.0406 U**	mg/kg	0.115	0.0406	1	05/12/22 09:45	05/16/22 00:06	115-90-2	
Fenthion	**0.0153 U**	mg/kg	0.115	0.0153	1	05/12/22 09:45	05/16/22 00:06	55-38-9	
Malathion	**0.0206 U**	mg/kg	0.115	0.0206	1	05/12/22 09:45	05/16/22 00:06	121-75-5	
Merphos	**0.0267 U**	mg/kg	0.115	0.0267	1	05/12/22 09:45	05/16/22 00:06	150-50-5	
Methyl parathion	**0.0233 U**	mg/kg	0.115	0.0233	1	05/12/22 09:45	05/16/22 00:06	298-00-0	
Mevinphos	**0.0264 U**	mg/kg	0.115	0.0264	1	05/12/22 09:45	05/16/22 00:06	7786-34-7	
Naled	**0.0552 U**	mg/kg	0.115	0.0552	1	05/12/22 09:45	05/16/22 00:06	300-76-5	
Phorate	**0.0241 U**	mg/kg	0.115	0.0241	1	05/12/22 09:45	05/16/22 00:06	298-02-2	
Ronnel	**0.0171 U**	mg/kg	0.115	0.0171	1	05/12/22 09:45	05/16/22 00:06	299-84-3	
Stirophos (Tetrachlorvinphos)	**0.0205 U**	mg/kg	0.115	0.0205	1	05/12/22 09:45	05/16/22 00:06	22248-79-9	
Sulfotepp (Thiodiphosphoric Ac	**0.0113 U**	mg/kg	0.115	0.0113	1	05/12/22 09:45	05/16/22 00:06	3689-24-5	
TEPP	**0.180 U**	mg/kg	1.15	0.180	1	05/12/22 09:45	05/16/22 00:06	107-49-3	
Tokuthion (Prothiofos)	**0.0172 U**	mg/kg	0.115	0.0172	1	05/12/22 09:45	05/16/22 00:06	34643-46-4	
Trichloronate	**0.0231 U**	mg/kg	0.115	0.0231	1	05/12/22 09:45	05/16/22 00:06	327-98-0	
Surrogates									
Triphenylphosphate (S)	89.7	%	36.0-121		1	05/12/22 09:45	05/16/22 00:06	115-86-6	
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3546 Pace Analytical Services - Ormond Beach								
Aldrin	**0.00019 U**	mg/kg	0.0019	0.00019	1	05/11/22 00:43	05/11/22 13:59	309-00-2	
alpha-BHC	**0.000053 U**	mg/kg	0.0019	0.000053	1	05/11/22 00:43	05/11/22 13:59	319-84-6	
beta-BHC	**0.00023 U**	mg/kg	0.0019	0.00023	1	05/11/22 00:43	05/11/22 13:59	319-85-7	
delta-BHC	**0.00010 U**	mg/kg	0.0019	0.00010	1	05/11/22 00:43	05/11/22 13:59	319-86-8	
gamma-BHC (Lindane)	**0.000056 U**	mg/kg	0.0019	0.000056	1	05/11/22 00:43	05/11/22 13:59	58-89-9	
Chlordane (Technical)	**0.0058 U**	mg/kg	0.019	0.0058	1	05/11/22 00:43	05/11/22 13:59	57-74-9	
4,4'-DDD	**0.000087 U**	mg/kg	0.0019	0.000087	1	05/11/22 00:43	05/11/22 13:59	72-54-8	
4,4'-DDE	**0.00022 I**	mg/kg	0.0019	0.000077	1	05/11/22 00:43	05/11/22 13:59	72-55-9	
4,4'-DDT	**0.0020**	mg/kg	0.0019	0.00011	1	05/11/22 00:43	05/11/22 13:59	50-29-3	
Dieldrin	**0.000075 U**	mg/kg	0.0019	0.000075	1	05/11/22 00:43	05/11/22 13:59	60-57-1	

REPORT OF LABORATORY ANALYSIS

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8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-4 **Lab ID: 35716198004** Collected: 05/06/22 17:00 Received: 05/09/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3546								
	Pace Analytical Services - Ormond Beach								
Endosulfan I	**0.00022 U**	mg/kg	0.0019	0.00022	1	05/11/22 00:43	05/11/22 13:59	959-98-8	
Endosulfan II	**0.000087 U**	mg/kg	0.0019	0.000087	1	05/11/22 00:43	05/11/22 13:59	33213-65-9	
Endosulfan sulfate	**0.000077 U**	mg/kg	0.0019	0.000077	1	05/11/22 00:43	05/11/22 13:59	1031-07-8	
Endrin	**0.000097 U**	mg/kg	0.0019	0.000097	1	05/11/22 00:43	05/11/22 13:59	72-20-8	
Endrin aldehyde	**0.00029 U**	mg/kg	0.0039	0.00029	1	05/11/22 00:43	05/11/22 13:59	7421-93-4	
Endrin ketone	**0.000091 U**	mg/kg	0.0019	0.000091	1	05/11/22 00:43	05/11/22 13:59	53494-70-5	
Heptachlor	**0.00021 U**	mg/kg	0.0019	0.00021	1	05/11/22 00:43	05/11/22 13:59	76-44-8	
Heptachlor epoxide	**0.000084 U**	mg/kg	0.0019	0.000084	1	05/11/22 00:43	05/11/22 13:59	1024-57-3	
Methoxychlor	**0.00032 I**	mg/kg	0.0019	0.00029	1	05/11/22 00:43	05/11/22 13:59	72-43-5	
Toxaphene	**0.0084 U**	mg/kg	0.019	0.0084	1	05/11/22 00:43	05/11/22 13:59	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	105	%	53-140		1	05/11/22 00:43	05/11/22 13:59	877-09-8	
Decachlorobiphenyl (S)	116	%	43-157		1	05/11/22 00:43	05/11/22 13:59	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
	Pace Analytical Services - Ormond Beach								
Arsenic	**0.43 I**	mg/kg	0.52	0.26	1	05/11/22 05:43	05/12/22 13:00	7440-38-2	
Barium	**3.4**	mg/kg	0.52	0.087	1	05/11/22 05:43	05/12/22 13:00	7440-39-3	
Cadmium	**0.043 I**	mg/kg	0.052	0.026	1	05/11/22 05:43	05/11/22 17:40	7440-43-9	
Chromium	**5.3**	mg/kg	0.26	0.13	1	05/11/22 05:43	05/12/22 13:00	7440-47-3	
Copper	**43.9**	mg/kg	0.26	0.13	1	05/11/22 05:43	05/12/22 13:00	7440-50-8	
Iron	**843**	mg/kg	10.4	3.1	1	05/11/22 05:43	05/12/22 13:00	7439-89-6	
Lead	**2.2**	mg/kg	0.52	0.26	1	05/11/22 05:43	05/12/22 13:00	7439-92-1	
Manganese	**18.9**	mg/kg	0.26	0.13	1	05/11/22 05:43	05/12/22 13:00	7439-96-5	
Selenium	**0.39 U**	mg/kg	0.78	0.39	1	05/11/22 05:43	05/12/22 13:00	7782-49-2	
Silver	**0.057 U**	mg/kg	0.26	0.057	1	05/11/22 05:43	05/12/22 13:00	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
	Pace Analytical Services - Ormond Beach								
Mercury	**0.023**	mg/kg	0.011	0.0054	1	05/16/22 10:41	05/16/22 13:44	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87								
	Pace Analytical Services - Ormond Beach								
Percent Moisture	**14.1**	%	0.10	0.10	1		05/14/22 08:11		
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G								
	Pace National - Mt. Juliet								
Total Solids	**87.0**	%			1	05/14/22 17:27	05/14/22 17:49		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-1 **Lab ID: 35716198005** Collected: 05/07/22 09:30 Received: 05/09/22 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141	Analytical Method: EPA 8141 Preparation Method: 3510C Pace National - Mt. Juliet								
Azinphos, methyl (Guthion)	**0.534 U**	ug/L	1.00	0.534	1	05/13/22 05:20	05/16/22 00:40	86-50-0	G6
Bolstar	**0.214 U**	ug/L	1.00	0.214	1	05/13/22 05:20	05/16/22 00:40	35400-43-2	G6
Chlorpyrifos	**0.320 U**	ug/L	1.00	0.320	1	05/13/22 05:20	05/16/22 00:40	2921-88-2	G6
Coumaphos	**0.410 U**	ug/L	1.00	0.410	1	05/13/22 05:20	05/16/22 00:40	56-72-4	G6
Total Demeton	**0.626 U**	ug/L	2.00	0.626	1	05/13/22 05:20	05/16/22 00:40	8065-48-3	G6
Diazinon	**0.302 U**	ug/L	1.00	0.302	1	05/13/22 05:20	05/16/22 00:40	333-41-5	G6
Dichlorvos	**0.196 U**	ug/L	2.00	0.196	1	05/13/22 05:20	05/16/22 00:40	62-73-7	G6
Dimethoate	**0.327 U**	ug/L	1.00	0.327	1	05/13/22 05:20	05/16/22 00:40	60-51-5	G6, J(L0)
Disulfoton	**0.227 U**	ug/L	1.00	0.227	1	05/13/22 05:20	05/16/22 00:40	298-04-4	G6
EPN (ENT)	**0.129 U**	ug/L	1.00	0.129	1	05/13/22 05:20	05/16/22 00:40	2104-64-5	G6
Ethoprop	**0.293 U**	ug/L	1.00	0.293	1	05/13/22 05:20	05/16/22 00:40	13194-48-4	G6
Parathion (Ethyl parathion)	**0.454 U**	ug/L	1.00	0.454	1	05/13/22 05:20	05/16/22 00:40	56-38-2	G6
Fensulfothion	**0.405 U**	ug/L	2.00	0.405	1	05/13/22 05:20	05/16/22 00:40	115-90-2	G6
Fenthion	**0.213 U**	ug/L	1.00	0.213	1	05/13/22 05:20	05/16/22 00:40	55-38-9	G6
Malathion	**0.354 U**	ug/L	1.00	0.354	1	05/13/22 05:20	05/16/22 00:40	121-75-5	G6
Merphos	**1.32 U**	ug/L	2.00	1.32	1	05/13/22 05:20	05/16/22 00:40	150-50-5	G6
Methyl parathion	**0.383 U**	ug/L	1.00	0.383	1	05/13/22 05:20	05/16/22 00:40	298-00-0	G6
Mevinphos	**0.275 U**	ug/L	1.00	0.275	1	05/13/22 05:20	05/16/22 00:40	7786-34-7	G6
Naled	**0.594 U**	ug/L	1.00	0.594	1	05/13/22 05:20	05/16/22 00:40	300-76-5	G6
Phorate	**0.276 U**	ug/L	1.00	0.276	1	05/13/22 05:20	05/16/22 00:40	298-02-2	G6
Ronnel	**0.277 U**	ug/L	1.00	0.277	1	05/13/22 05:20	05/16/22 00:40	299-84-3	G6
Stirophos (Tetrachlorvinphos)	**0.277 U**	ug/L	1.00	0.277	1	05/13/22 05:20	05/16/22 00:40	22248-79-9	G6
Sulfotepp (Thiodiphosphoric Ac	**0.181 U**	ug/L	1.00	0.181	1	05/13/22 05:20	05/16/22 00:40	3689-24-5	G6
TEPP	**3.11 U**	ug/L	10.0	3.11	1	05/13/22 05:20	05/16/22 00:40	107-49-3	G6, J(L0)
Tokuthion (Prothiofos)	**0.241 U**	ug/L	1.00	0.241	1	05/13/22 05:20	05/16/22 00:40	34643-46-4	G6
Trichloronate	**0.306 U**	ug/L	1.00	0.306	1	05/13/22 05:20	05/16/22 00:40	327-98-0	G6
Surrogates									
Triphenylphosphate (S)	50.8	%	42.0-129		1	05/13/22 05:20	05/16/22 00:40	115-86-6	
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510 Pace Analytical Services - Ormond Beach								
Aldrin	**0.0038 U**	ug/L	0.0095	0.0038	1	05/10/22 16:30	05/11/22 11:35	309-00-2	1p
alpha-BHC	**0.0020 U**	ug/L	0.0095	0.0020	1	05/10/22 16:30	05/11/22 11:35	319-84-6	1p
beta-BHC	**0.019 U**	ug/L	0.029	0.019	1	05/10/22 16:30	05/11/22 11:35	319-85-7	1p
delta-BHC	**0.0046 U**	ug/L	0.0095	0.0046	1	05/10/22 16:30	05/11/22 11:35	319-86-8	1p
gamma-BHC (Lindane)	**0.0021 U**	ug/L	0.0095	0.0021	1	05/10/22 16:30	05/11/22 11:35	58-89-9	1p
Chlordane (Technical)	**0.23 U**	ug/L	0.48	0.23	1	05/10/22 16:30	05/11/22 11:35	57-74-9	1p
4,4'-DDD	**0.0026 U**	ug/L	0.0095	0.0026	1	05/10/22 16:30	05/11/22 11:35	72-54-8	1p
4,4'-DDE	**0.0048 U**	ug/L	0.0095	0.0048	1	05/10/22 16:30	05/11/22 11:35	72-55-9	1p
4,4'-DDT	**0.0049 U**	ug/L	0.0095	0.0049	1	05/10/22 16:30	05/11/22 11:35	50-29-3	1p
Dieldrin	**0.0019 U**	ug/L	0.0095	0.0019	1	05/10/22 16:30	05/11/22 11:35	60-57-1	1p
Endosulfan I	**0.0049 U**	ug/L	0.0095	0.0049	1	05/10/22 16:30	05/11/22 11:35	959-98-8	1p
Endosulfan II	**0.0038 U**	ug/L	0.0095	0.0038	1	05/10/22 16:30	05/11/22 11:35	33213-65-9	1p
Endosulfan sulfate	**0.0059 U**	ug/L	0.095	0.0059	1	05/10/22 16:30	05/11/22 11:35	1031-07-8	1p

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ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-1 **Lab ID: 35716198005** Collected: 05/07/22 09:30 Received: 05/09/22 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
	Pace Analytical Services - Ormond Beach								
Endrin	**0.0041 U**	ug/L	0.0095	0.0041	1	05/10/22 16:30	05/11/22 11:35	72-20-8	1p
Endrin aldehyde	**0.0034 U**	ug/L	0.095	0.0034	1	05/10/22 16:30	05/11/22 11:35	7421-93-4	1p
Endrin ketone	**0.0048 U**	ug/L	0.0095	0.0048	1	05/10/22 16:30	05/11/22 11:35	53494-70-5	1p
Heptachlor	**0.0059 U**	ug/L	0.0095	0.0059	1	05/10/22 16:30	05/11/22 11:35	76-44-8	1p
Heptachlor epoxide	**0.015 U**	ug/L	0.019	0.015	1	05/10/22 16:30	05/11/22 11:35	1024-57-3	1p
Methoxychlor	**0.0040 U**	ug/L	0.0095	0.0040	1	05/10/22 16:30	05/11/22 11:35	72-43-5	1p
Toxaphene	**0.24 U**	ug/L	0.48	0.24	1	05/10/22 16:30	05/11/22 11:35	8001-35-2	1p
Surrogates									
Tetrachloro-m-xylene (S)	92	%	27-124		1	05/10/22 16:30	05/11/22 11:35	877-09-8	
Decachlorobiphenyl (S)	84	%	10-132		1	05/10/22 16:30	05/11/22 11:35	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Pace Analytical Services - Ormond Beach								
Arsenic	**3.4 U**	ug/L	10.0	3.4	1	05/11/22 07:40	05/12/22 17:32	7440-38-2	
Barium	**0.84 U**	ug/L	10.0	0.84	1	05/11/22 07:40	05/12/22 17:32	7440-39-3	
Cadmium	**0.60 I**	ug/L	1.0	0.33	1	05/11/22 07:40	05/12/22 17:32	7440-43-9	
Chromium	**1.7 U**	ug/L	5.0	1.7	1	05/11/22 07:40	05/12/22 17:32	7440-47-3	
Copper	**50.6**	ug/L	5.0	2.6	1	05/11/22 07:40	05/12/22 17:32	7440-50-8	
Iron	**204**	ug/L	40.0	25.0	1	05/11/22 07:40	05/12/22 17:32	7439-89-6	
Lead	**4.6 U**	ug/L	10.0	4.6	1	05/11/22 07:40	05/12/22 17:32	7439-92-1	
Manganese	**190**	ug/L	5.0	1.1	1	05/11/22 07:40	05/12/22 17:32	7439-96-5	
Selenium	**3.9 U**	ug/L	15.0	3.9	1	05/11/22 07:40	05/12/22 17:32	7782-49-2	
Silver	**1.0 U**	ug/L	5.0	1.0	1	05/11/22 07:40	05/12/22 17:32	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Pace Analytical Services - Ormond Beach								
Mercury	**0.090 U**	ug/L	0.20	0.090	1	05/11/22 10:50	05/12/22 09:37	7439-97-6	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
	Pace Analytical Services - Ormond Beach								
Nitrogen, NO2 plus NO3	**24.3**	mg/L	1.2	0.38	25		05/10/22 13:26		Q
Nitrogen, Nitrate	**24.3**	mg/L	1.2	0.62	25		05/10/22 13:26	14797-55-8	Q
Nitrogen, Nitrite	**0.62 U**	mg/L	1.2	0.62	25		05/10/22 13:26	14797-65-0	Q

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ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-2 **Lab ID: 35716198006** Collected: 05/07/22 10:40 Received: 05/09/22 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141	Analytical Method: EPA 8141 Preparation Method: 3510C Pace National - Mt. Juliet								
Azinphos, methyl (Guthion)	**0.534 U**	ug/L	1.00	0.534	1	05/13/22 05:20	05/16/22 01:13	86-50-0	G6
Bolstar	**0.214 U**	ug/L	1.00	0.214	1	05/13/22 05:20	05/16/22 01:13	35400-43-2	G6
Chlorpyrifos	**0.320 U**	ug/L	1.00	0.320	1	05/13/22 05:20	05/16/22 01:13	2921-88-2	G6
Coumaphos	**0.410 U**	ug/L	1.00	0.410	1	05/13/22 05:20	05/16/22 01:13	56-72-4	G6
Total Demeton	**0.626 U**	ug/L	2.00	0.626	1	05/13/22 05:20	05/16/22 01:13	8065-48-3	G6
Diazinon	**0.302 U**	ug/L	1.00	0.302	1	05/13/22 05:20	05/16/22 01:13	333-41-5	G6
Dichlorvos	**0.196 U**	ug/L	2.00	0.196	1	05/13/22 05:20	05/16/22 01:13	62-73-7	G6
Dimethoate	**0.327 U**	ug/L	1.00	0.327	1	05/13/22 05:20	05/16/22 01:13	60-51-5	G6, J(L0)
Disulfoton	**0.227 U**	ug/L	1.00	0.227	1	05/13/22 05:20	05/16/22 01:13	298-04-4	G6
EPN (ENT)	**0.129 U**	ug/L	1.00	0.129	1	05/13/22 05:20	05/16/22 01:13	2104-64-5	G6
Ethoprop	**0.293 U**	ug/L	1.00	0.293	1	05/13/22 05:20	05/16/22 01:13	13194-48-4	G6
Parathion (Ethyl parathion)	**0.454 U**	ug/L	1.00	0.454	1	05/13/22 05:20	05/16/22 01:13	56-38-2	G6
Fensulfothion	**0.405 U**	ug/L	2.00	0.405	1	05/13/22 05:20	05/16/22 01:13	115-90-2	G6
Fenthion	**0.213 U**	ug/L	1.00	0.213	1	05/13/22 05:20	05/16/22 01:13	55-38-9	G6
Malathion	**0.354 U**	ug/L	1.00	0.354	1	05/13/22 05:20	05/16/22 01:13	121-75-5	G6
Merphos	**1.32 U**	ug/L	2.00	1.32	1	05/13/22 05:20	05/16/22 01:13	150-50-5	G6
Methyl parathion	**0.383 U**	ug/L	1.00	0.383	1	05/13/22 05:20	05/16/22 01:13	298-00-0	G6
Mevinphos	**0.275 U**	ug/L	1.00	0.275	1	05/13/22 05:20	05/16/22 01:13	7786-34-7	G6
Naled	**0.594 U**	ug/L	1.00	0.594	1	05/13/22 05:20	05/16/22 01:13	300-76-5	G6
Phorate	**0.276 U**	ug/L	1.00	0.276	1	05/13/22 05:20	05/16/22 01:13	298-02-2	G6
Ronnel	**0.277 U**	ug/L	1.00	0.277	1	05/13/22 05:20	05/16/22 01:13	299-84-3	G6
Stirophos (Tetrachlorvinphos)	**0.277 U**	ug/L	1.00	0.277	1	05/13/22 05:20	05/16/22 01:13	22248-79-9	G6
Sulfotepp (Thiodiphosphoric Ac	**0.181 U**	ug/L	1.00	0.181	1	05/13/22 05:20	05/16/22 01:13	3689-24-5	G6
TEPP	**3.11 U**	ug/L	10.0	3.11	1	05/13/22 05:20	05/16/22 01:13	107-49-3	G6, J(L0)
Tokuthion (Prothiofos)	**0.241 U**	ug/L	1.00	0.241	1	05/13/22 05:20	05/16/22 01:13	34643-46-4	G6
Trichloronate	**0.306 U**	ug/L	1.00	0.306	1	05/13/22 05:20	05/16/22 01:13	327-98-0	G6
Surrogates									
Triphenylphosphate (S)	59.6	%	42.0-129		1	05/13/22 05:20	05/16/22 01:13	115-86-6	
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510 Pace Analytical Services - Ormond Beach								
Aldrin	**0.0038 U**	ug/L	0.0095	0.0038	1	05/10/22 16:30	05/11/22 11:49	309-00-2	1p
alpha-BHC	**0.0020 U**	ug/L	0.0095	0.0020	1	05/10/22 16:30	05/11/22 11:49	319-84-6	1p
beta-BHC	**0.019 U**	ug/L	0.029	0.019	1	05/10/22 16:30	05/11/22 11:49	319-85-7	1p
delta-BHC	**0.0046 U**	ug/L	0.0095	0.0046	1	05/10/22 16:30	05/11/22 11:49	319-86-8	1p
gamma-BHC (Lindane)	**0.0021 U**	ug/L	0.0095	0.0021	1	05/10/22 16:30	05/11/22 11:49	58-89-9	1p
Chlordane (Technical)	**0.23 U**	ug/L	0.48	0.23	1	05/10/22 16:30	05/11/22 11:49	57-74-9	1p
4,4'-DDD	**0.0026 U**	ug/L	0.0095	0.0026	1	05/10/22 16:30	05/11/22 11:49	72-54-8	1p
4,4'-DDE	**0.0049 I**	ug/L	0.0095	0.0048	1	05/10/22 16:30	05/11/22 11:49	72-55-9	1p,C2
4,4'-DDT	**0.0049 U**	ug/L	0.0095	0.0049	1	05/10/22 16:30	05/11/22 11:49	50-29-3	1p
Dieldrin	**0.0019 U**	ug/L	0.0095	0.0019	1	05/10/22 16:30	05/11/22 11:49	60-57-1	1p
Endosulfan I	**0.0049 U**	ug/L	0.0095	0.0049	1	05/10/22 16:30	05/11/22 11:49	959-98-8	1p
Endosulfan II	**0.0038 U**	ug/L	0.0095	0.0038	1	05/10/22 16:30	05/11/22 11:49	33213-65-9	1p
Endosulfan sulfate	**0.0059 U**	ug/L	0.095	0.0059	1	05/10/22 16:30	05/11/22 11:49	1031-07-8	1p

