

# **2022 Water Quality Report**

U.S. Army Corps of Engineers Saint Louis District

**Lake Shelbyville Water Quality Conditions: 1984-2022** 



**November 2023** 

Lake Shelbyville Water Quality Conditions: 1984-2022

## Prepared for

United States Army Corps of Engineers Saint Louis District 1222 Spruce Street Saint Louis, MO 63103-2833

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#### **EXECUTIVE SUMMARY**

The United States Army Corps of Engineers (USACE) commitment to environmental compliance and protection of estuaries, rivers, lakes, and navigable waters arises from the national policy and directives expressed in Federal Statutes, Executive Orders, and internal regulations. These regulations were designed to minimize pollution, maximize recreation, protect aesthetics, preserve natural resources, and promote the comprehensive planning and use of water bodies to enhance the public interest rather than private gain; therefore, USACE, in the design, construction, management, operation, and maintenance of its facilities, will exert leadership within existing authorities and appropriations in the nationwide effort to protect, enhance, and sustain the quality of the nation's resources. It is USACEs policy to comply with requirements of the Clean Water Act and not to degrade existing water quality conditions to the maximum extent that is practicable, consistent with project authorities, Federal legal and regulatory requirements, the public interest, and water control manuals.

The United States Army Corps of Engineers, Saint Louis District (CEMVS), implemented a water quality monitoring program during the 1970s to evaluate how its civil projects may be affecting water resources. Data collected from this effort serves as an invaluable tool for evaluating the significance of annual water quality measurements and tracking long-term trends. Water quality data is provided to the Missouri Department of Natural Resources and the Illinois Environmental Protection Agency to be used as a screening mechanism for the Missouri and Illinois Water Quality Report which is required every two years by the Clean Water Act Sections 303(d) and 305(b).

The National Water Quality Inventory Report to Congress (305(b) report) is the primary vehicle for informing law makers and the public about general water quality conditions in the United States. This document characterizes our water quality, identifies widespread water quality problems of national significance and describes various programs implemented to restore and protect our waters. Currently the Illinois Environmental Protection Agency (IEPA, 2020) has listed Lake Shelbyville impaired for total suspended solids, total phosphorus, and mercury. The impairments upstream of the lake include pesticides, mercury, PCBs, chloride, dissolved oxygen, bacteria, pH, and sedimentation. The impairments immediately downstream of the lake in the Kaskaskia River include pesticides, mercury, and bacteria. The lists of sources for these impairments are runoff, crop production, shore modifications, and recreational pollution.

Water quality sampling in 2022 revealed the following concerns at Lake Shelbyville: total phosphorus, iron, bacteria, temperature, and chlorophyll\_a.

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## INTRODUCTION

Lake Shelbyville is located in Shelby and Moultrie Counties of east-central Illinois with the dam site approximately one-half mile east of Shelbyville. Two rivers, the West Okaw and the Kaskaskia, drain into Lake Shelbyville. The Kaskaskia River begins in Champaign County, while the West Okaw headwaters drain farmland from Piatt County southward. At normal recreation pool, the 11,100 acre lake is approximately 20 miles long, varying in width from one-quarter to one mile. Average depth is 19 feet, with depths much deeper in the original river channel. The Kaskaskia River is an important and prominent natural feature in Central and Southwestern Illinois. The watershed, primarily agricultural, is the second largest river system within Illinois, originating in Champaign County and flowing in a southwesterly direction for approximately 292 miles, where it unites with the Mississippi River in Randolph County. The Kaskaskia River Watershed encompasses an area of 5,746 square miles (10.2% of the entire state). The CEMVS manages and operates two large reservoirs on the Kaskaskia River, Lake Shelbyville and Carlyle Lake, as well as the 36 mile long navigable channel and lock and dam at the Kaskaskia River Project.

Shelbyville Lake is managed and operated by the CEMVS for the authorized purposes of flood risk management, recreation, water supply, navigation, and fish and wildlife conservation. The lake serves as a heavy recreational usage lake. The land surrounding the lake is used predominately for agriculture. Surrounding communities have existing industrial/commercial operations and residents which discharge wastewater into municipal wastewater treatment plants that ultimately discharge treated water into the Kaskaskia River basin. Agricultural runoff and municipal wastewater treatment facilities are the primary potential source of pollution into the Lake Shelbyville watershed. Additional sources are marinas, recreational watercraft discharges and wildlife fecal material runoff.

Water quality is of paramount importance for sustaining ecological integrity and services provided by the Kaskaskia River and Lake Shelbyville. Water quality is influenced by a range of both point and nonpoint pollution sources, which may include natural processes, industrial and municipal effluents, and surface runoff from agricultural arenas.

The Saint Louis District USACE has implemented a Water Quality Management Plan (WQMP) as part of the operation and maintenance activities associated with managing USACEs' civil works projects throughout the District which includes, among other reservoirs and rivers, the Kaskaskia River and Lake Shelbyville. The WQMP addresses surface water quality management issues and adheres to the guidance and requirements specified by Clean Water Act (CWA), as well as the self-imposed Engineering Regulation (ER) 1110-2-8154, "Water Quality and Environmental Management for USACE Civil Works Projects" (USACE, 2018). Water quality monitoring is implemented to fulfill five primary objectives that drive the CEMVS WQMP:

- 1) Establish baseline conditions, identify significant water quality trends, and document problems and accomplishments.
- Ensure that surface water quality, as affected by CEMVS projects, is suitable for project purposes, existing water uses, public health and safety, and in compliance with applicable state and federal water quality standards.
- 3) Provide support to water control, project operations, and navigation for regulations and modifications.
- 4) Investigate special problems, design, and implement modifications, and improve water management procedures
- 5) Establish and maintain strong working partnerships and collaborations with appropriate entities within and outside USACE regarding water quality.

This report is intended to document and assess water quality conditions occurring at Lake Shelbyville. The report describes conditions observed in 2022, as well as baseline data collected from 1984-2021. Data are available upon request.

## LAKE SHELBYVILLE WQMP COVERAGE

The WQMP for Lake Shelbyville includes water samples taken at the following locations: major tributaries (SBV-12 and SBV-13), main body of the lake (SBV-2, SBV-4, SBV-11, and the marinas), and just downstream of the dam (SBV-1). See Table 1 and Figure 1 for site coordinates and a site map.

## Sample Location Summary Table

**Table 1: Sample Location Summary and Geographic Location (NAD 1983)** 

Sample Location Type	Abbreviation	Site Name	Latitude	Longitude
Major Tributary	TRIB	SBV-13	39.59417	-88.72651
	TRIB	SBV-12	39.57170	-88.55345
Main Reservoir Surface	RS	SBV-2	39.40947	-88.77614
	RS	SBV-4	39.53397	-88.60528
	RS	SBV-11	39.55269	-88.70556
	RS	SBV-FIN	39.52388	-88.70820
	RS	SBV-LS	39.42802	-88.75728
	RS	SBV-SUL	39.53635	-88.60675
Reservoir Benthic	RB	SBV-2-10	39.40947	-88.77614
Tail Race (below dam)	TR	SBV-1	39.40823	-88.78124

Samples at Marinas are not always taken in the exact same location.

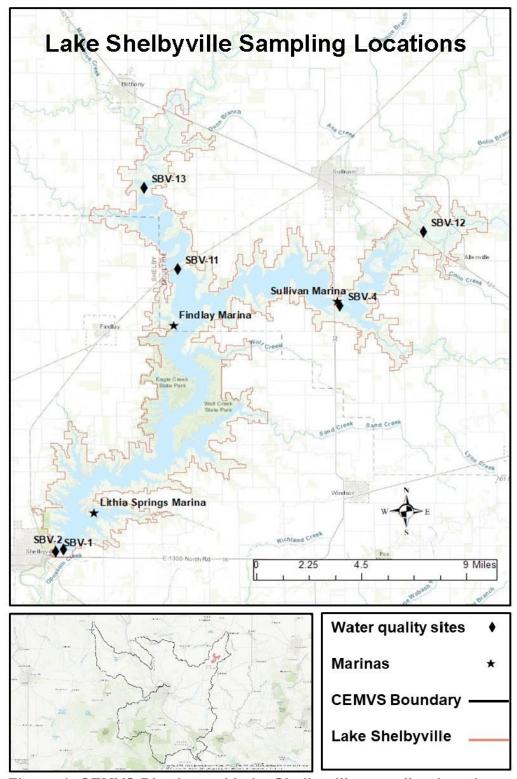


Figure 1. CEMVS District and Lake Shelbyville sampling locations.

## METHODS AND ANALYSIS: WATER QUALITY

#### Data Collection and Historical Reference Data

During 2022, water quality samples were collected and analyzed for 10 locations during four separate sampling events (n=40; Table 1). One duplicate sample was also collected during each sampling event for quality control purposes. Samples were collected from the upper one meter of the water column, preserved, and transported to the Applied Research and Development Laboratory (ARDL) in Mount Vernon, Illinois for analysis.

For the purpose of this report, historical reference data refers to water quality data collected during the previous years ranging as far back as 1984 (parameter dependent) at Lake Shelbyville. Historical reference data are intended to represent the current condition of Lake Shelbyville.

## Statistical Summary and Comparison to Applicable Water Quality Standards

Statistical analyses were performed on water quality monitoring data collected for 10 locations, and classified as TRIB (n= 2), RS (n=6), RB (n=1), and TR (n=1). Descriptive statistics were calculated to describe central tendencies and boxplots created to illustrate comparisons between groups. Monitoring results were compared to applicable water quality standard criteria established by the appropriate state agencies pursuant to the Federal Clean Water Act. If a state water quality standard criteria was not available, recommended criteria from the literature were considered.

Seasonal data are classified as: Winter (December 01 - March 14), Spring (March 15 – May 31), Summer (June 1 – September 15), Fall (September 16 – November 30).

## **Quality Assurance**

The United States Army Corps of Engineers, Saint Louis District quality assurance procedures considers two primary focus areas: (1) those that involve laboratory analysis of samples, and (2) those concerning the collection and processing of the water samples in the field.

Since 2012, ARDL has analyzed water quality samples for CEMVS. Their quality assurance program includes the use of quality control charts, check standards, field and in-house matrix spikes, laboratory blanks and performance evaluation samples. In addition, one blind duplicate sample is submitted for at least every 20 samples, or, in this case, every sampling event (one event/day at Lake Shelbyville has 6 samples and one duplicate).

Internal checks are also used for field sampling. This includes adherence to operating procedures for data collection and periodic evaluation of sampling personnel. Field sampling equipment and multimeters are calibrated/serviced in accordance with factory recommendations.

## Water Quality Parameters and Criteria

Parameters used to characterize water quality have been generally accepted criteria for assessing aquatic life and human health include:

Temperature (Temp) is important because it controls several aspects of water quality. Colder water holds more dissolved oxygen which is required by aquatic organisms. Plants grow more rapidly and use more oxygen in warmer water. Decomposition of organic matter which uses oxygen is accelerated in warmer water. Temperature can also determine the availability of toxic compounds such as ammonia. Since aquatic organisms are cold blooded, water temperature regulates their metabolism and ability to survive. The number and kinds of organisms that are found in streams or lakes is directly related to temperature. Certain organisms require a specific temperature range, such as Salmonids, which require water temperatures below 20°C. Water temperature criteria for warm water bodies in Illinois is within 2.8°C of the seasonal norm.

<u>Dissolved Oxygen (DO)</u> refers to the measurement of free oxygen molecules (O<sub>2</sub>) that are not bonded to any other elements; thus, oxygen bonded in water (H<sub>2</sub>O) would not be considered in a measurement of dissolved oxygen. Oxygen is dissolved in surface waters through interactions with the atmosphere and as a waste product of photosynthesis (CO<sub>2</sub> + H<sub>2</sub>O (CH<sub>2</sub>O) + O<sub>2</sub>) from phytoplankton and aquatic vegetation. Additional factors influencing DO include temperature, pressure, and salinity.

Dissolved oxygen is required for most aquatic life including fish, invertebrates, bacteria, and plants. Fish and invertebrates utilize DO for respiration through gills and cutaneous breathing, and plants

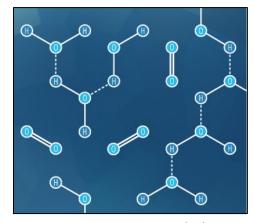


Figure 1: Dissolved oxygen  $(O_2)$  vs oxygen bonded in water  $(H_2O)$ .

require dissolved oxygen for respiration when photosynthesis is not possible. Smaller microbes and bacteria utilize DO for decomposition of organic material; a process essential for nutrient cycling. Bottom feeders such as worms and mussels can persist when DO is  $\geq 1 \text{mg/L}$ , while most inland fish species require a minimum DO of 4 mg/L. The DO water quality criteria for Illinois is  $\geq 5 \text{mg/L}$ .

<u>Potential of Hydrogen (pH)</u> is a measure of how acidic or basic water is. Potential of Hydrogen is reported on a logarithmic scale ranging from 0 – 14, with 7.0 being neutral. As pH increases from 7.0, water increases in alkalinity, whereas a decrease from 7.0

indicates an increase in acidity. Since pH is measured on a logarithmic scale, every one-unit change in pH indicates a 10-fold change in acidity; thus, a pH of 6.0 is ten times more acidic than a pH of 7.0 and a pH of 4.0 would be one-thousand times more than a pH of 7.0.

The pH of water varies considerably beyond the local level. Natural variation in bedrock and soil composition through which water moves has been reported as one of the most influential factors. Additional factors include decomposition of organic materials, acidity of local precipitation, discharge of effluents and chemicals, and mining operations.

Most freshwater streams and rivers have a natural pH ranging from 6 to 8. As pH approaches 5 (acidic), less tolerant fish and aquatic invertebrate assemblages may be extirpated, and a pH below 4.5 would be without most desired aquatic life. Conversely, when pH exceeds 9.5 (alkaline), aquatic fish and invertebrates begin to rapidly decrease and beyond 10, fish become extirpated. The pH water quality criteria for Illinois ranges from 6.5 - 9.0.

<u>Conductivity</u> is a measure of water's ability to conduct electrical current. In its purist form, water has a *near* neutral charge, indicating that it is an inefficient conductor of electrical current. Thus, the ability to carry electrical current is driven by water soluble ions (atoms and molecules with a charge) such as salts and other inorganic materials. Conductivity is also influenced by water temperature; as temperature increases, conductivity increases. For this reason, conductivity is commonly reported as Specific Conductivity (SpCond), which is the measurement of conductivity at 25 degrees Celsius.

Conductivity in streams and rivers is affected by the geology of the area. Streams running through granite tend to have lower conductivity due to granite being composed of inert material; materials that do not ionize or dissolve into ionic compounds in water. Conversely, streams that run through areas of limestone or clay soils tend to have higher conductivity readings because of the presence of materials that ionize. Conductivity is useful as a general measure of water quality. A stream tends to have a relatively constant range of conductivity that, once established, can be used as a baseline. Significant changes, either increases or decreases, might indicate a source of pollution has been introduced into the water. The pollution source could be a treatment plant, which raises the conductivity, or an oil spill, which would lower the conductivity. In general, there are no water quality criteria for SpCond. The District threshold of 500  $\mu$ S/cm is a rule of thumb value that is often associated with some form of biological impairment.

Oxidation Reduction Potential (ORP) is a measurement of the net status of all the oxidation and reduction reactions in a given water sample. Oxidation involves an exchange of electrons between 2 atoms. The atom that loses an electron is oxidized and the one that gains an electron is reduced. Oxidation reduction potential sensors measure the electrochemical potential between the solution and a reference electrode. Readings are expressed in millivolts. Positive readings indicate increased oxidizing

potential and negative readings increased reduction. Oxidation reduction potential values are used much like pH values to determine water quality. While pH readings characterize the state of a system relative to the receiving or donating hydrogen ions (base or acid), ORP readings characterize the relative state of losing or gaining electrons. Generally, ORP readings above 400mV are harmful to aquatic life; however, ORP is a non-specific measurement, which is a reflection of a combination of effects of all the dissolved materials in the water. Therefore, the measurement of ORP in relatively clean water has only limited utility unless a predominant redox-active material is known to be present.

Total Suspended Solids (TSS) concentrations, which cause the photosynthetic activity to be reduced by more than 10% from the seasonably established norm, can have a detrimental effect on aquatic life. Soil particles, organic material, and other debris comprise suspended solids in the water column. Turbidity (FNU) measurements are inverse to suspended solid measurements. As TSS increases, the FNU or water transparency decreases. Total suspended solids can be an important indicator of the type and degree of FNU. Total Suspended Solids measurements represent a combination of Volatile Suspended Solids (VSS), which consist of organic material, and Nonvolatile Suspended Solids (NVSS), which is comprised of inorganic mineral particles in the water. In order to more accurately determine the types and amounts of suspended solids, VSS are analyzed. Volatile suspended solid concentration represents the organic portion of the total suspended solids. Organic material often includes plankton, and additional plant and animal debris present in water. Total VSS indicates the presence of organics in suspension; and, therefore, show additional demand levels of oxygen. The Illinois Environmental Protection Agency suggests that generally NVSS above 15 mg/L could highly impair recreational lake use while NVSS of 3 to 7 mh/L may cause slight impairment (Hudson, 1998).

Total Organic Carbon (TOC) is a measure of the amount of organic carbon in a water body. In addition to natural organic substances, TOC includes insecticides and herbicides, as well as domestic and industrial waste. Industrial waste effluent may include carbon-containing compounds with various toxicity levels. Further, a high organic content means an increase in the growth of microorganisms which contribute to the depletion of oxygen supplies.

Currently, there are no state or federal water quality standard criteria set for TOC. Because carbon occurs naturally, its concentration varies based on physical and chemical attributes in a watershed; thus, this study relies on historical reference conditions to identify unfavorable conditions.

Metals Iron (TFe) and Manganese (TMn) (T=total) are nutrients for both plants and animals. Living organisms require trace amounts of metals. However, excessive amounts can be harmful to the organism. Heavy metals exist in surface waters in three forms, colloidal, particulate, and dissolved. Water chemistry determines the rate of adsorption and desorption of metals to and from sediment. Metals are desorbed from the sediment if the water experiences increases in salinity, decreases in redox potential,

or decreases in pH. Metals in surface waters can be from natural or human sources. Metal levels in surface water may pose a health risk to humans and the environment.

Pesticides are commonly used throughout much of the agricultural landscape that the Big Muddy River flows. This study considers one insecticide and seven herbicides. Atrazine and Alachlor herbicides are commonly used agricultural chemicals which can be readily transported by rainfall runoff. Both compounds are suspected of causing cancer; and therefore, were monitored for the protection of human and aquatic health. Herbicides which are pesticides used to kill vegetation are the most widely used and sampled. Two of the most widely used herbicides are Atrazine and Alachlor. Atrazine is a preemergence or postemergence herbicide use to control broadleaf weeds and annual grasses. Atrazine is most commonly detected in ground and surface water due to its wide use, and its ability to persist in soil and move in water. Alachlor is a Restricted Use Pesticide (RUP) due to the potential to contaminate groundwater. The water quality standards for the pesticides sampled are located in Table 2.

<u>Nitrogen</u> occurs naturally in water through several forms including nitrogen (N2), nitrite (NO2-N), nitrate (NO3-N), ammonia (NH3), and ammonium (NH4). Nitrates are the most commonly reported form of nitrogen and may have a meaningful influence on a water body's trophic status. Algae and other plants use NO3-N as a food source, thus excess levels of NO3-N can promote increases in algae production and hypereutrophic conditions.

In general, NO3-N does not have a *direct* effect on fish or aquatic insects. Illinois has set criteria standards for NO3-N to 10 mg/L to accommodate safe drinking waters for human and livestock; however, this threshold likely exceeds the concentration that is appropriate for assessing ecosystem health.

<u>Total Ammonia Nitrogen (TAN)</u> includes NH3 and NH4. Total ammonia nitrogen is a colorless gas with a strong pungent odor. Ammonia occurs naturally and is a biological requirement for aquatic life, however elevated concentrations can be toxic to freshwater organisms. Unnatural sources of ammonia include, accidental releases of ammonia rich fertilizer, effluent from sewage treatment plants, improper disposal of ammonia products, and livestock waste.

Toxic concentrations for freshwater organisms range from 0.53 – 22.8 mg/L, and are strongly dependent on both pH and temperature. In general, an increase in pH and/or temperature corresponds with an increase in toxicity. Additional information regarding the relationship between pH, temperature, and ammonia, as it relates to toxicity, can be reviewed in Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater (USEPA 2013).

<u>Total Phosphorus (TP)</u> is analyzed as phosphorus and has been monitored due to the potential for uptake by nuisance algae. Levels of phosphate can indicate the potential for rapid growth of algae (algae bloom) which can cause serious oxygen depletion during the algae decay process. Phosphorous is typically the limiting nutrient in a water

body; therefore, any addition of phosphorous to the ecosystem stimulates the growth of plants and algae. Phosphorous is delivered to lakes and streams by way of runoff from agricultural fields and urban environments. Other sources of phosphorous are anaerobic decomposition of organic matter, leaking sewer systems, and point source pollution. The general Illinois standard for phosphorous is (shall not exceed) 0.05 mg/L. Dissolved phosphorous, also called **Orthophosphate (PO<sub>4</sub>-P)** is generally found in much smaller concentrations than total phosphorous and is readily available for algal uptake. Orthophosphate concentrations in a water body vary widely over short periods of time as plants take it up and release it.

<u>Chlorophyll a (CHL a)</u> is a measure of the amount of algae growing in a waterbody, and therefore can be used to classify trophic status. Although algae are a natural part of freshwater ecosystems, too much algae can cause aesthetic problems such as green scums and bad odors and can result in decreased levels of DO.

<u>Pheophytin a (PHEO a)</u> is a natural degradation product or digestion of CHL\_a. The ratio of PHEO\_a to CHL\_a can provide an indication of the decline or growth in eukaryotic algae and cyanobacteria populations.

<u>Trophic Status</u> is determined using a modified **Trophic State Index (TSI)**, as described by Carlson (1977). Trophic State Index is calculated from secchi-depth transparency, total phosphorus, and chlorophyll-a measurements. Values for these three parameters are converted to an index number ranging from 0-100 according to the following equations:

```
TSI (Secchi Depth) = 10(6 - (\ln SD/\ln 2))
TSI (Chlorophyll-a) = TSI(Chl) = 10(6 - ((2.04 - 0.68 \ln Chl)/\ln 2))
TSI (Total Phosphorus) = TSI(TP) = 10(6 - (\ln (48/TP)/\ln 2))
```

where In indicates the Natural Logarithm

A TSI average value, calculated as the average of the three individually determined TSI metrics, is used as an overall indicator of a water body's trophic state. The relationship between TSI and trophic condition according to the IEPA is defined as follows:

TSI	Trophic Condition
0-40	Oligotrophic
40-50	Mesotrophic
50-70	Eutrophic
70-100	Hypereutrophic

## Laboratory Methods and Water Quality Criteria Summary Table

Table 2: Metrics, Methods, and Water Quality Criteria Used for Evaluating Water Quality

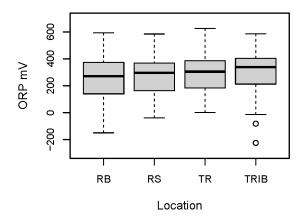
<u>Metric</u>	Abbreviation	Analysis Method	Water Quality Criteria	Source
Alachlor		EPA Method 8270C	< 2μg/L PWS or <1100 μg/L: aquatic life	Illinois EPA
Ammonia Nitrogen	NH <sub>3</sub>	EPA Method 350.1	<15 mg/L	Illinois EPA
Atrazine	Atrazine	EPA Method 8270C	9 μg/L: Chronic or 82 μg/L: Acute or 3 μg/L DWS	Illinois EPA
Bacteria: E. Coliform	E Col	EPA Method 1604	< 235 E. Col per 100/mL for single sample	Illinois EPA
Chlorophyll a	Chl_a	SM Method 10200H	< 25mg/cm³ (Eutrophic Upper Limit)	Carlson 1977
Cyanazine		EPA Method 8270C	< 30 μg/L: chronic or < 370 μg/L acute (aquatic life)	Illinois EPA
Depth	Depth	Multiparameter Meter	Measurements reported at ~1 meter	
Dissolved Oxygen	DO	Multiparameter Meter	Greater than 5.0mg/L	Illinois EPA
Metolachlor		EPA Method 8270C	30.4 μg/L: Chronic or 380 μg/L: Acute	Illinois EPA
Metribuzin		EPA Method 8270C	8.4 mg/L: aquatic life or 8.3 mg/L: human health	Illinois EPA
Nitrate as Nitrogen	NO <sub>3</sub>	Green Method	< 10 mg/L	Illinois EPA
Non-Volatile Suspended Solids	NVSS	TSS - VSS		
Orthophosphate	Ortho	EPA Method 365.2		
Pendmethalin		EPA Method 8270C	< 30 μg/L: chronic or < 350 μg/L acute (aquatic life)	Illinois EPA
Pheophytin a	Phpy_a	SM Method 10200H		
Potential of Hydrogen	pН	Multiparameter Meter	Range: 6.5 – 9.0pH	Illinois EPA
Specific Conductivity	SpCond	Multiparameter Meter	500 uS/cm	
Temperature	Temp	Multiparameter Meter	Less than rise of 2.8°C above normal seasonal temperature	Illinois EPA
Total Dissolved Solids	TDS	Multiparameter Meter	< 500 mg/L	Illinois EPA
Total Manganese	TMn	EPA Method 6010C	< 1 mg/L	Illinois EPA
Total Organic Carbon	тос	EPA Method 415.1		

<u>Metric</u>	Abbreviation	Analysis Method	Water Quality Criteria	Source
Total Iron	TFe	EPA Method 6010C	< 1 mg/L	Illinois EPA
Total Phosphorus	TP	EPA Method 365.2	Less than 0.05 mg/L	Illinois EPA
Total Suspended Solids	TSS	EPA Method 160.2		
Trifluralin		EPA Method 8270C	< 1.1 μg/L: chronic or < 26 μg/L acute (aquatic life)	Illinois EPA
Turbidity	Turb	Multiparameter Meter		
Volatile Suspended Solids	VSS	EPA Method 160.4		

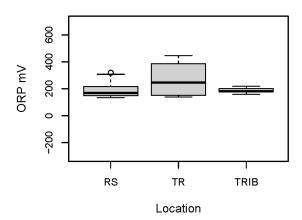
<sup>\*1</sup> mg/L is equivalent to 1 drop in two bathtubs and 1 ug/L is equivalent to 1 drop in an Olympic size swimming pool. PWS is public water supply. DWS is drinking water standard. WBC is whole body contact recreation. SCR is secondary contact recreation. USEPA\* refers to the Federal EPA reference nutrient conditions for level III ecoregion 72 lakes and rivers.

## RESULTS AND SUMMARY STATISTICS: WATER QUALITY

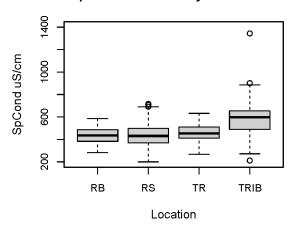
#### Oxidation Reduction Potential: 1986-2021



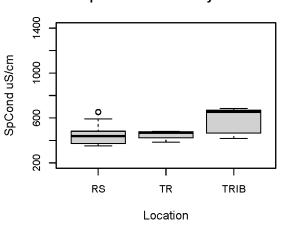
#### **Oxidation Reduction Potential: 2022**



Specific Conductivity: 1984-2021



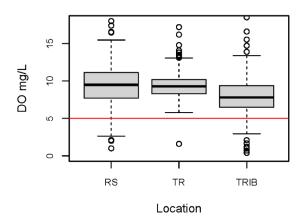
Specific Conductivity: 2022



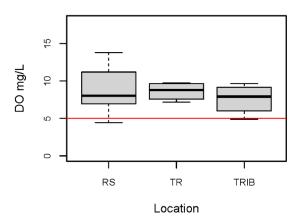
	Historical Re	eference 198	<u>84-2021</u>			2022	
	Location	Mean	Median	n	Mean	Median	n
ORP	RB	259.07	271.50	94			
	RS	272.90	297.00	321	191.60	169.30	23
	TR	283.52	305.00	129	269.18	245.65	4
	TRIB	310.28	339.50	196	186.99	181.25	8
SpCond	RB	436.54	435.00	99			
	RS	440.58	431.00	347	451.20	439.10	23
	TR	454.06	454.20	146	450.35	468.30	4
	TRIB	575.76	597.00	207	575.09	655.80	8

<sup>\*</sup>This report does not acknowledge a water quality criteria for SpCond or ORP.

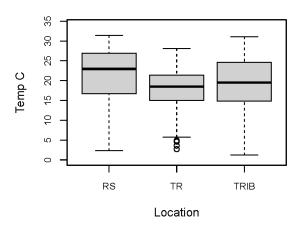
#### Dissolved Oxygen: 1984-2021



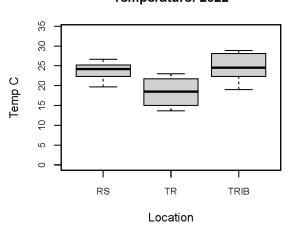
#### Dissolved Oxygen: 2022



Temperature: 1984-2021



Temperature: 2022

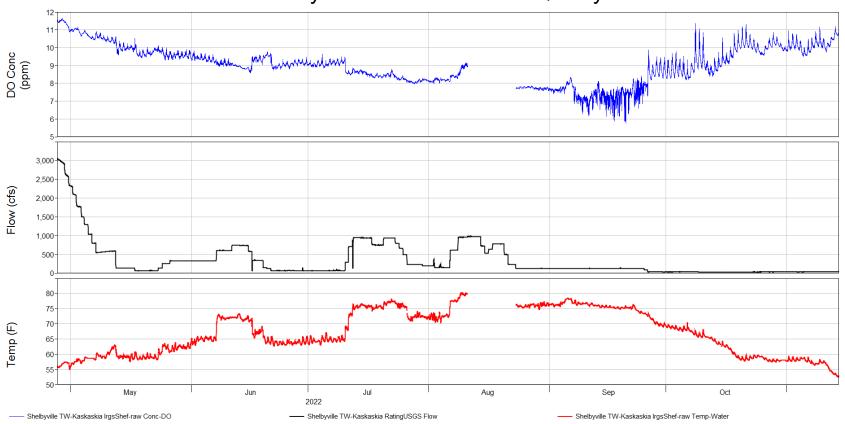


Red line placed at the 5 mg/L level for DO.