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-2 **Lab ID: 35716198006** Collected: 05/07/22 10:40 Received: 05/09/22 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
	Pace Analytical Services - Ormond Beach								
Endrin	**0.0041 U**	ug/L	0.0095	0.0041	1	05/10/22 16:30	05/11/22 11:49	72-20-8	1p
Endrin aldehyde	**0.0034 U**	ug/L	0.095	0.0034	1	05/10/22 16:30	05/11/22 11:49	7421-93-4	1p
Endrin ketone	**0.0048 U**	ug/L	0.0095	0.0048	1	05/10/22 16:30	05/11/22 11:49	53494-70-5	1p
Heptachlor	**0.0059 U**	ug/L	0.0095	0.0059	1	05/10/22 16:30	05/11/22 11:49	76-44-8	1p
Heptachlor epoxide	**0.015 U**	ug/L	0.019	0.015	1	05/10/22 16:30	05/11/22 11:49	1024-57-3	1p
Methoxychlor	**0.0040 U**	ug/L	0.0095	0.0040	1	05/10/22 16:30	05/11/22 11:49	72-43-5	1p
Toxaphene	**0.24 U**	ug/L	0.48	0.24	1	05/10/22 16:30	05/11/22 11:49	8001-35-2	1p
Surrogates									
Tetrachloro-m-xylene (S)	76	%	27-124		1	05/10/22 16:30	05/11/22 11:49	877-09-8	
Decachlorobiphenyl (S)	59	%	10-132		1	05/10/22 16:30	05/11/22 11:49	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Pace Analytical Services - Ormond Beach								
Arsenic	**7.6 I**	ug/L	10.0	3.4	1	05/11/22 07:40	05/12/22 17:36	7440-38-2	
Barium	**31.4**	ug/L	10.0	0.84	1	05/11/22 07:40	05/12/22 17:36	7440-39-3	
Cadmium	**0.51 I**	ug/L	1.0	0.33	1	05/11/22 07:40	05/12/22 17:36	7440-43-9	
Chromium	**1.8 I**	ug/L	5.0	1.7	1	05/11/22 07:40	05/12/22 17:36	7440-47-3	
Copper	**40.6**	ug/L	5.0	2.6	1	05/11/22 07:40	05/12/22 17:36	7440-50-8	
Iron	**2750**	ug/L	40.0	25.0	1	05/11/22 07:40	05/12/22 17:36	7439-89-6	
Lead	**4.6 U**	ug/L	10.0	4.6	1	05/11/22 07:40	05/12/22 17:36	7439-92-1	
Manganese	**679**	ug/L	5.0	1.1	1	05/11/22 07:40	05/12/22 17:36	7439-96-5	
Selenium	**3.9 U**	ug/L	15.0	3.9	1	05/11/22 07:40	05/12/22 17:36	7782-49-2	
Silver	**1.0 U**	ug/L	5.0	1.0	1	05/11/22 07:40	05/12/22 17:36	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Pace Analytical Services - Ormond Beach								
Mercury	**0.090 U**	ug/L	0.20	0.090	1	05/11/22 10:50	05/12/22 09:39	7439-97-6	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
	Pace Analytical Services - Ormond Beach								
Nitrogen, NO2 plus NO3	**4.3**	mg/L	0.050	0.015	1		05/10/22 12:52		Q
Nitrogen, Nitrate	**4.3**	mg/L	0.050	0.025	1		05/10/22 12:52	14797-55-8	Q
Nitrogen, Nitrite	**0.025 U**	mg/L	0.050	0.025	1		05/10/22 12:52	14797-65-0	Q

REPORT OF LABORATORY ANALYSIS

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8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-3 **Lab ID: 35716198007** Collected: 05/07/22 11:45 Received: 05/09/22 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141	Analytical Method: EPA 8141 Preparation Method: 3510C Pace National - Mt. Juliet								
Azinphos, methyl (Guthion)	**0.534 U**	ug/L	1.00	0.534	1	05/13/22 05:20	05/16/22 01:47	86-50-0	G6
Bolstar	**0.214 U**	ug/L	1.00	0.214	1	05/13/22 05:20	05/16/22 01:47	35400-43-2	G6
Chlorpyrifos	**0.320 U**	ug/L	1.00	0.320	1	05/13/22 05:20	05/16/22 01:47	2921-88-2	G6
Coumaphos	**0.410 U**	ug/L	1.00	0.410	1	05/13/22 05:20	05/16/22 01:47	56-72-4	G6
Total Demeton	**0.626 U**	ug/L	2.00	0.626	1	05/13/22 05:20	05/16/22 01:47	8065-48-3	G6
Diazinon	**0.302 U**	ug/L	1.00	0.302	1	05/13/22 05:20	05/16/22 01:47	333-41-5	G6
Dichlorvos	**0.196 U**	ug/L	2.00	0.196	1	05/13/22 05:20	05/16/22 01:47	62-73-7	G6
Dimethoate	**0.327 U**	ug/L	1.00	0.327	1	05/13/22 05:20	05/16/22 01:47	60-51-5	G6, J(L0)
Disulfoton	**0.227 U**	ug/L	1.00	0.227	1	05/13/22 05:20	05/16/22 01:47	298-04-4	G6
EPN (ENT)	**0.129 U**	ug/L	1.00	0.129	1	05/13/22 05:20	05/16/22 01:47	2104-64-5	G6
Ethoprop	**0.293 U**	ug/L	1.00	0.293	1	05/13/22 05:20	05/16/22 01:47	13194-48-4	G6
Parathion (Ethyl parathion)	**0.454 U**	ug/L	1.00	0.454	1	05/13/22 05:20	05/16/22 01:47	56-38-2	G6
Fensulfothion	**0.405 U**	ug/L	2.00	0.405	1	05/13/22 05:20	05/16/22 01:47	115-90-2	G6
Fenthion	**0.213 U**	ug/L	1.00	0.213	1	05/13/22 05:20	05/16/22 01:47	55-38-9	G6
Malathion	**0.354 U**	ug/L	1.00	0.354	1	05/13/22 05:20	05/16/22 01:47	121-75-5	G6
Merphos	**1.32 U**	ug/L	2.00	1.32	1	05/13/22 05:20	05/16/22 01:47	150-50-5	G6
Methyl parathion	**0.383 U**	ug/L	1.00	0.383	1	05/13/22 05:20	05/16/22 01:47	298-00-0	G6
Mevinphos	**0.275 U**	ug/L	1.00	0.275	1	05/13/22 05:20	05/16/22 01:47	7786-34-7	G6
Naled	**0.594 U**	ug/L	1.00	0.594	1	05/13/22 05:20	05/16/22 01:47	300-76-5	G6
Phorate	**0.276 U**	ug/L	1.00	0.276	1	05/13/22 05:20	05/16/22 01:47	298-02-2	G6
Ronnel	**0.277 U**	ug/L	1.00	0.277	1	05/13/22 05:20	05/16/22 01:47	299-84-3	G6
Stirophos (Tetrachlorvinphos)	**0.277 U**	ug/L	1.00	0.277	1	05/13/22 05:20	05/16/22 01:47	22248-79-9	G6
Sulfotepp (Thiodiphosphoric Ac	**0.181 U**	ug/L	1.00	0.181	1	05/13/22 05:20	05/16/22 01:47	3689-24-5	G6
TEPP	**3.11 U**	ug/L	10.0	3.11	1	05/13/22 05:20	05/16/22 01:47	107-49-3	G6, J(L0)
Tokuthion (Prothiofos)	**0.241 U**	ug/L	1.00	0.241	1	05/13/22 05:20	05/16/22 01:47	34643-46-4	G6
Trichloronate	**0.306 U**	ug/L	1.00	0.306	1	05/13/22 05:20	05/16/22 01:47	327-98-0	G6
Surrogates									
Triphenylphosphate (S)	71.0	%	42.0-129		1	05/13/22 05:20	05/16/22 01:47	115-86-6	
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510 Pace Analytical Services - Ormond Beach								
Aldrin	**0.0041 U**	ug/L	0.010	0.0041	1	05/10/22 16:30	05/11/22 12:03	309-00-2	1p
alpha-BHC	**0.0021 U**	ug/L	0.010	0.0021	1	05/10/22 16:30	05/11/22 12:03	319-84-6	1p
beta-BHC	**0.020 U**	ug/L	0.031	0.020	1	05/10/22 16:30	05/11/22 12:03	319-85-7	1p
delta-BHC	**0.0049 U**	ug/L	0.010	0.0049	1	05/10/22 16:30	05/11/22 12:03	319-86-8	1p
gamma-BHC (Lindane)	**0.0022 U**	ug/L	0.010	0.0022	1	05/10/22 16:30	05/11/22 12:03	58-89-9	1p
Chlordane (Technical)	**0.25 U**	ug/L	0.51	0.25	1	05/10/22 16:30	05/11/22 12:03	57-74-9	1p
4,4'-DDD	**0.0028 U**	ug/L	0.010	0.0028	1	05/10/22 16:30	05/11/22 12:03	72-54-8	1p
4,4'-DDE	**0.0051 U**	ug/L	0.010	0.0051	1	05/10/22 16:30	05/11/22 12:03	72-55-9	1p
4,4'-DDT	**0.0052 U**	ug/L	0.010	0.0052	1	05/10/22 16:30	05/11/22 12:03	50-29-3	1p
Dieldrin	**0.0020 U**	ug/L	0.010	0.0020	1	05/10/22 16:30	05/11/22 12:03	60-57-1	1p
Endosulfan I	**0.0052 U**	ug/L	0.010	0.0052	1	05/10/22 16:30	05/11/22 12:03	959-98-8	1p
Endosulfan II	**0.0041 U**	ug/L	0.010	0.0041	1	05/10/22 16:30	05/11/22 12:03	33213-65-9	1p
Endosulfan sulfate	**0.0063 U**	ug/L	0.10	0.0063	1	05/10/22 16:30	05/11/22 12:03	1031-07-8	1p

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ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-3 **Lab ID: 35716198007** Collected: 05/07/22 11:45 Received: 05/09/22 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
	Pace Analytical Services - Ormond Beach								
Endrin	**0.0044 U**	ug/L	0.010	0.0044	1	05/10/22 16:30	05/11/22 12:03	72-20-8	1p
Endrin aldehyde	**0.0037 U**	ug/L	0.10	0.0037	1	05/10/22 16:30	05/11/22 12:03	7421-93-4	1p
Endrin ketone	**0.0051 U**	ug/L	0.010	0.0051	1	05/10/22 16:30	05/11/22 12:03	53494-70-5	1p
Heptachlor	**0.0063 U**	ug/L	0.010	0.0063	1	05/10/22 16:30	05/11/22 12:03	76-44-8	1p
Heptachlor epoxide	**0.016 U**	ug/L	0.020	0.016	1	05/10/22 16:30	05/11/22 12:03	1024-57-3	1p
Methoxychlor	**0.0043 U**	ug/L	0.010	0.0043	1	05/10/22 16:30	05/11/22 12:03	72-43-5	1p
Toxaphene	**0.26 U**	ug/L	0.51	0.26	1	05/10/22 16:30	05/11/22 12:03	8001-35-2	1p
Surrogates									
Tetrachloro-m-xylene (S)	84	%	27-124		1	05/10/22 16:30	05/11/22 12:03	877-09-8	
Decachlorobiphenyl (S)	70	%	10-132		1	05/10/22 16:30	05/11/22 12:03	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Pace Analytical Services - Ormond Beach								
Arsenic	**3.4 U**	ug/L	10.0	3.4	1	05/11/22 07:40	05/12/22 17:40	7440-38-2	
Barium	**275**	ug/L	10.0	0.84	1	05/11/22 07:40	05/12/22 17:40	7440-39-3	
Cadmium	**0.36 I**	ug/L	1.0	0.33	1	05/11/22 07:40	05/12/22 17:40	7440-43-9	
Chromium	**1.7 U**	ug/L	5.0	1.7	1	05/11/22 07:40	05/12/22 17:40	7440-47-3	
Copper	**2.6 U**	ug/L	5.0	2.6	1	05/11/22 07:40	05/12/22 17:40	7440-50-8	
Iron	**15500**	ug/L	40.0	25.0	1	05/11/22 07:40	05/12/22 17:40	7439-89-6	
Lead	**4.6 U**	ug/L	10.0	4.6	1	05/11/22 07:40	05/12/22 17:40	7439-92-1	
Manganese	**208**	ug/L	5.0	1.1	1	05/11/22 07:40	05/12/22 17:40	7439-96-5	
Selenium	**3.9 U**	ug/L	15.0	3.9	1	05/11/22 07:40	05/12/22 17:40	7782-49-2	
Silver	**1.0 U**	ug/L	5.0	1.0	1	05/11/22 07:40	05/12/22 17:40	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Pace Analytical Services - Ormond Beach								
Mercury	**0.090 U**	ug/L	0.20	0.090	1	05/11/22 10:50	05/12/22 09:55	7439-97-6	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
	Pace Analytical Services - Ormond Beach								
Nitrogen, NO2 plus NO3	**0.015 I**	mg/L	0.050	0.015	1		05/10/22 12:53		Q
Nitrogen, Nitrate	**0.025 U**	mg/L	0.050	0.025	1		05/10/22 12:53	14797-55-8	Q
Nitrogen, Nitrite	**0.025 U**	mg/L	0.050	0.025	1		05/10/22 12:53	14797-65-0	Q

REPORT OF LABORATORY ANALYSIS

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Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-4 **Lab ID: 35716198008** Collected: 05/07/22 12:50 Received: 05/09/22 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141	Analytical Method: EPA 8141 Preparation Method: 3510C								
	Pace National - Mt. Juliet								
Azinphos, methyl (Guthion)	**0.534 U**	ug/L	1.00	0.534	1	05/13/22 05:20	05/16/22 02:20	86-50-0	G6
Bolstar	**0.214 U**	ug/L	1.00	0.214	1	05/13/22 05:20	05/16/22 02:20	35400-43-2	G6
Chlorpyrifos	**0.320 U**	ug/L	1.00	0.320	1	05/13/22 05:20	05/16/22 02:20	2921-88-2	G6
Coumaphos	**0.410 U**	ug/L	1.00	0.410	1	05/13/22 05:20	05/16/22 02:20	56-72-4	G6
Total Demeton	**0.626 U**	ug/L	2.00	0.626	1	05/13/22 05:20	05/16/22 02:20	8065-48-3	G6
Diazinon	**0.302 U**	ug/L	1.00	0.302	1	05/13/22 05:20	05/16/22 02:20	333-41-5	G6
Dichlorvos	**0.196 U**	ug/L	2.00	0.196	1	05/13/22 05:20	05/16/22 02:20	62-73-7	G6
Dimethoate	**0.327 U**	ug/L	1.00	0.327	1	05/13/22 05:20	05/16/22 02:20	60-51-5	G6, J(L0)
Disulfoton	**0.227 U**	ug/L	1.00	0.227	1	05/13/22 05:20	05/16/22 02:20	298-04-4	G6
EPN (ENT)	**0.129 U**	ug/L	1.00	0.129	1	05/13/22 05:20	05/16/22 02:20	2104-64-5	G6
Ethoprop	**0.293 U**	ug/L	1.00	0.293	1	05/13/22 05:20	05/16/22 02:20	13194-48-4	G6
Parathion (Ethyl parathion)	**0.454 U**	ug/L	1.00	0.454	1	05/13/22 05:20	05/16/22 02:20	56-38-2	G6
Fensulfothion	**0.405 U**	ug/L	2.00	0.405	1	05/13/22 05:20	05/16/22 02:20	115-90-2	G6
Fenthion	**0.213 U**	ug/L	1.00	0.213	1	05/13/22 05:20	05/16/22 02:20	55-38-9	G6
Malathion	**0.354 U**	ug/L	1.00	0.354	1	05/13/22 05:20	05/16/22 02:20	121-75-5	G6
Merphos	**1.32 U**	ug/L	2.00	1.32	1	05/13/22 05:20	05/16/22 02:20	150-50-5	G6
Methyl parathion	**0.383 U**	ug/L	1.00	0.383	1	05/13/22 05:20	05/16/22 02:20	298-00-0	G6
Mevinphos	**0.275 U**	ug/L	1.00	0.275	1	05/13/22 05:20	05/16/22 02:20	7786-34-7	G6
Naled	**0.594 U**	ug/L	1.00	0.594	1	05/13/22 05:20	05/16/22 02:20	300-76-5	G6
Phorate	**0.276 U**	ug/L	1.00	0.276	1	05/13/22 05:20	05/16/22 02:20	298-02-2	G6
Ronnel	**0.277 U**	ug/L	1.00	0.277	1	05/13/22 05:20	05/16/22 02:20	299-84-3	G6
Stirophos (Tetrachlorvinphos)	**0.277 U**	ug/L	1.00	0.277	1	05/13/22 05:20	05/16/22 02:20	22248-79-9	G6
Sulfotepp (Thiodiphosphoric Ac	**0.181 U**	ug/L	1.00	0.181	1	05/13/22 05:20	05/16/22 02:20	3689-24-5	G6
TEPP	**3.11 U**	ug/L	10.0	3.11	1	05/13/22 05:20	05/16/22 02:20	107-49-3	G6, J(L0)
Tokuthion (Prothiofos)	**0.241 U**	ug/L	1.00	0.241	1	05/13/22 05:20	05/16/22 02:20	34643-46-4	G6
Trichloronate	**0.306 U**	ug/L	1.00	0.306	1	05/13/22 05:20	05/16/22 02:20	327-98-0	G6
Surrogates									
Triphenylphosphate (S)	84.0	%	42.0-129		1	05/13/22 05:20	05/16/22 02:20	115-86-6	
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
	Pace Analytical Services - Ormond Beach								
Aldrin	**0.0038 U**	ug/L	0.0095	0.0038	1	05/10/22 16:30	05/11/22 12:17	309-00-2	1p
alpha-BHC	**0.0020 U**	ug/L	0.0095	0.0020	1	05/10/22 16:30	05/11/22 12:17	319-84-6	1p
beta-BHC	**0.019 U**	ug/L	0.029	0.019	1	05/10/22 16:30	05/11/22 12:17	319-85-7	1p
delta-BHC	**0.0046 U**	ug/L	0.0095	0.0046	1	05/10/22 16:30	05/11/22 12:17	319-86-8	1p
gamma-BHC (Lindane)	**0.0021 U**	ug/L	0.0095	0.0021	1	05/10/22 16:30	05/11/22 12:17	58-89-9	1p
Chlordane (Technical)	**0.23 U**	ug/L	0.48	0.23	1	05/10/22 16:30	05/11/22 12:17	57-74-9	1p
4,4'-DDD	**0.0026 U**	ug/L	0.0095	0.0026	1	05/10/22 16:30	05/11/22 12:17	72-54-8	1p
4,4'-DDE	**0.0048 U**	ug/L	0.0095	0.0048	1	05/10/22 16:30	05/11/22 12:17	72-55-9	1p
4,4'-DDT	**0.0049 U**	ug/L	0.0095	0.0049	1	05/10/22 16:30	05/11/22 12:17	50-29-3	1p
Dieldrin	**0.0019 U**	ug/L	0.0095	0.0019	1	05/10/22 16:30	05/11/22 12:17	60-57-1	1p
Endosulfan I	**0.0049 U**	ug/L	0.0095	0.0049	1	05/10/22 16:30	05/11/22 12:17	959-98-8	1p
Endosulfan II	**0.0038 U**	ug/L	0.0095	0.0038	1	05/10/22 16:30	05/11/22 12:17	33213-65-9	1p
Endosulfan sulfate	**0.0059 U**	ug/L	0.095	0.0059	1	05/10/22 16:30	05/11/22 12:17	1031-07-8	1p

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
8 East Tower Circle
Ormond Beach, FL 32174
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ANALYTICAL RESULTS

Project: Martin County BoC
Pace Project No.: 35716198

Sample: MCKP-4 **Lab ID: 35716198008** Collected: 05/07/22 12:50 Received: 05/09/22 08:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
	Pace Analytical Services - Ormond Beach								
Endrin	**0.0041 U**	ug/L	0.0095	0.0041	1	05/10/22 16:30	05/11/22 12:17	72-20-8	1p
Endrin aldehyde	**0.0034 U**	ug/L	0.095	0.0034	1	05/10/22 16:30	05/11/22 12:17	7421-93-4	1p
Endrin ketone	**0.0048 U**	ug/L	0.0095	0.0048	1	05/10/22 16:30	05/11/22 12:17	53494-70-5	1p
Heptachlor	**0.0059 U**	ug/L	0.0095	0.0059	1	05/10/22 16:30	05/11/22 12:17	76-44-8	1p
Heptachlor epoxide	**0.015 U**	ug/L	0.019	0.015	1	05/10/22 16:30	05/11/22 12:17	1024-57-3	1p
Methoxychlor	**0.0040 U**	ug/L	0.0095	0.0040	1	05/10/22 16:30	05/11/22 12:17	72-43-5	1p
Toxaphene	**0.24 U**	ug/L	0.48	0.24	1	05/10/22 16:30	05/11/22 12:17	8001-35-2	1p
Surrogates									
Tetrachloro-m-xylene (S)	87	%	27-124		1	05/10/22 16:30	05/11/22 12:17	877-09-8	
Decachlorobiphenyl (S)	77	%	10-132		1	05/10/22 16:30	05/11/22 12:17	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Pace Analytical Services - Ormond Beach								
Arsenic	**7.4 I**	ug/L	10.0	3.4	1	05/11/22 07:40	05/12/22 17:43	7440-38-2	
Barium	**28.2**	ug/L	10.0	0.84	1	05/11/22 07:40	05/12/22 17:43	7440-39-3	
Cadmium	**0.93 I**	ug/L	1.0	0.33	1	05/11/22 07:40	05/12/22 17:43	7440-43-9	
Chromium	**1.7 I**	ug/L	5.0	1.7	1	05/11/22 07:40	05/12/22 17:43	7440-47-3	
Copper	**57.0**	ug/L	5.0	2.6	1	05/11/22 07:40	05/12/22 17:43	7440-50-8	
Iron	**1770**	ug/L	40.0	25.0	1	05/11/22 07:40	05/12/22 17:43	7439-89-6	
Lead	**4.6 U**	ug/L	10.0	4.6	1	05/11/22 07:40	05/12/22 17:43	7439-92-1	
Manganese	**1750**	ug/L	25.0	5.5	5	05/11/22 07:40	05/13/22 14:26	7439-96-5	
Selenium	**3.9 U**	ug/L	15.0	3.9	1	05/11/22 07:40	05/12/22 17:43	7782-49-2	
Silver	**1.0 U**	ug/L	5.0	1.0	1	05/11/22 07:40	05/12/22 17:43	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Pace Analytical Services - Ormond Beach								
Mercury	**0.090 U**	ug/L	0.20	0.090	1	05/11/22 10:50	05/12/22 09:57	7439-97-6	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
	Pace Analytical Services - Ormond Beach								
Nitrogen, NO2 plus NO3	**34.0**	mg/L	0.75	0.22	15		05/10/22 13:29		Q
Nitrogen, Nitrate	**34.0**	mg/L	0.75	0.38	15		05/10/22 13:29	14797-55-8	Q
Nitrogen, Nitrite	**0.38 U**	mg/L	0.75	0.38	15		05/10/22 13:29	14797-65-0	Q

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

QC Batch: 1862934 Analysis Method: EPA 8141
QC Batch Method: 3510C Analysis Description: OP Pesticides 8141
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 35716198005, 35716198006, 35716198007, 35716198008

METHOD BLANK: R3792703-1 Matrix: Water
Associated Lab Samples: 35716198005, 35716198006, 35716198007, 35716198008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Azinphos, methyl (Guthion)	ug/L	0.534 U	1.00	0.534	05/17/22 11:34	
Bolstar	ug/L	0.214 U	1.00	0.214	05/17/22 11:34	
Chlorpyrifos	ug/L	0.320 U	1.00	0.320	05/17/22 11:34	
Coumaphos	ug/L	0.410 U	1.00	0.410	05/17/22 11:34	
Total Demeton	ug/L	0.626 U	2.00	0.626	05/17/22 11:34	
Diazinon	ug/L	0.302 U	1.00	0.302	05/17/22 11:34	
Dichlorvos	ug/L	0.196 U	2.00	0.196	05/17/22 11:34	
Dimethoate	ug/L	0.327 U	1.00	0.327	05/17/22 11:34	
Disulfoton	ug/L	0.227 U	1.00	0.227	05/17/22 11:34	
EPN (ENT)	ug/L	0.129 U	1.00	0.129	05/17/22 11:34	
Ethoprop	ug/L	0.293 U	1.00	0.293	05/17/22 11:34	
Parathion (Ethyl parathion)	ug/L	0.454 U	1.00	0.454	05/17/22 11:34	
Fensulfothion	ug/L	0.405 U	2.00	0.405	05/17/22 11:34	
Fenthion	ug/L	0.213 U	1.00	0.213	05/17/22 11:34	
Malathion	ug/L	0.354 U	1.00	0.354	05/17/22 11:34	
Merphos	ug/L	1.32 U	2.00	1.32	05/17/22 11:34	
Methyl parathion	ug/L	0.383 U	1.00	0.383	05/17/22 11:34	
Mevinphos	ug/L	0.275 U	1.00	0.275	05/17/22 11:34	
Naled	ug/L	0.594 U	1.00	0.594	05/17/22 11:34	
Phorate	ug/L	0.276 U	1.00	0.276	05/17/22 11:34	
Ronnel	ug/L	0.277 U	1.00	0.277	05/17/22 11:34	
Stirophos (Tetrachlorvinphos)	ug/L	0.277 U	1.00	0.277	05/17/22 11:34	
Sulfotepp (Thiodiphosphoric Ac	ug/L	0.181 U	1.00	0.181	05/17/22 11:34	
TEPP	ug/L	3.11 U	10.0	3.11	05/17/22 11:34	
Tokuthion (Prothiofos)	ug/L	0.241 U	1.00	0.241	05/17/22 11:34	
Trichloronate	ug/L	0.306 U	1.00	0.306	05/17/22 11:34	
Triphenylphosphate (S)	%	94.6	42.0-129		05/17/22 11:34	

LABORATORY CONTROL SAMPLE: R3792703-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Azinphos, methyl (Guthion)	ug/L	5.00	4.55	91.0	43.0-142	
Bolstar	ug/L	5.00	3.75	75.0	47.0-128	
Chlorpyrifos	ug/L	5.00	3.93	78.6	50.0-126	
Coumaphos	ug/L	5.00	4.40	88.0	37.0-137	
Total Demeton	ug/L	2.50	1.56	62.4	22.0-150	
Diazinon	ug/L	5.00	4.25	85.0	54.0-130	
Dichlorvos	ug/L	5.00	3.31	66.2	43.0-135	
Dimethoate	ug/L	5.00	1.01	20.2	27.0-120	J(L0)

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

LABORATORY CONTROL SAMPLE: R3792703-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Disulfoton	ug/L	5.00	2.56	51.2	44.0-136	
EPN (ENT)	ug/L	5.00	4.39	87.8	31.0-143	
Ethoprop	ug/L	5.00	4.27	85.4	52.0-130	
Parathion (Ethyl parathion)	ug/L	5.00	4.20	84.0	42.0-134	
Fensulfothion	ug/L	5.00	4.41	88.2	42.0-137	
Fenthion	ug/L	5.00	3.77	75.4	53.0-133	
Malathion	ug/L	5.00	3.87	77.4	47.0-121	
Merphos	ug/L	5.00	3.35	67.0	14.0-123	
Methyl parathion	ug/L	5.00	4.25	85.0	43.0-135	
Mevinphos	ug/L	5.00	2.51	50.2	49.0-123	
Naled	ug/L	5.00	4.45	89.0	25.0-126	
Phorate	ug/L	5.00	3.63	72.6	44.0-129	
Ronnel	ug/L	5.00	3.80	76.0	51.0-125	
Stirophos (Tetrachlorvinphos)	ug/L	5.00	4.31	86.2	53.0-125	
Sulfotepp (Thiodiphosphoric Ac	ug/L	5.00	4.01	80.2	40.0-140	
TEPP	ug/L	50.0	8.83	17.7	18.0-122	J(L0)
Tokuthion (Prothiofos)	ug/L	5.00	3.95	79.0	50.0-128	
Trichloronate	ug/L	5.00	4.23	84.6	47.0-130	
Triphenylphosphate (S)	%			81.8	42.0-129	

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

QC Batch: 1862644 Analysis Method: EPA 8141
QC Batch Method: 3546 Analysis Description: OP Pesticides 8141
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 35716198001, 35716198002, 35716198003, 35716198004

METHOD BLANK: R3792328-1 Matrix: Solid
Associated Lab Samples: 35716198001, 35716198002, 35716198003, 35716198004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Azinphos, methyl (Guthion)	mg/kg	0.0318 U	0.100	0.0318	05/13/22 18:31	
Bolstar	mg/kg	0.0149 U	0.100	0.0149	05/13/22 18:31	
Chlorpyrifos	mg/kg	0.0157 U	0.100	0.0157	05/13/22 18:31	
Coumaphos	mg/kg	0.0243 U	0.100	0.0243	05/13/22 18:31	
Total Demeton	mg/kg	0.00584 U	0.0700	0.00584	05/13/22 18:31	
Diazinon	mg/kg	0.0225 U	0.100	0.0225	05/13/22 18:31	
Dichlorvos	mg/kg	0.0300 U	0.100	0.0300	05/13/22 18:31	
Dimethoate	mg/kg	0.0334 U	0.100	0.0334	05/13/22 18:31	
Disulfoton	mg/kg	0.0254 U	0.100	0.0254	05/13/22 18:31	
EPN (ENT)	mg/kg	0.0276 U	0.100	0.0276	05/13/22 18:31	
Ethoprop	mg/kg	0.0118 U	0.100	0.0118	05/13/22 18:31	
Parathion (Ethyl parathion)	mg/kg	0.0164 U	0.100	0.0164	05/13/22 18:31	
Fensulfothion	mg/kg	0.0353 U	0.100	0.0353	05/13/22 18:31	
Fenthion	mg/kg	0.0133 U	0.100	0.0133	05/13/22 18:31	
Malathion	mg/kg	0.0179 U	0.100	0.0179	05/13/22 18:31	
Merphos	mg/kg	0.0232 U	0.100	0.0232	05/13/22 18:31	
Methyl parathion	mg/kg	0.0203 U	0.100	0.0203	05/13/22 18:31	
Mevinphos	mg/kg	0.0230 U	0.100	0.0230	05/13/22 18:31	
Naled	mg/kg	0.0480 U	0.100	0.0480	05/13/22 18:31	
Phorate	mg/kg	0.0210 U	0.100	0.0210	05/13/22 18:31	
Ronnel	mg/kg	0.0149 U	0.100	0.0149	05/13/22 18:31	
Stirophos (Tetrachlorvinphos)	mg/kg	0.0178 U	0.100	0.0178	05/13/22 18:31	
Sulfotepp (Thiodiphosphoric Ac	mg/kg	0.00986 U	0.100	0.00986	05/13/22 18:31	
TEPP	mg/kg	0.157 U	1.00	0.157	05/13/22 18:31	
Tokuthion (Prothiofos)	mg/kg	0.0150 U	0.100	0.0150	05/13/22 18:31	
Trichloronate	mg/kg	0.0201 U	0.100	0.0201	05/13/22 18:31	
Triphenylphosphate (S)	%	101	36.0-121		05/13/22 18:31	

LABORATORY CONTROL SAMPLE: R3792328-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Azinphos, methyl (Guthion)	mg/kg	0.333	0.355	107	58.0-125	
Bolstar	mg/kg	0.333	0.338	102	64.0-120	
Chlorpyrifos	mg/kg	0.333	0.356	107	62.0-120	
Coumaphos	mg/kg	0.333	0.342	103	60.0-120	
Total Demeton	mg/kg	0.167	0.173	104	59.0-120	
Diazinon	mg/kg	0.333	0.323	97.0	49.0-120	
Dichlorvos	mg/kg	0.333	0.307	92.2	37.0-120	
Dimethoate	mg/kg	0.333	0.336	101	46.0-127	

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

LABORATORY CONTROL SAMPLE: R3792328-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Disulfoton	mg/kg	0.333	0.358	108	60.0-121	
EPN (ENT)	mg/kg	0.333	0.355	107	60.0-121	
Ethoprop	mg/kg	0.333	0.375	113	59.0-120	
Parathion (Ethyl parathion)	mg/kg	0.333	0.363	109	62.0-120	
Fensulfothion	mg/kg	0.333	0.341	102	58.0-123	
Fenthion	mg/kg	0.333	0.352	106	61.0-121	
Malathion	mg/kg	0.333	0.340	102	59.0-120	
Merphos	mg/kg	0.333	0.314	94.3	59.0-120	
Methyl parathion	mg/kg	0.333	0.368	111	63.0-120	
Mevinphos	mg/kg	0.333	0.360	108	50.0-120	
Naled	mg/kg	0.333	0.315	94.6	10.0-125	
Phorate	mg/kg	0.333	0.367	110	60.0-120	
Ronnel	mg/kg	0.333	0.349	105	62.0-120	
Stirophos (Tetrachlorvinphos)	mg/kg	0.333	0.342	103	62.0-120	
Sulfotepp (Thiodiphosphoric Ac	mg/kg	0.333	0.365	110	62.0-122	
TEPP	mg/kg	3.33	0.795	23.9	10.0-135	
Tokuthion (Prothiofos)	mg/kg	0.333	0.344	103	63.0-120	
Trichloronate	mg/kg	0.333	0.376	113	62.0-120	
Triphenylphosphate (S)	%			101	36.0-121	

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

QC Batch: 822990 | Analysis Method: EPA 7470
QC Batch Method: EPA 7470 | Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 35716198005, 35716198006, 35716198007, 35716198008

METHOD BLANK: 4521212 Matrix: Water
Associated Lab Samples: 35716198005, 35716198006, 35716198007, 35716198008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	0.090 U	0.20	0.090	05/12/22 09:07	

LABORATORY CONTROL SAMPLE: 4521213

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2	2.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4521214 4521215

Parameter	Units	35716198006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	0.090 U	2	2	2.1	2.1	105	104	75-125	0	20	

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

QC Batch: 823761
QC Batch Method: EPA 7471
Analysis Method: EPA 7471
Analysis Description: 7471 Mercury
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 35716198001, 35716198002, 35716198003, 35716198004

METHOD BLANK: 4526191 Matrix: Solid
Associated Lab Samples: 35716198001, 35716198002, 35716198003, 35716198004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	0.0047 U	0.0094	0.0047	05/16/22 15:25	

LABORATORY CONTROL SAMPLE: 4526192

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.091	0.10	114	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4526193 4526194

Parameter	Units	35715785001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.13	0.68	0.69	0.68	0.68	80	80	80-120	1	20	

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

QC Batch:	822952	Analysis Method:	EPA 6010
QC Batch Method:	EPA 3050	Analysis Description:	6010 MET Solid
		Laboratory:	Pace Analytical Services - Ormond Beach

Associated Lab Samples: 35716198001, 35716198002, 35716198003, 35716198004

METHOD BLANK: 4521090 Matrix: Solid
Associated Lab Samples: 35716198001, 35716198002, 35716198003, 35716198004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/kg	0.30 U	0.60	0.30	05/11/22 16:25	
Barium	mg/kg	0.10 U	0.60	0.10	05/11/22 16:25	
Cadmium	mg/kg	0.030 U	0.060	0.030	05/11/22 16:25	
Chromium	mg/kg	0.15 U	0.30	0.15	05/11/22 16:25	
Copper	mg/kg	0.15 U	0.30	0.15	05/11/22 16:25	
Iron	mg/kg	3.6 U	12.0	3.6	05/11/22 16:25	
Lead	mg/kg	0.30 U	0.60	0.30	05/11/22 16:25	
Manganese	mg/kg	0.15 U	0.30	0.15	05/11/22 16:25	
Selenium	mg/kg	0.45 U	0.90	0.45	05/11/22 16:25	L
Silver	mg/kg	0.066 U	0.30	0.066	05/11/22 16:25	

LABORATORY CONTROL SAMPLE: 4521091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	15.3	14.5	95	80-120	
Barium	mg/kg	15.3	15.4	100	80-120	
Cadmium	mg/kg	1.5	1.5	99	80-120	
Chromium	mg/kg	15.3	15.7	102	80-120	
Copper	mg/kg	15.3	15.1	98	80-120	
Iron	mg/kg	153	156	102	80-120	
Lead	mg/kg	15.3	15.4	101	80-120	
Manganese	mg/kg	15.3	15.6	102	80-120	
Selenium	mg/kg	15.3	13.7	89	80-120	L
Silver	mg/kg	1.5	1.5	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4521092 4521093

Parameter	Units	35716119011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	1.6	16.4	16.7	17.6	16.8	97	91	75-125	5	20	
Barium	mg/kg	6.9	16.4	16.7	25.8	28.8	115	131	75-125	11	20	J(M1)
Cadmium	mg/kg	0.26	1.6	1.6	1.5	1.6	76	80	75-125	5	20	
Chromium	mg/kg	13.6	16.4	16.7	43.2	53.7	180	242	75-125	22	20	J(M1), J(R1)
Copper	mg/kg	19.8	16.4	16.7	39.6	62.1	121	254	75-125	44	20	J(M1), J(R1)

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4521092 4521093

Parameter	Units	35716119011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	mg/kg	2120	164	167	6030	8150	2380	3630	75-125	30	20	J(M1), J(R1), L
Lead	mg/kg	3.3	16.4	16.7	17.6	19.0	87	94	75-125	8	20	
Manganese	mg/kg	80.7	16.4	16.7	148	247	410	1000	75-125	50	20	J(M1), J(R1), L
Selenium	mg/kg	0.57 I	16.4	16.7	13.8	12.7	81	73	75-125	8	20	J(M1), L
Silver	mg/kg	0.073 U	1.6	1.6	1.4	1.3	88	80	75-125	8	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

QC Batch: 822983 | Analysis Method: EPA 6010
QC Batch Method: EPA 3010 | Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 35716198005, 35716198006, 35716198007, 35716198008

METHOD BLANK: 4521202 Matrix: Water
Associated Lab Samples: 35716198005, 35716198006, 35716198007, 35716198008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	3.4 U	10.0	3.4	05/12/22 16:39	
Barium	ug/L	0.84 U	10.0	0.84	05/12/22 16:39	
Cadmium	ug/L	0.33 U	1.0	0.33	05/12/22 16:39	
Chromium	ug/L	1.7 U	5.0	1.7	05/12/22 16:39	
Copper	ug/L	2.6 U	5.0	2.6	05/12/22 16:39	
Iron	ug/L	25.0 U	40.0	25.0	05/12/22 16:39	
Lead	ug/L	4.6 U	10.0	4.6	05/12/22 16:39	
Manganese	ug/L	1.1 U	5.0	1.1	05/12/22 16:39	
Selenium	ug/L	3.9 U	15.0	3.9	05/12/22 16:39	
Silver	ug/L	1.0 U	5.0	1.0	05/12/22 16:39	

LABORATORY CONTROL SAMPLE: 4521203

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	250	225	90	80-120	
Barium	ug/L	250	238	95	80-120	
Cadmium	ug/L	25	23.8	95	80-120	
Chromium	ug/L	250	231	92	80-120	
Copper	ug/L	250	231	92	80-120	
Iron	ug/L	2500	2320	93	80-120	
Lead	ug/L	250	238	95	80-120	
Manganese	ug/L	250	235	94	80-120	
Selenium	ug/L	250	234	94	80-120	
Silver	ug/L	25	22.5	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4521204 4521205

Parameter	Units	35715688001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	3.4 U	250	250	242	242	96	96	75-125	0	20	
Barium	ug/L	133	250	250	377	380	98	99	75-125	1	20	
Cadmium	ug/L	0.48 I	25	25	23.2	23.5	91	92	75-125	1	20	
Chromium	ug/L	4.1 I	250	250	238	241	93	95	75-125	1	20	
Copper	ug/L	2.9 I	250	250	249	252	98	100	75-125	1	20	
Iron	ug/L	880	2500	2500	3210	3250	93	95	75-125	1	20	
Lead	ug/L	4.6 U	250	250	231	235	92	93	75-125	2	20	
Manganese	ug/L	130	250	250	366	370	94	96	75-125	1	20	

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4521204 4521205

Parameter	Units	35715688001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Selenium	ug/L	3.9 U	250	250	145	145	58	58	75-125	0	20	J(M1)
Silver	ug/L	1.0 U	25	25	24.0	24.3	95	96	75-125	1	20	

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

QC Batch: 822922
QC Batch Method: EPA 3546
Analysis Method: EPA 8081
Analysis Description: 8081 GCS Pesticides
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 35716198001, 35716198002, 35716198003, 35716198004