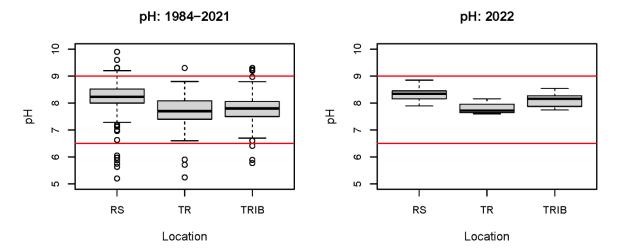
	Historical Re	ference 198	<u>84-2021</u>			2022	
	Location	Mean	Median	n	Mean	Median	n
DO	RS	9.51	9.50	338	8.73	8.02	23
	TR	9.47	9.29	146	8.62	8.79	4
	TRIB	8.00	7.82	204	8.87	7.92	8
Temp	RS	20.94	22.95	350	23.83	24.19	22
	TR	17.81	18.50	149	18.39	18.47	4
	TRIB	19.22	19.50	212	24.75	24.50	7

<sup>\*</sup> During the four sampling events the DO standard was exceeded three times. In 2022 temperature was recorded above the standard (rise of 2.8° C above the natural temperatures) for RS in the spring and TRIB in the summer. The historical average temperature by season per class was used as the natural temperature.

## Lake Shelbyville Tailwater Water Quality 2022



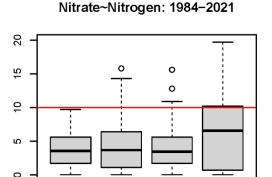
\*Data recorded by multi-parameter sonde at Lake Shelbyville Dam. There were no DO exceedances in 2022. Data was not reliable from August 11 through August 23, 2022.



\*Red lines indicate the upper and lower water quality criteria standards (between 6.5 and 9).

	Historical Re	ference 198	84-2021			2022	
	Location	Mean	Median	n	Mean	Median	n
рН	RS	8.21	8.23	341	8.34	8.34	23
	TR	7.72	7.70	145	7.80	7.72	4
	TRIB	7.79	7.80	208	8.11	8.16	8

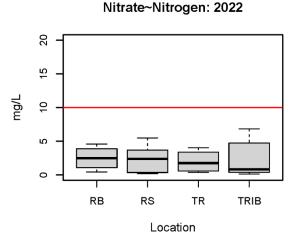
<sup>\*</sup>The pH standard was not exceeded in 2022.



RS

RB

mg/L

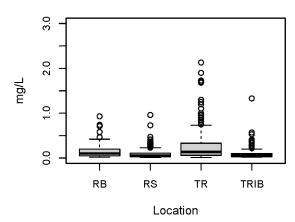


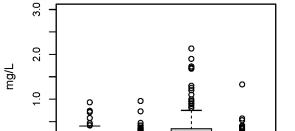


Location

TR

TRIB





RS

Location

TR

TRIB

Ammonia Nitrogen: 2022

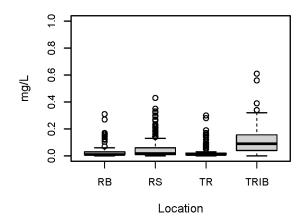
**Historical Reference 1984-2021** 2022 Location Mean Median Mean Median n n NO3-N RB 3.79 3.55 110 2.48 2.46 4 RS 4.18 3.69 345 2.31 2.36 11 TR 160 3.87 3.45 1.98 1.75 4 **TRIB** 6.24 6.55 2.34 230 0.83 8 NH3N RB 0.10 110 0.15 0.10 114 0.16 RS 0.09 0.05 343 0.09 0.06 354 TR 0.29 0.14 162 0.29 0.15 166 **TRIB** 0.09 0.06 230 0.09 0.06 238

0.0

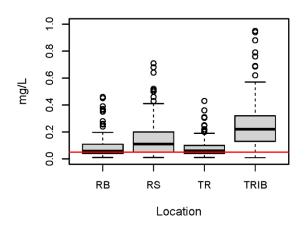
RB

<sup>\*</sup>The nitrate standard of 10 mg/L was not exceeded in 2022. All observations of ammonia nitrogen were within the water quality standard during 2022.

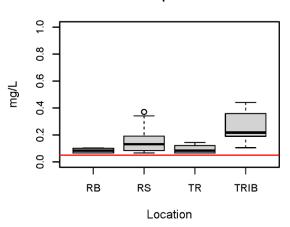
Orthophosphate: 1984-2021



Total Phosphorus: 1984-2021



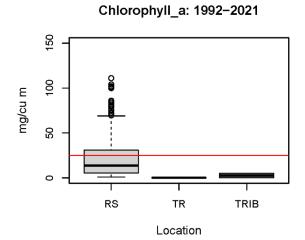
**Total Phosphorus: 2022** 

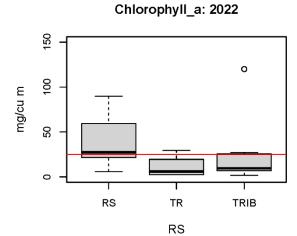


\*Red line indicates the TP water quality screening value of 0.05 mg/L.

	Historical Re	ference 198	<u>84-2021</u>			2022	
	Location	Mean	Median	n	Mean	Median	n
PO4	RB	0.03	0.01	106			
	RS	0.05	0.02	333			
	TR	0.03	0.01	157			
	TRIB	0.11	0.09	226			
TP	RB	0.09	0.06	111	0.08	80.0	4
	RS	0.14	0.11	349	0.16	0.13	11
	TR	0.08	0.06	162	0.09	80.0	4
	TRIB	0.25	0.22	234	0.26	0.22	8

<sup>\*</sup>TP exceeded the standard of 0.05 mg/L at all locations during multiple events in 2022. This study does not acknowledge a water quality standard for PO4. PO4 was not sampled in 2022.



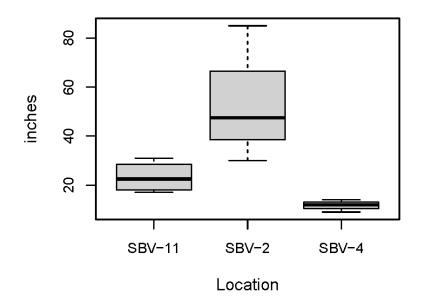


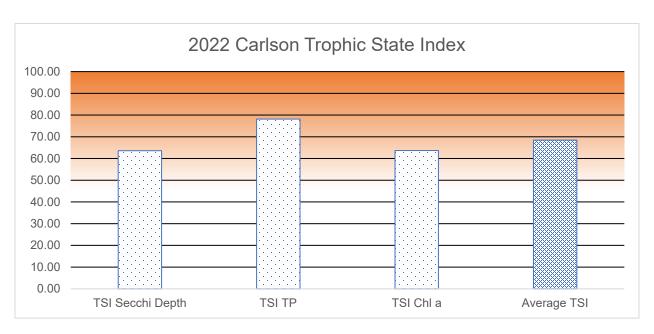
\*Red line indicates the reference standard of 25 mg/cu m.

	Historical Re	ference 198	<u>84-2021</u>			2022	
	Location	Mean	Median	n	Mean	Median	n
Chl_a	RS	21.94	13.70	321	37.32	27.35	12
	TR	0.22	0.22	1	10.98	6.00	4
	TRIB	2.61	2.61	2	25.78	9.70	8

<sup>\*</sup>The reference standard of 25 mg/cu m was exceeded on multiple occasions in the lake as well as in the tailrace and tributaries in 2022

## Secchi Depth: 2022





<40 = Oligotrophic \_\_\_ 40-50 = Mesotrophic \_\_\_ 50-70 = Eutrophic \_\_\_ >70 Hypereutrophic

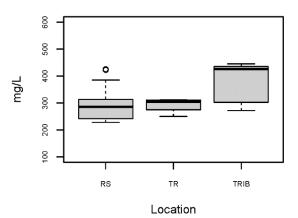
#### Total Dissolved Solids: 2018-2021

# mg/L hg/L hg/L

RS

RB

#### Total Dissolved Solids: 2022

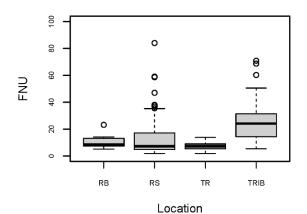


Turbidity: 2018-2021

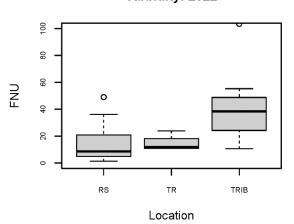
Location

TR

TRIB



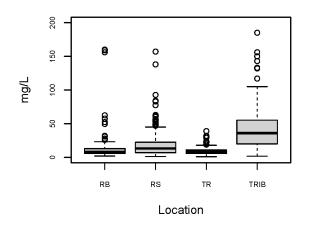
Turbidity: 2022



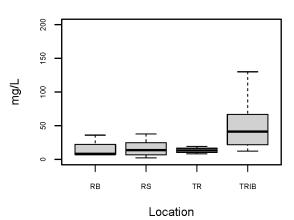
	Historical Re	ference 201	8-2021			2022	
	Location	Mean	Median	n	Mean	Median	n
TDS	RB	279.87	281.50	12			
	RS	274.18	260.50	84	293.23	285.50	22
	TR	281.52	277.50	16	292.75	304.50	4
	TRIB	343.24	346.50	32	374.00	426.00	7
FNU	RB	10.42	8.69	12			
	RS	15.07	7.27	84	14.54	8.65	23
	TR	7.37	7.25	16	14.55	11.75	4
	TRIB	27.07	24.13	32	42.09	38.34	8

<sup>\*</sup> All TDS observations were below the standard in 2022. This study does not recognize a standard for turbidity.

Total Suspended Solids: 1984-2021



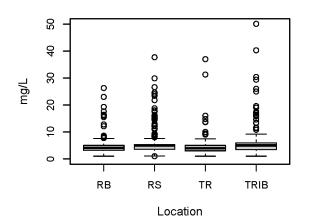
### Total Suspended Solids: 2022



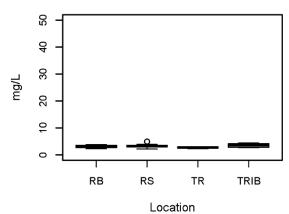
	Historical Re	ference 198	<u>34-2021</u>			2022	
	Location	Mean	Median	n	Mean	Median	n
TSS	RB	18.42	8.00	104	14.88	8.06	4
	RS	18.82	13.20	349	16.19	13.85	12
	TR	9.29	8.00	160	13.48	13.20	4
	TRIB	42.48	36.00	230	50.33	41.40	8

<sup>\*</sup> This study does not recognize a standard for TSS.

Total Organic Carbon: 1984-2021

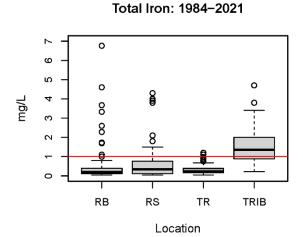


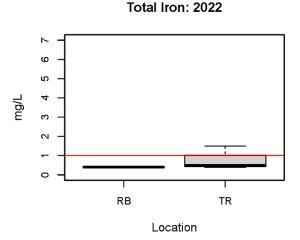
Total Organic Carbon: 2022



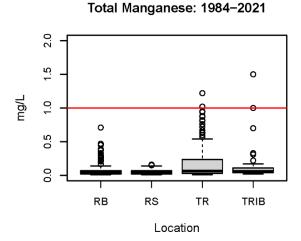
	Historical Re	ference 198		2022			
	Location	Mean	Median	n	Mean	Median	n
TOC	RB	5.20	4.10	111	3.14	3.23	4
	RS	5.50	4.90	349	3.30	3.27	11
	TR	4.62	3.90	162	2.76	2.80	4
	TRIB	5.91	5.00	233	3.53	3.56	8

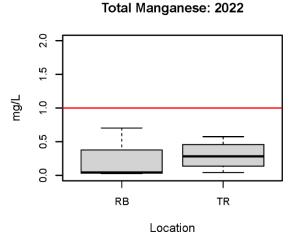
<sup>\*</sup>This study does not recognize a standard for TOC.





\*Red line indicates the water quality standard of 1 mg/L.

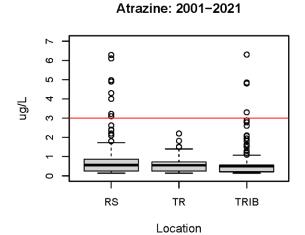


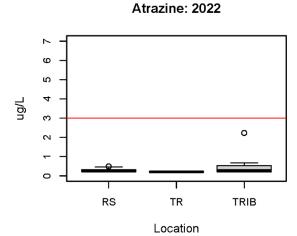


\*Red line indicates the standard for manganese of 1 mg/L.

	Historical Re	eference 19		2022			
	Location	Mean	Median	n	Mean	Median	n
TFe	RB	0.48	0.20	110	0.40	0.40	3
	RS	0.64	0.34	100			
	TR	0.30	0.24	160	0.72	0.50	4
	TRIB	1.49	1.35	68			
TMn	RB	0.08	0.04	110	0.20	0.04	4
	RS	0.05	0.04	95			
	TR	0.18	0.07	160	0.30	0.28	4
	TRIB	0.13	0.06	68			

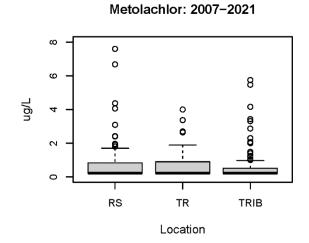
\*Fe exceeded the standard of 1 mg/L in the tailrace once in September 2022. The standard for Mn was not exceeded in 2022.

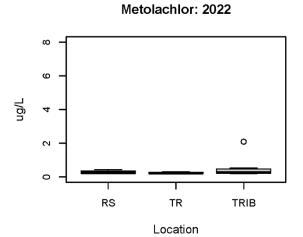




	Historical Re	ference 199		<u>2022</u>			
	Location	Mean	Median	n	Mean	Median	n
Atrazine	RS	0.78	0.56	213	0.28	0.23	12
	TR	0.59	0.55	72	0.21	0.21	4
	TRIB	0.70	0.50	137	0.56	0.29	8

<sup>\*</sup>The standard of 3 ug/L for Atrazine was not exceeded 2022.

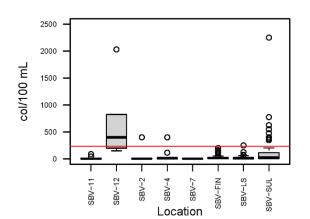




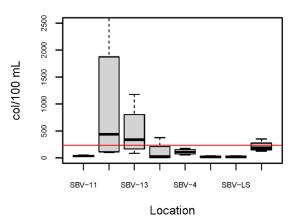
	<b>Historical Re</b>	ference 198		<u>2022</u>			
	Location	Mean	Median	n	Mean	Median	n
Metolachlor	RS	0.70	0.22	136	0.28	0.25	12
	TR	0.72	0.22	45	0.23	0.21	4
	TRIB	0.67	0.22	88	0.53	0.27	8

<sup>\*</sup>The standard of 30.4 ug/L for Metolachlor was not exceeded in 2022.

#### Surface Water E. Coli: 1996-2021



#### Surface Water E. Coli: 2022



<sup>\*</sup>The standard <235 colonies/100 mL is indicated with a red line.

	<u>Historical F</u>	Reference 200			2022			
	Location	Mean	Median	n	Location	Mean	Median	n
E col	SBV-11	15.91	3.00	11	SBV-11	36.50	34.50	4
	SBV-12	667.50	400.00	6	SBV-12	993.75	437.50	4
	SBV-2	40.00	3.00	11	SBV-2	109.00	28.00	4
	SBV-4	48.62	13.00	13	SBV-4	112.25	111.50	4
	SBV-7	4.00	4.00	1	SBV-13	484.25	337.50	4
	SBV-FIN	33.36	17.00	56	SBV-FIN	20.75	18.00	4
	SBV-LS	23.16	10.00	55	SBV-LS	20.50	15.50	4
	SBV-SUL	146.32	25.00	53	SBV-SUL	212.50	187.50	4

<sup>\*</sup>Bacteria levels exceed the standard of 235 colonies/100 mL at in the tributaries and in the lake multiple times in 2022.

#### 2022 Lake Shelbyville Swimming Beach Bacteria Levels (E. Coli / 100 mL)

Date	Coon (	Creek	Dam V	Vest	Lithia Sp	orings	Sullivan	Beach	Wilborn	Creek
	Shallow	Deep	Shallow	Deep	Shallow	Deep	Shallow	Deep	Shallow	Deep
5/16/2022	2	1	6.3	1	1	1	3	3	6.3	1
6/1/2022	3.1	2	2	1	1	1	1	3.1	1	2
6/14/2022	1	1	2	1	2	1	12.1	8.4	1	1
6/27/2022	5.2	1	1	3.1	1	1	13.5	10.8	2	4.1
7/13/2022	3.1	1	6.3	6.3	1	1	152.9	5.2	47.3	3.1
7/27/2022	3.1	2	8.6	1	1	1	686.7	6.3	17.3	6.3
8/3/2022				Re-t	est from 7/2	27/2022	83.6	113.7		
8/8/2022	1	1	2	2	1	1	14.4	5.2	27.5	6.3
8/24/2022	1	1	1	1	1	1	1	1	1	4.1

<sup>\*</sup>Beach bacteria levels exceeded the standard of 235 col/100mL once at Sullivan Beach on July 27, 2022.

## **DISCUSSION: WATER QUALITY**

Water quality metrics assessed by CEMVS can be sporadic and highly variable from year to year, thus long-term data collection using consistent and comparable methodology is critical to identify trends or patterns. In general, conditions observed during 2022 did not deviate far from conditions observed during the reference period (1984-2020); nevertheless, concerns regarding TP, TFe, bacteria, and temperature were evident. In addition, CHL\_a and subsequent TSI levels were indicative of a eutrophic system.

TP levels have surpassed the 0.05 mg/L criterion for several years. In 2022 the TP criterion was exceeded at all locations with a mean concentration across all sites of 0.169 mg/L, which is 8.9% greater than the historical average of 0.154 mg/L. Phosphorus is a limiting nutrient for primary producers (algae and plants) due to its relatively low amount in the environment. Higher inputs of TP and NO3-N into the lake contribute to a highly productive environment which stimulates algal growth that can lead to blooms that deplete the oxygen levels during die off. In addition, blooms can sometimes contain toxins which may be harmful to humans and wildlife.

Living organisms require trace amounts of metals, excessive levels can be harmful. TFe exceeded the criterion of 1 mg/L one time at the tailrace with a concentration of 1.49 mg/L. The 2022 mean TFe was 0.584 mg/L compared to 0.606 mg/L for the historical mean (3.6% less). Iron cycling is a function of oxidation-reduction processes. Elevated levels of iron near the bottom of a lake is not immediately detrimental to the overall lake system. Iron oxidizes relatively rapidly (minutes to hours); therefore, any iron released through the spillway will be oxidized in a short period of time.

Fecal coliform bacteria is monitored for the protection of human health as it relates to full body contact of recreational waters. People can be exposed to disease-causing organisms, such as bacteria, viruses and protozoa in beach and recreational waters mainly through accidental ingestion of contaminated water or through skin contact. These organisms, called pathogens, usually come from the feces of humans and other warm-blooded animals. If taken into the body, pathogens can cause various illnesses and on rare occasions, even death. Waterborne illnesses include diseases resulting from bacterial infection such as cholera, salmonellosis, and gastroenteritis, viral infections such as hepatitis, gastroenteritis, and intestinal diseases, and protozoan infections such as amoebic dysentery and giardiasis. The most commonly monitored recreational water indicator organisms are fecal coliform, Escherichia coli, (E. coli) and enterococci. Fecal coliform are bacteria that live in the intestinal tracts of warm-blooded animals. The Environmental Protection Agency (EPA) currently recommends E. coli or enterococci as an indicator organism for fresh waters. The standard for E. coli is less than 235 colonies per 100ml per single sample water or geometric mean of 126 colonies per 100ml. Swimming beaches (monitored by Lake Shelbyville staff) and surface water in the lake and in some of the tributaries are monitored for E. coli. In 2022 the water quality

standard was exceeded in the tributaries and lake. Bacteria sampling in the tributaries was added in recent years to get a better understanding of bacteria levels coming into the lake. Recent investigations in this arm of the lake suggest an increasing trend for bacteria and recent observations reinforce this finding.

Temperature is important because it controls several aspects of water quality. Colder water holds more dissolved oxygen which is required by aquatic organisms. Plants grow more rapidly and use more oxygen in warmer water. Decomposition of organic matter which uses oxygen is accelerated in warmer water. Temperature can also determine the availability of toxic compounds such as ammonia. Water temperature criteria for warm water bodies in Illinois is within 2.8°C of the seasonal norm. Observations in 2022 were compared to the USACE seasonal historical means. This comparison revealed that average observed temperature exceeded the standard in the surface water (RS) during spring and in the tributaries (TRIB) during summer.

Although there is not a state criterion for CHL\_a, the proposed standard of 25 ug/L was exceeded at multiple locations in the lake and in the tailrace and tributaries throughout 2022. The 2022 mean CHL\_a concentration of 29.1 ug/L is 25.3 % greater than the historical mean of 21.75 ug/L. CHL\_a is an indicator of the abundance of phytoplankton. Any water environment with a level recorded above 25 ug/L is considered to be eutrophic (nutrient enrichment increases algal and plant growth and negative effects). The 2021 TSI level, an average of the individual trophic state indexes for secchi depth, CHL\_a, and TP, for Lake Shelbyville is 67.25. Lake Shelbyville is considered eutrophic based on this TSI level. This does not necessarily mean the water quality is poor, but that its trophic level indicates nutrient levels are abundant, which can support an abundance of plants and algae. Long term monitoring and analyses are important to assess changes over time.

Total suspended solids can affect water quality by increasing temperature through the absorption of sunlight by suspended particles in the water column, and consequently reduce DO. Total suspended solids are also strongly correlated with water clarity and the presence of Macrophytes. Though there are no numeric water quality standards for TSS, Lake Shelbyville is listed by IEPA as impaired by TSS. The 2022 TSS levels were comparable to the historical levels and show the same spatial patterns by occurring in higher concentrations in the tributaries and trending down near the dam and discharge. Mean 2022 TSS levels were 25.4 mg/L compared to 23.4 mg/L historical levels.

All remaining parameters evaluated during the 2022 water quality monitoring effort were within designated criteria or within historical reference norms.

## MONITORING PROGRAM RECOMMENDATIONS

In accordance with EM-1110-2-1201, sediment samples should be taken to monitor and assess potential impacts to aquatic and human health. Routine sediment sampling and analyses occurred at Lake Shelbyville in 2018, and prior to that in 2007. During these last analyses multiple exceedances over the recommended criteria were observed. There were two non-routine sediment sampling efforts carried out by USACE which were executed due to upcoming dredge work in the Sullivan arm of the lake. The first sampling occurred in April 2022 and found that no analytes exceeded IEPA's elevated levels. The second sampling occurred in October/November 2022 and revealed all analytes of concern would fall below the criteria and/or historical background levels after twenty-four hours of settling. Both of these events in 2022 were geared towards meeting a 401 water quality certification for the upcoming dredging project and only focused on a small portion of the lake. Identifying trends over time is much more achievable with more consistent data. Contaminated sediments may have negative impacts on ecological processes. It is recommended to sample and analyze for sediment metals and nutrients, as well as grain size analyses yearly or every two years at all lake sites.

It is recommended to maintain a minimum of 4 seasonal routine water quality sampling events at all established locations to monitor conditions and conduct trend analyses as needed on parameters of concern such as nutrients, bacteria, temperature, pesticides, chlorophyll\_a, and total suspended solids.

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Hudson, H. (1998). Illinois Environmental Protection Acency. Common Lake Water Quality Parameters. Lake Notes.



	2	Dept h	DO (mg/		ORP	Temp	Sp Cond	TDS (mg/	Turbidity	Secchi
Date	Site	(m)	L)	рН	(mV)	(C)	(µS/cm)	L)	(FNU)	(in)
5/19/2022	SBV-1	1.56	9.72	8.16	164.5	13.64	474.8	309	12.5	
5/19/2022	SBV-1	0.75	10.01	8.23	163.3	13.55	467.6	304	23.93	
5/19/2022	SBV-2	0.57	13.87	8.83	143.9	20.02	410.4	267	2.27	48
5/19/2022	SBV-2	1.12	13.8	8.81	146.4	19.69	412.5	268	2.74	
5/19/2022	SBV-2	2.13	11.55	8.58	157.5	19.21	425.5	277	2.95	
5/19/2022	SBV-2	3.04	8.08	8.22	169.8	18.14	444.6	289	3.28	
5/19/2022	SBV-2	3.08	8.28	8.22	170.9	18.22	443.1	288	3.23	
5/19/2022	SBV-2	4.17	5.35	8.1	177	16.13	463.8	301	3.48	
5/19/2022	SBV-2	5.30	5.13	8.13	179	15.26	467.9	304	4	
5/19/2022	SBV-2	6.39	5.44	8.23	178.1	14.35	468.5	304	5.08	
5/19/2022	SBV-2	7.79	6.1	8.29	177.2	13.95	467.5	304	4.77	
5/19/2022	SBV-2	9.44	5.79	8.25	179	13.49	467.2	304	5.75	
5/19/2022	SBV-2	10.56	5.32	8.2	181	13.38	467.4	304	7.66	
5/19/2022	SBV-2	11.58	4.78	8.13	182.9	13.20	467.7	304	11.06	
5/19/2022	SBV-LS	1.00	13.57	8.85	214	20.97	394.5	256	4.73	
5/19/2022	SBV-LS	5.44	4.85	8.08	229.4	15.51	472.1	307	4.63	
5/19/2022	SBV-LS	9.68	4.26	8.09	226.7	13.64	470.4	306	17.81	
5/19/2022	SBV-13	0.68	7.52	8.22	172.8	19.01	663.9	432	36.82	
5/19/2022	SBV-FIN	1.06	12.54	8.62	196	21.41	481.9	313	6.59	
5/19/2022	SBV-FIN	2.34	12.51	8.57	190.8	20.93	486.9	317	6.86	
5/19/2022	SBV-FIN	3.81	8.45	8.11	116.8	20.35	506.7	329	36.31	
5/19/2022	SBV-11	1.08	12.12	8.57	152.3	21.71	499.4	325	5.13	31
5/19/2022	SBV-11	2.03	12.33	8.57	152.6	21.66	499.3	325	5.27	
5/19/2022	SBV-11	3.09	12.34	8.55	155	21.37	500.5	325	5.15	
5/19/2022	SBV-11	4.18	11.11	8.37	159.8	20.86	510.5	332	6.73	
5/19/2022	SBV-11	5.01	5.63	8.01	174.8	18.21	563.5	366	29.15	
5/19/2022	SBV-4	1.16	8.18	8.39	195.9	22.59	654	425	21.71	12
5/19/2022	SBV-SUL	1.12	8.02	8.37	218.8	22.29	651.4	423	25.89	
5/19/2022	SBV-12	0.65	8.69	8.26	157.9	20.76	655.8	426	10.59	
6/21/2022	SBV-1	0.88	9.6	7.69	446.9	16.44	480.3	312	10.86	
6/21/2022	SBV-2	1.08	8.71	8.1	227.2	24.28	448.2	291	1.36	85
6/21/2022	SBV-2	2.02	8.3	8.08	225.2	23.94	448.4	291	1.49	
6/21/2022	SBV-2	3.30	6.89	7.95	224.2	23.73	451.2	293	1.49	
6/21/2022	SBV-2	4.27	4.54	7.72	226	23.24	455	296	1.59	
6/21/2022	SBV-2	5.16	3.1	7.6	227.3	22.87	456.7	297	1.92	
6/21/2022	SBV-2	5.15	3.12	7.6	227.1	22.87	456.7	297	1.96	
6/21/2022	SBV-2	6.25	0.8	7.45	229.1	21.67	460.3	299	3.02	
6/21/2022	SBV-2	7.23	0.41	7.42	230.2	20.24	462.9	301	4.9	
6/21/2022	SBV-2	8.05	0.32	7.41	230.7	18.87	467.1	304	9.11	
6/21/2022	SBV-2	9.09	0.29	7.43	228.8	17.67	470.5	306	7.46	
5/19/2022	SBV-1	1.56	9.72	8.16	164.5	13.64	474.8	309	12.5	
5/19/2022	SBV-1	0.75	10.01	8.23	163.3	13.55	467.6	304	23.93	

		Dept	DO		ORP	Tomn	Sp Cond	TDS	Turbidity	Casabi
Date	Site	h (m)	(mg/ L)	рН	(mV)	Temp (C)	(µS/cm)	(mg/ L)	Turbidity (FNU)	Secchi (in)
6/21/2022	SBV-2	10.10	0.28	7.44	227	16.82	474.5	308	9.29	(111)
6/21/2022	SBV-LS	10.11	0.86	7.51	283.9	17.31	473.9	308	17.22	
6/21/2022	SBV-LS	5.17	3.2	7.62	273.8	23.17	451.1	293	2.66	
6/21/2022	SBV-LS	0.97	10.98	8.34	253	25.19	430.4	280	3.14	
6/21/2022	SBV-13	0.20	19.83	8.54	219.4	28.87	488.6	318	39.86	
6/21/2022	SBV-FIN	1.00	12.32	8.36	148.7	25.74	447.8	291	7.36	
6/21/2022	SBV-FIN	3.01	7.52	7.99	168.6	24.73	461.6	300	7.13	
6/21/2022	SBV-11	1.29	10.42	8.29	307.5	26.61	460.1	299	8.65	26
6/21/2022	SBV-11	2.12	9.45	8.22	294.9	25.78	462.2	300	12.9	
6/21/2022	SBV-11	3.15	7.93	8.07	290.8	25.23	465.1	302	21.58	
6/21/2022	SBV-11	4.16	7.56	8.03	286.5	25.05	465.1	302	33.56	
6/21/2022	SBV-11	5.18	3.27	7.64	287.4	24.92	477.1	310	22.2	
6/21/2022	SBV-11	5.95	2.55	7.58	286.9	24.84	478.8	311	28.15	
6/21/2022	SBV-4	1.17	6.88	8.03	319.1	25.23	592.6	385	49	14
6/21/2022	SBV-SUL	1.15	7.4	8.08	252.4	25.47	592	385	33.75	
6/21/2022	SBV-12	0.83	9.66	8.09	196.9	27.44	684.2	445	14.45	
8/3/2022	SBV-1	0.65	7.98	7.6	326.8	20.50	461.8	300	10.99	
8/3/2022	SBV-2	1.02	4.8	7.89	169.3	24.70	390.8	254	4.36	47
8/3/2022	SBV-2	2.07	4.26	7.78	174.7	24.60	392	255	4.36	
8/3/2022	SBV-2	2.99	3.27	7.71	178	24.60	393.3	256	4.52	
8/3/2022	SBV-2	4.17	3	7.69	179.5	24.50	393	255	4.74	
8/3/2022	SBV-2	4.96	2.64	7.65	181.6	24.50	393.5	256	4.96	
8/3/2022	SBV-2	6.07	1.87	7.59	183.3	24.40	395.4	257	10.02	
8/3/2022	SBV-2	7.03	2.01	7.58	183.5	24.30	394.5	256	8.72	
8/3/2022	SBV-2	8.21	0.54	7.52	184.9	23.90	399.6	260	11.73	
8/3/2022	SBV-LS	1.04	7.19	8.23	164.6	25.20	378	246	6.48	
8/3/2022	SBV-LS	10.23	1.16	7.47	85.1	22.80	325.6	212	103.16	
8/3/2022	SBV-LS	5.00	5.33	7.99	125.6	24.90	383.6	249	5.93	
8/3/2022	SBV-13	0.05	8.3	8.28	182.7	28.80	440.9	287	79	
8/3/2022	SBV-13	0.05	8.31	8.28	180.9	28.80	441.2	287	103.44	
8/3/2022	SBV-FIN	1.01	7.76	8.41	214.1	25.70	372.6	242	12.46	
8/3/2022	SBV-FIN	2.98	5.91	8.16	61.4	25.00	371	241	17.65	
8/3/2022	SBV-FIN	1.87	6.57	8.3	83.7	25.30	372	242	14.85	
8/3/2022	SBV-11	1.10	11.43	8.79	187.5	26.50	357.7	233	14.15	19
8/3/2022	SBV-11	2.08	11.43	8.78	183.4	26.50	358.1	233	14.61	
8/3/2022	SBV-11	3.12	7.61	8.52	181.7	25.50	363.1	236	17.63	
8/3/2022	SBV-11	4.08	5.63	8.35	182	25.10	364.6	237	18.57	
8/3/2022	SBV-11	5.14	5.08	8.29	181.7	24.90	364.9	237	20.27	
8/3/2022	SBV-11	6.16	4.54	8.21	181.6	24.90	365.4	238	24.91	
8/3/2022	SBV-4	1.16	7.71	8.4	157.4				20.01	
8/3/2022	SBV-4	2.06	7.77	8.4	158.8				19.52	
8/3/2022	SBV-12	0.05	4.9	7.78	181.1				42.26	

		Dept	DO		ODD	Tames	Sp	TDS	To only indicate	Coochi
Date	Site	h (m)	(mg/ L)	рН	ORP (mV)	Temp (C)	Cond (µS/cm)	(mg/ L)	Turbidity (FNU)	Secchi (in)
9/7/2022	SBV-13	0.17	6.18	7.85	184.8		417.2	271	49.22	
9/7/2022	SBV-13	0.52	5.06	7.74	181.4		418	272	55.25	
9/7/2022	SBV-12	0.93	6.96	7.97	205.5		673.9	438	34.03	
9/7/2022	SBV-1	2.30	7.18	7.75	138.5	23	384.5	250	23.86	
9/7/2022	SBV-2	1.07	8.72	8.49	134.6	24.4	353.6	230	4.88	30
9/7/2022	SBV-2	6.97	7.87	8.4	146.1	24.2	354.7	231	5.09	
9/7/2022	SBV-2	3.83	8.14	8.44	151.4	24.2	354.4	230	5.29	
9/7/2022	SBV-LS	1.04	7.06	8.34	140.4	24.1	356.6	232	4.66	
9/7/2022	SBV-FIN	1.07	6.21	8.32	143.1	23.8	351.2	228	10.4	
9/7/2022	SBV-11	1.05	5.21	8.22	149	23.8	354.1	230	14.98	17
9/7/2022	SBV-11	5.39	3.43	7.97	48.7	23.3	356.5	232	30.78	
9/7/2022	SBV-11	3.02	3.22	7.96	96.2	23.5	356.6	232	13.54	
9/7/2022	SBV-SUL	1.05	4.44	7.93	146.6	22.5	472.5	307	36.03	
9/7/2022	SBV-4	1.04	5.38	7.98	168.9	22.3	474.4	308	35.94	9
9/7/2022	SBV-4	1.41	4.66	7.9	157.1	22.3	477.8	311	61.72	





PO Box 1566 400 Aviation Drive Mt. Vernon, IL 62864 618-244-3235

www.ardlinc.com

**Customer Name: SLCOE** 

Date: 6/29/22

Project Name: Shelbyville Lake

Lab Name: ARDL, Inc.