METHOD BLANK: 4520943 Matrix: Solid
Associated Lab Samples: 35716198001, 35716198002, 35716198003, 35716198004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
4,4'-DDD	mg/kg	0.000076 U	0.0017	0.000076	05/11/22 10:16	
4,4'-DDE	mg/kg	0.000067 U	0.0017	0.000067	05/11/22 10:16	
4,4'-DDT	mg/kg	0.000094 U	0.0017	0.000094	05/11/22 10:16	
Aldrin	mg/kg	0.00017 U	0.0017	0.00017	05/11/22 10:16	
alpha-BHC	mg/kg	0.000046 U	0.0017	0.000046	05/11/22 10:16	
beta-BHC	mg/kg	0.00020 U	0.0017	0.00020	05/11/22 10:16	
Chlordane (Technical)	mg/kg	0.0051 U	0.017	0.0051	05/11/22 10:16	
delta-BHC	mg/kg	0.000087 U	0.0017	0.000087	05/11/22 10:16	
Dieldrin	mg/kg	0.000065 U	0.0017	0.000065	05/11/22 10:16	
Endosulfan I	mg/kg	0.00019 U	0.0017	0.00019	05/11/22 10:16	
Endosulfan II	mg/kg	0.000076 U	0.0017	0.000076	05/11/22 10:16	
Endosulfan sulfate	mg/kg	0.000067 U	0.0017	0.000067	05/11/22 10:16	
Endrin	mg/kg	0.000085 U	0.0017	0.000085	05/11/22 10:16	
Endrin aldehyde	mg/kg	0.00025 U	0.0034	0.00025	05/11/22 10:16	
Endrin ketone	mg/kg	0.000079 U	0.0017	0.000079	05/11/22 10:16	
gamma-BHC (Lindane)	mg/kg	0.000049 U	0.0017	0.000049	05/11/22 10:16	
Heptachlor	mg/kg	0.00018 U	0.0017	0.00018	05/11/22 10:16	
Heptachlor epoxide	mg/kg	0.000073 U	0.0017	0.000073	05/11/22 10:16	
Methoxychlor	mg/kg	0.00025 U	0.0017	0.00025	05/11/22 10:16	
Toxaphene	mg/kg	0.0073 U	0.017	0.0073	05/11/22 10:16	
Decachlorobiphenyl (S)	%	113	43-157		05/11/22 10:16	
Tetrachloro-m-xylene (S)	%	106	53-140		05/11/22 10:16	

LABORATORY CONTROL SAMPLE: 4520944

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	mg/kg	0.017	0.016	97	62-144	
4,4'-DDE	mg/kg	0.017	0.016	95	67-141	
4,4'-DDT	mg/kg	0.017	0.016	97	57-159	
Aldrin	mg/kg	0.017	0.016	96	70-136	
alpha-BHC	mg/kg	0.017	0.015	88	67-136	
beta-BHC	mg/kg	0.017	0.015	91	68-131	
delta-BHC	mg/kg	0.017	0.011	69	58-120	
Dieldrin	mg/kg	0.017	0.016	98	63-145	
Endosulfan I	mg/kg	0.017	0.016	98	66-129	
Endosulfan II	mg/kg	0.017	0.017	99	59-130	
Endosulfan sulfate	mg/kg	0.017	0.016	96	57-137	
Endrin	mg/kg	0.017	0.016	96	67-147	
Endrin aldehyde	mg/kg	0.017	0.016	98	54-144	

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

LABORATORY CONTROL SAMPLE: 4520944

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin ketone	mg/kg	0.017	0.016	98	60-139	
gamma-BHC (Lindane)	mg/kg	0.017	0.015	89	69-137	
Heptachlor	mg/kg	0.017	0.015	90	68-135	
Heptachlor epoxide	mg/kg	0.017	0.016	97	68-135	
Methoxychlor	mg/kg	0.017	0.016	99	57-153	
Decachlorobiphenyl (S)	%			105	43-157	
Tetrachloro-m-xylene (S)	%			97	53-140	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4520945 4520946

Parameter	Units	35716119011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4,4'-DDD	mg/kg	0.000093 U	0.021	0.021	0.023	0.024	113	116	62-144	2	40	
4,4'-DDE	mg/kg	0.012	0.021	0.021	0.036	0.039	120	135	67-141	8	40	
4,4'-DDT	mg/kg	0.00089 I	0.021	0.021	0.024	0.024	110	113	57-159	3	40	
Aldrin	mg/kg	0.00021 U	0.021	0.021	0.023	0.023	110	112	70-136	2	40	
alpha-BHC	mg/kg	0.000056 U	0.021	0.021	0.021	0.022	103	105	67-136	2	40	
beta-BHC	mg/kg	0.00025 U	0.021	0.021	0.021	0.022	103	105	68-131	2	40	
delta-BHC	mg/kg	0.00011 U	0.021	0.021	0.025	0.017	120	83	58-120	37	40	
Dieldrin	mg/kg	0.0025	0.021	0.021	0.026	0.026	116	113	63-145	2	40	
Endosulfan I	mg/kg	0.00023 U	0.021	0.021	0.024	0.025	115	118	66-129	3	40	
Endosulfan II	mg/kg	0.00032 I	0.021	0.021	0.022	0.023	106	108	59-130	2	40	
Endosulfan sulfate	mg/kg	0.00033 I	0.021	0.021	0.022	0.022	106	107	57-137	1	40	
Endrin	mg/kg	0.00010 U	0.021	0.021	0.023	0.023	110	111	67-147	1	40	
Endrin aldehyde	mg/kg	0.00031 U	0.021	0.021	0.021	0.021	100	100	54-144	1	40	
Endrin ketone	mg/kg	0.000097 U	0.021	0.021	0.023	0.024	113	115	60-139	1	40	
gamma-BHC (Lindane)	mg/kg	0.000060 U	0.021	0.021	0.021	0.021	101	101	69-137	0	40	
Heptachlor	mg/kg	0.00022 U	0.021	0.021	0.021	0.022	103	105	68-135	1	40	
Heptachlor epoxide	mg/kg	0.00020 I	0.021	0.021	0.023	0.023	111	113	68-135	1	40	
Methoxychlor	mg/kg	0.00031 U	0.021	0.021	0.023	0.024	113	115	57-153	2	40	
Decachlorobiphenyl (S)	%						116	122	43-157			
Tetrachloro-m-xylene (S)	%						117	115	53-140			

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

QC Batch:	822841	Analysis Method:	EPA 8081
QC Batch Method:	EPA 3510	Analysis Description:	8081 GCS Pesticides
		Laboratory:	Pace Analytical Services - Ormond Beach

Associated Lab Samples: 35716198005, 35716198006, 35716198007, 35716198008

METHOD BLANK: 4520018 Matrix: Water

Associated Lab Samples: 35716198005, 35716198006, 35716198007, 35716198008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
4,4'-DDD	ug/L	0.0027 U	0.010	0.0027	05/11/22 09:35	
4,4'-DDE	ug/L	0.0050 U	0.010	0.0050	05/11/22 09:35	
4,4'-DDT	ug/L	0.0051 U	0.010	0.0051	05/11/22 09:35	
Aldrin	ug/L	0.0040 U	0.010	0.0040	05/11/22 09:35	
alpha-BHC	ug/L	0.0021 U	0.010	0.0021	05/11/22 09:35	
beta-BHC	ug/L	0.020 U	0.030	0.020	05/11/22 09:35	
Chlordane (Technical)	ug/L	0.25 U	0.50	0.25	05/11/22 09:35	
delta-BHC	ug/L	0.0048 U	0.010	0.0048	05/11/22 09:35	
Dieldrin	ug/L	0.0020 U	0.010	0.0020	05/11/22 09:35	
Endosulfan I	ug/L	0.0051 U	0.010	0.0051	05/11/22 09:35	
Endosulfan II	ug/L	0.0040 U	0.010	0.0040	05/11/22 09:35	
Endosulfan sulfate	ug/L	0.0062 U	0.10	0.0062	05/11/22 09:35	
Endrin	ug/L	0.0043 U	0.010	0.0043	05/11/22 09:35	
Endrin aldehyde	ug/L	0.0036 U	0.10	0.0036	05/11/22 09:35	
Endrin ketone	ug/L	0.0050 U	0.010	0.0050	05/11/22 09:35	
gamma-BHC (Lindane)	ug/L	0.0022 U	0.010	0.0022	05/11/22 09:35	
Heptachlor	ug/L	0.0062 U	0.010	0.0062	05/11/22 09:35	
Heptachlor epoxide	ug/L	0.016 U	0.020	0.016	05/11/22 09:35	
Methoxychlor	ug/L	0.0042 U	0.010	0.0042	05/11/22 09:35	
Toxaphene	ug/L	0.25 U	0.50	0.25	05/11/22 09:35	
Decachlorobiphenyl (S)	%	87	10-132		05/11/22 09:35	
Tetrachloro-m-xylene (S)	%	83	27-124		05/11/22 09:35	

LABORATORY CONTROL SAMPLE & LCSD: 4520019 4520029

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
4,4'-DDD	ug/L	0.5	0.50	0.48	101	96	67-133	5	40	
4,4'-DDE	ug/L	0.5	0.49	0.48	98	95	59-125	3	40	
4,4'-DDT	ug/L	0.5	0.48	0.47	96	94	54-132	3	40	
Aldrin	ug/L	0.5	0.43	0.42	85	84	25-116	1	40	
alpha-BHC	ug/L	0.5	0.46	0.45	91	90	53-126	2	40	
beta-BHC	ug/L	0.5	0.49	0.48	98	96	62-130	1	40	
delta-BHC	ug/L	0.5	0.38	0.37	76	74	35-122	3	40	
Dieldrin	ug/L	0.5	0.49	0.48	99	96	66-128	3	40	
Endosulfan I	ug/L	0.5	0.48	0.46	96	93	67-125	3	40	
Endosulfan II	ug/L	0.5	0.49	0.48	98	96	67-131	2	40	
Endosulfan sulfate	ug/L	0.5	0.47	0.46	95	92	62-127	3	40	
Endrin	ug/L	0.5	0.50	0.48	100	97	66-130	3	40	
Endrin aldehyde	ug/L	0.5	0.53	0.51	106	103	61-124	3	40	

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

LABORATORY CONTROL SAMPLE & LCSD: 4520019 4520029

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Endrin ketone	ug/L	0.5	0.50	0.48	99	97	65-132	2	40	
gamma-BHC (Lindane)	ug/L	0.5	0.48	0.47	96	94	58-127	2	40	
Heptachlor	ug/L	0.5	0.44	0.43	89	87	35-123	2	40	
Heptachlor epoxide	ug/L	0.5	0.48	0.47	96	93	62-125	3	40	
Methoxychlor	ug/L	0.5	0.50	0.49	100	98	59-135	1	40	
Decachlorobiphenyl (S)	%				87	92	10-132			
Tetrachloro-m-xylene (S)	%				87	85	27-124			

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

QC Batch:	824074	Analysis Method:	ASTM D2974-87
QC Batch Method:	ASTM D2974-87	Analysis Description:	Dry Weight/Percent Moisture
		Laboratory:	Pace Analytical Services - Ormond Beach

Associated Lab Samples: 35716198001, 35716198002, 35716198003, 35716198004

SAMPLE DUPLICATE: 4528236

Parameter	Units	35715809005 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	7.3	7.6	5	10	

SAMPLE DUPLICATE: 4528237

Parameter	Units	35715868011 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.5	14.7	6	10	

SAMPLE DUPLICATE: 4528238

Parameter	Units	35716101011 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	16.2	17.7	9	10	

SAMPLE DUPLICATE: 4528239

Parameter	Units	35716121011 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.8	20.3	13	10	J(D6)

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

QC Batch: 1862708
QC Batch Method: SM 2540 G
Analysis Method: SM 2540G
Analysis Description: Total Solids 2540 G-2011
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 35716198001

METHOD BLANK: R3792119-1 Matrix: Solid
Associated Lab Samples: 35716198001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Solids	%	0.00100			05/14/22 11:30	

LABORATORY CONTROL SAMPLE: R3792119-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	%	50.0	50.0	100	85.0-115	

SAMPLE DUPLICATE: R3792119-3

Parameter	Units	L1491715-04 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	90.0	89.6	0.469	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

QC Batch:	1862709	Analysis Method:	SM 2540G
QC Batch Method:	SM 2540 G	Analysis Description:	Total Solids 2540 G-2011
		Laboratory:	Pace National - Mt. Juliet

Associated Lab Samples: 35716198002, 35716198003, 35716198004

METHOD BLANK: R3792150-1 Matrix: Solid
Associated Lab Samples: 35716198002, 35716198003, 35716198004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Solids	%	0.00100			05/14/22 17:49	

LABORATORY CONTROL SAMPLE: R3792150-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	%	50.0	50.0	100	85.0-115	

SAMPLE DUPLICATE: R3792150-3

Parameter	Units	L1492405-04 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	77.9	77.2	0.854	10	

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QUALITY CONTROL DATA

Project: Martin County BoC
Pace Project No.: 35716198

QC Batch: 822722
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 35716198005, 35716198006, 35716198007, 35716198008

METHOD BLANK: 4519448 Matrix: Water
Associated Lab Samples: 35716198005, 35716198006, 35716198007, 35716198008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	0.025 U	0.050	0.025	05/10/22 12:46	
Nitrogen, Nitrite	mg/L	0.025 U	0.050	0.025	05/10/22 12:46	
Nitrogen, NO2 plus NO3	mg/L	0.015 U	0.050	0.015	05/10/22 12:46	

LABORATORY CONTROL SAMPLE: 4519449

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrite	mg/L	1	1.1	110	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	2.1	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4519451 4519450

Parameter	Units	35716198005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Nitrite	mg/L	0.62 U	25	25	27.6	27.5	110	110	90-110	0	20	Q
Nitrogen, NO2 plus NO3	mg/L	24.3	50	50	75.8	75.8	103	103	90-110	0	20	Q

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4519453 4519452

Parameter	Units	35716152009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Nitrite	mg/L	0.25 U	10	10	10.9	10.9	109	109	90-110	0	20	
Nitrogen, NO2 plus NO3	mg/L	12.3	20	20	32.5	32.5	101	101	90-110	0	20	

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QUALIFIERS

Project: Martin County BoC
Pace Project No.: 35716198

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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BATCH QUALIFIERS

Batch: 822841

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Compound was analyzed for but not detected.
1p	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
C2	Relative percent difference between results from each column was greater than 40%. The lower of the two results was reported.
G6	An aliquot for analysis was taken from the original container received due to volume requirements of the laboratory's procedure. Rinsing of the original sample container for inclusion in the sample extraction was not performed.
J(D6)	Estimated Value. The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
J(L0)	Estimated Value. Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
J(M1)	Estimated Value. Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
J(R1)	Estimated Value. RPD value was outside control limits.
L	Off-scale high. Actual value is known to be greater than value given.
Q	Sample held beyond the accepted holding time.

Pace Analytical Services, LLC
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Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Martin County BoC
Pace Project No.: 35716198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35716198005	**MCKP-1**	3510C	1862934	EPA 8141	1862934
35716198006	**MCKP-2**	3510C	1862934	EPA 8141	1862934
35716198007	**MCKP-3**	3510C	1862934	EPA 8141	1862934
35716198008	**MCKP-4**	3510C	1862934	EPA 8141	1862934
35716198001	**MCKP-1**	3546	1862644	EPA 8141	1862644
35716198002	**MCKP-2**	3546	1862644	EPA 8141	1862644
35716198003	**MCKP-3**	3546	1862644	EPA 8141	1862644
35716198004	**MCKP-4**	3546	1862644	EPA 8141	1862644
35716198001	**MCKP-1**	EPA 3546	822922	EPA 8081	823000
35716198002	**MCKP-2**	EPA 3546	822922	EPA 8081	823000
35716198003	**MCKP-3**	EPA 3546	822922	EPA 8081	823000
35716198004	**MCKP-4**	EPA 3546	822922	EPA 8081	823000
35716198005	**MCKP-1**	EPA 3510	822841	EPA 8081	822995
35716198006	**MCKP-2**	EPA 3510	822841	EPA 8081	822995
35716198007	**MCKP-3**	EPA 3510	822841	EPA 8081	822995
35716198008	**MCKP-4**	EPA 3510	822841	EPA 8081	822995
35716198001	**MCKP-1**	EPA 3050	822952	EPA 6010	823100
35716198002	**MCKP-2**	EPA 3050	822952	EPA 6010	823100
35716198003	**MCKP-3**	EPA 3050	822952	EPA 6010	823100
35716198004	**MCKP-4**	EPA 3050	822952	EPA 6010	823100
35716198005	**MCKP-1**	EPA 3010	822983	EPA 6010	823089
35716198006	**MCKP-2**	EPA 3010	822983	EPA 6010	823089
35716198007	**MCKP-3**	EPA 3010	822983	EPA 6010	823089
35716198008	**MCKP-4**	EPA 3010	822983	EPA 6010	823089
35716198005	**MCKP-1**	EPA 7470	822990	EPA 7470	823109
35716198006	**MCKP-2**	EPA 7470	822990	EPA 7470	823109
35716198007	**MCKP-3**	EPA 7470	822990	EPA 7470	823109
35716198008	**MCKP-4**	EPA 7470	822990	EPA 7470	823109
35716198001	**MCKP-1**	EPA 7471	823761	EPA 7471	824367
35716198002	**MCKP-2**	EPA 7471	823761	EPA 7471	824367
35716198003	**MCKP-3**	EPA 7471	823761	EPA 7471	824367
35716198004	**MCKP-4**	EPA 7471	823761	EPA 7471	824367
35716198001	**MCKP-1**	ASTM D2974-87	824074		
35716198002	**MCKP-2**	ASTM D2974-87	824074		
35716198003	**MCKP-3**	ASTM D2974-87	824074		
35716198004	**MCKP-4**	ASTM D2974-87	824074		
35716198001	**MCKP-1**	SM 2540 G	1862708	SM 2540G	1862708
35716198002	**MCKP-2**	SM 2540 G	1862709	SM 2540G	1862709
35716198003	**MCKP-3**	SM 2540 G	1862709	SM 2540G	1862709
35716198004	**MCKP-4**	SM 2540 G	1862709	SM 2540G	1862709
35716198005	**MCKP-1**	EPA 353.2	822722		
35716198006	**MCKP-2**	EPA 353.2	822722		
35716198007	**MCKP-3**	EPA 353.2	822722		

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(386)672-5668

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Martin County BoC
Pace Project No.: 35716198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35716198008	**MCKP-4**	EPA 353.2	822722		

WO#: 35716198

35716198

Pace

...cal Request Document

Submitting a sample via this chain of custody constitu... All relevant fields must be completed accurately. ...found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

BO# 952691

Page : | Of

Section A
Required Client Information:

Company:	Martian Environmental
Address:	1109 Carmona Place
	Saint Augustine, FL 32092
Email:	martianenvironmental@gmail.com
Phone:	(706)718-5306 Fax
Requested Due Date:	

Section B
Required Project Infor...

Report To:	Brad Tompa
Copy To:	
Purchase Order #:	
Project Name:	Martin County BoC
Project #:	

...Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	bill.white@pacelabs.com,
Pace Profile #:	14387 L 6 & L7

Regulatory Agency
State / Location
FL

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analyses Test Y/N	EPA 8081 Pests	EPA 8141 Pests (PN)	6010/7470/7471	353.2 Nitrate, Nitrite	Residual Chlorine (Y/N)	
1	MCKP-1	SL	G	5/6		5/6/22	1530												✓	✓	✓			PLEASE HOMOGENIZE
2	MCKP-2	SL	G	5/6		5/6	1600												✓	✓	✓			"
3	MCKP-3	SL	G	5/6		5/6	1630												✓	✓	✓			"
4	MCKP-4	SL	G	5/6		5/6	1700												✓	✓	✓			"
5	MCKP-1	WT	G			5/7/22	0930												✓	✓	✓	✓		
6	MCKP-2	WT	G			5/7	1040												✓	✓	✓	✓		
7	MCKP-3	WT	G			5/7	1145												✓	✓	✓	✓		
8	MCKP-4	WT	G			5/7	1250												✓	✓	✓	✓		
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Brad Tompa / Martian	5/9/22	0800	TIMS? / PACE	5/9/22	0800				
	TIMS? / PACE	5/9/22	1700	FDX COURIER	5/9/22	1700				
	FDX COURIER			KMF / Pace	5/9/22	2205	2.1	Y	N	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed:

Pace

Sample Condition Upon Receipt Form (SCUR)

WO#: 35716198
PM: WBW Due Date: 05/18/22
CLIENT: MARENV

Project #
Project Manager:
Client:

JAX

Date and Initials of person:
Examining contents: KB
Label:
Deliver:
pH:

Thermometer Used: T-393 Date: 5/9/22 Time: 2251 Initials: HVI 5/9

State of Origin: ______

☐ For WV projects, all containers verified to ≤6 °C

	Visual	Correction Factor	Actual	
Cooler #1 Temp.°C	0.3	+0.0	0.3	☐ Samples on ice, cooling process has begun
Cooler #2 Temp.°C	2.1		2.1	☐ Samples on ice, cooling process has begun
Cooler #3 Temp.°C				☐ Samples on ice, cooling process has begun
Cooler #4 Temp.°C				☐ Samples on ice, cooling process has begun
Cooler #5 Temp.°C				☐ Samples on ice, cooling process has begun
Cooler #6 Temp.°C				☐ Samples on ice, cooling process has begun

Recheck for OOT °C ______ **(Visual)** ______ **(Correction Factor)** ______ **(Actual) Time:** ______ **Initials:** ______

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☑ Commercial ☐ Pace ☐ Other ______

Shipping Method: ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground ☐ International Priority ☐ Other ______

Billing: ☐ Recipient ☐ Sender ☐ Third Party ☐ Credit Card ☐ Unknown

Tracking # ______

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No **Seals intact:** ☐ Yes ☐ No **Ice:** Wet Blue Melted None

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other ______

Samples shorted to lab (If Yes, complete) Shorted Date: ______ Shorted Time: ______ Qty: ______

		Comments:
Chain of Custody Present	☑ Yes ☐ No ☐ N/A	
Chain of Custody Filled Out	☑ Yes ☐ No ☐ N/A	
Relinquished Signature & Sampler Name COC	☑ Yes ☐ No ☐ N/A	
Samples Arrived within Hold Time	5 Yes ☑ No ☐ N/A	not Coli
Rush TAT requested on COC	☐ Yes ☑ No ☐ N/A	
Sufficient Volume	☑ Yes ☐ No ☐ N/A	
Correct Containers Used	☑ Yes ☐ No ☐ N/A	
Containers Intact	☑ Yes ☐ No ☐ N/A	
Sample Labels match COC (sample IDs & date/time of collection)	☑ Yes ☐ No ☐ N/A	
All containers needing acid/base preservation have been checked.	☑ Yes ☐ No ☐ N/A	Preservation Information: Preservative: ______ Lot #/Trace #: ______ Date: ______ Time: ______ Initials: ______
All Containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: Vials, Microbiology, O&G, PFAS	☑ Yes ☐ No ☐ N/A	
Headspace in VOA Vials? (>6mm):	☐ Yes ☐ No ☑ N/A	
Trip Blank Present:	☐ Yes ☐ No ☑ N/A	

Comments/ Resolution (use back for additional comments): ______

APPENDIX C
Regulatory Guidance

Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits

Document Referenced in Chapters 62-770, 62-777, 62-780, 62-782, and 62-785, F.A.C.

Prepared by the Division of Resource Assessment and Management for the Division of Waste Management Cleanup Programs

October 12, 2004

Table of Contents

Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits

Referenced in Chapters 62-770, 62-777, 62-780, 62-782, and 62-785, F.A.C.

Intended Use of This Document

This document is intended to assist project managers with the selection of appropriate analytical methodology during the development of Data Quality Objectives (DQOs) for assessing contamination in cases where cleanup target levels are below the sensitivity of published methods and also as an aid in the data review process. The tables included in this document provide **target** Practical Quantitation Limits (PQLs) for selected[1], published analytical methods where laboratory PQLs have frequently been found to be higher than Cleanup Target Levels (CTLs). Data consumers and project managers can use the published PQLs as *guidelines* during project development and data review a) to ensure that adequately sensitive analytical techniques are utilized to address project DQOs, b) as an aid in assessing whether good faith efforts were made to achieve the best possible detection and quantification for the test conditions, and c) to help determine whether or not project goals for required remediation have been achieved.

Development of Data Quality Objectives

As a first step prior to project initiation, it is important to identify Data Quality Objectives (DQOs), identify Measurement Quality Objectives (MQOs), establish a reasonable framework for analytical work, and as a part of this framework, develop Data Quality Indicators (DQIs) including those for sensitivity (detection and quantification). During the development of project DQOs and prior to initiation of any project, the laboratory should be included in the method selection process. The laboratory is often best positioned to understand the effects that specific sample matrices may have on method performance, including method sensitivity. Furthermore, the laboratory may be able to suggest various approaches to minimizing the impact the sample matrix may have on data quality, including alternative methods that optimize the project objectives while still satisfying project DQOs, MQOs and DQIs. Additionally, project managers should independently assess the laboratory's capability and accreditation status for methods that may be required to fulfill project objectives.

For some contaminants, CTLs published in Chapter 62-777, F.A.C. may be below laboratory PQLs for certain methods. In those cases, special care must be taken in project planning and in establishing project DQOs and selection of methods, as well as in assessing project data.

Selection of the analytical method should not be solely based on the sensitivity of the instruments and/or methodology. It is equally important to understand the overall objectives of the project when selecting analytical methods and applicable reporting limits. The intent is that the project manager reviews and understands the analytical needs of the project, assesses the requirements and issues involved with the subject environmental samples, and determines

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[1] *This document is not intended to provide an exhaustive list of all appropriate analytical methodologies nor are the PQLs published in the document intended to represent levels that can be achieved on every environmental sample.*

whether the analytical program is suitable. For example, there may be cases where screening methods with higher PQLs may be more appropriate to evaluate the overall progress of a cleanup. Similarly, a cleanup may be focused on target compounds that can be measured using methods with higher PQLs. USEPA's "Guidance on Data Quality Indicators" (EPA QA/G-5i) and "Guidance on QA Project Plans" (EPA QA/G-5) are good sources for developing DQOs when initiating cleanup projects.

Development of Target PQLs

The target PQLs listed in this document were generated from the following sources:

1) *PQLs published in official methods*. The primary sources of data were the published methods found in EPA documents or PQLs listed in the Environmental Monitoring Methods Index (EMMI) and the National Environmental Monitoring Index (NEMI).
2) *PQLs published in Comprehensive Quality Assurance Plans (CompQAPs) submitted to the Florida Department of Environmental Protection (FDEP)*. Because programmatic objectives were generally not defined when CompQAPs were submitted for approval, a wide range of published PQLs has been found to exist among submitted plans (presumably, representing differing DQOs). A valid statistical treatment of data from all CompQAPs could not be performed without knowledge of the DQOs for each submittal. Therefore, data from CompQAPs deemed to represent the DQOs of Chapter 62-777, F.A.C. were chosen as references.
3) *PQLs published in the FDEP laboratory quality assurance plan*. Where no data were available from other laboratories or where published data were judged to be unreliable, values taken from the Department's laboratory were used as targets. Those data were typically for unusual analytes or methods.

For 1) and 2) above, it should be noted that these published values were not evaluated or verified independently and that there is no assessment of the measurement uncertainty associated with these values. Further, this is a working document and the tables will be updated routinely.

Reported Versus Target PQLs

The PQLs listed in this document are targets that should be achievable by most modern well-equipped environmental laboratories ***under optimal conditions***. The project laboratory cannot be expected to always meet the PQLs listed in the table. Often environmental samples will contain constituents that cause or contribute to analytical interferences. Those interferences can preclude achieving the target limits. Even physical characteristics of the sample such as moisture content or sample collection anomalies (e.g., the collection of less than ideal sample volumes) can affect reportable PQLs. Project managers and data consumers should take those effects into account when determining whether good faith efforts have been made at measuring contaminants at the lowest achievable levels for the applied method. Laboratories should to be able to provide backup documentation that demonstrates how the PQLs [and Method Detection Limits (MDLs), if appropriate] were derived. These materials can be used to further assess the applicability of the method and the good faith efforts that were undertaken to achieve the project PQLs. Laboratories providing data should alert project managers regarding sample- or matrix-specific effects that preclude the attainment of target PQLs. In some cases, laboratories can suggest alternative methods that may avoid significant interference problems. Additionally, the FDEP has a staff that can provide users assistance in selecting and evaluating PQLs on a project-specific basis.

Assessing Data Below Quantifiable Levels

Chapter 62-160, F.A.C., addresses reporting requirements for data submitted to the FDEP programs. Whenever an analyte is not detected above the MDL, the MDL for the measurement must be reported along with a qualifier code (U) indicating that the analyte was not detected at the reported detection limit. Alternately, laboratories have the option of reporting the analytical value followed by a qualifier code (T) indicating the analytical value reported was below the laboratory's detection limit.

If an analyte was detected but was below quantifiable limits (i.e., greater than the MDL but below the PQL), either a) the value from the measurement can be reported followed by a qualifier code (I) indicating the analyte was detected but could not be quantified with certainty or b) the PQL for the measurement can be reported followed by a qualifier code (M) indicating the analyte was detected but was below quantifiable levels. Refer to Chapter 62-160, F.A.C. for a complete list of appropriate data qualifier codes.

Regardless of the analytical values reported for a sample, Chapter 62-777, F.A.C. requires that laboratories also report sample-specific PQLs for each analyte. As stated above, some of the sample-specific PQLs reported by laboratories may be greater than the CTLs published in Chapter 62-777, F.A.C. for individual analytes. If the analyte is not detected at the MDL or is detected at a level below the PQL, the reviewer should compare the sample-specific PQL reported with the analytical data to determine if an appropriately sensitive method was utilized. As discussed above, these issues should be addressed and resolved prior to initiating an analytical program for a cleanup program. If the target PQL was not achieved, there may be valid reasons why and the reviewer should refer to justification provided by the laboratory or project manager. Guidance on Environmental Data Verification and Validation (EPA QA/G-8), being finalized by the USEPA, can be used to address and resolve issues where reporting limits may be above project objectives or risk-based criteria. For a more thorough discussion of analytical sensitivity and uncertainty, data consumers may also refer to other technical guidance such as Chapter 3 in "*Guidance on Data Quality Indicators*", EPA QA/G-5i (September 2001).

Table A
No Listed PQLs
(Aqueous)

CONTAMINANT	CAS #	Analytical Method
Allyl alcohol	107-18-6	8260
Butanol, n-	71-36-3	8260
Carbofuran	1563-66-2	8270
Chloral hydrate	302-17-0	8260
Chlorine Cyanide	506-77-4	SM 4500-CN
Chlorophenol, 3-	108-43-0	8041
Dichlorophenol, 2,3-	576-24-9	8041
Dichlorophenol, 2,5-	583-78-8	8041
Dichlorophenol, 3,4-	95-77-2	8041
Dimethylphenol, 2,6,-	576-26-1	8041
Dimethylphenol, 3,4-	95-65-8	8041
Epichlorohydrin	106-89-8	8260
Ethanol	64-17-5	8260
Ethylene glycol	107-21-1	8015
Hexachlorocyclohexane, technical [or BHC, technical]	608-73-1	8081
Hydrogen sulfide	7783-06-4	SM 4500-S2
Hydroquinone	123-31-9	8270
Methanol	67-56-1	8015

PQL - Practical Quantitation Limit

[1] This table is not an exhaustive list of appropriate analytical methods. Laboratories may achieve target PQLs with other published analytical methods.

[2] The project laboratory cannot be expected to always meet the target PQLs due to analytical interferences or the nature of the sample.

[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

Table B
No Listed Methods
(Aqueous)

CONTAMINANT	CAS #
Acifluorfen, sodium [or Blazer]	62476-59-9
Acrylic Acid	79-10-7
Aluminum phosphide	20859-73-8
Ammonium sulfamate	7773-06-0
Ally [or Metsulfuron, methyl]	74223-64-6
Azobenzene	103-33-3
Bioallethrin	28057-48-9
Bisphenol A	80-05-7
Bromoxynil octanoate	1689-99-2
Butane	106-97-8
Butyl acetate, n-	123-86-4
Butylphthalyl butylglycolate	85-70-1
Cacodylic acid (as Arsenic)	75-60-5
Calcium cyanide	592-01-8
Copper cyanide	544-92-3
Chlorsulfuron	64902-72-3
Crotonaldehyde	123-73-9
Cyanogen	460-19-5
Cyclohexylamine	108-91-8
Cyhalothrin [or Karate]	68085-85-8
Decabromodiphenyl ether	1163-19-5
Dibromobenzene, 1,4-	106-37-6
Dichlorobenzophenone, 4,4'-	90-98-2
Diethylene glycol, monoethyl ether	111-90-0
Diisopropyl methylphosphonate	1445-75-6
Dimethylaniline, 2,4-	95-68-1
Dimethrin	70-38-2
Dimethylformamide, N,N-	68-12-2
Ethoxyethanol acetate, 2-	111-15-9
Ethoxyethanol, 2-	110-80-5
Ethyl acrylate	140-88-5
Ethylene diamine	107-15-3
Ethylphthalyl ethylglycolate [or EPEG]	84-72-0

Formic acid	64-18-6
Furan	110-00-9
Glycidaldehyde	765-34-3
Hydrogen Cyanide	74-90-8
Iprodione	3674-19-7
Limonene	138-86-3
Maleic Anhydride	108-31-6
Maleic hydrazide	123-33-1
Mercuric chloride (Mercury)	7487-94-7
Methyl acetate	79-20-9
Methyl acrylate	96-33-3
Nickel subsulfide	12035-72-2
Nonylphenol	25154-52-3
Oxadiazon	19666-30-9
Phenmedipham [or Betanal]	13684-64-4
Phenylenediamine,m-	108-45-2
Phenylphenol, 2-	90-43-7
Phosphine	7803-51-2
Polycyclic aromatic hydrocarbons	130498-29-2
Potassium cyanide	151-50-8
Propargite	2312-35-8
Propiconazole	60207-90-1
Propylene glycol	57-55-6
Propylene glycol monomethyl ether	107-98-2
Propylene oxide	75-56-9
Quinolinne	91-22-5
Selenious acid (as selenium)	7783-00-8
Chlorite (sodium salt) [or sodium chlorite]	7758-19-2
Sodium cyanide (as cyanide)	143-33-9
Temephos	3383-96-8
Thallium sulfate (as Thallium)	7446-18-6
Thiobencarb	28249-77-6
Titanium dioxide	13463-67-7
Toluidine,p-	106-49-0
Triallate	2303-17-5
Tributyltin oxide	56-35-9
Trichloropropane, 1,1,2-	598-77-6
Trichloropropene, 1,2,3-	96-19-5
Trimethylbenzene, 1,2,3-	526-73-8
Vanadium pentoxide (as Vanadium)	1314-62-1
Zinc Chloride	7646-85-7

PQL - Practical Quantitation Limit

[1] This table is not an exhaustive list of appropriate analytical methods. Laboratories may achieve target PQLs with other published analytical methods.

[2] The project laboratory cannot be expected to always meet the target PQLs due to analytical interferences or the nature of the sample.

[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

Table C
Groundwater

CONTAMINANT	CAS #	Method	Target PQL (ug/L)	Source
Acephate	30560-19-1	614	8	DEP
Acrolein	107-02-8	8260	20	Lab
Acrylamide	79-06-1	8032	0.2	NEMI
Acrylonitrile	107-13-1	8260	20	Lab
Alachlor	15972-60-8	8081	3	DEP
Aldrin	309-00-2	8081	0.05	Lab
Anilazine [or Dyrene]	101-05-3	8270	100	NEMI
Aramite	140-57-8	8270	20	NEMI
Benzenethiol	108-98-5	8270	100	Lab
Benzidine	92-87-5	8270	400	DEP
Benzo(a)anthracene	56-55-3	8310	0.2	Lab
Benzo(b)fluoranthene	205-99-2	8310	0.1	Lab
Benzotrichloride	98-08-7	8121	1	CompQAP
Benzyl chloride	100-44-7	8260	2	COMPQAP
Bidrin [or Dicrotophos]	141-66-2	8270	10	EMMI
Bis(2-chloroethyl)ether	111-44-4	8270	10	Lab
Bis(2-chloroisopropyl)ether [or Bis(2-chloro-1-metylethyl)ether]	108-60-1	8270	10	Lab
Bis(2-ethylhexyl)phthalate [orDEHP]	117-81-7	8270	10	Lab
Bromate	15541-45-4	300.0	0.1	Method
Carbazole	86-74-8	8270	10	Lab
Chlorobenzilate	510-15-6	8081	0.8	EMMI
Chloronitrobenzene, p-	100-00-5	8091	4	COMPQAP
Chlorophenol, 4-	106-48-9	1653	5	NEMI
Cumene [or Isopropyl benzene]	98-82-8	8260	2	Lab
Cyanazine	21725-46-2	629	24	EMMI
Demeton	8065-48-3	8141	1	Lab
Dibenz(a,h)anthracene	53-70-3	8310	0.2	Lab
Dibromochloromethane	124-48-1	8260	2	Lab
Dichlorobenzidine, 3,3'-	91-94-1	8270	50	Lab
Dichlorodiphenyltrichloroethane, p,p'- [or DDT, 4, 4'-]	50-29-3	8081	0.2	DEP
Dichlorophenol, 2,4-	120-83-2	8270	10	Lab
Dichlorophenol, 2,6-	87-65-0	8270	10	Lab
Dichloropropene, 1,3-	542-75-6	8260	2	Lab

Dichlorvos	62-73-7	8141	0.5	Lab
Dicofol [or Kelthane]	115-32-2	8081	1	Lab
Dieldrin	60-57-1	8081	0.1	DEP
Diethylstilbestrol	56-53-1	8270	20	NEMI
Dimethoxybenzidine,3,3-	119-90-4	8270	100	EMMI
Dimethylbenzidine, 3,3'-	119-93-7	8270	10	EMMI
Dinitrobenzene, 1,2- (o)	528-29-0	8270	10	Lab
Dinitrobenzene, 1,3- (m)	99-65-0	8270	10	Lab
Dinitrobenzene, 1,4- (p)	100-25-4	8270	10	Lab
Dinitro-o-cyclohexylphenol	131-89-5	8270	100	EMMI
Dinitrophenol, 2,4-	51-28-5	8270	60	DEP
Dinitrotoluene, 2,4-	121-14-2	8330	0.2	Lab
Dinitrotoluene,2,6-	606-20-2	8270	10	EMMI
Dioxane, 1,4-	123-91-1	8270	10	Lab
Diphenylhydrazine, 1,2-	122-66-7	8270	10	EMMI
Disulfoton	298-04-4	8141	0.4	DEP
Ethyl p-nitrophenyl phenylphosphorothioate [or EPN]	2104-64-5	8141	0.5	Lab
Ethylene oxide	75-21-8	8260	600	Lab
Ethylene thiourea [or ETU]	96-45-7	509	11	EMMI
Furfural	98-01-1	1667	50	EMMI
Hexachloro-1,3-butadiene	87-68-3	8260	3	Lab
Hexachlorocyclohexane, alpha- [or BHC, alpha-]	319-84-6	8081	0.05	Lab
Hexachlorocyclohexane, beta- [BHC, beta-]	319-85-7	8081	0.05	Lab
Hexachloroethane	67-72-1	8270	10	EMMI
Hexachlorophene	70-30-4	8321	30	Lab
Hexahydro-1,3,5-trinitro-1,3,5-triazine [orRDX]	121-82-4	8330	14	EMMI
Hexane, n-	110-54-3	1666	10	Emmi
Indeno(1,2,3-cd)pyrene	193-39-5	8310	0.2	Lab
Kepone	143-50-0	8270	6	Lab
Maneb	12427-38-2	630	60	EMMI
Merphos	150-50-5	8141	2	EMMI
Merphos oxide	78-48-8	1657	2	EMMI
Methacrylonitrile	126-98-7	8260	10	Lab
Methamidophos	10265-92-6	1657	0.5	DEP
Methidathion	950-37-8	614	2	DEP
Methoxy-5-nitroaniline, 2-	99-59-2	8270	10	EMMI
Methoxyethanol, 2-	109-86-4	1671	20	EMMI
Methyl-5-nitroaniline, 2-	99-55-8	8270	10	EMMI
Methylaniline, 2-	95-53-4	8270	10	EMMI
Methylene bis(2-chloroaniline), 4,4-	101-14-4	8270	100	Lab

Methylphenol, 4- [or p-Cresol]	106-44-5	8270	10	EMMI
Mevinphos	7786-34-7	8141	7	Lab
Naphthylamine, 2-	91-59-8	8270	10	EMMI
Nitroaniline, m-	99-09-2	8270	50	Lab
Nitroaniline, o-	88-74-4	8270	50	Lab
Nitroaniline, p-	100-01-6	8270	50	Lab
Nitrobenzene	98-95-3	8270	10	EMMI
Nitroso-di-ethylamine, N-	55-18-5	8270	10	Lab
Nitroso-dimethylamine, N-	62-75-9	8270	10	Lab
Nitroso-di-n-butylamine, N-	924-16-3	8270	10	Lab
Nitroso-di-n-propylamine, N-	621-64-7	8270	10	Lab
Nitrso-diphenylamine, N-	86-30-6	8270	10	Lab
Nitroso-N-methylethylamine, N-	10595-95-6	8270	10	Lab
Nitrosopyrrolidine, N-	930-55-2	8270	10	Lab
Octamethylpyrophosphoramide	152-16-9	8270	200	EMMI
PCBs [or Aroclor mixture]	1336-36-3	8082	1	COMPQAP
Pentachlorobenzene	608-93-5	8270	10	EMMI
Pentachloronitrobenzene	82-68-8	8081	0.3	EMMI
Pyridine	110-86-1	8270	20	Lab
Strychnine	57-24-9	8270	40	EMMI
Terbufos	13071-79-9	614	0.3	DEP
Tetrachlorobenzene, 1,2,4,5	95-94-3	8270	10	Lab
Tetrachloroethane, 1,1,2,2-	79-34-5	8260	2	Lab
Thiocyanomethylthio-benzothiazole,2- [or TCMTB]	21564-17-0	637	4	EMMI
Toluene-2,4-diamine	95-80-7	8270	1000	Lab
Trichlorophenol, 2,4,5-	95-95-4	8270	10	Lab
Trichlorophenol, 2,4,6-	88-06-2	8270	10	Lab
Trichloropropane, 1,2,3-	96-18-4	8260	2	Lab
Trimethyl phosphate	512-56-1	8270	10	EMMI
Trinitrotoluene, 2,4,6,-	118-96-7	8330	7	EMMI
White Phosphorous	7723-14-0	365.1	10	EMMI

DEP-Florida Department of Environmental Protection

PQL - Practical Quantitation Limit

Lab - values provided by comment from laboratories

EMMI - Environmental Methods Monitoring Index

NEMI - National Environmental Methods Index

CompQAP - Comprehensive Quality Assurance Plan

Method - Value obtained from the analytical method

[1] This table is not an exhaustive list of appropriate analytical methods. Laboratories may achieve target PQLs with other published analytical methods.