Samples Received at ARDL: 5/19/22

ARDL Report No.: 8927

### **CASE NARRATIVE**

Customer	<u>Date</u>	<u>Lab ID</u>	
Sample No.	Collected	Number	Analyses Requested
SVL-1	5/19/22	8927-01	NP Pesticides, Metals (1), Inorganics (2)(3)
SVL-2	5/19/22	8927-02	NP Pesticides, Inorganics (2)(3), E. Coli
SVL-2-10	5/19/22	8927-03	Metals (1), Inorganics (2)
SVL-4	5/19/22	8927-04	NP Pesticides, Inorganics (2)(3), E. Coli
SVL-12	5/19/22	8927-05	NP Pesticides, Inorganics (2)(3), E. Coli
SVL-13	5/19/22	8927-06	NP Pesticides, Inorganics (2)(3), E. Coli
SVL-11	5/19/22	8927-07	NP Pesticides, Inorganics (2)(3), E. Coli
SVL-15	5/19/22	8927-08	NP Pesticides, Inorganics (2)(3)
LS Marina	5/19/22	8927-09	E. Coli
FIN Marina	5/19/22	8927-10	E. Coli
SUL Marina	5/19/22	8927-11	E. Coli

- (1) Including iron and manganese.
- (2) Including ammonia\*, nitrate, nitrite, TKN\*, total phosphorus, TOC\*, TSS and TVSS.
- (3) Including chlorophyll-a and pheophytin-a.

The quality control data are summarized as follows:

### NP PESTICIDE FRACTION - METHOD 8270-SIM

### **HOLDING TIME**

Samples were prepared and analyzed within method specified holding times.

### **INITIAL CALIBRATION**

The initial calibration passed criteria.

### CONTINUING CALIBRATION

The continuing calibration verification (CCV) passed criteria for all analytes.

### PREPARATION BLANK

The blank met acceptance criteria.

### LABORATORY CONTROL SAMPLE

The LCS analyses met recovery criteria.

### MATRIX SPIKE

The matrix spike and matrix spike duplicate met recovery criteria.

### **DUPLICATE**

Duplicate analyses are reported as MS/MSD. RPD of the duplicate analyses met criteria.

"Test everything, keep the good" 1 Thes. 5:21

Page 1 of 2

<sup>\*</sup> Analyzed by an accredited subcontract laboratory.

Project Name: Shelbyville Lake ARDL Report No.: 8927

### **CASE NARRATIVE (Continued)**

### INTERNAL STANDARDS

All internal standard criteria were met.

### **SURROGATES**

All surrogate recovery criteria were met.

### **INORGANIC FRACTION**

### PREPARATION BLANK

Results of the preparation blanks were undetected.

### LABORATORY CONTROL SAMPLE

Percent recoveries of all LCS analyses were within control limits.

### MATRIX SPIKE

Percent recoveries of all matrix spikes and matrix spike duplicates were within control limits, except 2 of 2 for total phosphorus. The parent sample has been flagged appropriately with a 'J' qualifier. Matrix QC for TOC and ammonia were performed on a batch specific basis. Please refer to ARDL Report 8925 for these data.

### **DUPLICATE**

All duplicate analyses are reported as MS/MSD except chlorophyll-a, pheophytin-a, TSS and TVSS. RPD on all duplicate analyses were within control limits, except for chlorophyll-a. The parent sample has been flagged appropriately with a 'J' qualifier.

### **DATA REPORTING QUALIFIERS**

The following data reporting qualifiers are used as required:

- ND Indicates parameter was analyzed for but not detected.
- J Indicates an estimated value. This flag is used either when estimating a concentration or this flag indicates analyte(s) associated with a DOD-QSM specified non-compliance pertaining to matrix QC criteria.

#### REPORT ORGANIZATION

The data in this report appear by sample type (Field sample, preparation blank, laboratory control sample / spike blank, matrix spike /spike duplicate and sample duplicate). Within each sample type the data appear in the order that the analytical methods were discussed in this case narrative. Sample receipt information follows the analytical data.

Release of the data contained in this package has been authorized by the Technical Services Manager or his designee as verified by the following signature.

Dean S. Dickerson

Technical Services Manager



## Sample & QC Results

Including as appropriate:

Field Sample Results

Batch QC

Prep Blank

LCS/Spike Blank

Matrix QC

MS/MSD

Sample Duplicate

ARDL Data Package

8927

N:\ARDL Case Narratives\ARDL Data Package Contents.pdf - Revised June 21, 2019

Authorized By: DSD-QAO

Lab Report No: 008927 Report Date: 06/02/2022

Project Name:	SHELBYVILLE LAKE	E An	alysis: N	P PESTICII	DES (82'	70SIM-MC	D)
Project No.:		Analytical	-				
-	fied - IL100308	-	Method: 3				
Field ID:	SVL-1		ARDL 1	Lab No.:	0089	27-01	
Desc/Location:			Lab F	ilename:	E060	1205	
Sample Date:	05/19/2022		Recei	ved Date:	05/1	9/2022	
Sample Time:	1000		Prep.	Date:	05/2	0/2022	
Matrix:	WATER		Analy	sis Date:	06/0	1/2022	
Amount Used:	1000 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Bat	tch:	B114	81	
% Moisture:	NA		Level	:	LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	ND		UG/L	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	ND		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results	
Triphenylphosphate	30-130	64%	
			1

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 00	008927						px,	Report Date:	: 06/27/2022	022
Project Name: SHELBYN Project No:	SHELBYVILLE LAKE						Z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: 008927-01 Field ID: SVL-1 Received: 05/19/2022	-01	Sampling Samplin Samplin	1 0 0		05/19/2022 1000			Matrix: Moisture:	:: WATER	
Analyte	TOD	TOO	Flag	Result	Units	Prep	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron	0.0400	0.0500		0.546	MG/L	3010A	6010C	05/23/22	05/25/22	P7776
(a) Manganese	0.00400	0.00500		0.0422	MG/L	3010A	6010C	05/23/22	05/25/22	P7776
Ammonia Nitrogen	0.100	0.100		ND	MG/L	NONE	350.1	NA	05/27/22	06026685
Chlorophyll-a, Correcte	:e 1.0	1.0	þ	9.5	MG/CU.M.	10200H	10200H	05/20/22	06/09/22	06106707
Kjeldahl Nitrogen	1.00	1.00		ND	MG/L	351.2	351.2	05/26/22	05/26/22	06016681
Nitrate as Nitrogen	0.0950	0.100		4.04	MG/L	NONE	GREEN	NA	05/26/22	06026686
Nitrite as Nitrogen	0.0200	0.0200		0.131	MG/I	NONE	354.1	NA	05/20/22 (	05256653
Pheophytin-a	1.00	1.00		16.2	MG/CU.M.	10200H	10200H	05/20/22	06/09/22 (	06106707
Phosphorus	0.00800	0.0100		0.144	MG/L	365.2	365.2	06/01/22	06/02/22	06036693
Solids, Total Suspended	ad 2.00	2.00		19.4	MG/I	NONE	160.2	NA	05/20/22 (	05246640
Solids, Volatile Suspen	en 2.00	2.00		2.8	MG/L	NONE	160.4	NA	05/20/22 (	05246641
Total Organic Carbon	0.500	1.00		3.0	MG/L	NONE	415.1	NA	06/13/22	581309T

(a) DOD and/or NELAC Accredited Analyte.

Lab Report No: 008927 Report Date: 06/02/2022

Project Name: Si Project No.: NELAC Certific			nalysis: N				
*		Analycical	Method: 8				_,
	ed - IL100308	-	Method: 3				
Field ID: S'	VL-2		ARDL	Lab No.:	0089	27-02	
Desc/Location:			Lab F	ilename:	E060	1208	
Sample Date: 0	5/19/2022		Recei	ved Date:	05/1	9/2022	
Sample Time: 1	030		Prep.	Date:	05/2	0/2022	
Matrix: W	ATER		Analy	sis Date:	06/0	1/2022	
Amount Used: 1	000 mL		Instr	ument ID:	AG5		
Final Volume: 1	mL		QC Ba	tch:	B114	81	
% Moisture: N	A		Level	:	LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	ND		UG/L	1 ·
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	ND		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results	
Triphenylphosphate	30-130	63%	
			1

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

(a) DOD and/or NELAC Accredited Analyte.

Sample 008927-02, Inorganic Analyses

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No:	No: 008927	27						<u>α</u>	Report Date:	: 06/27/2022	022
Project Name: S Project No:	SHELBYVILLE LAKE	LE LAKE						Z	Analysis: Inor NELAC Certified -	: Inorganics fied - IL1003	ganics IL100308
ARDL No: (	008927-03		Sampl	Sampling Loc'n:	'n:				Matrix:	: WATER	
Field ID: S Received: (	SVL-2-10 05/19/2022	2	Samp	Sampling Date: Sampling Time:		05/19/2022 1040			Moisture:	: NA	
Analyte	0)	TOD	TOO	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron		0.0400	0.0500		0.358	MG/L	3010A	6010C	05/23/22	05/25/22	P7775
(a) Manganese	J	0.00400	0.00500		0.0256	MG/L	3010A	6010C	05/23/22	05/25/22	P7775
Ammonia Nitrogen	C	0.100	0.100		ND	MG/L	NONE	350.1	NA	05/27/22	06026685
Kjeldahl Nitrogen	ue	1.00	1.00		ND	MG/L	351.2	351.2	05/26/22	05/26/22	06016681
Nitrate as Nitrogen	ogen	0.0950	0.100		4.58	MG/L	NONE	GREEN	NA	05/26/22	06026686
Nitrite as Nitrogen	ogen	0.0200	0.0200		0.118	MG/L	NONE	354.1	NA	05/20/22	05256653
Phosphorus		0.00800.0	0.0100		0.10	MG/L	365.2	365.2	06/01/22	06/02/22	06036693
Solids, Total Suspended	nspended	1.18	1.18		7.41	MG/L	NONE	160.2	NA	05/20/22	05246640
Solids, Volatile Suspen	e Suspen	1.18	1.18		1.65	MG/I	NONE	160.4	NA	05/20/22	05246641
Total Organic Carbon	arbon	0.500	1.00		3.4	MG/L	NONE	415.1	NA	06/13/22	581309T
The state of the s											***************************************

(a) DOD and/or NELAC Accredited Analyte.

Sample 008927-03, Inorganic Analyses

Lab Report No: 008927 Report Date: 06/02/2022

			2				
Project Name:	SHELBYVILLE LAK		nalysis: N		DES (82)	70SIM-MO	(טט)
Project No.:	C' 1 77400000	Analytical					
NELAC Certi	fied - IL100308	Prep	Method: 3	510C			
Field ID:	SVL-4		ARDL	Lab No.:	0089	27-04	
Desc/Location:			Lab F	ilename:	E060	1209	
Sample Date:	05/19/2022		Recei	ved Date:	05/1	9/2022	
Sample Time:	1333		Prep.	Date:	05/2	0/2022	
Matrix:	WATER		Analy	sis Date:	06/0	1/2022	
Amount Used:	1000 mL		Instr	ument ID:	AG5		•
Final Volume:	1 mL		QC Ba	tch:	B114	81	
% Moisture:	NA		Level	:	LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	0.310		UG/L	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	ND		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1
SURROGATE RECOV	ERIES:	L:	imits		Res	sults	
Triphenylphosph	ate	30	0-130		•	65%	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Report Date: 06/27/2022	Analysis: Inorganics NELAC Certified - IL100308	Matrix: WATER Moisture: NA	is Prep Analysis Run d Date Date Number	NA 05/27/22 06026685  H 05/20/22 06/09/22 06106707  NA 05/19/22 05236636  05/26/22 05/26/22 06016681  NA 05/20/22 05/26/22 06026686  NA 05/20/22 06/09/22 05256653  H 05/20/22 06/09/22 06106707  06/01/22 06/02/22 06036693  NA 05/20/22 05246641  NA 05/20/22 05246641
			Analysis	350.1 10200H 1604 351.2 GREEN 354.1 10200H 365.2 160.2
			Prep Method	NONE 10200H NONE 351.2 NONE 10200H 365.2 NONE NONE
		05/19/2022 1333	Units	MG/L MG/CU.M. COL/100 ML MG/L MG/L MG/L MG/L MG/L MG/L MG/L MG
			Result	ND 20.3 175 ND 5.49 0.068 7.5 0.226 29.4 6.46
		Sampling Loc'n: Sampling Date: Sampling Time:	Flag	Ŋ
		Samp. Samj	LOQ	0.100 1.00 1.00 0.100 0.0200 1.00 0.0100 2.08 2.08
127	LE LAKE	7	LOD	0.100 1.00 1.00 0.0950 0.0200 1.00 0.00800 2.08 2.08
Lab Report No: 008927	Project Name: SHELBYVILLE LAKE Project No:	ARDL No: 008927-04 Field ID: SVL-4 Received: 05/19/2022	Analyte	Ammonia Nitrogen Chlorophyll-a, Correcte E. Coliform Kjeldahl Nitrogen Nitrate as Nitrogen Nitrite as Nitrogen Pheophytin-a Phosphorus Solids, Total Suspended Solids, Volatile Suspen

(a) DOD and/or NELAC Accredited Analyte.

Lab Report No: 008927 Report Date: 06/02/2022

Project Name:	SHELBYVILLE LAK		4	P PESTICII	DES (82	70SIM-MC	D)
Project No.:		Analytical					
NELAC Certi	fied - IL100308	Prep	Method: 3	510C			
Field ID:	SVL-12		ARDL	Lab No.:	0089	27-05	
Desc/Location:			Lab F	ilename:	E060	1210	
Sample Date:	05/19/2022		Recei	ved Date:	05/1	9/2022	
Sample Time:	1443		Prep.	Date:	05/2	0/2022	
Matrix:	WATER		Analy	sis Date:	06/0	1/2022	
Amount Used:	1000 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Ba	tch:	B1148	31	
% Moisture:	NA		Level	:	LOW		
4000					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	0.670		UG/L	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	0.520		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1
SURROGATE RECOV	ERIES:	T.ii	mits		Res	sults	
riphenylphosph			-130			52%	

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008927	927						ĸ	Report Date:	: 06/27/2022	022
Project Name: SHELBYVILLE LAKE Project No:	LLE LAKE						Z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: 008927-05 Field ID: SVL-12 Received: 05/19/2022	5	Sampl Samp	Sampling Loc'n: Sampling Date: Sampling Time:		05/19/2022 1443			Matrix: Moisture:	: WATER : NA	
Analyte	LOD	TOO	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen Chlorophyll-a, Correcte E. Coliform Kjeldahl Nitrogen Nitrate as Nitrogen Nitrite as Nitrogen Pheophytin-a Phosphorus Solids, Total Suspended Solids, Volatile Suspen Total Organic Carbon	0.100 1.00 1.00 0.0950 0.0200 1.00 1.33 1.33	0.100 1.00 1.00 0.100 0.0200 1.00 1.33 1.33		ND 1.8 125 ND 6.71 0.40 ND 0.195 12.4 1.6	MG/CU.M. COL/100 ML MG/L MG/L MG/L MG/L MG/L MG/L MG/L MG	NONE 10200H NONE 351.2 NONE NONE 10200H 365.2 NONE NONE	350.1 10200H 1604 351.2 GREEN 354.1 10200H 365.2 160.2	NA 05/20/22 NA 05/26/22 NA NA 05/20/22 06/01/22 NA NA	05/27/22 06/09/22 05/19/22 05/26/22 05/20/22 06/09/22 05/20/22 05/20/22	06026685 06106707 05236636 06016681 06026686 05256653 06106707 06036693 05246641 5813091

(a) DOD and/or NELAC Accredited Analyte.

Sample 008927-05, Inorganic Analyses

Lab Report No: 008927 Report Date: 06/02/2022

Project Name:	SHELBYVILLE LAKE		4	P PESTICII	ES (82	70SIM-MC	D)
Project No.:		Analytical M					
NELAC Certi	fied - IL100308	Prep M	ethod: 3	510C			
Field ID:	SVL-13		ARDL	Lab No.:	00892	27-06	
Desc/Location:			Lab F	ilename:	E060	1211	
Sample Date:	05/19/2022		Recei	ved Date:	05/19	9/2022	
Sample Time:	1200		Prep.	Date:	05/20	0/2022	
Matrix:	WATER		Analy	sis Date:	06/03	L/2022	
Amount Used:	1000 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Ba	tch:	B1148	31	
% Moisture:	NA		Level	:	LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	ND		UG/L	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	ND		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1
SURROGATE RECOV	ERIES:	Lim	its		Res	sults	
riphenylphosph	ate	30-	130			59%	

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008927	3927						Ř	Report Date:	: 06/27/2022	022
Project Name: SHELBYVI Project No:	SHELBYVILLE LAKE						Z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: 008927-06 Field ID: SVL-13 Received: 05/19/2022	)6 122	Samp Samp Samp	Sampling Loc'n: Sampling Date: Sampling Time:		05/19/2022 1200			Matrix: Moisture:	: WATER : NA	
Analyte	LOD	TOO	Flag	Result	Units	Prep	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen Chlorophyll-a, Correcte E. Coliform Kjeldahl Nitrogen Nitrate as Nitrogen Nitrite as Nitrogen Pheophytin-a Phosphorus Solids, Total Suspended Solids, Volatile Suspen	0.100 1.00 1.00 0.0950 0.0200 1.00 0.00800	0.100 1.00 1.00 0.100 0.0200 1.00 0.0100 2.86 2.86		ND 6.5 250 ND 6.83 0.067 3.5 0.105 43.1 5.71	MG/L MG/CU.M. COL/100 ML MG/L MG/L MG/L MG/L MG/L MG/L MG/L	NONE 10200H NONE 351.2 NONE 10200H 365.2 NONE NONE	350.1 10200H 1604 351.2 GREEN 354.1 10200H 365.2 160.2	NA 05/20/22 NA 05/26/22 NA NA 05/20/22 06/01/22 NA NA	05/27/22 06/09/22 05/19/22 05/26/22 05/20/22 06/09/22 06/02/22 05/20/22 05/20/22	06026685 06106707 05236636 06016681 06026686 05256653 06106707 06036693 05246641 5813091

(a) DOD and/or NELAC Accredited Analyte.

Sample 008927-06, Inorganic Analyses

Lab Report No: 008927 Report Date: 06/02/2022

Project Name:	SHELBYVILLE LAKE		-	P PESTICII	ES (82	70SIM-MO	D)
Project No.:		Analytical N					
NELAC Certi	fied - IL100308	Prep N	Method: 3	510C			
Field ID:	SVL-11		ARDL :	Lab No.:	0089	27-07	
Desc/Location:			Lab F	ilename:	E060	1212	
Sample Date:	05/19/2022		Recei	ved Date:	05/1	9/2022	
Sample Time:	1308		Prep.	Date:	05/2	0/2022	
Matrix:	WATER		Analy	sis Date:	06/03	1/2022	
Amount Used:	1000 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Ba	tch:	B1148	31	
% Moisture:	NA		Level	:	LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	ND		UG/L	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	ND		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1
GUDDOGATE DEGOV	EDTEG.	T	0.1 to 0		Par	711]+a	
SURROGATE RECOV			nits			sults	
Triphenylphosph	ate	30-	-130		:	57%	

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

ر ب	008927						ıς.	Report Date:		022
Project Name: SHELBYV Project No:	SHELBYVILLE LAKE						N	Analysis: Inor NELAC Certified -	: Inorganics fied - IL1003	ganics IL100308
ARDL No: 008927-07	07	Samp	Sampling Loc'n:	'n:				Matrix:	: WATER	
Field ID: SVL-11 Received: 05/19/2022	022	Sam Sam	Sampling Date: Sampling Time:		05/19/2022 1308			Moisture:	: NA	
Analyte	LOD	ŎOI	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.100	0.100		ND	MG/L	NONE	350.1	NA	05/27/22	06026685
Chlorophyll-a, Correcte	e 1.00	1.00		22.7	MG/CU.M.	10200H	10200H	05/20/22	06/09/22	06106707
E. Coliform	1.00	1.00		23.0	COL/100 ML	NONE	1604	NA	05/19/22	05236636
Kjeldahl Nitrogen	0.480	1.00		1.4	MG/L	351.2	351.2	05/26/22	05/26/22	06016681
Nitrate as Nitrogen	0.0950	0.100		3.98	MG/L	NONE	GREEN	NA	05/26/22	06026686
Nitrite as Nitrogen	0.0200	0.0200		0.043	MG/L	NONE	354.1	NA	05/20/22	05256654
Pheophytin-a	1.00	1.00		8.4	MG/CU.M.	10200H	10200H	05/20/22	06/09/22	06106707
Phosphorus	0.00800	0.0100		0.342	MG/L	365.2	365.2	06/01/22	06/02/22	06036693
Solids, Total Suspended	d 1.11	1.11		10.3	MG/L	NONE	160.2	NA	05/20/22	05246640
Solids, Volatile Suspen	n 1.11	1.11		4.11	MG/L	NONE	160.4	NA	05/20/22	05246641
Total Organic Carbon	0.500	1.00		3.0	MG/L	NONE	415.1	NA	06/13/22	581309T

(a) DOD and/or NELAC Accredited Analyte.

Sample 008927-07, Inorganic Analyses

Lab Report No: 008927 Report Date: 06/02/2022

Project Name:	SHELBYVILLE LAK	E Ana	alysis: N	P PESTICII	DES (82	70SIM-MC	D)
Project No.:		Analytical N	Method: 83	270D			
NELAC Certi	fied - IL100308	Prep M	Method: 3	510C			
Field ID:	SVL-15		ARDL	Lab No.:	0089	27-08	
Desc/Location:			Lab F	ilename:	E060	1213	
Sample Date:	05/19/2022		Recei	ved Date:	05/1	9/2022	
Sample Time:	1332		Prep.	Date:	05/2	0/2022	
Matrix:	WATER		Analy	sis Date:	06/0	1/2022	
Amount Used:	1000 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Bat	tch:	B114	31	
% Moisture:	NA		Level	:	LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	ND		UG/L	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	ND		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results	
Triphenylphosphate	30-130	56%	ĺ
1			1

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 0	008927						ц	Report Date:	: 06/27/2022	022
Project Name: SHELBY Project No:	SHELBYVILLE LAKE						Z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: 008927-08 Field ID: SVL-15 Received: 05/19/2022	-08 2022	Samp. Samp.	Sampling Loc'n: Sampling Date: Sampling Time:		05/19/2022 1332			Matrix: Moisture:	: WATER : NA	
Analyte	TOD	TOO	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.100	0.100		ND	MG/L	NONE	350.1	NA	05/27/22	06026685
Chlorophyll-a, Correcte	te 1.00	1.00		21.6	MG/CU.M.	10200H	10200H	05/20/22	06/09/22	06106707
Kjeldahl Nitrogen	0.480	1.00		1.1	MG/L	351.2	351.2	05/26/22	05/26/22	06016681
Nitrate as Nitrogen	0.0950	0.100		4.78	MG/L	NONE	GREEN	NA	05/26/22	06026686
Nitrite as Nitrogen	0.0200	0.0200		0.043	MG/L	NONE	354.1	NA	05/20/22	06026688
Pheophytin-a	1.00	1.00		5.4	MG/CU.M.	10200H	10200H	05/20/22	06/09/22	06106707
Phosphorus	0.00800	0.0100		0.351	MG/L	365.2	365.2	06/01/22	06/02/22	06036693
Solids, Total Suspended	ed 1.11	1.11		11.7	MG/L	NONE	160.2	NA	05/20/22	05246640
Solids, Volatile Suspen	en 1.11	1.11		4.67	MG/L	NONE	160.4	NA	05/20/22	05246641
Total Organic Carbon	0.500	1.00		3.0	MG/L	NONE	415.1	NA	06/13/22	581309T

(a) DOD and/or NELAC Accredited Analyte.

Sample 008927-08, Inorganic Analyses

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Report Date: 06/27/2022	Analysis: Inorganics NELAC Certified - IL100308	Matrix: WATER isture: NA	Analysis Run Date Number	05/19/22 05236636
port Date	Analysis LLAC Certi	Matrix: Moisture:	Prep Date	NA
Re	HN HN		Analysis Method	1604
			Prep	NONE
		05/19/2022 1050	Units	COL/100 ML
			Result	23.0
		Sampling Loc'n: Sampling Date: Sampling Time:	Flag	
		Sam Sar Sar	ЙОТ	1.00
008927	SHELBYVILLE LAKE	19 IA 122	LOD	1.00
No: 008	SHELBYVI	008927-09 LS MARINA 05/19/2022	t a	
Lab Report No:	Project Name: Project No:	ARDL No: 008927-09 Field ID: LS MARINA Received: 05/19/202	Analyte	E. Coliform

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Report Date: 06/27/2022	Analysis: Inorganics NELAC Certified - IL100308	: WATER : NA	Analysis Run Date Number	05/19/22 05236636
port Date	Analysis LAC Certi	Matrix: Moisture:	Prep Date	NA
Re	NE		Analysis Method	1604
			Prep Method	NONE
		05/19/2022 1253	Units	COL/100 ML
			Result	25.0
		Sampling Loc'n: Sampling Date: Sampling Time:	Flag	
		Samp San San	TOO	1.00
008927	SHELBYVILLE LAKE	008927-10 FIN MARINA 05/19/2022	гор	1.00
Lab Report No: 008927	Project Name: SHEL Project No:	ARDL No: 008927-10 Field ID: FIN MARINA Received: 05/19/2022	Analyte	E. Coliform

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Report Date: 06/27/2022	Analysis: Inorganics NELAC Certified - IL100308	Matrix: WATER isture: NA	Analysis Run Date Number	05/19/22 05236636
eport Dat	Analysi ELAC Cert	Matrix: Moisture:	Prep Date	NA
Ř	N N		Prep Analysis Method Method	1604
			Prep Method	NONE
		05/19/2022 1347	Units	COL/100 ML
			Result	350
		Sampling Loc'n: Sampling Date: Sampling Time:	Flag	
		Samp San San	TOO	1.00
008927	SHELBYVILLE LAKE	008927-11 SUL MARINA 05/19/2022	LOD	1.00
Lab Report No: 008927	Project Name: SHE Project No:	ARDL No: 008927-11 Field ID: SUL MARIN Received: 05/19/202	Analyte	E. Coliform

(a) DOD and/or NELAC Accredited Analyte.

# METHOD BLANK REPORT ARDL, Inc. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008927 Report Date: 06/02/2022

Project Name:	SHELBYVILLE LAK	E Analys	sis: NP PES'	ricides (8:	270SIM-M	OD)	
Project No.:		Analytical Meth	nod: 8270D				
NELAC Certif	ied - IL100308	Prep Meth	nod: 3510C				
Field ID:	NA		ARDL Lab No	008	927-01B1		
Desc/Location:	NA		Lab Filena	me: E06	01203		
Sample Date:	NA		Received Da	ate: NA			
Sample Time:	NA		Prep. Date	: 05/:	20/2022		
Matrix:	QC Material		Analysis Da	ate: 06/	01/2022		
Amount Used:	1000 mL		Instrument	ID: AG5			
Final Volume:	1 mL		QC Batch:	B114	481		
% Moisture:	NA		Level:	LOW			
					Data		
Parameter		LOD	LOQ	Result	Flag	Units	
Trifluralin		0.200	0.200	ND		UG/L	
Atrazine		0.200	0.200	ND		UG/L	
Metribuzin		0.200	0.200	ND		UG/L	
Alachlor		0.200	0.200	ND		UG/L	
Metolachlor		0.200	0.200	ND		UG/L	
Chlorpyrifos		0.200	0.200	ND		UG/L	
Cyanazine		0.200	0.200	ND		UG/L	
Pendimethalin		0.200	0.200	ND		UG/L	
SURROGATE RECOVE	RIES:	Limits	3	Re	esults		
riphenylphospha		30-130			75%		

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

Mt. Vernon, IL 400 Aviation Drive; P.O. Box 1566 BLANK SUMMARY REPORT ARDL, INC.

62864

Lab Report No: 008927	927							Report Date:		06/27/2022
Project Name:	SHELBY	SHELBYVILLE LAKE	KE					NELA	NELAC Certified	ed - IL100308
Analyte	TOD	7001	Blank Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run	QC Lab Number
(a) Iron	0.040	0.050	NO ON	MG/L	3010A	6010C	05/23/22	05/25/22	P7775	008925-01B1
(a) Iron	0.040	0.050	N	MG/L	3010A	6010C	06/06/22	06/07/22	P7776	008932-01B1
(a) Manganese	0.004	0.005	ND	MG/L	3010A	6010C	05/23/22	05/25/22	P7775	008925-01B1
(a) Manganese	0.004	0.005	QN	MG/I	3010A	6010C	06/06/22	06/07/22	P7776	008932-01B1
Ammonia Nitrogen	0.030	0.10	NO	MG/L	NONE	350.1	NA	05/27/22	06026685	008925-01B1
Chlorophyll-a, Corre	1.0	1.0	QN	MG/CU.M.	10200H	10200H	05/20/22	06/09/22	06106707	008927-01B1
E. Coliform	1.0	1.0	QN	COL/100 ML	NONE	1604	NA	05/19/22	05236636	008927-02B1
Kjeldahl Nitrogen	1.0	1.0	ND	MG/L	351.2	351.2	05/26/22	05/26/22	06016681	008927-01B1
Nitrate as Nitrogen	0.019	0.020	ND	MG/L	NONE	GREEN	NA	05/26/22	06026686	008927-01B1
Nitrite as Nitrogen	0.020	0.020	QN	MG/L	NONE	354.1	NA	05/20/22	05256654	008928-01B1
Nitrite as Nitrogen	0.020	0.020	NO	MG/L	NONE	354.1	NA	05/20/22	05256653	008927-01B1
Nitrite as Nitrogen	0.020	0.020	NO	MG/L	NONE	354.1	NA	05/20/22	06026688	008927-08B1
Pheophytin-a	1.0	1.0	QN	MG/CU.M.	10200H	10200H	05/20/22	06/09/22	06106707	008927-01B1
Phosphorus	0.008	0.010	ND	MG/L	365.2	365.2	06/01/22	06/02/22	06036693	008925-02B1
Solids, Total Suspen	1.0	1.0	ND	MG/L	NONE	160.2	NA	05/20/22	05246640	008927-01B1
Solids, Volatile Sus	1.0	1.0	ND	MG/L	NONE	160.4	NA	05/20/22	05246641	008927-01B1
Total Organic Carbon	0.50	1.0	ND	MG/I	NONE	415.1	NA	06/13/22	581309T	008925-01B1

(a) DOD and/or NELAC Accredited Analyte Inorganic Method Blanks for 008927

Mt. Vernon, IL BLANK SPIKE/SPIKE DUPLICATE REPORT 400 Aviation Drive; P.O. Box 1566 ARDL, INC.

62864

Lab Report No:	0: 008927							Rej	port Date	Report Date: 06/02/2022
Project Name: Project No.:	Project Name: SHELBYVILLE LAKE Project No.:	7	Analysis: NP PESTICIDES (8270SIM-MOD)	PESTICII	)ES (8270S)	[M-MOD)	Anal	ytical M Prep M	Analytical Method: 8270D Prep Method: 3510C	70D 10C
Matrix: Amount Used:	QC Material 1000 mL		QC Batch: Level:		B11481 LOW		Prep. Date: Analysis Da	Date: is Date:	Prep. Date: 05/20/2022 Analysis Date: 06/01/2022	22
	Parameter	Spike Result	Spike	Spike % Rec	Duplicate Result	Duplicate Level	Duplicate % Rec	Recovery	RPD	RPD Limit
	Trifluralin	2.92	4	73			1	30-130	-	
	Atrazine	2.99	4	75	;	;	;	30-130	;	;
	Metribuzin	2.91	4	73	;	;	;	30-130	;	;
	Alachlor	3.03	4	92	!	;	;	30-130	;	;
	Metolachlor	2.86	4	72	!	;	;	30-130	!	;
	Chlorpyrifos	2.75	4	69	i i	1	;	30-130	;	!
	Cyanazine	2.91	4	73	;	1	i i	30-130	;	;
H	Pendimethalin	2.65	4	99	;	;	;	30-130	;	!

%R Limits 30-130

Duplicate %R

Spike %R 70

SURROGATE RECOVERIES:

Triphenylphosphate

(a) DoD and/or NELAC Accredited Analyte.

<sup>&#</sup>x27;\*' indicates a recovery outside of standard limits.

62864 Mt. Vernon, IL LABORATORY CONTROL SAMPLE REPORT 400 Aviation Drive; P.O. Box 1566 Mt. ARDL, INC.

Lab Report No: 008927 Project Name: S	8927 SHELBYVILLE LAKE	LE LAKE							Report Da	Report Date: 06/27/2022 NELAC Certified - IL100308
	LCS 1	LCS 1	LCS 1	LCS 2	LCS 2	LCS 2	% Rec	Mean	Analytical	QC Lab
	Result	Level	% Rec	Result	Level	% Rec	Limits	% Rec	Run	Number
	5.2	5.0	103	1	-	1	87-115	1	P7775	008925-01C1
	5.3	5.0	105	1	1	1	87-115	;	P7776	008932-01C1
	0.81	0.75	108	1	}	!	90-114	1	P7775	008925-01C1
	0.82	0.75	109	}	1	;	90-114	ì	P7776	008932-01C1
	1.1	1.0	108	ì	i	!	80-120	ı	06026685	008925-01C1
	11.0	10.0	110	!	1	1	80-120	1	06016681	008927-01C1
	0.95	1.0	95	l l	;	1	80-120	1	06026686	008927-01C1
	0.99	1.0	66	ŀ	i	;	80-120	i	05256654	008928-01C1
	н	1.0	100	1	}	1	80-120	ł	06026688	008927-08C1
	0.98	1.0	86	;	;	1	80-120	1	05256653	008927-01C1
	0.68	0.67	101	1	1	1	80-120	1	06036693	008925-02C1
Total Organic Carbon	18.8	20.0	94	18.7	20.0	94	76-120	94	581309T	008925-01C1

NOTE: Any values tabulated above marked with an asterisk are outside of acceptable limits.

Inorganic LCS Results for 008927

<sup>(</sup>a) DOD and/or NELAC Accredited Analyte

Mt. Vernon, IL MATRIX SPIKE/SPIKE DUPLICATE REPORT 400 Aviation Drive; P.O. Box 1566 ARDL, INC.

62864

Lab Report No:	008927								Report Date:		06/02/2022
Project Name: 8 Project No.:	Project Name: SHELBYVILLE LAKE Project No.:		Analysis:	NP PEST	NP PESTICIDES (8270SIM-MOD	OSIM-MOD)		Analytic Pr	Analytical Method: 8270D Prep Method: 3510C	: 8270D : 3510C	
Field ID: Desc/Location: Sample Date: Sample Time:	SVL-1 05/19/2022 1000		Prep. Dat Amount Us % Moistur QC Batch:	Prep. Date: Amount Used: % Moisture: QC Batch:	i		Lee Ree Ar	ARDL Lab No.: Lab Filename: Received Date: Analysis Date:		008927-01 05/19/2022 06/01/2022	
Matrix:	WATER		revel:		гом						
		Sample	MS	MS	MS	MSD	MSD	MSD	% Rec		RPD
Parameter	eter	Result	Result	Level	% Rec	Result	Level	% Rec	Limits	RPD	Limit
Trifluralin	ralin	ES.	2.83	4	70.8	2.75	4	68.8	30-130	2.9	30
Atra	Atrazine	S S	2.83	4	70.8	2.92	4	73	30-130	3.1	30
Metri	Metribuzin	ğ	2.65	4	66.3	2.77	4	69.3	30-130	4.4	30
Alac	Alachlor	Ð	2.77	4	69.3	2.84	4	7.1	30-130	2.5	30
Metolachlor	chlor	S S	2.76	4	69	2.78	4	69.5	30-130	0.7	30
Chlorp	Chlorpyrifos	QN.	2.47	4	61.8	2.55	4,	63.8	30-130	3.2	30
Cyanazine	zine	S S	2.57	4	64.3	2.66	4	66.5	30-130	3.4	30
Pendimethalin	thalin	S S	2.47	4	61.8	2.42	4	60.5	30-130	7	30

SURROGATE RECOVERLES:	MS %R	MSD %R	%R Limits
Triphenylphosphate	61	63	30-130

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

<sup>&#</sup>x27;nc' indicates sample >4X spike level.

Matrix Spikes for 008927-01, NP PESTICIDES (8270SIM-MOD) '\*' indicates a recovery outside of standard limits.

62864 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL MATRIX SPIKE/SPIKE DUPLICATE REPORT ARDL, INC.

Report Date: 06/27/2022 Lab Report No: 008927

Sample Sample MS MS MSD MSD MSD MSD MSD MSD MSD MSD M	Project Name:		SHELBYVILLE LAKE	LE LAKE								NELAC	Certifi	NELAC Certified - IL100308
WATER         0.55         1.6         1.0         108         1.6         1.0           WATER         0.042         0.56         0.50         104         0.56         0.50           WATER         ND         11.0         10.0         110         10.0         10.0           WATER         0.13         1.2         1.0         103         1.2         1.0	Analyte	Sample Matrix	Sample Result	MS Result	MS Level	% Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit	Run	QC Lab Number
WATER         0.042         0.56         0.50         104         0.56         0.50           WATER         4.0         5.0         10.0         110         10.0         10.0           WATER         0.13         1.2         1.0         99         5.2         1.0           WATER         0.13         1.2         1.0         1.0         1.0	(a) Iron	WATER	0.55	1.6	1.0	108	1.6	1.0	108	87-115	0	20	P7776	008927-01MS
WATER         ND         11.0         10.0         110         10.0           WATER         4.0         5.0         1.0         99         5.2         1.0           WATER         0.13         1.2         1.0         103         1.2         1.0	(a) Manganese	WATER	0.042	0.56	0.50	104	0.56	0.50	105	90-114	ref	20	P7776	008927-01MS
WATER 0.13 1.2 1.0 99 5.2 1.0 MATER 0.13 1.2 1.0 103 1.2 1.0	eldahl Nitrogen	WATER	ND	11.0	10.0	110	10.0	10.0	100	75-125	10	20	06016681	008927-01MS
WATER 0.13 1.2 1.0 103 1.2 1.0	rate as Nitrogen	WATER	4.0	5.0	1.0	66	5.2	1.0	112	75-125	٣	20	06026686	008927-01MS
CO O A L + CAL CO O A L CC O CONTRET	ite as Nitrogen	WATER	0.13	1.2	1.0	103	1.2	1.0	102	75-125	0	20	05256653	008927-01MS
WALES 0.23 I.3 0.03 I.3 0.03	Phosphorus	WATER	0.23	1.5	0.83	157 *	1.5	0.83	157 *	75-125	0	20	06036693	008927-04MS

NOTE: Values tabulated above marked with an asterisk are explained in the associated narrative.

<sup>(</sup>a) DOD and/or NELAC Accredited Analyte.

62864 Mt. Vernon, IL SAMPLE DUPLICATE REPORT 400 Aviation Drive; P.O. Box 1566 ARDL, INC.

Report Date: 06/27/2022	NELAC Certified - IL100308	rcent Mean Analytical QC Lab Diff (Smp, D1, D2) Run Number	32* 06106707 008927-01D1	19 06106707 008927-01D1	2 05246640 008927-01D1	3 05246641 008927-01D1
		Percent Units Diff	MG/CU.M. 3	MG/CU.M. 1	MG/L	MG/T.
		Second	1	!	;	1
	AKE	Sample First Conc'n Duplicate	13.1	13.4	19.8	0
7	SHELBYVILLE LAKE	Sample Conc'n	9.5	16.2	19.4	α
Lab Report No: 008927	Project Name: SHELB'	Analyte	Chlorophyll-a, Corrected	Pheophytin-a	Solids, Total Suspended	Solids Volatile Suspend

\* indicates that agreement between duplicates is greater than 20%. See Case Narrative for exceptions. (a) DOD and/or NELAC Accredited Analyte

Sample Duplicates for 008927



Sample Receipt Information

### Including as appropriate:

- COCs
- Cooler Receipts
- Airbills
- Email Communication / Instructions from Customer

ARDL Data Package 8927

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1	Inc.
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	AKU
4	<b>A</b>

.O. Box 1566, 400 Aviation Drive, Mt. Vernon, IL 62864

(618) 244-3235 Phone

(618) 244-1149 Fax

CHAIN OF CUSTODY RECORD

		.^	1																	
PRESERVATION	SPECIFY CHEMICALS ADDED AND FINAL PH IF KNOWN																			
PRES	ICED		×	×	×	×	×	×	×	×	×	×	×							
		REMARKS OR SAMPLE LOCATION																		
																	ONS:	,		
																	REMARKS/SPECIAL INSTRUCTIONS			
	03	WSW E C															INSTI			
	110	2011	×														IAL	L2SO4 INO3		
	156	I ST IN	1	×	h.d.	×	×	×	×		×	×	×				S/SPE	with F with F		
	V. ANASA	MAN	X	×	X	×	×	×	×	×							ARKS	*Preserved with H <sub>2</sub> SO <sub>4</sub> #Preserved with HNO <sub>3</sub>		
	POOT I	SON!	X	X	×	X	X	X	X	X							REM	*Pres		
	0907	50/	×	×	×	×	×	×	×	×							r	8		
1	CON SO	20/0/2	×	×	×	×	×	×	×	×							11	3-		
	* 35	1/38/	×	×		×	×	×	×	×							igna	(Signature)	t No.	
			×	X	×	X	×	×	×	×							by		Ticke	
SAB	CONTAIN	GRAB NO. OF	×	×	×	×	×	×	×	×	×	×	×				Received by Signature)	Received by:	Shipping Ticket No.	
	)	COMP															S. C.			
	26 7/5	TIME	1000	1020	1040	1333	2441	1200	305!	1350	1050	1353	4451				Time		_	
	Towns Scher/c	DATE	5/19/2	_			_				_		_		45		Date	Date	Date 5-19-12	
PROJECT Shelbyville Lake	SAMPLERS: (Signature)		SVL-1	SVL-2	3 SVL-2-10	( SVL-4	SVL-12	SVL-13	SVL-11	SVL-15	LS Marina	FIN Marina	SUL Marina	A	RDL	Re	J	S Rejinquished by: (Signature)	or Laboratory by:	O DPURCHASE ORDER NO:

# COOLER RECEIPT REPORT ARDL, INC.

ARI		Cooler # Red 1	anti 7		
Pro		Number of Coolers in Shipm Date Received: 05/19/20			-
A.	PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 05/19/20	32Z (Signature) XB		,	VA distance and
1.	Did cooler come with a shipping slip (airbill, etc.)?		YES (	NO)	
	If YES, enter carrier name and airbill number here: Hand deli	vered-Valerie			
2.	Were custody seals on outside of cooler?		YES	NO (	N/A)
	How many and where?,Seal Date:	,Seal Name:			
3.	Were custody seals unbroken and intact at the date and time of arrival?		YES	NO	(NA)
4.	Did you screen samples for radioactivity using a Geiger Counter?	,	YES	NO	
5.	Were custody papers sealed in a plastic bag? Hand de IVENER	:(	YES (	NO	
6.	Were custody papers filled out properly (ink, signed, etc.)?		YES	NO	N/A
7.	Were custody papers signed in appropriate place by ARDL personnel?		YES	NO	N/A
8.	Was project identifiable from custody papers? If YES, enter project name at the	e top of this form	(YES)	NO	N/A
9.	Was a separate container provided for measuring temperature? YESN	Observed Cooler Temp	410 c	50	
В.	LOG-IN PHASE: Date samples were logged-in: 05/20/2022 (Signal Control of the Cont	gnature)DCB Corre	ection factor_C	7.0	c
10.	$T_{0}$				
11.	Were all samples sealed in separate plastic bags?		YES	(NO)	N/A
12.	Did all containers arrive unbroken and were labels in good condition?			NO	
13.	Were sample labels complete?		<b>E</b>	NO	
14.	Did all sample labels agree with custody papers?		(YES	NO	
15.	Were correct containers used for the tests indicated?		(YES)	NO	
16.	Was pH correct on preserved water samples?		(FES)	NO	N/A
17.	Was a sufficient amount of sample sent for tests indicated?		(YES)	NO	
18.	Were bubbles absent in VOA samples? If NO, list by sample #:		YES	NO	N/A
19.	Was the ARDL project coordinator notified of any deficiencies?		YES	NO	(N/A)
	Comments and/or Corrective Action:	Sample T	ransfer		$\widetilde{}$
	All a L. CLL COLLIST	Fraction	Fraction		
	All Containers State SBV instead	Area # A A	Area#		
0	of SUL.	Walk-In			
	0	By A.O	Ву		
		On 1	On		
		05/20/2022			
		Obein of Overlands	· Management and the second of the second		COMPANS OF THE PARTY OF THE PAR
(E	By: Signature) DCR Date: US/20/2022	Chain-of-Custody #			

### COOLER RECEIPT REPORT ARDL, INC.

ARI		ooler# <u>Blue 1</u> umber of Coolers in Shipr	- mont: 2		
Pro		ate Received: <u>05/19</u>			-
Α.	PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 05/19/202	2Z (Signature) DCB			
1.	Did cooler come with a shipping slip (airbill, etc.)?		YES	NO	)
	Did cooler come with a shipping slip (airbill, etc.)?	vrier-Valerie			
2.	Were custody seals on outside of cooler?			NO	(N/A)
	How many and where?,Seal Date:	"Seal Name:			
3.	Were custody seals unbroken and intact at the date and time of arrival?			NO	(NA)
4.	Did you screen samples for radioactivity using a Geiger Counter?			NO	
5.	Were custody papers sealed in a plastic bag? Hand delivered,			(NO)	
6.	Were custody papers filled out properly (ink, signed, etc.)?		(YES)	NO	N/A
7.	Were custody papers signed in appropriate place by ARDL personnel?		YES	NO	N/A
8.	Was project identifiable from custody papers? If YES, enter project name at the		2	NO	N/A
9.	Was a separate container provided for measuring temperature? YESN	Observed Cooler Tem	. 3 <i>.</i> 8 .	2 ^	_
В.	LOG-IN PHASE: Date samples were logged-in: 05/20/2022 (Sign	nature) DCB Corr	ection factor_	),()	c
10.	Describe type of packing in cooler: LOOSe Ice				
11.			YES	NO	) N/A
12.	Did all containers arrive unbroken and were labels in good condition?			) NO	
13.	Were sample labels complete?		YES	NO	
14.	Did all sample labels agree with custody papers?			NO	
15.	Were correct containers used for the tests indicated?		(YES)	NO	
16.	Was pH correct on preserved water samples?		(YES)	NO	N/A
17.	Was a sufficient amount of sample sent for tests indicated?		(F)	NO	
18.	Were bubbles absent in VOA samples? If NO, list by sample #:		YES	NO	(N/A)
19.	Was the ARDL project coordinator notified of any deficiencies?		YES	NO	(N/A)
	Comments and/or Corrective Action:	Sample	Transfer		
1		Fraction	Fraction 1		
+	VI container state SBV	Arela# A L	Area#		
1	nstead of SVL.	Walk-In	7.1104.11		
		By	Ву		
-		On	On		
		05/20/2022		70-	
			, economical contractive contr	the second s	
-	2000-100	Chain-of-Custody #			
[ (E	By: Signature) 003 Date: 05/20/2022				



PO Box 1566 400 Aviation Drive Mt. Vernon, IL 62864 618-244-3235

www.ardlinc.com

**Customer Name: SLCOE** 

Date: 7/14/22

**Project Name: Shelbyville Lake** 

Lab Name: ARDL, Inc.

Samples Received at ARDL: 6/21/22

ARDL Report No.: 8935

### **CASE NARRATIVE**

Customer	<u>Date</u>	<u>Lab ID</u>	
Sample No.	Collected	<u>Number</u>	Analyses Requested
SVL-1	6/21/22	8935-01	NP Pesticides, Metals(1), Inorganics(2)(3)
SVL-2	6/21/22	8935-02	NP Pesticides, Inorganics(2)(3), E. Coli
SVL-2-10	6/21/22	8935-03	Metals(1), Inorganics(2)
SVL-4	6/21/22	8935-04	NP Pesticides, Inorganics(2)(3), E. Coli
SVL-12	6/21/22	8935-05	NP Pesticides, Inorganics(2)(3), E. Coli
SVL-13	6/21/22	8935-06	NP Pesticides, Inorganics(2)(3), E. Coli
SVL-11	6/21/22	8935-07	NP Pesticides, Inorganics(2)(3), E. Coli
SVL-15	6/21/22	8935-08	NP Pesticides, Inorganics(2)(3)
LS MARINA	6/21/22	8935-09	E. Coli
FIN MARINA	6/21/22	8935-10	E. Coli
SUL MARINA	6/21/22	8935-11	E. Coli

<sup>(1)</sup> Including iron and manganese.

The quality control data are summarized as follows:

### NP PESTICIDE FRACTION - METHOD 8270-SIM

### **HOLDING TIME**

Samples were prepared and analyzed within method specified holding times.

### **INITIAL CALIBRATION**

The initial calibration passed criteria.

### **CONTINUING CALIBRATION**

The continuing calibration verification (CCV) passed criteria for all analytes.

### PREPARATION BLANK

The blank met acceptance criteria.

### LABORATORY CONTROL SAMPLE

The LCS analyses met recovery criteria.

### MATRIX SPIKE

The matrix spike and matrix spike duplicate met recovery criteria.

"Test everything, keep the good" 1 Thes. 5:21

Page 1 of 3

<sup>(2)</sup> Including ammonia\*, nitrate, nitrite, total phosphorus\*, TKN\*, TOC\*, TSS and TVSS.

<sup>(3)</sup> Including chlorophyll-a corrected and pheophytin-a.

<sup>\*</sup> Analyzed by an accredited subcontract laboratory.

Project Name: Shelbyville Lake ARDL Report No.: 8935

### **CASE NARRATIVE (Continued)**

### **DUPLICATE**

Duplicate analyses are reported as MS/MSD. RPD of the duplicate analyses met criteria.

### INTERNAL STANDARDS

All internal standard criteria were met.

### **SURROGATES**

All surrogate recovery criteria were met.

### **INORGANIC FRACTION**

### PREPARATION BLANK

Results of the preparation blanks met criteria except for iron which was detected just under 1.5x the LOQ. Sample 8935-01 was detected at 5.5x the level in the blank. The data is flagged appropriately with a 'B' qualifier in the associated samples.

### LABORATORY CONTROL SAMPLE

Percent recoveries of all LCS analyses were within control limits.

### MATRIX SPIKE

Percent recoveries of all matrix spikes and matrix spike duplicates were within control limits, except 2 of 2 for nitrate. The parent sample has been flagged appropriately with a 'J' qualifier.

### **DUPLICATE**

All duplicate analyses are reported as MS/MSD except chlorophyll-a corrected, pheophytin-a, TSS and TVSS. RPD on all duplicate analyses were within control limits, except pheophytin-a, TSS and TVSS. The parent sample has been flagged appropriately with a 'J' qualifier.

### **DATA REPORTING QUALIFIERS**

The following data reporting qualifiers are used as required:

- ND Indicates parameter was analyzed for but not detected.
- Indicates an estimated value. This flag is used either when estimating a concentration or this flag indicates analyte(s) associated with a DOD-QSM specified non-compliance pertaining to matrix QC criteria.
- B This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

### **REPORT ORGANIZATION**

The data in this report appear by sample type (Field sample, preparation blank, laboratory control sample / spike blank, matrix spike /spike duplicate and sample duplicate). Within each sample type the data appear in the order that the analytical methods were discussed in this case narrative. Sample receipt information follows the analytical data.

Project Name: Shelbyville Lake	ARDL Report No.: 8935
CASE NA	RRATIVE (Continued)
Release of the data contained in this package had designee as verified by the following signature.	s been authorized by the Technical Services Manager or his
	Dean S. Dickerson
	Technical Services Manager



# Sample & QC Results

Including as appropriate: Field Sample Results

Batch QC

Prep Blank LCS/Spike Blank

Matrix QC

MS/MSD

Sample Duplicate

ARDL Data Package

8935

N:\ARDL Case Narratives\ARDL Data Package Contents.pdf - Revised June 21, 2019

Authorized By: DSD-QAO

Lab Report No: 008935 Report Date: 07/10/2022

Project Name:	SHELBYVILLE LAKE		_	P PESTICII	DES (82'	70SIM-MO	D)
Project No.:	And	alytical M	ethod: 82	270D			
NELAC Certi	fied - IL100308	Prep M	ethod: 3	510C			
Field ID:	SVL-1		ARDL 1	Lab No.:	00893	35-01	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E0708	3205	
Sample Date:	06/21/2022		Recei	ved Date:	06/2:	1/2022	
Sample Time:	1005		Prep.	Date:	06/2	7/2022	
Matrix:	WATER		Analy	sis Date:	07/08	3/2022	
Amount Used:	1000 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Bat	ch:	B1149	98	
% Moisture:	NA		Level	:	FOM		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	ND		$\mathtt{UG}/\mathtt{L}$	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	ND		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	. 1
Pendimethalin		0.200	0.200	ND		UG/L	1
URROGATE RECOV	ERIES:	Lim	its		Res	sults	·
riphenylphosph	ate	30-	130		9	91%	. · ·

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 00	008935						Ж	Report Date:	: 07/15/2022	022
Project Name: SHELBYV Project No:	SHELBYVILLE LAKE						Z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: 008935-01 Field ID: SVL-1 Received: 06/21/2022	-01	Sampl Samp Samp	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 06/21/2022 1005			Matrix: Moisture:	: WATER : NA	
Analyte	ГОР	ŎOI	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron	0.0400	0.0500	Д	0.391	MG/L	3010A	6010C	06/24/22	06/28/22	P7784
(a) Manganese	0.00400	0.00500		0.230	MG/L	3010A	6010C	06/24/22	06/28/22	P7784
Ammonia Nitrogen	0.0300	0.0100		0.25	MG/L	NONE	350.1	NA	06/23/22	R313570A
Chlorophyll-a, Correcte	ie 1.00	1.00		2.4	MG/CU.M.	10200H	10200H	06/22/22	06/29/22	07016804
Kjeldahl Nitrogen	1.00	1.00		ND	MG/L	351.2	351.2	06/22/22	06/23/22	193897T
Nitrate as Nitrogen	0.0950	0.100	þ	2.75	MG/L	NONE	GREEN	NA	06/22/22	06306793
Nitrite as Nitrogen	0.0200	0.0200		0.076	MG/L	NONE	354.1	NA	06/22/22	06286778
Pheophytin-a	1.00	1.00		3.4	MG/CU.M.	10200H	10200H	06/22/22	06/29/22 (	07016804
Phosphorus	0.100	0.100		ΩN	MG/L	365.2	365.2	06/22/22		193896P
Solids, Total Suspended	ad 1.33	1.33		8.13	MG/L	NONE	160.2	NA	06/22/22 (	06276771
Solids, Volatile Suspen	an 1.33	1.33		1.6	MG/L	NONE	160.4	NA	06/22/22 (	06276773
Total Organic Carbon	0.400	1.00		2.6	MG/I	NONE	415.1	NA	06/29/22 (	07076831

(a) DOD and/or.NELAC Accredited Analyte.

Sample 008935-01, Inorganic Analyses

Lab Report No: 008935 Report Date: 07/10/2022

alytical M Prep M	ARDL Lab F			35-02	
Prep M	ARDL Lab F	Lab No.:		35-02	
	Lab F			35-02	
		ilename:	<b>ロハフハ</b>		
	Recei		E0/08	3208	
		ved Date:	06/23	1/2022	
	Prep.	Date:	06/2	7/2022	
	Analy	sis Date:	07/08	3/2022	
	Instr	ument ID:	AG5		
	QC Bat	tch:	B1149	98	
	Level	:	LOW		
			Data		Dilution
LOD	LOQ	Result	Flag	Units	Factor
0.222	0.222	ND		UG/L	1
0.222	0.222	ND		UG/L	1
0.222	0.222	ND		UG/L	1
0.222	0.222	ND		UG/L	1
0.222	0.222	ND		UG/L	1
0.222	0.222	ND		UG/L	1
0.222	0.222	ND		UG/L	1
0.222	0.222	ND		UG/L	1
	0.222 0.222 0.222 0.222 0.222 0.222 0.222	LOD LOQ  0.222 0.222 0.222 0.222 0.222 0.222 0.222 0.222 0.222 0.222 0.222 0.222 0.222 0.222 0.222 0.222	Instrument ID: QC Batch: Level:  LOD LOQ Result  0.222 0.222 ND	Instrument ID: AG5 QC Batch: B1149 Level: LOW  Data LOD LOQ Result Flag  0.222 0.222 ND	Instrument ID: AG5 QC Batch: B11498 Level: LOW  Data LOD LOQ Result Flag Units  0.222 0.222 ND UG/L

SURROGATE RECOVERIES:	Limits	Results	1
Triphenylphosphate	30-130	71%	
			ĺ

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008935	935						M.	Report Date:	: 07/14/2022	022
Project Name: SHELBYVILLE LAKE Project No:	LLE LAKE						z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: 008935-02 Field ID: SVL-2 Received: 06/21/2022	22	Samplin Sampli Sampli	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 06/21/2022 1138			Matrix: Moisture:	: WATER : NA	
Analyte	TOD	ÕOI	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen Chlorophyll-a, Correcte E. Coliform Kjeldahl Nitrogen Nitrate as Nitrogen Nitrite as Nitrogen Pheophytin-a Phosphorus Solids, Total Suspended Solids, Volatile Suspen Total Organic Carbon	0.100 1.00 1.00 0.0950 0.0200 1.00 0.100 1.18 1.18	0.100 1.00 1.00 0.100 0.0200 1.00 1.18 1.18		ND 6.4 375 ND 3.39 0.059 2.8 ND 2.24 1.65	MG/L MG/CU.M. COL/100 ML MG/L MG/L MG/L MG/L MG/L MG/L MG/L	NONE 10200H NONE 351.2 NONE 10200H 365.2 NONE NONE	350.1 10200H 1604 351.2 GREEN 354.1 10200H 365.2 160.2 160.4	NA 06/22/22 NA 06/22/22 NA NA 06/22/22 06/22/22 NA NA	06/23/22 06/29/22 06/21/22 06/22/22 06/22/22 06/29/22 06/23/22 06/22/22	R313570A 07016804 06236757 193897T 06286778 07016804 193896P 06276771 06276773

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Project Name: SHELBYVILLE LAKE Project No: ARDL No: 008935-03 Field ID: SVL-2-10 Received: 06/21/2022									
						Ŋ	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
	Sampling Sampling Sampling	ampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 06/21/2022 1138			Matrix: Moisture:	: WATER : NA	
Analyte	ÖOI	Flag	Result	Units	Prep	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron 0.0400	0.0500	В	14.0	MG/L	3010A	6010C	06/24/22	06/28/22	P7784
(a) Manganese 0.00400	0.00500		0.704	MG/L	3010A	6010C	06/24/22	06/28/22	P7784
Ammonia Nitrogen 0.0300	0.100	þ	0.090	MG/L	NONE	350.1	NA	06/23/22	R313570A
Kjeldahl Nitrogen 0.500	1.00	ט	0.70	MG/L	351.2	351.2	06/22/22	06/23/22	193897T
Nitrate as Nitrogen 0.095	0.10		3.2	MG/L	NONE	GREEN	NA	06/22/22	06306793
Nitrite as Nitrogen 0.0200	0.0200		ND	MG/L	NONE	354.1	NA	06/22/22	06286778
Phosphorus 0.0660	0.100		0.104	MG/L	365.2	365.2	06/22/22	06/23/22	193896P
Solids, Total Suspended 1.33	1.33		8.67	MG/L	NONE	160.2	NA	06/22/22	06276771
Solids, Volatile Suspen 1.33	1.33		2.0	MG/L	NONE	160.4	NA	06/22/22	06276773
Total Organic Carbon 0.400	1.00		3.8	MG/L	NONE	415.1	NA	06/29/22	07076831

(a) DOD and/or NELAC Accredited Analyte.