[2] The project laboratory cannot be expected to always meet the target PQLs due to analytical interferences or the nature of the sample.

[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

Table D
Freshwater Surface Water

CONTAMINANT	CAS #	Method	Target PQL (ug/L)	Source
Acenapthene	83-32-9	8270	10	EMMI
Acenaphthylene	208-96-8	8310	1	Lab
Acrolein	107-02-8	8260	20	Lab
Acrylonitrile	107-13-1	8260	20	Lab
Alachlor	15972-60-8	8081	3	DEP
Aldicarb [or Temik]	116-06-3	8318	6	DEP
Aldicarb sulfoxide	1646-87-3	8318	6	DEP
Aldrin	309-00-2	8081	0.05	Lab
Aluminum	7429-90-5	6010	200	DEP
Aniline	62-52-3	8270	6	Lab
Anthracene	120-12-7	8310	3	EMMI
Aramite	140-57-8	8270	20	NEMI
Baygon [or Propoxur]	114-26-1	8318	8	DEP
Benomyl	17804-35-2	631	2	DEP
Benzidine	92-87-5	8270	400	DEP
Benzo(a)anthracene	56-55-3	8310	0.2	Lab
Benzo(a)pyrene	50-32-8	8310	0.1	Lab
Benzo(b)fluoranthene	205-99-2	8310	0.1	Lab
Benzo(g,h,i)perylene	191-24-2	8310	0.2	Lab
Benzo(k)fluoranthene	207-08-9	8310	0.1	Lab
Benzotrichloride	98-08-7	8121	1	CompQAP
Beryllium	7440-41-7	6010	2	DEP
Bis(2-chloroethyl)ether	111-44-4	8270	10	Lab
Bis(2-ethylhexyl)phthalate [or DEHP]	117-81-7	8270	10	Lab
Carbaryl [or Sevin]	63-25-2	8318	6	DEP
Carbofuran	1563-66-2	8318	6	DEP
Carbophenothion [or Trithion]	786-19-6	8141	0.2	DEP
Chlordane (alpha+beta)	57-74-9	8081	0.8	Lab
Chlorine	7782-50-5	330.1	40	EMMI
Chloroaniline, p-	106-47-8	8270	10	Lab
Chlorobenzilate	510-15-6	8081	0.8	EMMI
Chlorpyrifos	2921-88-2	8141	0.5	Lab
Chlorpyrifos, methyl	5598-13-0	622	2	EMMI
Chrysene	218-01-9	8310	0.2	Lab
Coumaphos	56-72-4	8141	0.5	Lab
Cyanazine	21725-46-2	629	24	EMMI

Cyanide, free	57-12-5	9014	20	Method
Cypermethrin	52315-07-8	608	0.2	DEP
Demeton	8065-48-3	8141	1	Lab
Diazinon	333-41-5	8141	0.5	Lab
Dibenz(a,h)anthracene	53-70-3	8310	0.2	Lab
Dichlorobenzidine, 3,3'-	91-94-1	8270	50	Lab
Dichlorodiphenyldichloroethane, p,p' [or DDD, 4,4'-]	72-54-8	8081	0.08	DEP
Dichlorodiphenyldichloroethylene, p,p'- [or DDE, 4, 4']	72-55-9	8081	0.08	DEP
Dichlorodiphenyltrichloroethane, p,p'- [or DDT, 4, 4'-]	50-29-3	8081	0.2	DEP
Dichlorvos	62-73-7	8141	0.5	Lab
Dicofol [or Kelthane]	115-32-2	8081	1	Lab
Dieldrin	60-57-1	8081	0.1	DEP
Dimethoate	60-51-5	8141	1.1	Lab
Dinitrophenol, 2,4-	51-28-5	8270	60	DEP-PQL
Dinitrotoluene,2,6-	606-20-2	8270	10	EMMI
Dioxins, as total 2,3,7,8-TCDD equivalents	1746-01-6	8290	0.00001	Method
Diphenylhydrazine, 1,2-	122-66-7	8270	10	EMMI
Diquat	85-00-7	549.1	5	DEP
Disulfoton	298-04-4	8141	0.4	DEP
Endosulfan (alpha+beta)	115-29-7	8081	0.1	Lab
Endrin	72-20-8	8081	0.2	DEP
Ethion	563-12-2	614	0.4	EMMI
Ethoprop	13194-48-4	8141	0.8	NEMI
Ethyl p-nitrophenyl phenylphosphorothioate [or EPN]	2104-64-5	8141	0.5	Lab
Fenamiphos	22224-92-6	614	0.8	DEP
Fluoranthene	206-44-0	8310	1	EMMI
Fonofos	944-22-9	8141	0.4	DEP
Guthion [or Methyl azinphos]	86-50-0	8141	0.4	EMMI
Heptachlor	76-44-8	8081	0.05	Lab
Heptachlor epoxide	1024-57-3	8081	0.08	DEP
Hexachlorobenzene	118-74-1	8081	0.1	CompQAP
Hexachlorocyclohexane, alpha- [or BHC, alpha-]	319-84-6	8081	0.05	Lab
Hexachlorocyclohexane, beta- [BHC, beta-]	319-85-7	8081	0.05	Lab
Hexachlorocyclohexane, gamma- [or Lindane or BHC,gamma-]	58-89-9	8081	0.1	EMMI
Hexachloroethane	67-72-1	8270	10	EMMI
Hexachlorophene	70-30-4	8321	30	Lab
Hydrogen sulfide	7783-06-4	SM4500-S^2-D/	200	Method

		SM4500-S^2-H		
Indeno(1,2,3-cd)pyrene	193-39-5	8310	0.2	Lab
Malathion	121-75-5	8141	2	Lab
Mancozeb	8018-01-7	630	20	COMPQAP
Maneb	12427-38-2	630	60	EMMI
Merphos oxide	78-48-8	1657	2	EMMI
Methamidophos	10265-92-6	1657	0.5	DEP
Methidathion	950-37-8	614	2	DEP
Methomyl	16752-77-5	8318	7	EMMI
Methoxychlor	72-43-5	8081	0.2	DEP
Methyl parathion [or Parathion, methyl]	298-00-0	8141	0.5	EMMI
Metolachlor	51218-45-2	507	3	EMMI
Mevinphos	7786-34-7	8141	7	Lab
Mirex	2385-85-5	8081	0.08	DEP
Naled	300-76-5	8141	10	Lab
Nitroso-di-ethylamine, N-	55-18-5	8270	10	Lab
Nitroso-dimethylamine, N-	62-75-9	8270	10	Lab
Nitroso-di-n-butylamine, N-	924-16-3	8270	10	Lab
Nitroso-di-n-propylamine, N-	621-64-7	8270	10	Lab
Nitrso-diphenylamine, N-	86-30-6	8270	10	Lab
Nitroso-N-methylethylamine, N-	10595-95-6	8270	10	Lab
Parathion	56-38-2	8141	0.6	DEP
PCBs [or Aroclor mixture]	1336-36-3	8081	1	COMPQAP
Pentachlorobenzene	608-93-5	8270	7	Lab
Pentachloronitrobenzene	82-68-8	8081	0.3	EMMI
Permethrin	52645-53-1	8081	1	COMPQAP
Phenanthrene	85-01-8	8310	0.2	Lab
Phorate	298-02-2	8141	0.5	Lab
Phosmet	732-11-6	8141	4	EMMI
Pydrin [or Fenvalerate]	51630-58-1	8270	25	Lab
Pyrene	129-00-0	8310	2	EMMI
Resmethrin	10453-86-8	616	144	EMMI
Ronnel	299-84-3	8141	10	Lab
Rotenone	83-79-4	8321	5	Lab
Silver	7440-22-4	6020	1	Lab
Strychnine	57-24-9	8270	40	EMMI
Terbufos	13071-79-9	8141	0.3	DEP
Tetrachlorobenzene, 1,2,4,5	95-94-3	8270	10	Lab
Tetrachlorophenol, 2,3,4,6-	58-90-2	8270	50	Lab
Tetraethyl dithiopyrophosphate	3689-24-5	8141	0.3	EMMI
Thiocyanomethylthio-benzothiazole,2-	21564-17-0	637	4	EMMI

Thiram	137-26-8	630.1	10	EMMI
Toxaphene	8001-35-2	8081	3	DEP
Trichlorophenol, 2,4,6-	88-06-2	8270	10	Lab
Trichloropropane, 1,2,3-	96-18-4	8260	2	Lab
Zineb	12122-67-7	630.1	17	EMMI

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Method - Value obtained from the analytical method

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[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

Table E
Marine Surface Water

CONTAMINANT	CAS #	Method	Target PQL (ug/L)	Source
Acenapthene	83-32-9	8270	10	EMMI
Acenaphthylene	208-96-8	8310	1	Lab
Acrolein	107-02-8	8260	20	Lab
Acrylonitrile	107-13-1	8260	20	Lab
Alachlor	15972-60-8	8081	3	DEP
Aldicarb [or Temik]	116-06-3	8318	6	DEP
Aldicarb sulfoxide	1646-87-3	8318	6	DEP
Aldrin	309-00-2	8081	0.05	Lab
Aniline	62-52-3	8270	6	Lab
Anthracene	120-12-7	8310	3	EMMI
Aramite	140-57-8	8270	20	NEMI
Baygon [or Propoxur]	114-26-1	8318	8	DEP
Benomyl	17804-35-2	631	2	DEP
Benzidine	92-87-5	8270	400	DEP
Benzo(a)anthracene	56-55-3	8310	0.2	Lab
Benzo(a)pyrene	50-32-8	8310	0.1	Lab
Benzo(b)fluoranthene	205-99-2	8310	0.1	Lab
Benzo(g,h,i)perylene	191-24-2	8310	0.2	Lab
Benzo(k)fluoranthene	207-08-9	8310	0.1	Lab
Benzotrichloride	98-08-7	8121	1	CompQAP
Beryllium	7440-41-7	6010	2	DEP
Bis(2-chloroethyl)ether	111-44-4	8270	10	Lab
Bis(2-ethylhexyl)phthalate [or DEHP]	117-81-7	8270	10	Lab
Carbaryl [or Sevin]	63-25-2	8318	6	DEP
Carbofuran	1563-66-2	8318	6	DEP
Carbophenothion [or Trithion]	786-19-6	8141	0.2	DEP
Chlordane (alpha+beta)	57-74-9	8081	0.8	Lab
Chlorine	7782-50-5	330.1	40	EMMI
Chloroaniline, p-	106-47-8	8270	10	Lab
Chlorobenzilate	510-15-6	8081	0.8	EMMI
Chlorpyrifos	2921-88-2	8141	0.5	Lab
Chlorpyrifos, methyl	5598-13-0	622	2	EMMI
Chrysene	218-01-9	8310	0.2	Lab
Coumaphos	56-72-4	8141	0.5	Lab

Cyanazine	21725-46-2	629	24	EMMI
Cyanide, free	57-12-5	335.4	20	DEP
Cypermethrin	52315-07-8	608	0.2	DEP
Demeton	8065-48-3	8141	1	Lab
Diazinon	333-41-5	8141	0.5	Lab
Dibenz(a,h)anthracene	53-70-3	8310	0.2	Lab
Dichlorobenzidine, 3,3'-	91-94-1	8270	50	Lab
Dichlorodiphenyldichloroethane, p,p' [or DDD, 4,4'-]	72-54-8	8081	0.08	DEP
Dichlorodiphenyldichloroethylene, p,p'- [or DDE, 4, 4']	72-55-9	8081	0.08	DEP
Dichlorodiphenyltrichloroethane, p,p'- [or DDT, 4, 4'-]	50-29-3	8081	0.2	DEP
Dichlorvos	62-73-7	8141	0.5	Lab
Dicofol [or Kelthane]	115-32-2	8081	1	Lab
Dieldrin	60-57-1	8081	0.1	DEP
Dimethoate	60-51-5	8141	1.1	Lab
Dinitrophenol, 2,4-	51-28-5	8270	60	DEP
Dinitrotoluene,2,6-	606-20-2	8270	10	EMMI
Dioxins, as total 2,3,7,8-TCDD equivalents	1746-01-6	8290	0.00001	EMMI
Diphenylhydrazine, 1,2-	122-66-7	8270	10	EMMI
Diquat	85-00-7	549.1	5	DEP
Disulfoton	298-04-4	8141	0.4	DEP
Endosulfan (alpha+beta+sulfate)	115-29-7	8081	0.1	Lab
Endrin	72-20-8	8081	0.2	DEP
Ethion	563-12-2	614	0.4	EMMI
Ethoprop	13194-48-4	8141	0.8	NEMI
Ethyl p-nitrophenyl phenylphosphorothioate [or EPN]	2104-64-5	8141	0.5	Lab
Fenamiphos	22224-92-6	614	0.8	DEP
Fluoranthene	206-44-0	8310	1	EMMI
Fonofos	944-22-9	8141	0.4	DEP
Guthion [or Methyl azinphos]	86-50-0	8141	0.4	EMMI
Heptachlor	76-44-8	8081	0.05	Lab
Heptachlor epoxide	1024-57-3	8081	0.08	DEP
Hexachlorobenzene	118-74-1	8081	0.1	CompQAP
Hexachlorocyclohexane, alpha- [or BHC, alpha-]	319-84-6	8081	0.05	Lab
Hexachlorocyclohexane, beta- [BHC, beta-]	319-85-7	8081	0.05	Lab
Hexachlorocyclohexane, gamma- [or Lindane or BHC,gamma-]	58-89-9	8081	0.1	EMMI
Hexachloroethane	67-72-1	8270	10	EMMI
Hexachlorophene	70-30-4	8321	30	Lab
Hydrogen sulfide	7783-06-4	SM4500-S^2-D/	200	Method

		SM4500-S^2-H		
Indeno(1,2,3-cd)pyrene	193-39-5	8310	0.2	Lab
Malathion	121-75-5	8141	2	Lab
Mancozeb	8018-01-7	630	20	COMPQAP
Maneb	12427-38-2	630	60	EMMI
Merphos oxide	78-48-8	1657	2	EMMI
Methamidophos	10265-92-6	1657	0.5	DEP
Methidathion	950-37-8	614	2	DEP
Methomyl	16752-77-5	8318	7	EMMI
Methoxychlor	72-43-5	8081	0.2	DEP
Methyl parathion [or Parathion, methyl]	298-00-0	8141	0.5	EMMI
Metolachlor	51218-45-2	507	3	EMMI
Mevinphos	7786-34-7	8141	7	Lab
Mirex	2385-85-5	8081	0.08	DEP
Naled	300-76-5	8141	10	Lab
Nitroso-di-ethylamine, N-	55-18-5	8270	10	Lab
Nitroso-dimethylamine, N-	62-75-9	8270	10	Lab
Nitroso-di-n-butylamine, N-	924-16-3	8270	10	Lab
Nitroso-di-n-propylamine, N-	621-64-7	8270	10	Lab
Nitrso-diphenylamine, N-	86-30-6	8270	10	Lab
Nitroso-N-methylethylamine, N-	10595-95-6	8270	10	Lab
Parathion	56-38-2	8141	0.6	DEP
PCBs [or Aroclor mixture]	1336-36-3	8081	1	COMPQAP
Pentachlorobenzene	608-93-5	8270	7	Lab
Pentachloronitrobenzene	82-68-8	8081	0.3	EMMI
Permethrin	52645-53-1	608	1	COMPQAP
Phenanthrene	85-01-8	8310	0.2	Lab
Phorate	298-02-2	8141	0.5	Lab
Phosmet	732-11-6	8141	4	EMMI
Pydrin [or Fenvalerate]	51630-58-1	8270	25	Lab
Pyrene	129-00-0	8310	2	EMMI
Resmethrin	10453-86-8	616	144	EMMI
Ronnel	299-84-3	8141	10	Lab
Rotenone	83-79-4	8321	5	Lab
Silver	7440-22-4	6020	1	Lab
Strychnine	57-24-9	8270	40	EMMI
Terbufos	13071-79-9	8141	0.3	DEP
Tetrachlorobenzene, 1,2,4,5	95-94-3	8270	10	Lab
Tetrachlorophenol, 2,3,4,6-	58-90-2	8270	50	Lab
Tetraethyl dithiopyrophosphate	3689-24-5	8141	0.3	EMMI
Thiocyanomethylthio-benzothiazole, 2-	21564-17-0	637	4	EMMI

Thiram	137-26-8	630.1	10	EMMI
Toxaphene	8001-35-2	8081	3	DEP
Trichlorophenol, 2,4,6-	88-06-2	8270	10	Lab
Trichloropropane, 1,2,3-	96-18-4	8260	2	Lab
Zineb	12122-67-7	630.1	17	EMMI

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Method - Value obtained from the analytical method

[1] This table is not an exhaustive list of appropriate analytical methods. Laboratories may achieve target PQLs with other published analytical methods.

[2] The project laboratory cannot be expected to always meet the target PQLs due to analytical interferences or the nature of the sample.

[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

Table F
Groundwater Low Yield and Poor Quality (GwLYPQ)

CONTAMINANT	CAS #	Method	Target PQL (ug/L)	Source
Acrylamide	79-06-1	8032	0.2	NEMI
Acrylonitrile	107-13-1	8260	20	Lab
Aldrin	309-00-2	8081	0.05	Lab
Anilazine [or Dyrene]	101-05-3	8270	100	NEMI
Benzenethiol	108-98-5	8270	100	Lab
Benzidine	92-87-5	8270	400	DEP
Benzotrichloride	98-08-7	8121	1	CompQAP
Bidrin [or Dicrotophos]	141-66-2	8270	10	EMMI
Bis(2-chloroethyl)ether	111-44-4	8270	10	Lab
Bis(2-chloroisopropyl)ether [or Bis(2-chloro-1-metylethyl)ether]	108-60-1	8270	10	Lab
Chlorophenol, 4-	106-48-9	1653	5	NEMI
Cyanazine	21725-46-2	629	24	EMMI
Dibenz(a,h)anthracene	53-70-3	8310	0.2	Lab
Dichlorobenzidine,3,3'-	91-94-1	8270	50	Lab
Dichlorophenol, 2,4-	120-83-2	8270	10	Lab
Dichlorophenol, 2,6-	87-65-0	8270	10	Lab
Dicofol [or Kelthane]	115-32-2	8081	1	Lab
Dieldrin	60-57-1	8081	0.1	DEP
Diethylstilbestrol	56-53-1	8270	20	NEMI
Dimethoxybenzidine, 3,3'-	119-90-4	8270	100	NEMI
Dimethylbenzidine, 3,3'-	119-93-7	8270	30	Lab
Dinitrobenzene, 1,3- (m)	99-65-0	8270	10	Lab
Dinitrotoluene,2,6-	606-20-2	8270	10	EMMI
Diphenylhydrazine, 1,2-	122-66-7	8270	10	EMMI
Ethylene oxide	75-21-8	8260	600	Lab
Ethylene thiourea [or ETU]	96-45-7	509	11	EMMI
Hexachlorophene	70-30-4	8321	30	Lab
Hexahydro-1,3,5-trinitro-1,3,5-triazine [orRDX]	121-82-4	8330	14	EMMI
Kepone	143-50-0	8270	0.06	Lab
Methacrylonitrile	126-98-7	8260	10	Lab
Methoxy-5-nitroaniline, 2-	99-59-2	8270	10	EMMI
Methoxyethanol, 2-	109-86-4	1671	20	EMMI

Methylaniline, 2-	95-53-4	8270	10	EMMI
Methylene bis(2-chloroaniline), 4,4-	101-14-4	8270	100	Lab
Naphthylamine, 2-	91-59-8	8270	10	EMMI
Nitroaniline, m-	99-09-2	8270	50	Lab
Nitroaniline, p-	100-01-6	8270	50	Lab
Nitroso-di-ethylamine, N-	55-18-5	8270	10	Lab
Nitroso-dimethylamine, N-	62-75-9	8270	10	Lab
Nitroso-di-n-butylamine, N-	924-16-3	8270	10	Lab
Nitroso-di-n-propylamine, N-	621-64-7	8270	10	Lab
Nitroso-N-methylethylamine, N-	10595-95-6	8270	10	Lab
Nitrosopyrrolidine, N-	930-55-2	8270	10	Lab
Octamethylpyrophosphoramide	152-16-9	8270	200	EMMI
Strychnine	57-24-9	8270	40	Method
Toluene-2,4-diamine	95-80-7	8270	1000	Lab
Trichloropropane, 1,2,3-	96-18-4	8260	2	Lab
White Phosphorous	7723-14-0	365.1	10	DEP

DEP-Florida Department of Environmental Protection
PQL - Practical Quantitation Limit
Lab - values provided by comment from laboratories
EMMI - Environmental Methods Monitoring Index
NEMI - National Environmental Methods Index
CompQAP - Comprehensive Quality Assurance Plan
Method - Value obtained from the analytical method

[1] This table is not an exhaustive list of appropriate analytical methods. Laboratories may achieve target PQLs with other published analytical methods.

[2] The project laboratory cannot be expected to always meet the target PQLs due to analytical interferences or the nature of the sample.