Lab Report No: 008935 Report Date: 07/10/2022

Project Name:	SHELBYVILLE LAKE	Ana	lvsis: N	P PESTICII	DES (82'	70SIM-MC	)D)
Project No.:		alytical M	-		(		-,
-	fied - IL100308	-	ethod: 3				4 - y
Field ID:	SVL-4		ARDL	Lab No.:	00893	35-04	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E0708	8209	
Sample Date:	06/21/2022		Recei	ved Date:	06/23	1/2022	
Sample Time:	1513		Prep.	Date:	06/2	7/2022	
Matrix:	WATER		Analy	sis Date:	07/08	8/2022	
Amount Used:	1000 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Bat	tch:	B1149	98	
% Moisture:	NA		Level	:	LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND	.,	UG/L	1
Atrazine		0.200	0.200	0.490		$\mathtt{UG}/\mathtt{L}$	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	0.330		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results	
Triphenylphosphate	30-130	62%	
1			`.

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Report Date: 07/14/2022	Analysis: Inorganics NELAC Certified - IL100308	Matrix: WATER Moisture: NA	Prep Analysis Prep Analysis Run Method Method Date Date Number	NONE 350.1 NA 06/23/22 R313570A 10200H 10200H 06/22/22 06/29/22 07016804 NONE 1604 NA 06/21/22 06236757 351.2 351.2 06/22/22 06/23/22 193897T NONE 354.1 NA 06/22/22 06306793 10200H 10200H 06/22/22 06/29/22 07016804 365.2 365.2 06/22/22 06/23/22 193896P NONE 160.2 NA 06/22/22 06276771 NONE 160.4 NA 06/22/22 06276771 NONE 160.4 NA 06/22/22 06276773 NONE 150.4 NA 06/22/22 06276773
		SHELBYVILLE LAKE 06/21/2022 1513	Units	MG/L MG/CU.M. COL/100 ML MG/L MG/L MG/L MG/L MG/L MG/L MG/L
			Result	ND 66.8 88.0 0.70 2.4 0.064 10.3 0.157 17.0 6.2
		Sampling Loc'n: Sampling Date: Sampling Time:	Flag	כי
		Samp) Samp	COT	0.100 1.00 1.00 1.00 0.10 0.100 2.00 2.0
35	LE LAKE	5	LOD	0.100 1.00 1.00 0.500 0.0200 1.00 0.0660 2.00 2.00
Lab Report No: 008935	Project Name: SHELBYVILLE LAKE Project No:	ARDL No: 008935-04 Field ID: SVL-4 Received: 06/21/2022	Analyte	Ammonia Nitrogen Chlorophyll-a, Correcte E. Coliform Kjeldahl Nitrogen Nitrate as Nitrogen Nitrite as Nitrogen Pheophytin-a Phosphorus Solids, Total Suspended Solids, Volatile Suspen Total Organic Carbon

(a) DOD and/or NELAC Accredited Analyte.

Sample 008935-04, Inorganic Analyses

Lab Report No: 008935 Report Date: 07/10/2022

Project Name:	SHELBYVILLE LAKE		-	P PESTICII	DES (82	70SIM-MC	D)
Project No.:		alytical M					
NELAC Certi	fied - IL100308	Prep M	ethod: 35	510C			
Field ID:	SVL-12		ARDL 1	Lab No.:	00893	35-05	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E0708	3210	
Sample Date:	06/21/2022		Receiv	ved Date:		1/2022	
Sample Time:	1630		Prep.	Date:	06/2	7/2022	
Matrix:	WATER		Analys	sis Date:	07/08	3/2022	
Amount Used:	1000 mL		Instru	ument ID:	AG5		
Final Volume:	1 mL		QC Bat	tch:	B1149	98	
% Moisture:	NA		Level	:	LOM		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin	Land Control of the C	0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	2.23		UG/L	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	0.230		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1
URROGATE RECOV	ERIES:	Lim	its		Res	sults	
riphenylphosph	ate	30-	130		(	59%	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008935	35						R	Report Date:	: 07/14/2022	022
Project Name: SHELBYVILLE LAKE Project No:	LE LAKE						N	Analysis: ELAC Certif	Analysis: Inorganics NELAC Certified - IL100308	ics 00308
ARDL No: 008935-05 Field ID: SVL-12 Received: 06/21/2022	22	Samp Sami Sami	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 06/21/2022 1630			Matrix: Moisture:	: WATER : NA	
Analyte	LOD	TOO	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen Chlorophyll-a, Correcte E. Coliform Kjeldahl Nitrogen Nitrate as Nitrogen Nitrite as Nitrogen Pheophytin-a Phosphorus Solids, Total Suspended Solids, Volatile Suspen Total Organic Carbon	0.100 1.00 1.00 0.095 0.0200 1.00 1.43 1.43	0.100 1.00 1.00 0.10 0.0200 1.00 1.43 1.43		ND 9.4 100 ND 2.7 ND 3.3 0.186 23.6 3.71 2.8	MG/L MG/CU.M. COL/100 ML MG/L MG/L MG/L MG/L MG/L MG/L	NONE 10200H NONE 351.2 NONE 10200H 365.2 NONE NONE	350.1 10200H 1604 351.2 GREEN 354.1 10200H 365.2 160.2 160.4	NA 06/22/22 NA 06/22/22 NA NA 06/22/22 06/22/22 NA NA	06/23/22 06/29/22 06/21/22 06/23/22 06/22/22 06/29/22 06/23/22 06/23/22 06/22/22 06/22/22	R313570A 07016804 06236757 193897T 06306793 06286778 07016804 193896P 06276771

(a) DOD and/or NELAC Accredited Analyte.

Lab Report No: 008935 Report Date: 07/10/2022

Project Name:	SHELBYVILLE LAKE		-	P PESTICII	ES (82	70SIM-MO	D)
Project No.:		alytical M					
NELAC Certi:	fied - IL100308	Prep M	ethod: 3	510C			
Field ID:	SVL-13		ARDL	Lab No.:	00893	35-06	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E0708	3211	
Sample Date:	06/21/2022		Recei	ved Date:	06/23	1/2022	
Sample Time:	1325		Prep.	Date:	06/27	7/2022	
Matrix:	WATER		Analy	sis Date:	07/08	3/2022	
Amount Used:	900 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Bat	tch:	B1149	98	
% Moisture:	NA		Level	:	LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.222	0.222	ND		UG/L	1
Atrazine		0.222	0.222	0.356		UG/L	1 .
Metribuzin		0.222	0.222	ND		UG/L	1
Alachlor		0.222	0.222	ND		UG/L	1
Metolachlor		0.222	0.222	ND		UG/L	1
Chlorpyrifos		0.222	0.222	ND		UG/L	1
Cyanazine		0.222	0.222	ND		UG/L	1
Pendimethalin		0.222	0.222	ND		UG/L	1
SURROGATE RECOVI	ERIES:	Lim	its		Res	sults	>, i 1º }
riphenylphospha	ate	30-	130		6	50%	7. 1.0

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008935	935						M.	Report Date:	: 07/14/2022	)22
Project Name: SHELBYVI Project No:	SHELBYVILLE LAKE						Z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	.cs 00308
ARDL No: 008935-06 Field ID: SVL-13 Received: 06/21/2022	52	Sampl Samp Samp	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 06/21/2022 1325			Matrix: Moisture:	: WATER : NA	
Analyte	LOD	TOO	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.100	0.100		ΩN	MG/L	NONE	350.1	NA	06/23/22 I	R313570A
Chlorophyll-a, Correcte	1.00	1.00		120	MG/CU.M.	10200H	10200H	06/22/22	06/29/22 (	07016804
E. Coliform	1.00	1.00		82.0	COL/100 ML	NONE	1604	NA	06/21/22 (	06236757
Kjeldahl Nitrogen	0.480	1.00		1.5	MG/L	351.2	351.2	06/22/22	06/23/22	193897T
Nitrate as Nitrogen	0.0190	0.0200		0.113	MG/L	NONE	GREEN	NA	06/22/22 (	06306792
Nitrite as Nitrogen	0.0200	0.0200		0.044	MG/L	NONE	354.1	NA	06/22/22 (	06286778
Pheophytin-a	1.00	1.00	b	41.1	MG/CU.M.	10200H	10200H	06/22/22	06/29/22 (	07016804
Phosphorus	0990.0	0.100		0.194	MG/L	365.2	365.2	06/22/22	06/23/22	193896P
Solids, Total Suspended	4.00	4.00	p	73.6	MG/L	NONE	160.2	NA	06/22/22 (	06276771
Solids, Volatile Suspen	4.00	4.00	ט	20.4	MG/L	NONE	160.4	NA	06/22/22 (	06276773
Total Organic Carbon	0.400	1.00		4.2	MG/L	NONE	415.1	NA	06/29/22 (	07076831

(a) DOD and/or NELAC Accredited Analyte.

Sample 008935-06, Inorganic Analyses

Lab Report No: 008935 Report Date: 07/10/2022

Project Name:	SHELBYVILLE LAKE	Ana	lysis: N	P PESTICII	DES (82	70SIM-MO	D)
Project No.:	Ar	nalytical M	Method: 83	270D			
NELAC Certi	fied - IL100308	Prep M	lethod: 3	510C			
Field ID:	SVL-11		ARDL	Lab No.:	00893	35-07	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E070	3212	
Sample Date:	06/21/2022		Recei	ved Date:	06/2	1/2022	
Sample Time:	1438		Prep.	Date:	06/2	7/2022	
Matrix:	WATER		Analy	sis Date:	07/08	3/2022	
Amount Used:	1000 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Bat	tch:	B1149	98	
% Moisture:	NA		Level	:	FOM		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	0.260		UG/L	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	ND		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1
SURROGATE RECOV	ERIES:	Lin	nits		Rea	sults	
Triphenylphosph		30-	130		(	55%	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

رب	008935						Ж	Report Date:		022
Project Name: SHELB' Project No:	SHELBYVILLE LAKE						Z	Analysis: ELAC Certif	Analysis: Inorganics NELAC Certified - IL100308	ics 00308
ARDL No: 008935-07 Field ID: SVL-11 Received: 06/21/2022	5-07 1 /2022	Samp Samp Samp	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 06/21/2022 1438			Matrix: Moisture:	: WATER : NA	
Analyte	LOD	TOO	F. Lag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.100	0.100		ND	MG/L	NONE	350.1	NA		R313570A
Chlorophyll-a, Correcte	cte 1.00	1.00		23.9	MG/CU.M.	10200H	10200H	06/22/22	06/29/22	07016804
E. Coliform	1.00	1.00		24.0	COL/100 ML	NONE	1604	NA	06/21/22	06236757
Kjeldahl Nitrogen	0.500	1.00	p	0.80	MG/L	351.2	351.2	06/22/22	06/23/22	193897T
Nitrate as Nitrogen	0.095	0.10		2.7	MG/L	NONE	GREEN	NA	06/22/22	06306793
Nitrite as Nitrogen	0.0200	0.0200		0.105	MG/L	NONE	354.1	NA	06/22/22	06286778
Pheophytin-a	1.00	1.00		7.7	MG/CU.M.	10200H	10200H	06/22/22	06/29/22	07016804
Phosphorus	0.100	0.100		ND	MG/L	365.2	365.2	06/22/22	06/23/22	193896P
Solids, Total Suspended	ded 1.33	1.33		10.7	MG/L	NONE	160.2	NA	06/22/22	06276771
Solids, Volatile Suspen	pen 1.33	1.33		4.93	MG/L	NONE	160.4	NA	06/22/22	06276773
Total Organic Carbon	0.400	1.00		2.8	MG/L	NONE	415.1	NA	06/29/22	07076831

(a) DOD and/or NELAC Accredited Analyte.

Sample 008935-07, Inorganic Analyses

Lab Report No: 008935 Report Date: 07/10/2022

Project Name:	SHELBYVILLE LAKE	Ana	lysis: N	P PESTICII	DES (82	70SIM-MO	D)
Project No.:	I	Analytical M	ethod: 8	270D			
NELAC Certi:	fied - IL100308	Prep M	ethod: 3	510C			
Field ID:	SVL-15		ARDL	Lab No.:	00893	35-08	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E070	8213	
Sample Date:	06/21/2022		Recei	ved Date:	06/2	1/2022	
Sample Time:	1438		Prep.	Date:	06/2	7/2022	
Matrix:	WATER		Analy	sis Date:	07/0	8/2022	
Amount Used:	900 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Ba	tch:	B114	98	
% Moisture:	NA		Level	:	FOM		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.222	0.222	ND		UG/L	1
Atrazine		0.222	0.222	0.267		UG/L	1
Metribuzin		0.222	0.222	ND		UG/L	1
Alachlor		0.222	0.222	ND		UG/L	1
Metolachlor		0.222	0.222	ND		UG/L	1
Chlorpyrifos		0.222	0.222	ND		UG/L	1
Cyanazine		0.222	0.222	ND		UG/L	1
Pendimethalin		0.222	0.222	ND		UG/L	1
URROGATE RECOV	ERTES:	T.i m	its		Res	sults	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

30-130

Triphenylphosphate

70%

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008	008935						Ж	Report Date:	: 07/14/2022	022
Project Name: SHELBYVI Project No:	SHELBYVILLE LAKE						Z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: 008935-08 Field ID: SVL-15 Received: 06/21/2022	122	Sampl Samp Samp	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 06/21/2022 1438			Matrix: Moisture:	: WATER : NA	
Analyte	ГОР	TOO	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.100	0.100		QN	MG/L	NONE	350.1	NA	06/23/22	R313570A
Chlorophyll-a, Correcte	1.00	1.00		22.7	MG/CU.M.	10200H	10200H	06/22/22	06/29/22	07016804
Kjeldahl Nitrogen	0.500	1.00	þ	0.50	MG/L	351.2	351.2	06/22/22	06/23/22	193897T
Nitrate as Nitrogen	0.095	0.10		2.6	MG/I	NONE	GREEN	NA	06/22/22	06306793
Nitrite as Nitrogen	0.0200	0.0200		0.104	MG/L	NONE	354.1	NA	06/22/22	06286778
Pheophytin-a	1.00	1.00		9.1	MG/CU.M.	10200H	10200H	06/22/22	06/29/22	07016804
Phosphorus	0.100	0.100		ND	MG/L	365.2	365.2	06/22/22	06/23/22	193896P
Solids, Total Suspended	1.33	1.33		10.7	MG/L	NONE	160.2	NA	06/22/22	06276771
Solids, Volatile Suspen	1.33	1.33		4.93	MG/L	NONE	160.4	NA	06/22/22	06276773
Total Organic Carbon	0.400	1.00		2.8	MG/I	NONE	415.1	NA	06/29/22	07076831

(a) DOD and/or NELAC Accredited Analyte.

Sample 008935-08, Inorganic Analyses

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Report Date: 07/14/2022	Analysis: Inorganics NELAC Certified - IL100308	Matrix: WATER Moisture: NA	s Prep Analysis Run Date Date Number	NA 06/21/22 06236757
		The state of the s	Analysis Method	1604
			Prep #	NONE
		Loc'n: SHELBYVILLE LAKE Date: 06/21/2022 Time: 1209	Units	COL/100 ML
		oc'n: SHELI Date: 06/2: Time: 1209	Result	8.0
		Sampling Loc'n: Sampling Date: Sampling Time:	Flag	
		Samp San San	001	1.00
08935	SHELBYVILLE LAKE	-09 INA 2022	TOD	1.00
. No: 0	SHELBY	008935-09 LS MARINA 06/21/202	rte	
Lab Report No: 008935	Project Name: Project No:	ARDL No: 008935-09 Field ID: LS MARINA Received: 06/21/2022	Analyte	E. Coliform

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Report Date: 07/14/2022	Analysis: Inorganics NELAC Certified - IL100308	Matrix: WATER	Analysis Run Date Number	06/21/22 06236757
sport Dat	Analysi LAC Cert	Matrix: Moisture:	Prep Date	NA
Re	N		Prep Analysis Method Method	1604
			Prep Method	NONE
		Sampling Loc'n: SHELBYVILLE LAKE Sampling Date: 06/21/2022 Sampling Time: 1423	Units	COL/100 ML NONE
		n: SHELJ	Result	11.0
		ampling Loc'n: Sampling Date: Sampling Time:	Flag	
		Samp Sam Sam	Й	1.00
008935	SHELBYVILLE LAKE	35-10 MARINA 1/2022	LOD	1.00
Lab Report No: 008935	Project Name: SHEL Project No:	ARDL No: 008935-10 Field ID: FIN MARINA Received: 06/21/2022	Analyte	E. Coliform
	P	- The state of the		ы

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

2022	nics 100308		Run Number	06/21/22 06236757
Report Date: 07/14/2022	Analysis: Inorganics NELAC Certified - IL100308	Matrix: WATER isture: NA	Analysis Date	06/21/22
eport Dat	Analysi ELAC Cert	Matrix: Moisture:	Prep Date	NA
Re	N N		Analysis Method	1604
			Prep Method	NONE
		SHELBYVILLE LAKE 06/21/2022 1522	Units	COL/100 ML
			Result	125
		Sampling Loc'n: Sampling Date: Sampling Time:	Flag	
		Samp Samy Samy	OOI	1.00
08935	SHELBYVILLE LAKE	-11 RINA 2022	TOD	1.00
No: 0	SHELBY	008935-11 SUL MARINA 06/21/2022	φ μ	
Lab Report No: 008935	Project Name: Project No:	ARDL No: Field ID: Received:	Analyte	E. Coliform

(a) DOD and/or NELAC Accredited Analyte.

# METHOD BLANK REPORT ARDL, Inc. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008935 Report Date: 07/10/2022

Project Name:	SHELBYVILLE LAK	E Analy	sis: NP PEST	ICIDES (82	270SIM-M	OD)
Project No.:		Analytical Met	hod: 8270D			
NELAC Certi	fied - IL100308	Prep Met	hod: 3510C			
Field ID:	NA		ARDL Lab No	.: 0089	935-01B1	
Desc/Location:	NA		Lab Filenam	e: E070	08203	
Sample Date:	NA		Received Da	te: NA		
Sample Time:	NA		Prep. Date:	06/2	27/2022	
Matrix:	QC Material		Analysis Da	te: 07/0	08/2022	
Amount Used:	1000 mL		Instrument	ID: AG5		
Final Volume:	1 mL		QC Batch:	B114	198	
% Moisture:	NA		Level:	LOW		
					Data	
Parameter		FOD	LOQ	Result	Flag	Units
Trifluralin		0.200	0.200	ND		UG/L
Atrazine		0.200	0.200	ND		UG/L
Metribuzin		0.200	0.200	ND		UG/L
Alachlor		0.200	0.200	ND		$\mathtt{UG/L}$
Metolachlor		0.200	0.200	ND		UG/L
Chlorpyrifos		0.200	0.200	ND		UG/L
Cyanazine		0.200	0.200	ND		UG/L
Pendimethalin		0.200	0.200	ND		UG/L

SURROGATE RECOVERIES:	Limits	Results	
Triphenylphosphate	30-130	79%	
1			

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

Mt. Vernon, IL 400 Aviation Drive; P.O. Box 1566 BLANK SUMMARY REPORT ARDL, INC.

Lab Report No: 008935

Report Date: 07/14/2022

62864

7								4			
Project Name:	SHELBY	SHELBYVILLE LAKE	KE					NELA	C Certifi	NELAC Certified - IL100308	I
			7 2 2 1		ا د د		2000	0.000		4c 1 00	1
Analyte	LOD	TOOT	Result	Units	Method	Method	Date	Analysis Date	Run	Number	
(a) Iron	0.040	0.050	0.071	MG/L	3010A	6010C	06/24/22	06/28/22	P7784	008935-01B1	1
(a) Manganese	0.004	0.005	ND	MG/L	3010A	6010C	06/24/22	06/28/22	P7784	008935-01B1	
Ammonia Nitrogen	0.030	0.010	ND	MG/L	NONE	350.1	NA	06/23/22	R313570A	008935-01B1	
Chlorophyll-a, Corre	1.0	1.0	N	MG/CU.M.	10200H	10200H	06/22/22	06/29/22	07016804	008935-06B1	
E. Coliform	1.0	1.0	N	COL/100 ML	NONE	1604	NA	06/21/22	06236757	008935-02B1	
Kjeldahl Nitrogen	0.50	1.0	N	MG/L	351.2	351.2	06/22/22	06/23/22	193897T	008935-08B1	
Nitrate as Nitrogen	0.019	0.020	NO	MG/L	NONE	GREEN	NA	06/22/22	06306792	008935-06B1	
Nitrate as Nitrogen	0.019	0.020	N	MG/L	NONE	GREEN	NA	06/22/22	06306793	008935-01B1	
Nitrite as Nitrogen	0.020	0.020	ND	MG/L	NONE	354.1	NA	06/22/22	06286778	008935-01B1	
Pheophytin-a	1.0	1.0	ND	MG/CU.M.	10200H	10200H	06/22/22	06/29/22 (	07016804	008935-06B1	
Phosphorus	0.10	0.10	ND	MG/L	365.2	365.2	06/22/22	06/23/22	193896P	008935-08B1	
Solids, Total Suspen	1.0	1.0	NO	MG/L	NONE	160.2	NA	06/22/22 (	06276771	008935-06B1	
Solids, Volatile Sus	1.0	1.0	NO	MG/L	NONE	160.4	NA	06/22/22 (	06276773	008935-06B1	
Total Organic Carbon	0.40	1.0	NO	MG/L	NONE	415.1	NA	06/29/22 (	07076831	008935-01B1	

(a) DOD and/or NELAC Accredited Analyte Inorganic Method Blanks for 008935

Mt. Vernon, IL BLANK SPIKE/SPIKE DUPLICATE REPORT 400 Aviation Drive; P.O. Box 1566 ARDL, INC.

62864

Lab Report No:	008935							Rej	port Date	Report Date: 07/10/2022	N
Project Name: Project No.:	Project Name: SHELBYVILLE LAKE Project No.:	Ana	Analysis: NP PESTICIDES (8270SIM-MOD)	PESTICID	ES (8270SI	[М-МОD)	Anal	ytical M Prep M	Analytical Method: 8270D Prep Method: 3510C	70D 10C	1
Matrix: Amount Used:	QC Material 1000 mL		QC Batch: Level:	1: B11498 LOW	498		Prep. Date: Analysis Da	Date: is Date:	Prep. Date: 06/27/2022 Analysis Date: 07/08/2022	22	1
	Parameter	Spike	Spike	Spike	Duplicate	Duplicate	Duplicate % Rec	Recovery	CIGN	RPD	1
											ľ
,	Trifluralin Atrazine	3.58	<b>4</b> 4	O 80	: ;	! ! ! !	: :	30-130	} {	!!!	
	Metribuzin	3.31	4	83	;	;	;	30-130	!	:	
	Alachlor	3.79	4	95	;	;	!	30-130	1	1 1	
4	Metolachlor	3.5	4	88	;	;	1	30-130	;	!	
J	Chlorpyrifos	3.38	4	85	;	:	{	30-130	1	;	
	Cyanazine	3.43	4	98	;	;	;	30-130	1	;	
Pe	Pendimethalin	3.2	4	80	;	;	1	30-130	;	;	

%R Limits	30-130
Duplicate %R	ŧ 1
Spike %R	82
SURROGATE RECOVERIES:	Triphenylphosphate

<sup>\*!&#</sup>x27;indicates a recovery outside of standard limits.
Spike Blanks for 008935-01, NP PESTICIDES (8270SIM-MOD)

62864 Mt. Vernon, IL LABORATORY CONTROL SAMPLE REPORT 400 Aviation Drive; P.O. Box 1566 ARDL, INC.

27.4 27.2 101 76-120 07076831 008935-01C1

NOTE: Any values tabulated above marked with an asterisk are outside of acceptable limits.

Inorganic LCS Results for 008935

<sup>(</sup>a) DOD and/or NELAC Accredited Analyte

		Report Date: 07/10/2022
	62864	Date:
	ΙĽ	eport
	Mt. Vernon, IL 62864	PK.
	Mt.	
REPORT	1566	
CATE	Вох	
DUPLI(	P.0.	
SPIKE	Drive;	
MATRIX SPIKE/SPIKE DUPLICATE REPORT	400 Aviation Drive; P.O. Box 1566	
MATR	400	
	INC.	
	ARDL,	35

Project Name: SHELBYVILLE LAKE   Analysis: NP PESTICIDES (8270SIM-MOD)   Analytical Merchachlor   Analysis: NP PESTICIDES (8270SIM-MOD)   Analysis: NP PESTICIDES (8270SIM-MOD)   Analysis: NP Merchachlor   Analysis: NP Merch	Lab report NO: 000933	,									
SVL-1         Prep. Date: 06/27/2022           tion: SHELBYVILLE LAKE         Amount Used: 1000 mL         % Moisture: NA           me: 1005         Amount Used: 1000 mL         NA           parameter         \$ Moisture: NA         NA           Parameter         Result         Level: Level         * Rec           Trifluralin         ND         3.59         4         \$91.3         3.41           Atrazine         ND         3.65         4         \$91.3         3.41         4           Metribuzin         ND         3.29         4         \$82.3         3.41         4           Alachlor         ND         3.36         4         \$82.3         3.43         4           Metolachlor         ND         3.36         4         \$82.3         3.36         4           Chlorpyrifos         ND         3.34         4         \$83.5         3.35         4           Cyanazine         ND         3.34         4         \$83.5         4         4           Chlorpyrifos         ND         3.34         4         \$83.5         4         4           Syanazine         ND         3.34         4         83.55         4	Project Name: SHELBYV Project No.:	ILLE LAKE	Analysis:	1	CCIDES (8270	SIM-MOD)		Analytic Pr	Analytical Method: Prep Method:	1: 8270D	
Date:         06/21/2022         % Moisture:         NA           Time:         1005         Sample         MS         MS         MSD         MSD           Parameter         Result         Result         Level:         1 kec         Result         Resu	Field ID: SVL-1 Desc/Location: SHELBY	VILLE LAKE	Prep	. Date: nt Used:	06/27/2022 1000 mL		A	ARDL Lab No.: Lab Filename:		008935-01	
WATER         Level:         LOW           Parameter         Result         MS         MS         MSD         MSD           Trifluralin         ND         3.59         4         89.8         3.35         4           Atrazine         ND         3.65         4         82.3         3.41         4           Metribuzin         ND         3.29         4         82.3         3.46         4           Metolachlor         ND         3.86         4         96.5         3.46         4           Chlorpyrifos         ND         3.55         4         88.8         3.37         4           Chlorpyrifos         ND         3.34         4         88.8         3.37         4           Cyanazine         ND         3.32         4         83.3         3.31         4		2022	% MO.	isture: atch:	NA B11498		æ ፈ	Received Date: Analysis Date:		06/21/2022 07/08/2022	
Sample         MS         MS         MSD         MSD           Result         Level         % Rec         Result         Level         %           ND         3.59         4         89.8         3.35         4           ND         3.29         4         82.3         3.41         4           ND         3.86         4         96.5         3.46         4           ND         3.55         4         88.8         3.37         4           S         ND         3.34         4         83.5         3.05         4           ND         3.32         4         83.5         3.05         4         4			Leve	l:	LOW						
Result         Result         Level         % Rec         Result         Level         %           ND         3.59         4         89.8         3.35         4           ND         3.29         4         82.3         3.41         4           ND         3.29         4         82.3         3.46         4           ND         3.55         4         88.8         3.37         4           S         ND         3.34         4         83.5         3.05         4           ND         3.32         4         83.5         3.31         4		Sample	MS	MS	MS	MSD	MSD	MSD	% Rec		RPD
ND       3.59       4       89.8       3.35       4         ND       3.29       4       82.3       3.41       4         ND       3.29       4       82.3       3.03       4         ND       3.55       4       96.5       3.46       4         S       ND       3.34       4       83.5       3.37       4         ND       3.32       4       83.5       3.31       4	Parameter	Result	Result	Level	% Rec	Result	Level	* Rec	Limits	RPD	Limit
ND         3.65         4         91.3         3.41         4           ND         3.29         4         82.3         3.03         4           ND         3.86         4         96.5         3.46         4           S         ND         3.55         4         88.8         3.37         4           ND         3.32         4         83.5         3.05         4	Trifluralin	€N	3.59	4	89.8	3.35	4	83.8	30-130	6.9	30
ND     3.29     4     82.3     3.03     4       ND     3.55     4     96.5     3.46     4       S     ND     3.34     4     83.5     3.37     4       ND     3.34     4     83.5     3.05     4	Atrazine	QX	3.65	4	91.3	3.41	4	85.3	30-130	8.9	30
ND 3.86 4 96.5 3.46 4  ND 3.55 4 88.8 3.37 4  S ND 3.34 4 83.5 3.05 4  ND 3.32 4 83 3.31 4	Metribuzin	CN	3.29	4	82.3	3.03	4	75.8	30-130	8.2	30
ND 3.34 4 88.8 3.37 4 8 ND 3.34 4 83.5 3.05 4 ND 3.32 4 83 3.31 4	Alachlor	QN	3.86	4	96.5	3.46	4	86.5	30-130	10.9	30
ND 3.34 4 83.5 3.05 4 ND 3.32 4 83 3.31 4	Metolachlor	GN.	3.55	4	88.8	3.37	4,	84.3	30-130	5.2	30
ND 3.32 4 83 3.31 4	Chlorpyrifos	QX	3.34	4	83.5	3.05	4	76.3	30-130	9.1	30
	Cyanazine	- EN	3.32	4	83	3.31	4	82.8	30-130	0.3	30
Pendimethalin ND 3.18 4 79.5 2.96 4 74	Pendimethalin	Q.	3.18	4	79.5	2.96	4	74	30-130	7.2	30

%R Limits	30-130	
MSD %R	76	
MS %R	79	
SURROGATE RECOVERIES:	Triphenylphosphate	

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

<sup>&#</sup>x27;nc' indicates sample >4X spike level.

<sup>&#</sup>x27;\*' indicates a recovery outside of standard limits.
Matrix Spikes for 008935-01, NP PESTICIDES (8270SIM-MOD)

62864 Mt. Vernon, IL MATRIX SPIKE/SPIKE DUPLICATE REPORT 400 Aviation Drive; P.O. Box 1566 ARDL, INC.

Report Date: 07/14/2022 Lab Report No: 008935

Project Name:	 o	SHELBYVILLE LAKE	LE LAKE								NELAC	Certifi	NELAC Certified - IL100308
	Sample	Sample	MS	MS	MS	MSD	MSD	MSD	* Rec		RPD		QC Lab
Analyte	Matrix	Result	Result	Level	% Rec	Result	Level	% Rec	Limits	RPD	Limit	Run	Number
(a) Iron	WATER	0.39	1.4	1.0	66	1.4	1.0	104	87-115	3	20	P7784	008935-01MS
(a) Manganese	WATER	0.23	0.74	0.50	101	0.75	0.50	103	90-114	٦	20	P7784	008935-01MS
Ammonia Nitrogen	WATER	0.25	1.8	2.0	79	1.9	2.0	82	75-125	ო	20	R313570A	008935-01MS
Kjeldahl Nitrogen	WATER	J 0.50	0.0	10.0	94	9.5	10.0	06	75-125	4	20	193897T	008935-08MS
Nitrate as Nitrogen	WATER	2.8	4.1	1.0	137 *	4.1	1.0	136 *	75-125	0	20	06306793	008935-01MS
Nitrite as Nitrogen	WATER	0.076	1.1	1.0	66	1.1	1.0	100	75-125	Н	20	06286778	008935-01MS
Phosphorus	WATER	QN	1.0	1.0	101	1.0	1.0	103	75-125	2	20	193896P	008935-08MS
Total Organic Carbon	WATER	2.6	7.3	5.0	94	7.4	5.0	96	76-120	н	20	07076831	008935-01MS

NOTE: Values tabulated above marked with an asterisk are explained in the associated narrative.

<sup>(</sup>a) DOD and/or NELAC Accredited Analyte.

62864 Mt. Vernon, IL 400 Aviation Drive; P.O. Box 1566 SAMPLE DUPLICATE REPORT ARDL, INC.

Lab Report No: 008935	35						Report Date: 07/14/2022	07/14/2022
Project Name: SHELI	SHELBYVILLE LAKE	AKE					NELAC Certifi	NELAC Certified - IL100308
Analyte	Sample Conc'n I	First Ouplicate	Second Duplicate Units	Units	Percent Diff	rcent Mean Diff (Smp,D1,D2)	Analytical Run	QC Lab Number
Chlorophyll-a, Corrected	120	104	I I	MG/CU.M.	14	am ens	07016804	008935-06D1
Pheophytin-a	41.1	31.0	1	MG/CU.M.	28*	1	07016804	008935-06D1
Solids, Total Suspended	73.6	54.4	i i	MG/L	30*	1	06276771	008935-06D1
Solids, Volatile Suspend	20.4	14.8		MG/L	32*	;	06276773	008935-06D1

See Case Narrative for exceptions. \* indicates that agreement between duplicates is greater than 20%. (a) DOD and/or NELAC Accredited Analyte Sample Duplicates for 008935



Including as appropriate:

- COCs
- Cooler Receipts
- Airbills
- Email Communication / Instructions from Customer

ARDL Data Package 8935

ARDL, Inc.

P.O. Box 1566, 400 Aviation Drive, Mt. Vernon, IL 62864

(618) 244-1149 Fax (618) 244-3235 Phone

8935

CHAIN OF CUSTODY RECORD

SPECIFY CHEMICALS ADDED AND FINAL PH IF KNOWN PRESERVATION × × × × ICED × × × × × × × 2 SAMPLE LOCATION REMARKS 0 REMARKS/SPECIAL INSTRUCTIONS: \*Preserved with H<sub>2</sub>SO<sub>4</sub> #Preserved with HNO<sub>3</sub> × × × × × × × × × × 185, 1V85, "NO2.N Chlorotofora 100, 7185, "NO2.N × × × × × × × × × × × × × × × × × Received by: (Signature) Received by: (Signature) andem Willman × × × × × × × Shipping Ticket No. NO. OF CONTAINERS GKAB × × × × × × × × ×  $\bowtie$ × COWP 1438 (00) Time Time TIME 1438 525 222 Time 1513 1630 100 1138 1801 (13% 1325 6171122 11/2 事 Date 12/22 DATE Date Date Sander Stuber, Ber Greeting Relinquished by: (Signature) Received for Laboratory by: မှ EPURCHASE ORDER NO: SAMPLE NUMBER SAMPLERS: (Signature) Shelbyville Lake SUL Marina FIN Marina LS Marina SVL-2-10 **SVL-12 SVL-13** SVL-15 SVL-11 SVL-4 SVL-2 SVL-1

# COOLER RECEIPT REPORT ARDL, INC.

ARD	L#: <u>8935,8936</u>	Cooler # Blue 1
Proje	ect: Sholbyville Lake + Kaskaskia Rive	Number of Coolers in Shipment:  Date Received: $\frac{O(\sqrt{2} /2027)}{\sqrt{2027}}$
A. <u>F</u>	PRELIMINARY EXAMINATION PHASE: Date cooler was opened:	22/2 <i>0</i> 22(Signature) <i>OCB</i>
1. [	Did cooler come with a shipping slip (airbill, etc.)?	YES (6)
	If YES, enter carrier name and airbill number here:	Courier - Tordan W.
2. \	Vere custody seals on outside of cooler?	
	How many and where?,Seal Date	
3. \	Vere custody seals unbroken and intact at the date and time of arrival?	
	Did you screen samples for radioactivity using a Geiger Counter?,	
5. \	Nere custody papers sealed in a plastic bag?	VES (NO)
	Nere custody papers filled out properly (ink, signed, etc.)?	
	Nere custody papers signed in appropriate place by ARDL personnel?  Nas project identifiable from custody papers? If YES, enter project name a	
		117
	Nas a separate container provided for measuring temperature? YES	4
	OG-IN PHASE: Date samples were logged-in:	(Signature) (Signature)
10.	Describe type of packing in cooler: Lose Ice	
11.	Nere all samples sealed in separate plastic bags?	YES (NO) N/A
12.	Did all containers arrive unbroken and were labels in good condition?	YES NO
13.	Were sample labels complete?	
14.	Did all sample labels agree with custody papers?	ØÊS NO
15.	Were correct containers used for the tests indicated?	ES NO
16.	Was pH correct on preserved water samples?	
17.	Was a sufficient amount of sample sent for tests indicated?	YES) NO
18.	Were bubbles absent in VOA samples? If NO, list by sample #:	YES NO (N/A)
19.	Was the ARDL project coordinator notified of any deficiencies?	YES NO
	Comments and/or Corrective Action:	Sample Transfer
		Fraction Fraction
		Area #
		Walk-h
		By By
		On On
		1 10/07/2022
		- Collection
		Chain-of-Custody#

# COOLER RECEIPT REPORT ARDL, INC.

ARI	DL#: <u>8935, 8936</u>	Cooler # Red 1 Number of Coolers in Shipment:
Pro	ect: Shelbyville Lake + Kaskaskia	Date Received: 06/2//2022
A.	PRELIMINARY EXAMINATION PHASE: Date cooler was opened.	2022 (Signature) DB
1.	Did cooler come with a shipping slip (airbill, etc.)?	YES (NO)
	If YES, enter carrier name and airbill number here:	Courier-Jordan W.
2.	Were custody seals on outside of cooler?	
	How many and where?,Seal Date	:,Seal Name:
3.	Were custody seals unbroken and intact at the date and time of arrival?	YES NO NA
4.	Did you screen samples for radioactivity using a Geiger Counter?,.	YÉS NO
5.	Were custody papers sealed in a plastic bag? ( and delive.	ed YES NO
6.	Were custody papers filled out properly (ink, signed, etc.)?	NO N/A
7.	Were custody papers signed in appropriate place by ARDL personnel?	
8.	Was project identifiable from custody papers? If YES, enter project name	at the top of this formYES NO N/A
9.	Was a separate container provided for measuring temperature? YES	
B.	LOG-IN PHASE: Date samples were logged-in: 00 22/2022	(Signature) Correction factor 0.0 C
10.	Describe type of packing in cooler Loose ce	
11.	Were all samples sealed in separate plastic bags?	YES (10) N/A
12.	Did all containers arrive unbroken and were labels in good condition?	
13.	Were sample labels complete?	YÉS) NO
14.	Did all sample labels agree with custody papers?	(FES) NO
15.	Were correct containers used for the tests indicated?	
16.	Was pH correct on preserved water samples?	YES NO N/A
17.	Was a sufficient amount of sample sent for tests indicated?	YES NO
18.	Were bubbles absent in VOA samples? If NO, list by sample #:	YES NO (N/A)
19.	Was the ARDL project coordinator notified of any deficiencies?	YES NO NIA
	Comments and/or Corrective Action:	Sample Transfer
		Fraction Fraction
		Area# Area#
		Walker
		By NA By
		On 010/27/7022 On
		Chain-of-Custody#
(E	y: Signature) Date:	Sham of Subtody ii

M:\ADMIN\FORMS\COOLER RECEIPT REPORT.doc Rev. 02/22/17



PO Box 1566 400 Aviation Drive Mt. Vernon, IL 62864 618-244-3235

www.ardlinc.com

**Customer Name: SLCOE** 

Project Name: Shelbyville Lake

Samples Received at ARDL: 8/3/2022

Date: 8/25/2022

Lab Name: ARDL, Inc.

ARDL Report No.: 8960

# **CASE NARRATIVE**

Customer	<u>Date</u>	<u>Lab ID</u>	
Sample No.	Collected	<u>Number</u>	Analyses Requested
SVL-1	8/3/22	8960-01	NP Pesticides, Metals(1), Inorganics(2)(3)(4)
SVL-2	8/3/22	8960-02	NP Pesticides, Inorganics(2)(3)(4)(5)
SVL-2-10	8/3/22	8960-03	Metals(1), Inorganics(2)(4)
SVL-4	8/3/22	8960-04	NP Pesticides, Inorganics(2)(3)(5)
SVL-12	8/3/22	8960-05	NP Pesticides, Inorganics(2)(3)(4)(5)
SVL-13	8/3/22	8960-06	NP Pesticides, Inorganics(2)(3)(4)(5)
SVL-11	8/3/22	8960-07	NP Pesticides, Inorganics(2)(3)(4)(5)
SVL-15	8/3/22	8960-08	NP Pesticides, Inorganics(2)(3)(4)
LS MARINA	8/3/22	8960-09	Inorganics(5)
FIN MARINA	8/3/22	8960-10	Inorganics(5)
SUL MARINA	8/3/22	8960-11	Inorganics(5)

- (1) Including iron and manganese.
- (2) Including nitrite, TSS and TVSS.
- (3) Including chlorophyll-a corrected and pheophytin-a.
- (4) Including ammonia\*, nitrate\*, TKN\*, TOC\* and total phosphorus\*.
- (5) Including e. coli.

The quality control data are summarized as follows:

#### NP PESTICIDE FRACTION – METHOD 8270-SIM

#### HOLDING TIME

Samples were prepared and analyzed within method specified holding times.

#### INITIAL CALIBRATION

The initial calibration passed criteria. The ICV passed criteria.

#### **CONTINUING CALIBRATION**

The continuing calibration verification (CCV) passed criteria for all analytes.

#### PREPARATION BLANK

The blank met acceptance criteria.

#### LABORATORY CONTROL SAMPLE

The LCS analyses met recovery criteria.

#### MATRIX SPIKE

The matrix spike and matrix spike duplicate met recovery criteria.

"Test everything, keep the good" 1 Thes. 5:21

Page 1 of 2

<sup>\*</sup> Analyzed by an accredited subcontract laboratory.

Project Name: Shelbyville Lake

ARDL Report No.: 8960

# **CASE NARRATIVE (Continued)**

#### DUPLICATE

Duplicate analyses are reported as MS/MSD. RPD met recovery criteria.

#### INTERNAL STANDARDS

All internal standard criteria were met.

## SURROGATES

All surrogate recovery criteria were met.

### **INORGANIC FRACTION**

#### PREPARATION BLANK

Results of the preparation blanks were undetected.

#### LABORATORY CONTROL SAMPLE

Percent recoveries of all LCS analyses were within control limits.

#### MATRIX SPIKE

Percent recoveries of all matrix spikes and matrix spike duplicates were within control limits, except 2 of 2 for ammonia. The parent sample has been flagged appropriately with a 'J' qualifier.

#### **DUPLICATE**

All duplicate analyses are reported as MS/MSD except chlorophyll-a corrected, pheophytin-a, TSS and TVSS. RPD on all duplicate analyses were within control limits, except chlorophyll-a corrected. The parent sample has been flagged appropriately with a 'J' qualifier.

#### DATA REPORTING QUALIFIERS

The following data reporting qualifiers are used as required:

- ND Indicates parameter was analyzed for but not detected.
- J Indicates an estimated value. This flag is used either when estimating a concentration or this flag indicates analyte(s) associated with a DOD-QSM specified non-compliance pertaining to matrix QC criteria.

Release of the data contained in this package has been authorized by the Technical Services Manager or his designee as verified by the following signature.

Dean S. Dickerson

Technical Services Manager



# Sample & QC Results

Including as appropriate:
Field Sample Results
Batch QC
Prep Blank
LCS/Spike Blank
Matrix QC
MS/MSD

Sample Duplicate

ARDL Data Package 8960

N:\ARDL Case Narratives\ARDL Data Package Contents.pdf - Revised June 21, 2019

Authorized By: DSD-QAO

Lab Report No: 008960 Report Date: 08/24/2022

Project Name:	SHELBYVILLE LAKE	Ana	lysis: NE	PESTICII	DES (827	OSIM-MO	D)
Project No.:	Ana	alytical M	ethod: 82	270D			
NELAC Certi	fied - IL100308	Prep M	ethod: 35	510C			
Field ID:	SVL-1		ARDL I	Lab No.:	00896	50-01	
Desc/Location:	SHELBYVILLE LAKE		Lab Fi	lename:	E0824	1206	
Sample Date:	08/03/2022		Receiv	red Date:	08/03	3/2022	
Sample Time:	1022		Prep.	Date:	08/09	9/2022	
Matrix:	WATER		Analys	sis Date:	08/24	1/2022	
Amount Used:	1000 mL		Instru	ment ID:	AG5		
Final Volume:	1 mL		QC Bat	ch:	B1150	) 4	
% Moisture:	NA		Level	:	LOW		
			7		Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	0.220		UG/L	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	0.310		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results	-
Triphenylphosphate	30-130	117%	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

Analytes marked with '\*\*' indicate they are reported to lowest required value or MDL.

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Net	ا بـ	096800						м	Report Date:		022
1 Sampling Loc'n: SHELBYVILLE LAKE Sampling Loc'n: SHELBYVILLE LAKE Sampling Date: 08/03/2022  2 Sampling Date: 08/03/2022  LOD LOQ Flag Result Units Method Method Date Date 0.0400 0.05500 J. 0.735 MG/L NONE S5.1.2  0.0200 0.0200 0.0500 0.0550 ND MG/L NONE S5.2.1  1.00 1.00 0.0200 0.0500 0.0550 MG/L NONE S5.2.2  0.0200 0.0200 0.0500 0.0551 MG/L NONE S5.2.2  1.00 1.00 0.0500 0.0500 ND MG/L NONE S5.4.1  1.00 1.00 0.0500 MG/L NONE S5.4.1  1.00 0.0500 MG/L		ILLE LAKE						Z	Analysis ELAC Certi	: Inorgan fied - IL1	ics 00308
LOD   LOQ   Flag   Result   Units   Method   Method   Date   Date   Date		01	Sampl Samp Samp	ing Loc ling Dat		凶			Matrix Moisture		
0.0400         0.05500         0.455         MG/L         3010A         6010C         08/11/22         08/11/22         08/11/22           0.00400         0.00500         0.575         MG/L         3010A         6010C         08/11/22         08/11/22           0.0270         0.100         J         0.735         MG/L         NONE         350.1         NA         08/11/22           1.00         1.00         J         0.751         MG/L         NONE         351.2         08/15/22         08/11/22           0.0200         0.0500         0.751         MG/L         NONE         353.2         NA         08/04/22           0.0200         0.0200         ND         MG/L         NONE         354.1         NA         08/04/22           1.00         1.00         ND         MG/L         NONE         354.1         NA         08/04/22           0.0660         0.100         ND         MG/L         NONE         160.2         NA         08/04/22           2.00         2.00         13.6         MG/L         NONE         160.2         NA         08/04/22           2.00         2.00         4.0         MG/L         NONE         160.2         N	Analyte	LOD	ŏол	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
0.00400         0.00500         0.575         MG/L         3010A         6010C         08/11/22         08/11/22           0.0270         0.100         J         0.735         MG/L         NONE         350.1         NA         08/11/22           1.00         1.00         2.5         MG/CU.M.         10200H         10200H         08/04/22         08/11/22           0.0475         1.00         ND         MG/L         351.2         351.2         08/15/22         08/16/22           0.0200         0.0500         0.751         MG/L         NONE         353.2         NA         08/11/22           0.0200         0.0200         ND         MG/L         NONE         354.1         NA         08/04/22           1.00         1.00         ND         MG/L         10200H         10200H         08/04/22         08/04/22           2.00         2.00         0.100         ND         MG/L         NONE         160.2         NA         08/04/22           2.00         2.00         4.0         MG/L         NONE         160.2         NA         08/04/22           2.00         2.00         4.0         MG/L         NONE         160.2         NA <td< td=""><td>) Iron</td><td>0.0400</td><td>0.0500</td><td></td><td>0.455</td><td>MG/L</td><td>3010A</td><td>6010C</td><td>08/11/22</td><td>08/17/22</td><td>P7813</td></td<>	) Iron	0.0400	0.0500		0.455	MG/L	3010A	6010C	08/11/22	08/17/22	P7813
0.0270         0.100         J         0.735         MG/L         NONE         350.1         NA         08/11/22           1.00         1.00         2.5         MG/CU.M.         10200H         10200H         08/04/22         08/16/22           0.475         1.00         ND         MG/L         351.2         351.2         NA         08/16/22           0.0200         0.0500         0.751         MG/L         NONE         353.2         NA         08/11/22           0.0200         0.0200         ND         MG/L         NONE         354.1         NA         08/04/22           1.00         1.00         ND         MG/L         365.4         365.4         08/15/22         08/16/22           2.00         2.00         13.6         MG/L         NONE         160.2         NA         08/04/22           2.00         2.00         4.0         MG/L         NONE         160.4         NA         08/04/22           2.00         2.00         4.0         MG/L         NONE         160.4         NA         08/04/22           0.500         1.00         4.0         MG/L         NONE         160.4         NA         08/04/22	ı) Manganese	0.00400	0.00500		0.575	MG/L	3010A	6010C	08/11/22	08/17/22	P7813
1.00 1.00 2.5 MG/CU.M. 10200H 10200H 08/04/22 08/08/22 0 0.475 1.00 ND MG/L 351.2 351.2 08/15/22 08/16/22 0.00200 0.0500 0.751 MG/L NONE 353.2 NA 08/11/22 0.00200 0.00200 0.751 MG/L NONE 354.1 NA 08/04/22 0 0.0060 0.100 ND MG/L 365.4 365.4 08/15/22 08/16/22 0.0060 0.100 ND MG/L 365.4 365.4 08/15/22 08/16/22 0.0060 0.100 ND MG/L NONE 160.2 NA 08/04/22 0 0.0060 0.100 4.0 MG/L NONE 160.2 NA 08/04/22 0 0.0060 0.100 4.0 MG/L NONE 160.4 NA 08/04/22 0 0.0060 0.100 0.0060 0.100 MG/L NONE 160.0 NA 08/04/22 0 0.0000 0.00	monia Nitrogen	0.0270	0.100	Ь	0.735	MG/L	NONE	350.1	NA		R315638A
0.475         1.00         ND         MG/L         351.2         351.2         08/15/22         08/16/22           0.00900         0.0500         0.751         MG/L         NONE         353.2         NA         08/11/22           0.0200         0.0200         ND         MG/L         NONE         354.1         NA         08/04/22         0           1.00         1.00         2.8         MG/CU.M.         10200H         08/04/22         08/04/22         0           0.0660         0.100         ND         MG/L         365.4         365.4         08/15/22         08/16/22           2.00         2.00         4.0         MG/L         NONE         160.2         NA         08/04/22         0           2.00         4.0         MG/L         NONE         160.4         NA         08/04/22         0           0.500         1.00         2.31         MG/L         NONE         9060         NA         08/09/22	lorophyll-a, Correcte		1.00		2.5	MG/CU.M.	10200H	10200H	08/04/22		08096942
0.00900 0.0500 0.751 MG/L NONE 353.2 NA 08/11/22 0.0200 0.0200 ND MG/L NONE 354.1 NA 08/04/22 0 1.00 1.00 2.8 MG/CU.M. 10200H 10200H 08/04/22 08/16/22 0.0660 0.100 ND MG/L 365.4 365.4 08/15/22 08/16/22 2.00 2.00 13.6 MG/L NONE 160.2 NA 08/04/22 0 2.00 2.00 4.0 MG/L NONE 160.4 NA 08/04/22 0 0.500 1.00 2.31 MG/L NONE 0000 NA 08/09/22	eldahl Nitrogen		1.00		ND	MG/L	351.2	351.2	08/15/22	08/16/22	195592
0.0200 0.0200 ND MG/L NONE 354.1 NA 08/04/22 0	trate as Nitrogen	00600.0	0.0500		0.751	MG/L	NONE	353.2	NA	08/11/22	R315670
1.00 1.00 2.8 MG/CU.M. 10200H 10200H 08/04/22 08/08/22 0 0.0660 0.100 ND MG/L 365.4 08/15/22 08/16/22 2.00 2.00 13.6 MG/L NONE 160.2 NA 08/04/22 0 2.00 2.00 4.0 MG/L NONE 160.4 NA 08/04/22 0 0.500 1.00 2.31 MG/L NONE 9060 NA 08/09/22	trite as Nitrogen	0.0200	0.0200		ND	MG/L	NONE	354.1	NA	08/04/22	08247013
0.0660       0.100       ND       MG/L       365.4       365.4       08/15/22       08/16/22         2.00       2.00       13.6       MG/L       NONE       160.2       NA       08/04/22       0         2.00       2.00       4.0       MG/L       NONE       160.4       NA       08/04/22       0         0.500       1.00       2.31       MG/L       NONE       9060       NA       08/09/22	leophytin-a	1.00	1.00		2.8	MG/CU.M.	10200H	10200H	08/04/22		08096942
2.00 2.00 13.6 MG/L NONE 160.2 NA 08/04/22 0 2.00 2.00 4.0 MG/L NONE 160.4 NA 08/04/22 0 0.500 1.00 2.31 MG/L NONE 9060 NA 08/09/22	osphorus	0.0660	0.100		ND	MG/L	365.4	365.4	08/15/22	08/16/22	195590
2.00 2.00 4.0 MG/L NONE 160.4 NA 08/04/22 0 0.500 1.00 2.31 MG/L NONE 9060 NA 08/09/22	olids, Total Suspended		2.00		13.6	MG/L	NONE	160.2	NA	08/04/22	08086932
0.500 1.00 2.31 MG/L NONE 9060 NA 08/09/22	olids, Volatile Suspen		2.00		4.0	MG/I	NONE	160.4	NA	08/04/22	08086933
	tal Organic Carbon	0.500	1.00		2.31	MG/L	NONE	0906	NA	08/09/22	R315556

(a) DOD and/or NELAC Accredited Analyte.

Sample 008960-01, Inorganic Analyses

Lab Report No: 008960 Report Date: 08/24/2022

Project Name:	SHELBYVILLE LAKE		-	P PESTICII	ES (82	70SIM-MC	D)
Project No.:	Ana	lytical M	ethod: 8	270D			
NELAC Certi:	fied - IL100308	Prep M	ethod: 3	510C			
Field ID:	SVL-2		ARDL	Lab No.:	00896	50-02	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E0824	1209	
Sample Date:	08/03/2022		Recei	ved Date:	08/03	3/2022	
Sample Time:	1122		Prep.	Date:	08/09	9/2022	
Matrix:	WATER		Analy	sis Date:	08/24	1/2022	
Amount Used:	1000 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Ba	tch:	B1150	04	
% Moisture:	NA		Level	:	LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	ND		UG/L	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	0.270		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1
SURROGATE RECOV	ERIES:	Lim	its		Res	sults	
Triphenylphospha	ate	30-	130		8	37%	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No:	No: 008960	09						<u>α</u>	Report Date:	: 08/25/2022	022
Project Name: Project No:	SHELBYVILLE LAKE	LE LAKE						Z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: Field ID: Received:	008960-02 SVL-2 08/03/2022	2	Sampl Samp Samp	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 08/03/2022 1122			Matrix: Moisture:	: WATER : NA	
Analyte	υ.	LOD	ŌOI	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen Chlorophyll-a, Correcte E. Coliform Kjeldahl Nitrogen Nitrate as Nitrogen Nitrite as Nitrogen Pheophytin-a Phosphorus Solids, Total Suspended Solids, Volatile Suspen	Correcte ren ren rogen rogen ruspended e Suspen	0.0270 1.00 1.00 0.475 0.0180 0.0200 1.00 1.11	0.100 1.00 1.00 0.100 0.0200 0.100 1.11	לי י	0.060 5.9 49.0 ND 1.78 0.057 ND ND ND A.33	MG/L MG/CU.M. COL/100 ML MG/L MG/L MG/L MG/L MG/CU.M. MG/L MG/L MG/L	NONE 10200H NONE 351.2 NONE 10200H 365.4 NONE	350.1 10200H 1604 351.2 354.1 10200H 365.4 160.2	NA 08/04/22 NA 08/09/22 NA NA 08/04/22 08/09/22 NA	08/11/22 08/08/22 08/03/22 08/10/22 08/11/22 08/08/22 08/08/22 08/04/22	R315638A 08096942 08247014 195413 R315670 08247013 08096942 195411 08086933
Total Organic Carbon	arbon	0.500	1.00		2.2	MG/L	NONE	0906	NA	08/09/22	R315556

(a) DOD and/or NELAC Accredited Analyte.

Sample 008960-02, Inorganic Analyses

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No:	No: 008960	09						K.	Report Date:	: 08/25/2022	022
Project Name: Project No:	SHELBYVILLE LAKE	LE LAKE						Z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: Field ID: Received:	008960-03 SVL-2-10 08/03/2022	5	Sampl Samp Samp	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 08/03/2022 1118			Matrix: Moisture:	: WATER : NA	
Analyte	L e	LOD	TOO	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron		0.0400	0.0500		0.446	MG/L	3010A	6010C	08/11/22	08/17/22	P7813
(a) Manganese	J	0.00400	0.00500		0.0490	MG/L	3010A	6010C	08/11/22	08/17/22	P7813
Ammonia Nitrogen	ne	0.0270	0.100		0.10	MG/L	NONE	350.1	NA	08/11/22	R315638A
Kjeldahl Nitrogen	gen	0.475	1.00		ND	MG/L	351.2	351.2	08/09/22	08/10/22	195413
Nitrate as Nitrogen	rogen	0.0180	0.100		1.71	MG/L	NONE	353.2	NA	08/11/22	R315670
Nitrite as Nitrogen	rogen	0.0200	0.0200		0.050	MG/L	NONE	354.1	NA	08/04/22	08247013
Phosphorus		0.0660	0.100		ND	MG/L	365.4	365.4	08/09/22	08/10/22	195411
Solids, Total Suspended	Suspended	1.11	1.11		7.44	MG/L	NONE	160.2	NA	08/04/22	08086932
Solids, Volatile Suspen	le Suspen	1.11	1.11		2.56	MG/L	NONE	160.4	NA	08/04/22	08086933
Total Organic Carbon	Carbon	0.500	1.00		2.3	MG/L	NONE	0906	NA	08/09/22	R315556

(a) DOD and/or NELAC Accredited Analyte.

Sample 008960-03, Inorganic Analyses

Lab Report No: 008960 Report Date: 08/24/2022

ame: E082	960-04	Wasan and a second
ame: E082	960-04	Market
ame: E082	960-04	
Date: 08/0	24210	
	3/2022	
e: 08/0	9/2022	
Date: 08/2	24/2022	
ID: AG5		
B115	504	
LOW		
Data	Violando Vi	Dilution
sult Flag	Units	Factor
1D	UG/L	1
460	UG/L	1
1D	UG/L	1
1D	UG/L	1
	UG/L	1
.430	UG/L	1
.430 ND	UG/L	1
	TTCI /T	1
	ID	ID UG/L

SURROGATE RECOVERIES:	Limits	Results	
Triphenylphosphate	30-130	84%	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

			n	942 013 942 932 933
2022	lics 100308		Run Number	08096942 08247014 08247013 08096942 08086933
08/25/2022	Inorganics	WATER	Analysis Date	08/08/22 08096942 08/03/22 08247014 08/04/22 08247013 08/08/22 08096942 08/04/22 08086933
Report Date:	Analysis: Inorganics NELAC Certified - IL100308	Matrix: Moisture:	Prep Date	08/04/22 NA NA 08/04/22 NA
ĸ	Z		Analysis Method	10200H 1604 354.1 10200H 160.2 160.4
			Prep Method	10200H NONE NONE 10200H NONE
		SHELBYVILLE LAKE 08/03/2022 1515	Units	MG/CU.M. COL/100 ML MG/L MG/CU.M. MG/L MG/L
			Result	30.8 51.0 0.098 9.6 27.5 8.75
		Sampling Loc'n: Sampling Date: Sampling Time:	Flag	
		Samp Samp Samp	ŎOI	1.00 1.00 0.0200 1.00 2.50
09	LE LAKE	2	LOD	1.00 1.00 0.0200 1.00 2.50 2.50
. No: 008960	SHELBYVILLE LAKE	008960-04 SVL-4 08/03/2022	t e	Correcte rogen Suspended le Suspen
Lab Report No:	Project Name: Project No:	ARDL No: Field ID: Received:	Analyte	Chlorophyll-a, Correcte E. Coliform Nitrite as Nitrogen Pheophytin-a Solids, Total Suspended Solids, Volatile Suspen

(a) DOD and/or NELAC Accredited Analyte.