[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

Table G
No Listed PQLs
(Soil)

Contaminant	CAS#	Analytical Method
Allyl alcohol	107-818-6	8260
Benzaldehyde	100-52-7	8315
Benzenethiol	108-98-5	8270
Bidrin [or Dicrotophos]	141-66-2	8141
Bromacil	314-40-9	1656
Bromoxynil	1689-84-5	8270
Chloramben	133-90-4	8151
Chloronitrobenzene, p-	100-00-5	8091
Chlorophenol, 3-	108-43-0	8041
Chlorophenol, 4-	106-48-9	8041
Crotonaldehyde	123-73-9	8260
Cymene, p	99-87-6	8260
Dichlorophenol, 2,3-	576-24-9	8041
Dichlorophenol, 2,5-	583-78-8	8041
Dichlorophenol, 3,4-	95-77-2	8041
Dimethoxybenzidine, 3,3'-	119-90-4	8270
Dimethylformamide, N,N-	68-12-2	1625
Dimethylphenol, 3,4,-	95-65-8	8041
Dinitrobenzene, 1,2- (o)	528-29-0	8270
Epichlorohydrin	106-89-8	8260
Furfural	98-01-1	1667
Hexachlorophene	70-30-4	8270
Hydroquinone	123-31-9	8270
Methanol	67-56-1	8260
Methoxy-5-nitroaniline, 2-	99-59-2	8270
Octamethylpyrophosphoramide	152-16-9	8270
Phosmet	732-11-6	8270
Phthalic anhydride	85-44-9	8270
Propanil	709-98-8	1656
Propazine	139-40-2	1656
Terbacil	5902-51-2	1656
Trichlorobenzene, 1,3,5-	108-70-3	8121
Trimethyl phosphate	512-56-1	8270

PQL - Practical Quantitation Limit

[1] This table is not an exhaustive list of appropriate analytical methods. Laboratories may achieve target PQLs with other published analytical methods.

[2] The project laboratory cannot be expected to always meet the target PQLs due to analytical interferences or the nature of the sample.

[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

Table H
No Listed Method
(Soil)

Contaminate	CAS#
Acifluorfen, sodium [or Blazer]	6247-65-99
Acrylamide	79-06-1
Aluminum phosphide	20859-73-8
Ally [or Metsulfuron, methyl]	74223-64-6
Bayleton	43121-43-3
Benomyl	17804-35-2
Bis(2-ethylhexyl)adipate	103-21-1
Bisphenol A	80-05-7
Calcium cyanide	592-01-8
Carboxin	5234-68-4
Chlorine cyanide [or Cyanogen chloride]	506-77-4
Chloroacetic acid	79-11-8
Chloropropane, 2-	75-29-6
Chromium(trivalent)	16065-83-1
Cyanide, free	57-12-5
Cyanogen	460-19-5
Cycloate	1134-23-2
Cyclohexylamine	108-91-8
Cyhalothrin [0r Karate]	68085-85-8
Decabromodiphenyl ether	1163-19-5
Dibromobenzene, 1,4-	106-37-6
Dichloroacetic acid	79-43-6
Dichloroacetonitrile	3018-12-0
Diethylene glycol, monoethyl ether	111-90-0
diisopropyl methylphosphonate	1445-75-6
Dimethoxybenzidine, 3,3-	119-90-4
Dimethylaniline, 2,4-	95-68-1
Dimethylaniline, N,N-	121-69-7
Dimethrin	70-38-2
Diphenamid	957-51-7
Diquat	85-00-7
Endothall	145-73-3

Ethanol	64-17-5
Ethoxyethanol, 2-	110-80-5
Ethyl acrylate	140-88-5
Ethyl dipropylthiocarbamate, S- [or EPTC]	759-94-4
Ethylene diamine	107-15-3
Ethylene glycol	107-21-1
ETU [Ethylene thiourea]	96-45-7
Ethylphthalyl ethylglycolate [or EPEG]	84-72-0
Fluoridone	59756-60-4
Furfural	98-01-1
Glycidaldehyde	765-34-4
Glyphosate [or Roundup]	1071-83-6
Hexane, n-	110-54-3
Hexazinone	51235-04-2
Maneb	12427-38-2
Methyl acetate	79-20-9
Methyl acrylate	96-33-3
Molinate	2212-67-1
Nitroglycerin	55-63-0
Oxamyl	23135-22-0
Paraquat	1910-42-5
Pebulate	1114-71-2
Phenylphenol, 2-	90-43-7
Propylene glycol	57-55-6
Propylene oxide	75-56-9
Pydrin [or Fenvalerate]	51630-58-1
Resmethrin	10453-86-8
Terbacil	5902-51-2
Terbutryn	886-50-0
Thiobencarb	28249-77-6
Thiram	137-26-8
Toluidine, p	106-49-0
Triallate	2303-17-5
Tributyltin oxide	56-35-9
Trichloroacetic acid	76-03-9
Trichloropropene, 1,2,3-	96-19-5
Uranium, soluble salts	7440-61-1
Zinc phosphide	1314-84-7

Zineb	12122-67-7

PQL - Practical Quantitation Limit

[1] This table is not an exhaustive list of appropriate analytical methods. Laboratories may achieve target PQLs with other published analytical methods.

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[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

Table I
Residential
(Soil)

Contaminant	CAS#	Analytical Method	Target PQL mg/kg	Source
Acrolein	107-02-8	8260	0.10	CompQAP
Benzidine	92-87-5	8270	5.2	DEP
Dimethylbenzidine, 3,3'-	119-99-37	8270	0.40	CompQAP
Dinitrobenzene, 1,4- (p)	100-25-4	8270	1.6	COMPQAP
Ethylene oxide	75-21-8	8260	3.5	COMPQAP
Methylene bis(2-chloroaniline), 4,4-	101-14-4	8270	0.17	COMPQAP
Nitroso-di-ethylamine, N-	55-18-5	8270	0.24	DEP
Nitroso-dimethylamine, N-	62-75-9	8270	0.24	DEP
Nitroso-di-n-butylamine, N-	924-16-3	8270	0.24	DEP
Nitroso-di-n-propylamine, N-	621-64-7	8270	0.24	DEP
Nitroso-N-methylethylamine, N-	10595-95-6	8270	0.24	DEP

DEP - Department of Environmental Protection Laboratory
COMPQAP - Comprehensive Quality Assurance Plan

[1] This table is not an exhaustive list of appropriate analytical methods. Laboratories may achieve target PQLs with other published analytical methods.

[2] The project laboratory cannot be expected to always meet the target PQLs due to analytical interferences or the nature of the sample.

[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

Table J
Commercial / Industrial
(Soil)

Contaminant	CAS#	Analytical Method	Target PQL mg/kg	Source
Benzidine	92-87-5	8270	5.2	DEP
Dinitrobenzene, 1,4- (p)	100-25-4	8270	1.6	COMPQAP
Ethylene oxide	75-21-8	8260	3.5	COMPQAP
Nitroso-di-ethylamine, N-	55-18-5	8270	0.24	DEP
Nitroso-dimethylamine, N-	62-75-9	8270	0.24	DEP
Nitroso-di-n-butylamine, N-	924-16-3	8270	0.24	DEP
Nitroso-di-n-propylamine, N-	621-64-7	8270	0.24	DEP
Nitroso-N-methylethylamine, N-	10595-95-6	8270	0.24	DEP

DEP - Department of Environmental Protection Laboratory
COMPQAP - Comprehensive Quality Assurance Plan

[1] This table is not an exhaustive list of appropriate analytical methods. Laboratories may achieve target PQLs with other published analytical methods.

[2] The project laboratory cannot be expected to always meet the target PQLs due to analytical interferences or the nature of the sample.

[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

Table K
Groundwater-Leachability
(Soil)

Contaminates	CAS#	Analytical Method	Target PQL mg/kg	Source
Acephate	30560-19-1	8141	0.13	DEP
Acetonitrile	75-05-8	8260	0.40	EMMI
Acrolein	107-02-8	8260	0.10	CompQAP
Acrylonitrile	107-13-1	8260	0.03	Lab
Alachlor	15972-60-8	8141	0.08	DEP
Aniline	62-53-3	8270	0.70	DEP
Benzidine	92-87-5	8270	5.2	DEP
Benzyl chloride	100-44-7	8260	0.10	EMMI
Biphenyl, 1,1- [or Diphenyl]	92-52-4	8270	0.70	CompQAP
Bis(2-chloroethyl)ether	111-44-4	8270	0.24	DEP
Bis(2-chloroisopropyl)ether [or Bis(2-chloro-1-metylethyl)ether]	108-60-1	8270	0.24	DEP
Bromodichloromethane	75-27-4	8260	0.005	EMMI
Chloroaniline, p-	106-47-8	8270	0.66	METHOD
Dibromo-3-chloropropane, 1,2- [or DBCP, 1,2-]	132-64-9	8260	0.01	COMPQAP
Dibromochloromethane	124-48-1	8260	0.005	EMMI
Dibromoethane, 1,2- [or EDB]	106-93-4	8260	0.005	EMMI
Dichlorobenzidine, 3,3'-	91-94-1	8270	0.66	METHOD
Dichlorophenol, 2,4-	120-83-2	8270	0.28	Lab
Dichlorophenol, 2,6-	87-65-0	8270	0.31	Lab
Dichloropropene, 1,3-	542-75-6	8260	O.OO5	EMMI
Dichlorvos	62-73-7	8141	0.05	Lab
Dicofol [or Kelthane]	115-32-2	8081	0.02	DEP
Dieldrin	60-57-1	8081	0.003	DEP

Dimethoate	60-51-5	8141	0.07	DEP
Dimethylbenzidine, 3,3'-	119-99-37	8270	0.40	CompQAP
Dinitrobenzene, 1-3- (m)	99-65-0	8270	0.25	Lab
Dinitrobenzene, 1,4- (p)	100-25-4	8270	1.6	COMPQAP
Dinitrophenol, 2,4-	51-28-5	8270	1.5	DEP
Dinitrotoluene, 2,4-	121-14-2	8270	0.24	DEP
Dinitrotoluene, 2,6-	606-20-2	8270	0.24	DEP
Dinoseb	88-85-7	8151	0.10	Lab
Dioxane, 1,4-	123-91-1	8270	0.06	DEP
Diphenylhydrazine, 1,2-	122-66-7	8270	0.24	DEP
Ethoprop	13194-48-4	8141	0.02	DEP
Ethyl p-nitrophenyl phenylphosphorothioate [or EPN]	2104-64-5	8141	0.04	COMPQAP
Ethylene oxide	75-21-8	8260	3.5	COMPQAP
Fenamiphos	22224-92-6	8141	0.06	DEP
Fensulfothion	115-90-2	8141	0.05	Lab
Hexachlorocyclohexane, alpha- [or BHC, alpha]	319-84-6	8081	0.002	DEP
Hexachlorocyclohexane, beta- [or BHC, beta]]	319-85-7	8081	0.002	DEP
Hexahydro-1,3,5-trinitro-1,3,5-triazine [or RDX]	121-82-4	8330	0.50	COMPQAP
Isophorone	78-59-1	8270	0.24	DEP
Mercury	7439-97-6	7471	0.02	DEP
Mercury, methyl [or Methyl mercury]	22967-92-6	FDEP-HG-003-2+	0.003	DEP
Methacrylonitrile	126-98-7	8260	0.10	EMMI
Methamidophos	10265-92-6	8141	0.07	DEP
Methidathion	950-37-8	8141	0.04	DEP
Methyl-4-chlorophenoxy acetic acid, 2- [or MCPA]	94-74-6	8151	0.33	CompQAP
Methylaniline, 2-	95-53-4	8270	0.68	DEP
Methylene bis(2-chloroaniline), 4,4-	101-14-4	8270	0.17	COMPQAP

Mevinphos	7786-34-7	8141	0.03	DEP
Naled	300-76-5	8141	0.30	Lab
Nitroaniline, m-	99-09-2	8270	3.3	EMMI
Nitroaniline, o-	88-74-4	8270	0.24	DEP
Nitroaniline, p-	100-01-6	8270	0.24	DEP
Nitrobenzene	98-95-3	8270	0.24	DEP
Nitroso-di-ethylamine, N-	55-18-5	8270	0.24	DEP
Nitroso-dimethylamine, N-	62-75-9	8270	0.24	DEP
Nitroso-di-n-butylamine, N-	924-16-3	8270	0.24	DEP
Nitroso-di-n-propylamine, N-	621-64-7	8270	0.24	DEP
Nitroso-N-methylethylamine, N-	10595-95-6	8270	0.24	DEP
Pentachloronitrobenzene	82-68-8	8270	0.30	Lab
Phenol	108-95-2	8270	0.26	Lab
Phorate	298-02-2	8141	0.007	DEP
Pyridine	110-86-1	8270	0.24	DEP
Strychnine	57-24-9	8270	3.3	COMPQAP
Tetrachloroethane, 1,1,2,2-	79-34-5	8260	0.005	EMMI
Trichlorophenol, 2,4,5-	95-95-4	8270	0.24	DEP
Trichlorophenol, 2,4,6-	88-06-2	8270	0.24	DEP
Trichloropropane, 1,2,3-	96-18-4	8260	0.005	EMMI
Trinitrotoluene, 2,4,6-	118-96-7	8330	0.25	METHOD

DEP-Florida Department of Environmental Protection
PQL - Practical Quantitation Limit
Lab - values provided by comment from laboratories
EMMI - Environmental Methods Monitoring Index
NEMI - National Environmental Methods Index
CompQAP - Comprehensive Quality Assurance Plan
Method - Value obtained from the analytical method

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[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

Table L
Freshwater Surface Water-Leachability (Soil)

Contaminant	CAS#	Analytical Method	Target PQL mg/kg	Source
Acrolein	107-02-8	8260	0.10	CompQAP
Acrylonitrile	107-13-1	8260	0.03	Lab
Alachlor	15972-60-8	8141	0.08	DEP
Aldicarb [or Temik]	116-06-3	8318	0.02	DEP
Aniline	62-53-3	8270	0.70	DEP
Baygon [or Propoxur]	114-26-1	8318	0.02	DEP
Benzidine	92-87-5	8270	5.2	DEP
Benzyl chloride	100-44-7	8260	0.10	EMMI
Bis(2-chloroethyl)ether	111-44-4	8270	0.24	DEP
Carbaryl [or Sevin]	63-25-2	8318	0.02	DEP
Carbofuran	1563-66-2	8318	0.02	DEP
Chloroaniline, p-	106-47-8	8270	0.66	METHOD
Chlorobenzilate	510-15-6	8081	0.02	DEP
Chlorpyrifos	2921-88-2	8141	0.02	EMMI
Coumaphos	56-72-4	8141	0.04	EMMI
Cypermethrin	52315-07-8	8081	0.007	DEP
Diazinon	333-41-5	8141	0.05	Lab
Dibutyl phthalate	84-72-4	8270	1.6	DEP
Dichlorobenzidine, 3,3'-	91-94-1	8270	0.66	METHOD
Dichlorvos	62-73-7	8141	0.05	Lab
Dicofol [or Kelthane]	115-32-2	8081	0.02	DEP
Dieldrin	60-57-1	8081	0.003	DEP
Dimethoate	60-51-5	8141	0.07	DEP

Dinitrophenol, 2,4-	51-28-5	8270	1.5	DEP
Dinitrotoluene, 2,4-	121-14-2	8270	0.24	DEP
Dinitrotoluene, 2,6-	606-20-2	8270	0.24	DEP
Dinoseb	88-85-7	8151	0.10	Lab
Dioxins, as total 2,3,7,8,-TCDD equivalents	1746-01-6	8290	0.000001	Method
Diphenylhydrazine, 1,2-	122-66-7	8270	0.24	DEP
Endrin	72-20-8	8081	0.005	DEP
Ethion	563-12-2	8141	0.007	DEP
Ethoprop	13194-48-4	8141	0.02	DEP
Ethyl p-nitrophenyl phenylphosphorothioate [or EPN]	2104-64-5	8141	0.04	COMPQAP
Fenamiphos	22224-92-6	8141	0.06	DEP
Fensulfothion	115-90-2	8141	0.05	Lab
Fonofos	944-22-9	8141	0.02	DEP
Guthion [or Methyl azinphos]	86-50-0	8141	0.007	DEP
Heptachlor epoxide	1024-57-3	8081	0.002	DEP
Hexachlorobenzene	118-74-1	8270	0.24	DEP
Hexachlorocyclohexane, alpha- [or BHC, alpha]	319-84-6	8081	0.002	DEP
Hexachlorocyclohexane, beta- [or BHC, beta]]	319-85-7	8081	0.002	DEP
Hexachloroethane	67-72-1	8270	0.33	METHOD
Mercury	7439-97-6	7471	0.02	DEP
Methidathion	950-37-8	8141	0.04	DEP
Methomyl	16752-77-5	8318	0.01	COMPQAP
Methyl parathion [or Parathion, methyl]	298-00-0	8270	0.02	DEP
Methylaniline, 2-	95-53-4	8270	0.68	DEP
Metolachlor	51218-45-2	8141	0.07	DEP
Mevinphos	7786-34-7	8141	0.03	DEP
Naled	300-76-5	8141	0.30	Lab
Nitroso-di-ethylamine, N-	55-18-5	8270	0.24	DEP

Nitroso-dimethylamine, N-	62-75-9	8270	0.24	DEP
Nitroso-di-n-butylamine, N-	924-16-3	8270	0.24	DEP
Nitroso-di-n-propylamine, N-	621-64-7	8270	0.24	DEP
Nitroso-N-methylethylamine, N-	10595-95-6	8270	0.24	DEP
Parathion	56-38-2	8141	0.05	Lab
PCBs [or Aroclor mixture]	1336-36-3	8082	0.04	DEP
Pentachloronitrobenzene	82-68-8	8270	0.30	Lab
Permethrin	52645-53-1	8081	0.008	DEP
Phenol	108-95-2	8270	0.26	Lab
Phorate	298-02-2	8141	0.007	DEP
Selenium	7782-49-2	7741	2.0	DEP
Silver	7440-22-4	6010	0.40	DEP
Strychnine	57-24-9	8270	3.3	COMPQAP
Terbufos	13071-79-9	8141	0.007	DEP
Tetrachlorophenol, 2,3,4,6-	58-90-2	8270	0.25	Lab
Tetraethyl dithiopyrophosphate	3689-24-5	8141	0.02	EMMI
Toxaphene	8001-35-2	8081	0.10	DEP
Trichlorophenol, 2,4,6-	88-06-2	8270	0.24	DEP
Trichloropropane, 1,2,3-	96-18-4	8260	0.005	EMMI
Trinitrobenzene, 1,3,5-	99-35-4	8270	0.24	DEP

DEP - Department of Environmental Protection Laboratory
EMMI - Environmental Method monitoring Index
COMPQAP - Comprehensive Quality Assurance Plan
Method - Analytical Method
Lab - Provided by comments from laboratory

[1] This table is not an exhaustive list of appropriate analytical methods. Laboratories may achieve target PQLs with other published analytical methods.

[2] The project laboratory cannot be expected to always meet the target PQLs due to analytical interferences or the nature of the sample.

[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

Table M
Marine Surface Water-Leachability (Soil)

Contaminant	CAS#	Analytical Method	Target PQL mg/kg	Source
Acrolein	107-02-8	8260	0.10	CompQAP
Acrylonitrile	107-13-1	8260	0.03	Lab
Alachlor	15972-60-8	8141	0.08	DEP
Aldicarb [or Temik]	116-06-3	8318	0.02	DEP
Aniline	62-53-3	8270	0.70	DEP
Baygon [or Propoxur]	114-26-1	8318	0.02	DEP
Benzidine	92-87-5	8270	5.2	DEP
Benzyl chloride	100-44-7	8260	0.10	EMMI
Bis(2-chloroethyl)ether	111-44-4	8270	0.24	DEP
Carbaryl [or Sevin]	63-25-2	8318	0.02	DEP
Carbofuran	1563-66-2	83.18	0.02	DEP
Chloroaniline, p-	106-47-8	8270	0.66	METHOD
Chlorobenzilate	510-15-6	8081	0.02	DEP
Chlorpyrifos	2921-88-2	8141	0.02	EMMI
Coumaphos	56-72-4	8141	0.04	EMMI
Cypermethrin	52315-07-8	8081	0.007	DEP
Dibutyl phthalate	84-72-4	8270	1.6	DEP
Diazinon	333-41-5	8141	0.05	Lab
Dichlorobenzidine, 3,3'-	91-94-1	8270	0.66	METHOD
Dichlorvos	62-73-7	8141	0.05	Lab
Dicofol [or Kelthane]	115-32-2	8081	0.02	DEP
Dieldrin	60-57-1	8081	0.003	DEP
Dimethoate	60-51-5	8141	0.07	DEP
Dinitrophenol, 2,4-	51-28-5	8270	1.5	DEP

Dinitrotoluene, 2,4-	121-14-2	8270	0.24	DEP
Dinitrotoluene, 2,6-	606-20-2	8270	0.24	DEP
Dinoseb	88-85-7	8151	0.10	Lab
Dioxins, as total 2,3,7,8,-TCDD equivalents	1746-01-6	8290	0.000001	Method
Diphenylhydrazine, 1,2-	122-66-7	8270	0.24	DEP
Endosulfan (alpha+beta+sulfate)	115-29-7	8081	0.004	EMMI
Endrin	72-20-8	8081	0.005	DEP
Ethion	563-12-2	8141	0.007	DEP
Ethoprop	13194-48-4	8141	0.02	DEP
Ethyl p-nitrophenyl phenylphosphorothioate [or EPN]	2104-64-5	8141	0.04	COMPQAP
Fenamiphos	22224-92-6	8141	0.06	DEP
Fensulfothion	115-90-2	8141	0.05	Lab
Fonofos	944-22-9	8141	0.02	DEP
Guthion [or Methyl azinphos]	86-50-0	8141	0.007	DEP
Heptachlor epoxide	1024-57-3	8081	0.002	DEP
Hexachlorobenzene	118-74-1	8270	0.24	DEP
Hexachlorocyclohexane, alpha- [or BHC, alpha]	319-84-6	8081	0.002	DEP
Hexachlorocyclohexane, beta- [or BHC, beta]]	319-85-7	8081	0.002	DEP
Hexachloroethane	67-72-1	8270	0.33	METHOD
Mercury	7439-97-6	7471	0.02	DEP
Methidathion	950-37-8	8141	0.04	DEP
Methomyl	16752-77-5	8318	0.01	COMPQAP
Methyl parathion [or Parathion, methyl]	298-00-0	8270	0.02	DEP
Methylaniline, 2-	95-53-4	8270	0.68	DEP
Metolachlor	51218-45-2	8141	0.07	DEP
Mevinphos	7786-34-7	8141	0.03	DEP
Naled	300-76-5	8141	0.30	Lab

Nitroso-di-ethylamine, N-	55-18-5	8270	0.24	DEP
Nitroso-dimethylamine, N-	62-75-9	8270	0.24	DEP
Nitroso-di-n-butylamine, N-	924-16-3	8270	0.24	DEP
Nitroso-di-n-propylamine, N-	621-64-7	8270	0.24	DEP
Nitroso-N-methylethylamine, N-	10595-95-6	8270	0.24	DEP
Parathion	56-38-2	8141	0.05	Lab
PCBs [or Aroclor mixture]	1336-36-3	8082	0.04	DEP
Pentachloronitrobenzene	82-68-8	8270	0.30	Lab
Permethrin	52645-53-1	8081	0.008	DEP
Phenol	108-95-2	8270	0.26	Lab
Phorate	298-02-2	8141	0.007	DEP
Strychnine	57-24-9	8270	3.3	COMPQAP
Terbufos	13071-79-9	8141	0.007	DEP
Tetrachlorophenol, 2,3,4,6-	58-90-2	8270	0.25	Lab
Tetraethyl dithiopyrophosphate	3689-24-5	8141	0.02	EMMI
Toxaphene	8001-35-2	8081	0.10	DEP
Trichlorophenol, 2,4,6-	88-06-2	8270	0.24	DEP
Trichloropropane, 1,2,3-	96-18-4	8260	0.005	EMMI
Trinitrobenzene, 1,3,5-	99-35-4	8270	0.24	DEP

DEP-Florida Department of Environmental Protection
PQL - Practical Quantitation Limit
Lab - values provided by comment from laboratories
EMMI - Environmental Methods Monitoring Index
NEMI - National Environmental Methods Index
CompQAP - Comprehensive Quality Assurance Plan
Method - Value obtained from the analytical method

[1] This table is not an exhaustive list of appropriate analytical methods. Laboratories may achieve target PQLs with other published analytical methods.

[2] The project laboratory cannot be expected to always meet the target PQLs due to analytical interferences or the nature of the sample.

[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

Table N
GwLYPQ-Leachability
(Soil)

Contaminant	CAS#	Analytical Method	Target PQL mg/kg	Source
Acrylonitrile	107-13-1	8260	0.03	Lab
Aniline	62-53-3	8270	0.70	DEP
Benzidine	92-87-5	8270	5.2	DEP
Benzyl chloride	100-44-7	8260	0.10	EMMI
Bis(2-chloroethyl)ether	111-44-4	8270	0.24	DEP
Bis(2-chloroisopropyl)ether [or Bis(2-chloro-1-metylethyl)ether]	108-60-1	8270	0.24	DEP
Dibromoethane, 1,2- [or EDB]	106-93-4	8260	0.005	EMMI
Dichlorobenzidine, 3,3'-	91-94-1	8270	0.66	METHOD
Dichlorophenol, 2,4-	120-83-2	8270	0.28	Lab
Dichlorophenol, 2,6-	87-65-0	8270	0.31	Lab
Dichlorvos	62-73-7	8141	0.05	Lab
Dimethoate	60-51-5	8141	0.07	DEP
Dimethylbenzidine, 3,3'-	119-99-37	82.7	0.40	CompQAP
Dinitrobenzene, 1-3- (m)	99-65-0	8270	0.25	Lab
Dinitrobenzene, 1,4- (p)		82.7	1.6	COMPQAP
Dinitrophenol, 2,4-	51-28-5	8270	1.5	DEP
Dinitrotoluene, 2,4-	121-14-2	8270	0.24	DEP
Dinitrotoluene, 2,6-	606-20-2	8270	0.24	DEP
Diphenylhydrazine, 1,2-	122-66-7	8270	0.24	DEP
Ethylene oxide	75-21-8	8260	3.5	COMPQAP
Hexahydro-1,3,5-trinitro-1,3,5-triazine [or RDX]	121-82-4	8330	0.50	COMPQAP
Methamidophos	10265-92-6	8141	0.07	DEP
Methyl-4-chlorophenoxy acetic acid, 2-	94-74-6	8151	0.33	CompQAP

Methylaniline, 2-	95-53-4	8270	0.68	DEP
Methylene bis(2-chloroaniline), 4,4-	101-14-4	8270	0.17	COMPQAP
Nitroaniline, m-	99-09-2	8270	3.3	METHOD
Nitroaniline, p-	100-01-6	8270	0.24	DEP
Nitroso-di-ethylamine, N-	55-18-5	8270	0.24	DEP
Nitroso-dimethylamine, N-	62-75-9	8270	0.24	DEP
Nitroso-di-n-butylamine, N-	924-16-3	8270	0.24	DEP
Nitroso-di-n-propylamine, N-	621-64-7	8270	0.24	DEP
Nitroso-N-methylethylamine, N-	10595-95-6	8270	0.24	DEP
Strychnine	57-24-9	8270	3.3	COMPQAP
Trichloropropane, 1,2,3-	96-18-4	8260	0.005	EMMI
Trinitrotoluene, 2,4,6-	118-96-7	8330	0.25	METHOD

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[1] This table is not an exhaustive list of appropriate analytical methods. Laboratories may achieve target PQLs with other published analytical methods.

[2] The project laboratory cannot be expected to always meet the target PQLs due to analytical interferences or the nature of the sample.

[3] Depending on the data quality objectives the target PQLs may not always have to be met depending on the progress of the cleanup or cleanup goals for target compounds.

SITE ASSESSMENT GUIDANCE FOR FORMER AGRICULTURAL SITES IN MIAMI- DADE COUNTY

A. Background

Pesticides and herbicides are designed to be toxic to plants and animal pests. Because of their intrinsic toxicity, they can also be harmful to human health and/or the environment and can pose a risk to exposed populations through direct or indirect contact. The historical usage of these agrichemicals can result in the accumulation of residual amounts of these toxic chemicals in the environment.

The conversion of former agricultural lands into nonagricultural uses (e.g., residential land uses, schools, etc.), results in different exposed populations (e.g., expectant mothers, children, construction workers, etc.), different exposure scenarios (e.g., increased exposure frequency and duration, etc.), and different exposure pathways. Under these new scenarios, the residual agrichemical concentrations in the environment may pose an unacceptable health risk to exposed populations and have the potential to cause a nuisance or cause ground pollution or water pollution as defined in Section 24-5 of the Miami-Dade County Code (the Code). Therefore, as authorized by the Code, including but not limited to, Section 24-7(26) of the Code, as well as other provisions of the Code, as applicable, the Department requires testing/proper assessment and, if necessary, risk mitigation to ensure the protection of public health, safety, and welfare.

This guidance was developed in response to requests to provide environmental professionals and practitioners with clear guidance for evaluating potential environmental concerns at sites transitioning from a former bona fide agriculture land use (e.g., crops and orchards) to a non-agricultural land use, such as a residential use. One of the goals of providing this guidance is to help environmental practitioners to submit an approvable document the first time or at least minimize the number of resubmittals, thereby potentially reducing costs and time to the client/responsible party and facilitating a more streamlined and expedited Departmental review and approval process.

The guidance addresses areas historically utilized for growing agricultural crops and provides minimum requirements to characterize the site's environmental conditions resulting from historical agricultural activities at the site. It is important to note that based on changes in types of crops grown, agrichemicals used, and irrigation and pest management strategies, homogenous application of agrichemicals and distribution of agrichemical residues in soils and groundwater cannot be assumed. Ancillary use areas (e.g., agrichemical storage, mix-load areas, fuel storage areas, etc.) may require more targeted assessment and may include additional contaminants of concern (COCs). Furthermore, additional assessment may be necessary on a case-by-case basis for properties at which a non-agricultural land use predated the bona-fide agricultural use (e.g., landfill, military installation, etc.) or where the land use history indicates a period during which bona-fide agricultural use was interrupted by a non-agricultural use. Golf courses are not a bona-fide agriculture use and as such, conversions from golf courses to other uses would generally not be covered by this guidance. The patterns of agrichemical application, the types of agrichemicals used, irrigation patterns, and management practices, including stormwater, are significantly different at golf courses than at agricultural operations.

While this document provides generalized assessment guidelines, an environmental professional may still submit an alternate assessment plan, provided that supporting data and analysis (e.g., statistical evaluation, ASTM Phase I/Phase II results, etc.) is included, as may be appropriate based on site-specific conditions. Any alternative proposal shall be subject to the Department's review and approval prior to implementation.

Notwithstanding the general guidance provided herein, please note that nothing herein would preclude DERM from requesting additional assessment based, for example, on the results of the initial soil and groundwater sampling, site-specific concerns, and closure option.

B. Soil Assessment

1. Sampling Methodology

Soil sampling should be adequate to provide representative assessment of the entire property or portion of the property subject to the proposed land use change (the property). The Department acknowledges that the sampling frequency (approximately 1 sample every 20-50 feet) and methodologies (discrete sampling) typically employed for assessment at small (less than 1 acre) sites are not practical and would be cost prohibitive for the large acreages typical of agricultural land uses. The Department recognizes that the selected closure option and ultimate proposed land use for the property will impact the potential for exposure to agrichemical residuals in soil and hence the resulting potential risk. As an example, if a No Further Action with Conditions (NFAC) with Engineering Controls (EC) is selected as the site closure option early in the process, assessment activities may be more targeted to the property boundary or areas that will not be subjected to an EC or to facilitate contaminated soil management/soil reuse/safety plans. The Department will evaluate, for approval, any proposal for alternate sampling strategies based on site-specific information, including closure options, available historic land use and land practices information (e.g., ASTM Phase I and or Phase II information, historic agrichemical use, historical crops, phased approach, etc.,) provided adequate supporting data and justification is provided.

- Discrete sampling

  While discrete sampling is an option for soil assessment, this type of sampling may not be practical for large areas (i.e., more than 1 acre). If discrete sampling is utilized, the number of samples should be adequate to account for potential spatial variability in soil characteristics and heterogeneity in contaminant concentration distribution. As provided in the FDEP Guidance Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 62-777, F.A.C. (February 2005), if the 95% approach is utilized, the exposure unit (default 0.25 acres for residential lots), or areas which the receptors will have equivalent and random contact, must be accounted for. The number and placement of discrete soil samples should be based on an appropriately designed Conceptual Site Model (CSM) and established Data Quality Objectives (DQOs). The United States Environmental Protection Agency (USEPA) publication EPA/240/R-02/005 (December 2002) available at: https://www.epa.gov/sites/production/files/2015-06/documents/g5s-final.pdf is one of several available resources for guidance on sampling design for environmental data collection.

- Composite Sampling

Composite sampling should consist of a minimum of one composite sample per acre and should account for and include areas that represent the highest potential for contaminant accumulation (e.g., topographic lows, crop variations, etc.). Each composite sample should, at minimum, consist of eight (8) subsamples evenly distributed within each composite sampling area. The above referenced USEPA publication along with EPA publication EPA-230-R-95-005 (August 1995) available at https://www.epa.gov/sites/production/files/2016-03/documents/comp-samp.pdf provides guidance on composite sampling techniques.

It is recommended that a representative number of individual subsamples be retained/archived to allow for analysis of individual subsamples if the results of the composite sample exceed any applicable Soil Cleanup Target Level (SCTL) and more targeted assessment is deemed necessary (e.g., for COCs with Acute Toxicity Considerations-See Section 5).

- ISM

The size, layout, and number of increments of the Decision Units (and/or Sampling Units) for any ISM sampling plan should be based on the CSM. ISM sampling shall be conducted in accordance with the Interstate Technology & Regulatory Council's (ITRC's) Incremental Sampling Methodology (ISM) guidance document (February 2012 updated October 2020), https://ism-2.itrcweb.org/?_ga=2.225860249.2090615185.1625585772-207317260.1603892520

Since ISM sampling does not allow for subsequent analysis of individual subsamples, it is crucial that the sampling plan considers the use of supplemental sampling techniques (e.g., discrete sampling), especially in areas of potential contaminant accumulation/discharge (e.g., mixing tank/mix-load areas, agrichemical storage, low lying areas, etc.).

2. Sampling Intervals

Samples should be collected at 0-6 inch and 6-24 inches below land surface (bls) and each subsequent two (2) foot interval to the water table or to the competent limestone bedrock, whichever is shallower. Adequate documentation of the depth of the limestone bedrock is required (e.g., geotechnical survey, test pits, soil boring logs from samples that extend into the limestone, rock core or drill cutting photographs, drill blow counts, etc.).

3. Contaminants of Concern

Group A

i. Total Arsenic, Chromium, and Copper
ii. Organochlorine Pesticides (EPA method 8081 or equivalent)
iii. Synthetic precipitation leaching procedure (SPLP), if applicable (Section 4 below).

If the concentration of any COC in a composite or ISM sample exceeds any applicable SCTL, further analysis such as targeted discrete sampling for ISM samples or release of subsamples for composite samples may be necessary (e.g., if copper is a COC at the site, acute toxicity considerations will apply, as discussed in Section 5 below).

Group B

A subset (15%) of the collected soil samples from each interval shall also be analyzed for:

Lead and Manganese

Sampling locations for the subset of samples shall account for site-specific conditions that may favor contaminant accumulation (e.g., historical land use, topography, lithology, contaminant distribution, etc.).

If the concentration of any COCs analyzed in the subset of samples exceed their applicable SCTL, then the remaining samples (i.e., 85%) for that COC which exceeded applicable SCTL shall be analyzed.

4. SPLP

SPLP analysis is required if the total concentration of a COC exceeds the default leachability SCTL. For inorganics without a default leachability SCTL, SPLP analysis is required if the total concentration exceeds the applicable Miami-Dade County background concentration. If the site soil quality is approved by the Department to be consistent with background (see Section 7 below,) the potential impacts to groundwater shall be evaluated based on the groundwater assessment as per Groundwater Assessment section (Section C) below.

5. Acute Toxicity Considerations

COCs with direct exposure SCTLs, calculated based on acute toxicity (e.g., copper), may require modified sampling design (e.g., increased sampling frequency, discrete vs composite sampling, etc.,) to ensure that the exposure units (e.g., residential lot, etc.) are appropriately and adequately evaluated. Refer to http://publicfiles.dep.state.fl.us/DWM/FTP/DBS/Acute_Toxicity_Whitepaper_Apr20.pdf for additional information on COCs with acute toxicity modes of action.

For COCs with acute toxicity concerns, where ISM or composite sampling is utilized, the Department may request release of discrete samples/sub-samples for further analysis at a concentration below the applicable health-based concentration. The environmental professional may propose a maximum ISM/composite concentration below which the individual discrete samples that comprise the composite/ISM sample will not be reasonably expected to be a concern. The proposal should include appropriate and adequate supporting information and requires Department approval.

The Department recommends that the responsible party request that the analytical laboratory retain the samples for at least 30 days to facilitate conducting (as applicable based on initial sample results) leachability testing via SPLP and/or analysis for the additional COCs (as applicable) on the original samples. Based on the short holding time of some parameter groups, resampling may be required if leachability testing or additional analysis is deemed necessary.

While not required, submittal of a sampling plan to the Department for review and comment prior to implementation is highly recommended.

6. Assessment of Bioavailability from Soil

A risk-based soil cleanup target level includes an assumption regarding the relative oral bioavailability (RBA) of the chemical from soil. The RBA for a chemical from soil can vary from site-to-site depending upon a variety of factors including soil characteristics and the form of the chemical released to the environment. The default RBA for most chemicals is 1.0 (100%), although arsenic has a much lower default of 0.33 in Florida. The default RBA values must be used when deriving risk-based soil cleanup goals unless the responsible party develops site-specific RBA data using a method approved by the Department. Currently, EPA Method 1340 is available for estimating RBA for arsenic and lead based upon an in vitro extraction (see SW-846 Test Method 1340: https://www.epa.gov/hw-sw846/sw-846-test-method-1340-vitro-bioaccessibility-assay-lead-soil and Validation Assessment of In Vitro Arsenic Bio accessibility Assay for Predicting Relative Bioavailability of Arsenic in Soils and Soil-like Materials at Superfund Sites, U.S. EPA, OLEM 9355.4-29, April 20, 2017). The number of soil samples required to derive a site-specific RBA for arsenic and/or lead will depend upon the size of the site and variability in terms of soil characteristics and chemical releases. Guidance on sampling for this purpose is available from U.S. EPA (Guidance for Sample Collection for In Vitro bio accessibility Assay for Arsenic and Lead in Soil and Applications of Relative Bioavailability Data in Human Health Risk Assessments, January 4, 2021. https://semspub.epa.gov/work/HQ/100002711.pdf).

7. Special Note on Background Concentrations

"Background concentrations" means concentrations of contaminants that are naturally occurring or resulting from anthropogenic impacts unrelated to the discharge of pollutants or hazardous substances at a contaminated site undergoing site rehabilitation…", (62-780.200(3), Florida Administrative Code (FAC).

DERM, like the FDEP, allows for an evaluation of background concentrations at sites undergoing site rehabilitation:

"However, the Department shall not require site rehabilitation to achieve a CTL for an individual contaminant that is more stringent than the site-specific background concentration for that

contaminant or the best achievable detection limit for that contaminant." (62-780.650, FAC)

Responsible parties have the option of conducting a site-specific background study to demonstrate that the contaminants documented at the site are related to background conditions. However, to assist the public the Department has conducted and published the results of several countywide background studies; these studies are available for download at https://www.miamidade.gov/environment/research-reports.asp#4. The background study with most relevance to this Guidance is downloadable at https://www.miamidade.gov/environment/library/reports/2014-anthropogenic-background-study.pdf. The background concentrations are utilized to guide decisions regarding cleanup (e.g., delineation of impacted areas) at sites in Miami-Dade County, including former agricultural sites undergoing land use changes to non-agricultural uses. In utilizing the Miami-Dade County background information, the environmental professional shall evaluate the data with reference to site-specific data (e.g., population distribution consistency) to determine the need for a supplemental sub-regional background study. The site-specific background or supplemental sub-regional study shall be submitted for review and approval to the Department.

C. <u>Groundwater Assessment</u>

A representative number of shallow, properly constructed groundwater monitoring wells (refer to https://www.miamidade.gov/environment/library/instructions/risk-based-corrective-action.pdf - DERM's monitoring well construction guidance) shall be installed to evaluate groundwater conditions at the site.

1. Sampling Frequency

Generally, one well per acre is the minimum acceptable frequency. However, if an NFAC closure is pre-determined as the closure option early in the site rehabilitation process, groundwater assessment may be tailored to target property boundaries, with targeted assessment in areas proposed for drainage.

To help inform the locations of the required monitoring wells, DERM recommends that groundwater assessment be deferred pending the results of the soil assessment. Additionally, the monitoring well locations should be optimized to allow assessment in areas of proposed drainage (if known) (please see Attachment C of the Class II, III & VI Applications Guidance Drainage for Contaminated Sites at https://www.miamidade.gov/permits/library/class-2-3-6.pdf).

The Department shall evaluate for approval any proposal for alternate sampling strategies, based on site-specific information, including closure options, available historic land use and land practices information (e.g., ASTM Phase I and or Phase II information, historic agrichemical use, historical crops, phased approach, etc.,) provided adequate supporting data and justification is provided.

2. Contaminants of Concern

Group A

All samples shall be analyzed for:

i. Total Arsenic, Iron, and Manganese
ii. Nitrate and Nitrate-Nitrite

Group B

A subset (15%) of monitoring wells shall also be sampled for:

i. Chromium
ii. Organochlorine Pesticides
iii. Nitrites

Sampling locations for the subset of samples shall consider site-specific conditions that may favor contaminant accumulation (e.g., historical land use, topography, lithology, contaminant distribution, etc.).

If the concentration of any of the additional COCs analyzed in the subset of samples exceed the groundwater cleanup target level (GCTL), then the remaining monitoring wells (i.e., the other 85%) shall be sampled for the contaminant(s) that exceed the GCTL. The Department recommends that monitoring wells not be abandoned until such time DERM has given written approval that the wells are no longer required as part of site assessment/remediation activities.

D. General Guidance

1. Technical Reports

Technical reports submitted to the Department shall include, without limitation:

i. An excel file which includes a compilation of all available summary of the laboratory analytical data, and for each sampled interval and parameter,
ii. The coordinates of all the soil borings and monitoring well locations, the geographic coordinate system utilized, and any pertinent geo-referencing data shall be included with technical reports along with a scaled site map,
iii. Laboratory analytical reports, and
iv. A copy of all statistical analysis performed in support of derived conclusions.

2. Notification

DERM shall be notified in writing a minimum of three (3) working days prior to the implementation of any sampling or field activities. Email notifications shall be directed to DERMPCD@miamidade.gov. DERM has the option to split any samples deemed necessary with the consultant or laboratory at the subject site.

The consultant collecting the samples shall perform field sampling work in accordance with the Standard Operating Procedures provided in Chapter 62-160, FAC, as amended. The laboratory analyzing the samples shall perform laboratory analyses pursuant to the National Environmental Laboratory Accreditation Program (NELAP) certification requirements. If the data submitted exhibits a substantial variance from DERM split sample analysis, a complete resampling using two independent certified laboratories will be required.