Sample 008960-04, Inorganic Analyses

Lab Report No: 008960 Report Date: 08/24/2022

Project Name:	SHELBYVILLE LAKE	Ana	lysis: N	P PESTICID	ES (82	70SIM-MC	D)
Project No.:	Ana	alytical M	ethod: 82	270D			
NELAC Certi	fied - IL100308	Prep M	ethod: 3	510C			
Field ID:	SVL-12		ARDL 1	Lab No.:	00896	50-05	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E0824	1211	
Sample Date:	08/03/2022		Recei	ved Date:	08/03	3/2022	
Sample Time:	1550		Prep.	Date:	08/09	9/2022	
Matrix:	WATER		Analys	sis Date:	08/24	1/2022	
Amount Used:	900 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Bat	ch:	B1150	04	
% Moisture:	NA		Level	:	FOM		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.222	0.222	ND		UG/L	1
Atrazine		0.222	0.222	0.411		UG/L	1
Metribuzin		0.222	0.222	ND		UG/L	1
Alachlor		0.222	0.222	ND		UG/L	1
Metolachlor		0.222	0.222	2.09		UG/L	1
Chlorpyrifos		0.222	0.222	ND		UG/L	1
Cyanazine		0.222	0.222	ND		$\mathtt{UG}/\mathtt{L}$	1
Pendimethalin		0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results	
Triphenylphosphate	30-130	81%	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No:	10: 008960	09						щ	Report Date:	: 08/25/2022	:022
Project Name: S Project No:	SHELBYVILLE LAKE	LE LAKE						Z	Analysis: Inor NELAC Certified -		ganics IL100308
ARDL No: 0 Field ID: S Received: 0	008960-05 SVL-12 08/03/2022	2	Samp. Sami Sami	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 08/03/2022 1550			Matrix: Moisture:	: WATER : NA	
Analyte		LOD	ЙОЛ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen Chlorophyll-a, Correcte E. Coliform Kjeldahl Nitrogen Nitrate as Nitrogen Nitrite as Nitrogen Pheophytin-a Phosphorus Solids, Total Suspended Solids, Volatile Suspen Total Organic Carbon	cte ded pen	0.0270 1.00 1.00 0.475 0.00900 0.0200 1.00 2.22 2.22 2.22 0.500	0.100 1.00 1.00 1.00 0.0500 0.0200 1.00 2.22 2.22 2.22		ND 10.0 3000 ND 0.431 ND 2.6 0.312 20.2 6.44	MG/L MG/CU.M. COL/100 ML MG/L MG/L MG/L MG/L MG/L MG/L MG/L MG	NONE 10200H NONE 351.2 NONE 10200H 365.4 NONE NONE	350.1 10200H 1604 351.2 353.2 354.1 10200H 365.4 160.2 160.2	NA 08/04/22 NA 08/09/22 NA NA 08/04/22 08/09/22 NA NA	08/11/22 08/08/22 08/03/22 08/10/22 08/11/22 08/08/22 08/08/22 08/04/22 08/04/22	R315638A 08096942 08247014 195413 R315670 08247013 08096942 195411 08086933 R315556

(a) DOD and/or NELAC Accredited Analyte.

Sample 008960-05, Inorganic Analyses

Lab Report No: 008960 Report Date: 08/24/2022

Project Name:	SHELBYVILLE LAKE	Ana	lysis: N	P PESTICII	DES (82	70SIM-MO	D)
Project No.:	An	alytical M	ethod: 82	270D			
NELAC Certif	Fied - IL100308	Prep M	ethod: 35	510C			
Field ID:	SVL-13		ARDL 1	Lab No.:	0089	50-06	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E0824	1212	
Sample Date:	08/03/2022		Receiv	ved Date:	08/03	3/2022	
Sample Time:	1307		Prep.	Date:	08/09	9/2022	
Matrix:	WATER		Analys	sis Date:	08/24	1/2022	
Amount Used:	1000 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Bat	tch:	B1150	04	
% Moisture:	NA		Level	:	LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	0.210		UG/L	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	0.430		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results	
Triphenylphosphate	30-130	74%	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 00	096800						щ	Report Date:	: 08/25/2022	:022
Project Name: SHELBY	SHELBYVILLE LAKE						z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	lics .00308
ARDL No: 008960-06 Field ID: SVL-13 Received: 08/03/2022	-06 2022	Samp Samr Samr	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 08/03/2022 1307			Matrix: Moisture:	: WATER : NA	
Analyte	LOD	TOO	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0270	0.100		0.10	MG/L	NONE	350.1	NA	08/11/22 R315638A	R315638A
Chlorophyll-a, Correcte	te 1.00	1.00	þ	27.2	MG/CU.M.	10200H	10200H	08/04/22	08/08/22	08096942
E. Coliform	1.00	1.00		1180	COL/100 ML	NONE	1604	NA	08/03/22	08247014
Kjeldahl Nitrogen	0.475	1.00		1.0	MG/L	351.2	351.2	08/09/22	08/10/22	195413
Nitrate as Nitrogen	0.00900	0.0500		0.279	MG/L	NONE	353.2	NA	08/11/22	R315670
Nitrite as Nitrogen	0.0200	0.0200		ND	MG/L	NONE	354.1	NA	08/04/22	08247013
Pheophytin-a	1.00	1.00		14.1	MG/CU.M.	10200H	10200H	08/04/22	08/08/22	08096942
Phosphorus	0990.0	0.100		0.404	MG/L	365.4	365.4	08/09/22	08/10/22	195411
Solids, Total Suspended	ed 10.0	10.0		130	MG/L	NONE	160.2	NA	08/04/22	08086932
Solids, Volatile Suspen	en 10.0	10.0		24.0	MG/L	NONE	160.4	NA	08/04/22	08086933
Total Organic Carbon	0.500	1.00		4.1	MG/L	NONE	0906	NA	08/09/22	R315556

(a) DOD and/or NELAC Accredited Analyte.

Lab Report No: 008960 Report Date: 08/24/2022

Project Name:	SHELBYVILLE LAKE	Ana	lysis: N	P PESTICII	ES (82	70SIM-MO	D)
Project No.:	An	alytical M	ethod: 82	270D			
NELAC Certi	fied - IL100308	Prep M	ethod: 3	510C			
Field ID:	SVL-11		ARDL	Lab No.:	0089	50-07	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E0824	4213	
Sample Date:	08/03/2022		Recei	ved Date:	08/03	3/2022	
Sample Time:	1433		Prep.	Date:	08/09	9/2022	
Matrix:	WATER		Analy	sis Date:	08/2	4/2022	
Amount Used:	1000 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Bat	tch:	B115	04	
% Moisture:	NA		Level	:	FOM		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	0.330		UG/L	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	0.370		UG/L	1 .
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results	
Triphenylphosphate	30-130	78%	•

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No:	096800	90						щ	Report Date:	: 08/25/2022	022
Project Name: SHEI Project No:	LBYVILI	SHELBYVILLE LAKE						Z	Analysis: Inor NELAC Certified -	: Inorganics fied - IL1003	ganics IL100308
ARDL No: 008960 Field ID: SVL-11 Received: 08/03/	008960-07 SVL-11 08/03/2022	2	Sampl Samp	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 08/03/2022 1433			Matrix: Moisture:	: WATER : NA	
Analyte		LOD	TOO	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen Chlorophyll-a, Correcte E. Coliform Kjeldahl Nitrogen Nitrate as Nitrogen Nitrite as Nitrogen Pheophytin-a Phosphorus Solids, Total Suspended Solids, Volatile Suspen Total Organic Carbon		0.0270 1.00 1.00 0.475 0.00900 0.0200 1.00 2.50 2.50 2.50	0.100 1.00 1.00 0.0500 0.0200 1.00 2.50 2.50	Ъ	ND 52.2 54.0 0.80 0.278 0.062 7.8 0.153 22.0 12.5	MG/L MG/CU.M. COL/100 ML MG/L MG/L MG/L MG/L MG/L MG/L	NONE 10200H NONE 351.2 NONE 10200H 365.4 NONE NONE	350.1 10200H 1604 351.2 353.2 354.1 10200H 365.4 160.2 160.2	NA 08/04/22 NA 08/09/22 NA NA 08/04/22 08/09/22 NA NA	08/11/22 08/08/22 08/03/22 08/10/22 08/11/22 08/04/22 08/04/22 08/04/22	R315638A 08096942 08247014 195413 R315670 08247013 08096942 195411 08086933 R315556

(a) DOD and/or NELAC Accredited Analyte.

Sample 008960-07, Inorganic Analyses

Lab Report No: 008960 Report Date: 08/24/2022

Project Name:	SHELBYVILLE LAKE	Ana	lysis: N	PESTICII	DES (82	70SIM-MC	DD)
Project No.:	Ana	alytical M	ethod: 82	270D			
NELAC Certi	fied - IL100308	Prep M	ethod: 35	510C			
Field ID:	SVL-15		ARDL 1	Lab No.:	00896	50-08	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E0824	1214	
Sample Date:	08/03/2022		Recei	ved Date:	08/03	3/2022	
Sample Time:	1433		Prep.	Date:	08/09	9/2022	
Matrix:	WATER		Analys	sis Date:	08/24	1/2022	
Amount Used:	1000 mL		Instr	ment ID:	AG5		
Final Volume:	1 mL		QC Bat	cch:	B1150	04	
% Moisture:	NA		Level	:	LOW		
	And Andrews Control of the Control o				Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.200	0.200	ND		UG/L	1
Atrazine		0.200	0.200	0.390		UG/L	1
Metribuzin		0.200	0.200	ND		UG/L	1
Alachlor		0.200	0.200	ND		UG/L	1
Metolachlor		0.200	0.200	0.440		UG/L	1
Chlorpyrifos		0.200	0.200	ND		UG/L	1
Cyanazine		0.200	0.200	ND		UG/L	1
Pendimethalin		0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results	
Triphenylphosphate	30-130	93%	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Project Name: SHELBYVILLE LAKE Project No: Project No: ARDL No: 008960-08 Field ID: SVL-15 Received: 08/03/2022 Analyte LOD	LOD LOD	Sampl Sampl Sampl LOQ	Sampling Loc'n: Sampling Date: Sampling Time:	ns la	SHELBYVILLE LAKE 08/03/2022 1433 1433	Prep Method	Analysis Method	Analysis: Inorganics NELAC Certified - IL100308 Matrix: WATER Moisture: NA Prep Analysis Ru Date Date Numb	: Inorganics fied - IL1003 : WATER : NA : NA Analysis Date Nu	Run Number
Chlorophyll-a, Correcte Kjeldahl Nitrogen	1.00 0.475	1.00	Ŋ	57.7 0.70	MG/U MG/U.M.	10200H 351.2	350.1 10200H 351.2	08/04/22 08/09/22		08096942 195413
Nitrate as Nitrogen Nitrite as Nitrogen	0.00900	0.0500		0.269	MG/L MG/L	NONE NONE	353.2 354.1	NA NA	08/16/22 08/04/22	R315833 08247013
Pheophytin-a Phosphorus	1.00	1.00		27.3	MG/CU.M. MG/L	10200H 365.4	10200H 365.4	08/04/22	08/08/22	08096942 195411
Solids, Total Suspended	2.50	2.50		21.5	MG/L	NONE	160.2	NA		08086932
Solids, Volatile Suspen	2.50	2.50		12.3	MG/L	NONE	160.4	NA	08/04/22	08086933
Total Organic Carbon	0.500	1.00		3,5	MG/L	NONE	0906	NA	08/09/22	R315556

(a) DOD and/or NELAC Accredited Analyte.

Sample 008960-08, Inorganic Analyses

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

22	.cs 0308		Run Number	8247014
Report Date: 08/25/2022	Analysis: Inorganics NELAC Certified - IL100308	Matrix: WATER isture: NA	Analysis Date	08/03/22 08247014
port Date	Analysis LAC Cert	Matrix: Moisture:	Prep Date	NA
Re	NE		Prep Analysis Method Method	1604
			Prep Method	NONE
		Sampling Loc'n: SHELBYVILLE LAKE Sampling Date: 08/03/2022 Sampling Time: 1146	Units	COL/100 ML
		'n: SHELE ce: 08/03 ne: 1146	Result	43.0
		ampling Loc'n: Sampling Date: Sampling Time:	Flag	
		Samp Sam Sam	TOO	1.00
09680	/ILLE LAKE	-09 INA 2022	LOD	1.00
No: 00	SHELBY	008960- LS MARI 08/03/2	t e	
Lab Report No: 008960	Project Name: SHELBYVILLE LAKE Project No:	ARDL No: 008960-09 Field ID: LS MARINA Received: 08/03/2022	Analyte	E. Coliform

(a) DOD and/or NELAC Accredited Analyte.

Sample 008960-09, Inorganic Analyses

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Report Date: 08/25/2022	Analysis: Inorganics NELAC Certified - IL100308	Matrix: WATER isture: NA	Analysis Run Date Number	08/03/22 08247014
sport Dat	Analysi SLAC Cert	Matrix: Moisture:	Prep Date	NA
Re	N N		Prep Analysis Method Method	1604
			Prep Method	NONE
		Sampling Loc'n: SHELBYVILLE LAKE Sampling Date: 08/03/2022 Sampling Time: 1426	Units	COL/100 ML NONE
		n: SHELL Le: 08/03 ne: 1426	Result	8.0
		ampling Loc'n: SHELBYVILLI Sampling Date: 08/03/2022 Sampling Time: 1426	Flag	
		Samp Sam Sam	TOO	1.00
098800	SHELBYVILLE LAKE	008960-10 FIN MARINA 08/03/2022	LOD	1.00
Lab Report No: 008960	Project Name: SHE Project No:	ARDL No: 008960-10 Field ID: FIN MARIN; Received: 08/03/202:	Analyte	E. Coliform

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

			н	14
:022	11cs 00308		Run Number	082470
. 08/25/2	Analysis: Inorganics AC Certified - IL1003	Matrix: WATER	Analysis Date	08/03/22 08247014
Report Date: 08/25/2022	Analysis: Inorganics NELAC Certified - IL100308	Matrix: Moisture:	Prep Date	NA
Re	NE		Analysis Method	1604
			Prep Method	NONE
		SHELBYVILLE LAKE 08/03/2022 1515	Units	COL/100 ML
		1	Result	175
		Sampling Loc'n: SHELL Sampling Date: 08/0: Sampling Time: 1515	Flag Re	
		Sampli Sampl Sampl	roo	1.00
90	LE LAKE	2 A	ГОР	1.00
No: 008960	SHELBYVILLE LAKE	008960-11 SUL MARINA 08/03/2022	Q.	
Lab Report No:	Project Name: Project No:	ARDL No: 008960-11 Field ID: SUL MARIN Received: 08/03/202	Analyte	E. Coliform

(a) DOD and/or NELAC Accredited Analyte.

# METHOD BLANK REPORT ARDL, Inc. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008960 Report Date: 08/24/2022

Project Name: Project No.:	SHELBYVILLE LAK	E Analy Analytical Met	sis: NP PEST	ricides (8	270SIM-M	OD)
-	fied - IL100308	•	hod: 3510C			
NEEDAC CCICI	1100 11100500	TTCP FICE	nou. Jiioc			
Field ID:	NA		ARDL Lab No	008	960-01B1	
Desc/Location:	NA		Lab Filenam	ne: E08	24204	
Sample Date:	NA		Received Da	ate: NA		
Sample Time:	NA		Prep. Date:	: 08/	09/2022	
Matrix:	QC Material		Analysis Da	ate: 08/	24/2022	
Amount Used:	1000 mL		Instrument	ID: AG5		
Final Volume:	1 mL		QC Batch:	B11	504	
% Moisture:	NA		Level:	LOW		
					Data	
Parameter		LOD	LOQ	Result	Flag	Units
Trifluralin		0.200	0.200	ND		UG/L
Atrazine		0.200	0.200	ND		UG/L
Metribuzin		0.200	0.200	ND		UG/L
Alachlor		0.200	0.200	ND		UG/L
Metolachlor		0.200	0.200	ND		UG/L
Chlorpyrifos		0.200	0.200	ND		UG/L
Cyanazine		0.200	0.200	ND		UG/L
Pendimethalin		0.200	0.200	ND		UG/L
		0,200	0.200	212		00, 1
SURROGATE RECOV	ERIES:	Limit	S	Re	esults	
riphenylphosph	ate	30-13	0		97%	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

Mt. Vernon, IL 400 Aviation Drive; P.O. Box 1566 BLANK SUMMARY REPORT ARDL, INC.

62864

022
08/25/2022
Report Date:
096800
Lab Report No: 008
Lab R

Project Name:	SHELBY	SHELBYVILLE LAKE	五					NELP	C Certifi	NELAC Certified - IL100308
Analyte	LOD	ŎОП	Blank Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run	QC Lab Number
(a) Iron	0.040	0.050	QN ON	MG/L	3010A	6010C	08/11/22	08/17/22	P7813	008958-01B1
(a) Manganese	0.004	0.005	ND	MG/L	3010A	6010C	08/11/22	08/17/22	P7813	008958-01B1
Ammonia Nitrogen	0.027	0.10	NO	MG/L	NONE	350.1	NA	08/11/22	R315638A	008960-01B1
Chlorophyll-a, Corre	1.0	1.0	N ON	MG/CU.M.	10200H	10200H	08/04/22	08/08/22	08096942	008960-06B1
Kjeldahl Nitrogen	0.48	1.0	ND	MG/L	351.2	351.2	08/09/22	08/10/22	195413	008960-02B1
Kjeldahl Nitrogen	0.48	1.0	NON	MG/L	351.2	351.2	08/15/22	08/16/22	195592	008960-01B1
Nitrate as Nitrogen	600.0	0.050	N ON	MG/L	NONE	353.2	NA	08/16/22	R315833	008960-08B1
Nitrate as Nitrogen	600.0	0.050	N ON	MG/L	NONE	353.2	NA	08/11/22	R315670	008960-01B1
Nitrite as Nitrogen	0.020	0.020	ND	MG/I	NONE	354.1	NA	08/04/22	08247013	008960-01B1
Pheophytin-a	1.0	1.0	ND	MG/CU.M.	10200H	10200H	08/04/22	08/08/22	08096942	008960-06B1
Phosphorus	0.066	0.10	ND	MG/L	365.4	365.4	08/09/22	08/10/22	195411	008960-02B1
Phosphorus	0.066	0.10	ND	MG/L	365.4	365.4	08/15/22	08/16/22	195590	008960-01B1
Solids, Total Suspen	1.0	1.0	NO	MG/L	NONE	160.2	NA	08/04/22	08086932	008960-06B1
Solids, Volatile Sus	1.0	1.0	ND	MG/L	NONE	160.4	NA	08/04/22	08086933	008960-06B1
Total Organic Carbon	0.50	1.0	NO	MG/L	NONE	0906	NA	08/09/22	R315556	008960-01B1

(a) DOD and/or NELAC Accredited Analyte Inorganic Method Blanks for 008960

Mt. Vernon, IL BLANK SPIKE/SPIKE DUPLICATE REPORT 400 Aviation Drive; P.O. Box 1566 ARDL, INC.

62864

Project Name: Project No.:	Project Name: SHELBYVILLE LAKE Project No.:	An	Analysis: NP	PESTICID	NP PESTICIDES (8270SIM-MOD)	IM-MOD)	Anal	ytical M Prep M	Analytical Method: 8270D Prep Method: 3510C	70D 10C
Matrix: Amount Used:	QC Material 1000 mL		QC Batch: Level:		B11504 LOW		Prep. Date: Analysis Da	Date: is Date:	Prep. Date: 08/09/2022 Analysis Date: 08/24/2022	22
Α,	Parameter	Spike Result	Spike Level	Spike % Rec	Duplicate Result	Duplicate Level	Duplicate % Rec	Recovery	RPD	RPD Limit
AE.	Trifluralin	3.29	4	82	l p	1	1 1	30-130	1 1	,
	Atrazine	3.68	4	92	;	;	;	30-130	;	1
Σ	Metribuzin	3.68	4	92	;	;	;	30-130	;	;
	Alachlor	3.48	4	87	;	;	;	30-130	;	1
Me	Metolachlor	3.51	4	88	;	1	:	30-130	;	1
윈	Chlorpyrifos	3.24	4	81	!	1	1	30-130	1	;
U	Cyanazine	3.74	4	94	!	i	;	30-130	;	i
Pen	Pendimethalin	3.05	4	76	;	1	i	30-130	;	;

SURROGATE RECOVERIES:	Spike %R	Duplicate %R	%R Limits
Triphenylphosphate	92.5	;	30-130

<sup>&#</sup>x27;\*' indicates a recovery outside of standard limits. Spike Blanks for 008960-01, NP PESTICIDES (8270SIM-MOD)

62864 Mt. Vernon, IL LABORATORY CONTROL SAMPLE REPORT 400 Aviation Drive; P.O. Box 1566 ARDL, INC.

Lab Report No: 008960									Report Da	Report Date: 08/25/2022
Project Name: SI	SHELBYVILLE LAKE	E LAKE							NELAC Cer	NELAC Certified - IL100308
	LCS 1	LCS 1	LCS 1	LCS 2	LCS 2	LCS 2	% Rec	Mean	Analytical	QC Lab
Analyte	Result	Level	% Rec	Result	Level	% Rec	Limits	% Rec	Run	Number
(a) Iron	4.6	5.0	93	-	-	1	87-115	1	P7813	008958-01C1
(a) Manganese	0.73	0.75	97	1	;	1	90-114	1	P7813	008958-01C1
Ammonia Nitrogen	10.4	10.0	104	ł	1	I	90-110	1	R315638A	008960-01C1
Kjeldahl Nitrogen	10.3	10.0	103	i	1	1	90-110	1	195413	008960-02C1
Kjeldahl Nitrogen	9.5	10.0	95	;	;	;	90-110	ļ	195592	008960-01C1
Nitrate as Nitrogen	0.52	0.50	104	1	;	;	90-110	1	R315833	008960-08C1
Nitrate as Nitrogen	0.51	05.0	102	}	;	;	90-110	}	R315670	008960-01C1
Nitrite as Nitrogen	0.95	1.0	95	!	1	1	80-120	1	08247013	008960-01C1
Phosphorus	0.95	1.0	95	!	1	!	85-115	1	195411	008960-02C1
Phosphorus	1.0	1.0	103	ļ	;	!	85-115	ŀ	195590	008960-01C1
Total Organic Carbon	26.9	27.2	66	1	1	!	90-110	1	R315556	008960-01C1

NOTE: Any values tabulated above marked with an asterisk are outside of acceptable limits.

Inorganic LCS Results for 008960

<sup>(</sup>a) DOD and/or NELAC Accredited Analyte

ARDL, Lab Report No: 008960	ARDL, INC.	MATRIX SPIKE/SPIKE DUPLICATE REPORT 400 Aviation Drive; P.O. Box 1566	IKE/SP. ion Dr:	SPIKE DUPLI Drive; P.O.	CATE REPOI Box 1566	ORT 56 Mt.	Vernon, IL Repoi	;	<b>62864</b> Date: (	08/24/2022
Project Name: SHELBYVILLE LAKE Project No.:	AKE	Analysis:	NP PEST	PESTICIDES (8270SIM-MOD)	70SIM-MOD)		Analytic Pr	Analytical Method: Prep Method:	: 8270D : 3510C	
Field ID: SVL-1 Desc/Location: SHELBYVILLE LAKE	LAKE	Prep. Amount	Prep. Date: Amount Used:	08/09/2022 1000 mL	01	A J	ARDL Lab No.: Lab Filename:		008960-01	
Sample Date: 08/03/2022		% Moi	% Moisture:	NA		Ř	Received D	Date: 08/0	08/03/2022	
Sample Time: 1022 Matrix: WATER		QC Batch: Level:	tch:	B11504 LOW		A	Analysis D	Date: 08/2	08/24/2022	
	Sample	MS	MS	MS	MSD	MSD	MSD	* Rec		RPD
Parameter	Result	Result	Level	% Rec	Result	Level	% Rec	Limits	RPD	Limit
Trifluralin	QN	4	4	100	3.45	4	86.3	30-130	14.8	30
Atrazine	0.220	4.54	4	108	3.86	4	91	30-130	16.2	30
Metribuzin	ND	4.27	4	106.8	3.69	4	92.3	30-130	14.6	30
Alachlor	QN	4.28	4	107	3.56	4	68	30-130	18.4	30
Metolachlor	0.310	4.65	4	108.5	3.94	4	8.06	30-130	16.5	30
Chlorpyrifos	ND	3.95	4	98.8	3.23	4	80.8	30-130	20.1	30
Cyanazine	QN	4.45	4	111.3	3.7	4	92.5	30-130	18.4	30
Pendimethalin	QN	3.88	4	97	3.3	4,	82.5	30-130	16.2	30

SURROGATE RECOVERIES: MS %R MSD %R %R Limits
Triphenylphosphate 113 95 30-130

<sup>&#</sup>x27;\*' indicates a recovery outside of standard limits. Matrix Spikes for 008960-01, NP PESTICIDES (8270SIM-MOD)

62864 MATRIX SPIKE/SPIKE DUPLICATE REPORT 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL ARDL, INC.

08/25/2022 Report Date: Lab Report No: 008960

Project Name:		SHELBYVILLE LAKE	LE LAKE								NELAC	Certifi	NELAC Certified - IL100308
	Sample	Sample	MS	MS	MS	MSD	MSD	MSD	% Re C		RPD		QC Lab
Analyte	Matrix	Result	Result	Level	% Rec	Result	Level	% Rec	Limits	RPD	Limit	Run	Number
(a) Iron	WATER	0.46	1.4	1.0	91	1.4	1.0	96	87-115	4	20	P7813	008960-01MS
(a) Manganese	WATER	0.58	1.0	0.50	93	1.1	0.50	101	90-114	4	20	P7813	008960-01MS
Ammonia Nitrogen	WATER	0.74	2.3	2.0	* 11	2.3	2.0	* 77	90-110	0	10	R315638A	008960-01MS
Kjeldahl Nitrogen	WATER	ND	9.3	10.0	93	9.3	10.0	93	90-110	1	15	195592	008960-01MS
Nitrate as Nitrogen	WATER	0.27	0.54	0.25	108	0.54	0.25	110	90-110	1	10	R315833	008960-08MS
Nitrite as Nitrogen	WATER	ND	0.94	1.0	94	0.94	1.0	94	75-125	0	20	08247013	008960-01MS
Phosphorus	WATER	ND	1.0	1.0	102	1.0	1.0	103	85-115	1	15	195590	008960-01MS
Total Organic Carbon	WATER	2.3	7.1	5.0	95	7.1	5.0	96	85-115	1	10	R315556	008960-01MS

NOTE: Values tabulated above marked with an asterisk are explained in the associated narrative.

<sup>(</sup>a) DOD and/or NELAC Accredited Analyte.

62864 Mt. Vernon, IL 400 Aviation Drive; P.O. Box 1566 SAMPLE DUPLICATE REPORT ARDL, INC.

Lab Report No: 008960	09680						Report Date: 08/25/2022	08/25/2022
Project Name: Sl	SHELBYVILLE LAKE	LAKE			The state of the s		NELAC Certified - IL100308	ed - IL100308
	Sample	First	Second		Percent	Mean	Analytical	QC Lab
Analyte	Conc'n	Conc'n Duplicate Duplicate	Duplicate	Units	Diff	(Smp, D1, D2)	Run	Number
Chlorophyll-a, Corrected	ted 27.2	36.0	1	MG/CU.M.	28*	1 1	08096942	008960-06D1
Pheophytin-a	14.1	14.4	!	MG/CU.M.	2	1	08096942	008960-06D1
Solids, Total Suspended	ded 130	129	1	MG/L	Н	-	08086932	008960-06D1
Solids, Volatile Suspend	end 24.0	23.0	1	MG/L	4	-	08086933	008960-06D1

See Case Narrative for exceptions. \* indicates that agreement between duplicates is greater than 20%. (a) DOD and/or NELAC Accredited Analyte

Sample Duplicates for 008960



# Sample Receipt Information

Including as appropriate:

- COCs
- Cooler Receipts
- Airbills
- Email Communication / Instructions from Customer

ARDL Data Package 8960

Authorized By: DSD-QAO

_	2	
	Equi	

P.O. Box 1566, 400 Aviation Drive, Mt. Vernon, IL 62864

(618) 244-3235 Phone (618) 244-1149 Fax

864

8260

CHAIN OF CUSTODY RECORD

PROJECT Shelbyville Lake						1															PRESERVATION	VATION	
SAMPLERS: (Signature) Sen Greeling, Grenden Skolon	3/5 0	140		CONTAINE	POOL I	SON, SO	0847	rox	N-EHN'N		110	08									ICED	SPECIFY CHEMICALS ADDED AND FINAL PH IF KNOWN	
SAMPLE NUMBER D.	DATE	TIME	COMP		W 58V	40/47	20/	SAN T	D ON	. 40	25	WSW DO 3						R SAMPI	REMARKS OR SAMPLE LOCATION				
SVL-1	8/3/11	J670	×		X	X	×	×	X	X	×										×		
Z SVL-2		127	×		X	×	×	×	×	×					y						×		
\$ SVL-2-10		9)	×		×	×	×	×	~	×											X		
4 SVL-4		1515	×		XX	N. C.	×	X	X	×											X		
SVL-12		1550	×		X	X	×	×	×	×											X		
SVL-13		1307	×		×	X	×	×	×	×											X		
7 SVL-11	_	1433	×		X	X	×	×	×	×											×		ā
§ SVL-15	_ <u>_</u>	1433	×		X	×	×	×	×												×		
7 LS Marina		1146	×							×											X		
6 FIN Marina		9261	×							×											×		
SUL Marina		1515	×							×											×		
Al	,																						
RDL												-											*
Rep			/	A	(,																		
	Date 8/3/22	Time	Received by	ed by:	: (Signature)	uture)	100	REM	IARK	REMARKS/SPECIAL INSTRUCTIONS:	CIAL	INST	RUCT	IONS:	7	-	Z	Sill	P		W.	RA M. Color 113	Je 113.
4	Date	Time	Received by: (Signature)	ed by:		ıture)	2	*Pre: #Pres	served	*Preserved with H <sub>2</sub> SO <sub>4</sub> #Preserved with HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>		5 10	2 5	7887	3	7 8	3	Chalis.	7			77.
3	Date 322	Time 23	Shipping Ticket No.	ng Tick	ket No		-	II	le le	2	X	100	3	1 3	ing !	\$. S	1 +2	bilect	Filled boxes indicate samples not collected 185 8/3/12	8/8/	27/		
LEURCHASE ORDER NO:							1																

# COOLER RECEIPT REPORT ARDL, INC.

ARE	DL #: <u>6960</u>	Cooler# Bue 1		
	h	Number of Coolers in Shipn	nent: <u> </u>	
Proj	ect: Shelbyville Lake	Date Received: 08/03/20	22	
A.	PRELIMINARY EXAMINATION PHASE: Date cooler was opened	12022 (Signature) 106		
1.	Did cooler come with a shipping slip (airbill, etc.)?		YES (N	
	Did cooler come with a shipping slip (airbill, etc.)?	Carier-Valeri	L	
	Were custody seals on outside of cooler?			O(N/A)
	How many and where?,Seal Date	e:,Seal Name:		
3.	Were custody seals unbroken and intact at the date and time of arrival?		YES N	O (NA)
4.	Did you screen samples for radioactivity using a Geiger Counter?	<u>*</u>	(ÉS) N	10
5.	Were custody papers sealed in a plastic bag?+ and de lived	ed	YES (N	0)
6.	Were custody papers filled out properly (ink, signed, etc.)?	•		IO N/A
7.	Were custody papers signed in appropriate place by ARDL personnel?		(ES) N	O N/A
8.	Was project identifiable from custody papers? If YES, enter project name		<i>(</i> )	O N/A
9.	Was a separate container provided for measuring temperature? YES		C V	Soundle
В.	LOG-IN PHASE: Date samples were logged-in	(Signature) DCB	ection factor	
10.	Describe type of packing in cooler: Leose Ice			
11.	Were all samples sealed in separate plastic bags?		YES (	N/A
12.	Did all containers arrive unbroken and were labels in good condition?		YES N	10
13.	Were sample labels complete?			10
14.	Did all sample labels agree with custody papers?			0
15.	Were correct containers used for the tests indicated?		(FÉS) N	Ю
16.	Was pH correct on preserved water samples?			NO N/A
17.	Was a sufficient amount of sample sent for tests indicated?		YES N	40
18.	Were bubbles absent in VOA samples? If NO, list by sample #:		YES 1	NO ENA
19.	Was the ARDL project coordinator notified of any deficiencies?		(ES) N	NO N/A
	Comments and/or Corrective Action:	Sample <sup>2</sup>	Transfer	
1	VIII NO TILL COLL	Fraction	Fraction	
	Usle IVO IKN on SVL-4,	Area# 1 1	Area #	
C	orrection from BGI on OBloylez	Walk-In		
	tated it is instead TSS, TUSS, No.	l By M/S	Ву	
2	made 1 18 (Morale 1 ) 1 1 1 2.	On VIII	On	
-		()8/04/2022		
		Chain-of-Custody#	Anna Paris Carlos Carlo	
(E	By: Signature) Date:	]		

# COOLER RECEIPT REPORT ARDL, INC.

ARI	ol#: <u>8960,8961</u>	Cooler # Red 1	2
Pro	ject: Shelbyville Lake, Kaskaskia Kiver	Number of Coolers in Shipment:	
1 10	· · · · · · · · · · · · · · · · · · ·	11	<del></del>
A.	PRELIMINARY EXAMINATION PHASE: Date cooler was opened:		
1.	Did cooler come with a shipping slip (airbill, etc.)?	Carier-Valerie	.YES (NO)
2.	Were custody seals on outside of cooler?		.YES NO N/A
	How many and where? "Seal Date	e:,Seal Name:	
3.	Were custody seals unbroken and intact at the date and time of arrival?		.YES NO (NA)
4.	Did you screen samples for radioactivity using a Geiger Counter?		
5.	Were custody papers sealed in a plastic bag? Hand deliver	ed	YES NO
6.	Were custody papers filled out properly (ink, signed, etc.)?		
7.	Were custody papers signed in appropriate place by ARDL personnel?		
8.	Was project identifiable from custody papers? If YES, enter project name		<u></u>
9.	Was a separate container provided for measuring temperature? YES	NO V Observed Cooler Temp. 2	6 c Somple
В.	LOG-IN PHASE: Date samples were logged-in: 08/01/2022	(Signature) Correction fa	actor <u>0.0</u> c Lea
10.	Describe type of packing in cooler: Louse Ice		and the second s
11.	Were all samples sealed in separate plastic bags?		YES NO N/A
12.	Did all containers arrive unbroken and were labels in good condition?		(ES) NO
13.	Were sample labels complete?		YES NO
14.	Did all sample labels agree with custody papers?		YES NO
15.	Were correct containers used for the tests indicated?		YES NO
16.	Was pH correct on preserved water samples?		YES NO N/A
17.	Was a sufficient amount of sample sent for tests indicated?		(YES) NO
18.	Were bubbles absent in VOA samples? If NO, list by sample #:		YES NO NA
19.	Was the ARDL project coordinator notified of any deficiencies?		YES NO (N/A)
	Comments and/or Corrective Action:	Sample Transf	
		Fraction Fraction	on
-		Area # / Area #	<u> </u>
		Walk-In	
		By By By	
-		On On	
-		U8/04/2022	
		Chain-of-Custody #	
(E	By: Signature) Date:		

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# COOLER RECEIPT REPORT ARDL, INC.

ARI	DL#: 8960	Cooler# Blue 2
	C1 11 11. 1 1	Number of Coolers in Shipment:
Pro	ject: Shelbyville Lake	Date Received: <u>OB/OS/2022</u>
Α.	PRELIMINARY EXAMINATION PHASE: Date cooler was opened:	4/2027_(Signature) <b>LCB</b>
1.	Did cooler come with a shipping slip (airbill, etc.)?	YES (NO)
	Did cooler come with a shipping slip (airbill, etc.)?	Courier-Valerie
2.	Were custody seals on outside of cooler?	
	How many and where?,Seal Date:	,Seal Name:
3.	Were custody seals unbroken and intact at the date and time of arrival?	YES NO (NA)
4.	Did you screen samples for radioactivity using a Geiger Counter?	
5.	Were custody papers sealed in a plastic bag? Hand de Wes	ld YES (NO)
6.	Were custody papers filled out properly (ink, signed, etc.)?	(YES) NO N/A
7.	Were custody papers signed in appropriate place by ARDL personnel?	
8.	Was project identifiable from custody papers? If YES, enter project name a	t the top of this form
9.	Was a separate container provided for measuring temperature? YES	NO Observed Cooler Temp. 32 C Sample
В.		(Signature) CB Correction factor O.O C
10.	Describe type of packing in cooler: Loose Ice	
11.	Were all samples sealed in separate plastic bags?	YES N/A
12.	Did all containers arrive unbroken and were labels in good condition?	(FES) NO
13.	Were sample labels complete?	NO YES NO
14.	Did all sample labels agree with custody papers?	VES NO
15.	Were correct containers used for the tests indicated?	VES NO
16.	Was pH correct on preserved water samples?	(YES) NO N/A
17.	Was a sufficient amount of sample sent for tests indicated?	(PES) NO
18.	Were bubbles absent in VOA samples? If NO, list by sample #:	YES NO NA
19.	Was the ARDL project coordinator notified of any deficiencies?	YES NO WA
	Comments and/or Corrective Action:	Sample Transfer
		Fraction Fraction
		Area # Area #
		Walkin
		By
		On On On
-		0804/2022
		Chain-of-Custody#
(F	By: Signature) Date:	

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PO Box 1566 400 Aviation Drive Mt. Vernon, IL 62864 618-244-3235

www.ardlinc.com

Date: 10/14/2022

Lab Name: ARDL, Inc.

ARDL Report No.: 8997

**Customer Name: SLCOE** 

Project Name: Shelbyville Lake

Samples Received at ARDL: 9/7/2022

# **CASE NARRATIVE**

Customer	<u>Date</u>	Lab ID	
Sample No.	Collected	<u>Number</u>	Analyses Requested
SVL-1	9/7/22	8997-01	NP Pesticides, Metals(1), Inorganics(2)(3)
SVL-2	9/7/22	8997-02	NP Pesticides, Inorganics(2)(3), E. Coli
SVL-2-10	9/7/22	8997-03	Metals(1), Inorganics(2)
SVL-4	9/7/22	8997-04	NP Pesticides, Inorganics(2)(3), E. Coli
SVL-12	9/7/22	8997-05	NP Pesticides, Inorganics(2)(3), E. Coli
SVL-13	9/7/22	8997-06	NP Pesticides, Inorganics(2)(3), E. Coli
SVL-11	9/7/22	8997-07	NP Pesticides, Inorganics(2)(3), E. Coli
SVL-15	9/7/22	8997-08	NP Pesticides, Inorganics(2)(3)
LS MARINA	9/7/22	8997-09	E. Coli
FIN MARINA	9/7/22	8997-10	E. Coli
SUL MARINA	9/7/22	8997-11	E. Coli

<sup>(1)</sup> Including iron and manganese.

The quality control data are summarized as follows:

#### NP PESTICIDE FRACTION - METHOD 8270-SIM

#### HOLDING TIME

Samples were prepared and analyzed within method specified holding times.

#### **INITIAL CALIBRATION**

The initial calibration passed criteria. The ICV passed criteria.

#### **CONTINUING CALIBRATION**

The continuing calibration verification (CCV) passed criteria for all analytes.

#### PREPARATION BLANK

The blank met acceptance criteria.

#### LABORATORY CONTROL SAMPLE

The LCS analyses met recovery criteria.

# MATRIX SPIKE

The matrix spike and matrix spike duplicate met recovery criteria.

"Test everything, keep the good" 1 Thes. 5:21

Page 1 of 2

<sup>(2)</sup> Including ammonia\*, nitrate\*, nitrite, total phosphorus\*, TKN\*, TOC\*, TSS and TVSS.

<sup>(3)</sup> Including chlorophyll-a corrected and pheophytin-a.

<sup>\*</sup> Analyzed by an accredited subcontract laboratory.

Project Name: Shelbyville Lake

**CASE NARRATIVE (Continued)** 

**DUPLICATE** 

Duplicate analyses are reported as MS/MSD. RPD met recovery criteria.

INTERNAL STANDARDS

All internal standard criteria were met.

**SURROGATES** 

All surrogate recovery criteria were met.

**INORGANIC FRACTION** 

PREPARATION BLANK

Results of the preparation blanks were undetected.

LABORATORY CONTROL SAMPLE

Percent recoveries of all LCS analyses were within control limits.

MATRIX SPIKE

Percent recovery of all matrix spikes and matrix spike duplicates were within control limits, except 2 of 2 for iron, ammonia and nitrate. The parent samples have been flagged appropriately with a 'J' qualifier.

DUPLICATE

All duplicate analyses are reported as MS/MSD except chlorophyll-a corrected, pheophytin-a, TSS and TVSS. RPD on all duplicate analyses were within control limits.

### DATA REPORTING QUALIFIERS

The following data reporting qualifiers are used as required:

- ND Indicates parameter was analyzed for but not detected.
- Indicates an estimated value. This flag is used either when estimating a concentration or this flag indicates analyte(s) associated with a DOD-QSM specified non-compliance pertaining to matrix QC criteria.

#### REPORT ORGANIZATION

The data in this report appear by sample type (Field sample, preparation blank, laboratory control sample / spike blank, matrix spike /spike duplicate and sample duplicate). Within each sample type the data appear in the order that the analytical methods were discussed in this case narrative. Sample receipt information follows the analytical data.

Release of the data contained in this package has been authorized by the Technical Services Manager or his designee as verified by the following signature.

Dean S. Dickerson

**Technical Services Manager** 

ARDL Report No.: 8997



# Sample & QC Results

Including as appropriate:

Field Sample Results

Batch QC

Prep Blank

LCS/Spike Blank

Matrix QC

MS/MSD

Sample Duplicate

ARDL Data Package

8997

Lab Report No: 008997 Report Date: 09/23/2022

Project Name: Project No.:	SHELBYVILLE LA	KE An Analytical	-	P PESTICII 270D	DES (82)	70SIM-MC	(טנ)
-	fied - IL100308	-	Method: 3				
Field ID:	SVL-1		ARDL	Lab No.:	0089	97-01	
Desc/Location:	SHELBYVILLE LA	KE	Lab F	ilename:	E092	1206	
Sample Date:	09/07/2022		Recei	ved Date:	09/0	7/2022	
Sample Time:	1012		Prep.	Date:	09/1	2/2022	
Matrix:	WATER		Analy	sis Date:	09/2	1/2022	
Amount Used:	900 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Ba	tch:	B115	24	
% Moisture:	NA		Level	:	LOW		
				<u> </u>	Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.222	0.222	ND		UG/L	1
Atrazine		0.222	0.222	ND		UG/L	1
Metribuzin		0.222	0.222	ND		UG/L	1
Alachlor		0.222	0.222	ND		UG/L	1
Metolachlor		0.222	0.222	0.222		UG/L	1
Chlorpyrifos		0.222	0.222	ND		UG/L	1
Cyanazine		0.222	0.222	ND		UG/L	1
Pendimethalin		0.222	0.222	ND		UG/L	1
SURROGATE RECOV	ERIES:	Li	mits		Re	sults	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

30-130

Triphenylphosphate

78%

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 00	166800						щ	Report Date:	: 10/11/2022	022
Project Name: SHELBYV Project No:	SHELBYVILLE LAKE						2	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: 008997-01 Field ID: SVL-1 Received: 09/07/2022	-01	Sampling Sampling Sampling			SHELBYVILLE LAKE 09/07/2022 1012			Matrix: Moisture:	: WATER : NA	
Analyte	LOD	ŎOI	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron	0.0400	0.0500	D.	1.49	MG/L	3010A	6010C	09/12/22	09/14/22	P7847
(a) Manganese	0.00400	0.00500		0.336	MG/L	3010A	6010C	09/12/22	09/14/22	P7847
Ammonia Nitrogen	0.0270	0.100	þ	0.578	MG/L	NONE	350.1	NA	09/12/22	R317907
Chlorophyll-a, Correcte	e 1.00	1.00		29.5	MG/CU.M.	10200H	10200H	09/08/22	09/27/22	10057128
Kjeldahl Nitrogen	0.475	1.00		1.3	MG/L	351.2	351.2	09/09/22	09/12/22	196486
Nitrate as Nitrogen	00600.0	0.0500		0.387	MG/L	NONE	353.2	NA	09/14/22	R318037
Nitrite as Nitrogen	0.0190	0.0200		0.026	MG/L	NONE	354.1	NA	09/08/22	10057132
Pheophytin-a	1.00	1.00		7.5	MG/CU.M.	10200H	10200H	09/08/22	09/27/22	10057128
Phosphorus	0.0660	0.100		ND	MG/L	365.2	365.4	09/09/22	09/12/22	196484
Solids, Total Suspended	2.00	2.00		12.8	MG/L	NONE	160.2	NA	09/08/22	10057129
Solids, Volatile Suspen	an 2.00	2.00		5.6	MG/L	NONE	160.4	NA	09/08/22	10057130
Total Organic Carbon	0.500	1.00		3.11	MG/L	NONE	415.1	NA	09/15/22	R318089

(a) DOD and/or NELAC Accredited Analyte.

Sample 008997-01, Inorganic Analyses

Lab Report No: 008997 Report Date: 09/23/2022

Project Name:	SHELBYVILLE LAKE		-	P PESTICID	ES (827	70SIM-MO	D)
Project No.:	Ar	alytical M	ethod: 8:	270D			
NELAC Certi:	fied - IL100308	Prep M	ethod: 3	510C			
Field ID:	SVL-2		ARDL :	Lab No.:	00899	97-02	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E0921	1209	
Sample Date:	09/07/2022		Recei	ved Date:	09/07	7/2022	
Sample Time:	1056		Prep.	Date:	09/12	2/2022	, · · · · · •
Matrix:	WATER		Analy	sis Date:	09/23	1/2022	
Amount Used:	900 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Ba	tch:	B1152	24	
% Moisture:	NA		Level	:	LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.222	0.222	ND		UG/L	1
Atrazine		0.222	0.222	ND		UG/L	1
Metribuzin		0.222	0.222	ND		UG/L	1
Alachlor		0.222	0.222	ND		UG/L	1
Metolachlor		0.222	0.222	ND		UG/L	1
Chlorpyrifos		0.222	0.222	ND		UG/L	1
Cyanazine		0.222	0.222	ND		UG/L	1
Pendimethalin		0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results	
Triphenylphosphate	30-130	77%	
1			1

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

(a) DOD and/or NELAC Accredited Analyte.

Sample 008997-02, Inorganic Analyses

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No:	: 008997	7						щ	Report Date:	: 10/10/2022	022
Project Name: SHI Project No:	SHELBYVILLE LAKE	3 LAKE						Z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: 008 Field ID: SVI Received: 09,	008997-03 SVL-2-10 09/07/2022		Sampl Samp Samp	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 09/07/2022 1056			Matrix: Moisture:	: WATER : NA	
Analyte		LOD	ÖOT	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron	0	0.0400	0.0500		0.403	MG/L	3010A	6010C	09/12/22	09/14/22	P7847
(a) Manganese	0	0.00400	0.00500		0.0364	MG/L	3010A	6010C	09/12/22	09/14/22	P7847
Ammonia Nitrogen	0	0.0270	0.100		ND	MG/L	NONE	350.1	NA	09/13/22	R317956
Kjeldahl Nitrogen		0.475	1.00	þ	0.665	MG/L	351.2	351.2	09/12/22	09/13/22	196543
Nitrate as Nitrogen		00600.0	0.0500		0.422	MG/L	NONE	353.2	NA	09/14/22	R318037
Nitrite as Nitrogen		0.0190	0.0200		0.031	MG/L	NONE	354.1	NA	09/08/22	10057132
Phosphorus	O	0.0660	0.100		ND	MG/L	365.2	365.4	09/09/22	09/12/22	196484
Solids, Total Suspended	pended	2.00	2.00		36.0	MG/L	NONE	160.2	NA	09/08/22	10057129
Solids, Volatile Suspen	Suspen	2.00	2.00		9.8	MG/L	NONE	160.4	NA	09/08/22	10057130
Total Organic Carbon		0.500	1.00		3.05	MG/L	NONE	415.1	NA	09/15/22	R318089

(a) DOD and/or NELAC Accredited Analyte.

Sample 008997-03, Inorganic Analyses

Lab Report No: 008997 Report Date: 09/23/2022

Project Name:	SHELBYVILLE LA	KE	Analysis	NP PESTI	CIDES (82	70SIM-MC	DD)
Project No.:		Analytica	-		(01	, 022	,
•	fied - IL100308	-	p Method:				
MILLIO COLOR.	1110000		p noonou				
Field ID:	SVL-4	Well-think the second s	ARI	Lab No.	: 0089	97-04	
Desc/Location:	SHELBYVILLE LA	KE	Lak	Filename	: E092	1210	
Sample Date:	09/07/2022		Red	ceived Date	e: 09/0	7/2022	
Sample Time:	1243		Pre	ep. Date:	09/1	2/2022	. ( )
Matrix:	WATER		Ana	alysis Dat	e: 09/2	1/2022	
Amount Used:	900 mL		Ins	strument I	D: AG5		
Final Volume:	1 mL		QC	Batch:	B115	24	
% Moisture:	NA		Lev	rel:	LOW		
					Data		Dilution
Parameter		LOI	LOG	Q Resul	t Flag	Units	Factor
						/-	
Trifluralin		0.22				UG/L	1
Atrazine		0.22				UG/L	1
Metribuzin		0.22				UG/L	1
Alachlor		0.22				UG/L	1
Metolachlor		0.22	2 0.2	0.40	0	UG/L	1
Chlorpyrifos		0.22	0.22	22 ND		UG/L	1
Cyanazine		0.22	2 0.22	22 ND		UG/L	1
Pendimethalin		0.22	2 0.23	22 ND		UG/L	1
SURROGATE RECOV	ERIES:		Limits		Re	sults	
Triphenylphosph			30-130			69%	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008	766800						ď.	Report Date:	: 10/10/2022	022
Project Name: SHELBYVI Project No:	SHELBYVILLE LAKE						Z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: 008997-04 Field ID: SVL-4 Received: 09/07/2022	04 022	Samp Samy Samy	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 09/07/2022 1243			Matrix: Moisture:	: WATER : NA	
Analyte	LOD	COD	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0270	0.100		QN	MG/L	NONE	350.1	NA	09/13/22	R317956
Chlorophyll-a, Correcte	1.00	1.00		89.7	MG/CU.M.	10200H	10200H	09/08/22	09/27/22	10057128
E. Coliform	1.00	1.00		135	COL/100 ML	NONE	1604	NA	09/07/22	10057131
Kjeldahl Nitrogen	0.475	1.00		1.9	MG/L	351.2	351.2	09/09/22	09/12/22	196486
Nitrate as Nitrogen	0.00000	0.0500		0.273	MG/L	NONE	353.2	NA	09/14/22	R318037
Nitrite as Nitrogen	0.0190	0.0200		0.031	MG/L	NONE	354.1	NA	09/08/22	10057132
Pheophytin-a	1.00	1.00		46.4	MG/CU.M.	10200H	10200H	09/08/22	09/27/22	10057128
Phosphorus	0.0660	0.100		0.371	MG/L	365.2	365.4	09/09/22	09/12/22	196484
Solids, Total Suspended	4.00	4.00		37.6	MG/L	NONE	160.2	NA	09/08/22	10057129
Solids, Volatile Suspen	4.00	4.00		12.8	MG/L	NONE	160.4	NA	09/08/22	10057130
Total Organic Carbon	0.500	1.00		4.94	MG/L	NONE	415.1	NA	09/15/22	R318089

(a) DOD and/or NELAC Accredited Analyte.

Sample 008997-04, Inorganic Analyses

Lab Report No: 008997 Report Date: 09/23/2022

Project Name:	SHELBYVILLE LAKE	Ana	lysis: NI	PESTICII	DES (827	70SIM-MC	DD)
Project No.:	An	alytical M	ethod: 82	270D			
NELAC Certif	fied - IL100308	Prep M	ethod: 35	510C			
Field ID:	SVL-12		ARDL I	Lab No.:	00899	97-05	
Desc/Location:	SHELBYVILLE LAKE		Lab Fi	ilename:	E0921	1211	
Sample Date:	09/07/2022		Receiv	ved Date:	09/07	7/2022	
Sample Time:	1228		Prep.	Date:	09/12	2/2022	
Matrix:	WATER		Analys	sis Date:	09/23	L/2022	
Amount Used:	900 mL		Instru	ment ID:	AG5		
Final Volume:	1 mL		QC Bat	ch:	B1152	24	
% Moisture:	NA		Level	:	LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.222	0.222	ND		UG/L	1
Atrazine		0.222	0.222	ND		UG/L	1
Metribuzin		0.222	0.222	ND		UG/L	1
Alachlor		0.222	0.222	ND		UG/L	1
Metolachlor		0.222	0.222	0.311		UG/L	1
Chlorpyrifos		0.222	0.222	ND		UG/L	1
Cyanazine		0.222	0.222	ND		UG/L	1
Pendimethalin		0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results	
Triphenylphosphate	30-130	73%	İ
			1

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008997	766						ĸ	Report Date:	: 10/10/2022	022
Project Name: SHELBYVILLE LAKE Project No:	LLE LAKE						Z	Analysis: Inom NELAC Certified -		ganics IL100308
ARDL No: 008997-05 Field ID: SVL-12 Received: 09/07/2022	5	Sampl Samp Samp	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 09/07/2022 1228			Matrix: Moisture:	WATER NA	
Analyte	LOD	TOO	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen Chlorophyll-a, Correcte E. Coliform Kjeldahl Nitrogen Nitrate as Nitrogen Nitrite as Nitrogen Nitrite as Nitrogen Sheophytin-a Phosphorus Solids, Total Suspended Solids, Volatile Suspen Total Organic Carbon	0.0270 1.00 1.00 0.475 0.00900 0.0190 1.00 2.86 2.86	0.100 1.00 1.00 0.0500 0.0200 1.00 0.100 2.86 2.86 1.00	Ь	ND 7.3 750 0.80 0.859 ND 4.3 0.24 39.7 5.43	MG/L MG/CU.M. COL/100 ML MG/L MG/L MG/L MG/L MG/L MG/L MG/L	NONE 10200H NONE 351.2 NONE 10200H 365.2 NONE NONE	350.1 10200H 1604 351.2 353.2 354.1 10200H 365.4 160.2 160.2	NA 09/08/22 NA 09/09/22 NA NA 09/09/22 09/09/22 NA NA	09/13/22 09/27/22 09/12/22 09/14/22 09/08/22 09/12/22 09/08/22 09/08/22	R317956 10057128 10057131 196486 R318037 10057128 196484 10057129 10057129

(a) DOD and/or NELAC Accredited Analyte.

Sample 008997-05, Inorganic Analyses

Lab Report No: 008997 Report Date: 09/23/2022

Project Name:	SHELBYVILLE			-	P PESTICII	ES (82	70SIM-MO	D)
Project No.:		Ana	alytical M	Method: 82	270D			
NELAC Certi	fied - IL1003	80	Prep M	Method: 3!	510C			
Field ID:	SVL-13			ARDL	Lab No.:	00899	97-06	
Desc/Location:	SHELBYVILLE	LAKE		Lab F	ilename:	E0921	L212	
Sample Date:	09/07/2022			Recei	ved Date:	09/07	7/2022	
Sample Time:	1143			Prep.	Date:	09/12	2/2022	
Matrix:	WATER			Analys	sis Date:	09/23	L/2022	
Amount Used:	1000 mL			Instr	ument ID:	AG5		
Final Volume:	1 mL			QC Bat	tch:	B1152	24	
% Moisture:	NA			Level	:	LOW		
						Data		Dilution
Parameter			LOD	LOQ	Result	Flag	Units	Factor
Trifluralin			0.200	0.200	ND		UG/L	1
Atrazine			0.200	0.200	ND		UG/L	1
Metribuzin			0.200	0.200	ND		UG/L	1
Alachlor			0.200	0.200	ND		UG/L	1
Metolachlor			0.200	0.200	ND		UG/L	1
Chlorpyrifos			0.200	0.200	ND		UG/L	1
Cyanazine			0.200	0.200	ND		UG/L	1
Pendimethalin			0.200	0.200	ND		UG/L	1
SURROGATE RECOV	ERIES:		Lin	nits		Res	sults	
Triphenylphosph	ate		30-	130		•	56%	in the state of th

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

TYVILLE LAKE  YOLLE LAKE  Sampling Loc'n: SHELBYVILLE LAKE  Sampling Loc'n: SHELBYVILLE LAKE  Sampling Date: 09/07/2022  Sampling Time: 1143  LOD  LOD  LOD  LOQ  Flag  Result  Units  Method  Method  Method  Method  Method  Date  1.00  1.00  24.0  MG/L  NONE  350.1  NA  09/08/22  09  0.0500  0.0500  0.0798  MG/L  NONE  351.2  350.1  NA  09  0.0798  MG/L  NONE  351.2  09/09/22  09  0.0798  MG/L  NONE  353.2  NA  09  0.0660  0.100  0.041  MG/L  NONE  355.2  NA  09  0.0660  0.100  0.441  MG/L  NONE  160.4  NA  09  0.0600	Lab Report No: 008	766800						Ж	Report Date:	: 10/10/2022	022
## Matrix:    1-3		LLE LAKE						Z	Analysis ELAC Certi	: Inorganics fied - IL1003	ics 00308
LOD LOQ Flag Result Units Method Method Date  0.0270 0.100 0.36 MG/L NONE 350.1 NA  1.00 1.00 24.0 MG/CU.M. 10200H 10200H 09/08/22  1.00 1.00 425 COL/100 ML NONE 1604 NA  0.475 1.00 1.6 MG/L 351.2 351.2 09/09/22  en 0.00900 0.0500 0.798 MG/L NONE 353.2 NA  en 0.0190 0.0200 0.021 MG/L NONE 354.1 NA  1.00 1.00 14.3 MG/CU.M. 10200H 09/08/22  pended 4.00 0.100 0.441 MG/L 365.2 365.4 09/09/22  Suspen 4.00 4.00 60.0 MG/L NONE 160.2 NA  5.00 1.00 4.10 MG/L NONE 160.4 NA  6.01 0.550 1.00 4.11 MG/L NONE 160.4 NA		22	Samp' Sami Sami	ling Loc pling Da pling Ti		BYVILLE 7/2022			Matrix Moisture		
recte 1.00 0.100 0.36 MG/L NONE 350.1 NA 1.00 1.00 1.00 24.0 MG/CU.M. 10200H 10200H 09/08/22 1.00 1.00 1.00 475 COL/100 ML NONE 1604 NA 1.6 MG/L 351.2 351.2 09/09/22 en 0.0500 0.0500 0.021 MG/L NONE 353.2 NA 1.00 1.00 0.021 MG/L NONE 354.1 NA 1.00 1.00 0.441 MG/L 365.2 365.4 09/09/22 pended 4.00 4.00 60.0 MG/L NONE 160.2 NA Suspen 4.00 4.00 4.41 MG/L NONE 160.4 NA 1.00 4.41 MG/L NONE 160.4 NA	Analyte	LOD	TOO	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
	Ammonia Nitrogen Chlorophyll-a, Correcte E. Coliform Kjeldahl Nitrogen Nitrate as Nitrogen Nitrite as Nitrogen Pheophytin-a Phosphorus Solids, Total Suspended Solids, Volatile Suspen Total Organic Carbon	0	0.100 1.00 1.00 0.0500 0.0200 1.00 4.00 1.00		0.36 24.0 425 1.6 0.798 0.021 14.3 0.441 60.0	MG/L MG/CU.M. COL/100 ML MG/L MG/L MG/L MG/L MG/L MG/L MG/L	NONE 10200H NONE 351.2 NONE NONE 10200H 365.2 NONE NONE	350.1 10200H 1604 351.2 353.2 354.1 10200H 365.4 160.2 160.4	NA 09/08/22 NA 09/09/22 NA 09/08/22 09/09/22 NA NA	09/12/22 09/27/22 09/07/22 09/12/22 09/08/22 09/27/22 09/12/22 09/08/22	R317907 10057128 10057131 196486 R318037 10057132 196484 196484 10057129

(a) DOD and/or NELAC Accredited Analyte.

Sample 008997-06, Inorganic Analyses

Lab Report No: 008997 Report Date: 09/23/2022

Project Name:	SHELBYVILLE LAKE	Ana	lysis: N	P PESTICID	ES (827	70SIM-MO	D)
Project No.:	An	alytical M	ethod: 82	270D			
NELAC Certif	Fied - IL100308	Prep M	ethod: 35	510C			
Field ID:	SVL-11		ARDL 1	Lab No.:	00899	97-07	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E0921	L213	
Sample Date:	09/07/2022		Recei	ved Date:	09/07	7/2022	
Sample Time:	1154		Prep.	Date:	09/12	2/2022	
Matrix:	WATER		Analys	sis Date:	09/23	L/2022	
Amount Used:	900 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Bat	tch:	B1152	24	
% Moisture:	NA		Level		LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.222	0.222	ND		UG/L	1
Atrazine		0.222	0.222	0.244		UG/L	1
Metribuzin		0.222	0.222	ND		UG/L	1
Alachlor		0.222	0.222	ND		UG/L	1
Metolachlor		0.222	0.222	0.322		UG/L	1
Chlorpyrifos		0.222	0.222	ND		UG/L	1
Cyanazine		0.222	0.222	ND		UG/L	1
Pendimethalin		0.222	0.222	ND		UG/L	1

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

Limits

30-130

SURROGATE RECOVERIES:

Triphenylphosphate

Results

76%

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008997	766						ж.	Report Date:	: 10/10/2022	022
Project Name: SHELBYVILLE LAKE Project No:	LLE LAKE						Z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: 008997-07	7	Samp	Sampling Loc'n:		SHELBYVILLE LAKE	The state of the s	The state of the s	Matrix:	MATER	
Field ID: SVL-11 Received: 09/07/2022	22	Samp Samp	Sampling Date: Sampling Time:		09/07/2022 1154			Moisture:	: NA	
Analyte	LOD	TOO	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0270	0.100	þ	0.030	MG/L	NONE	350.1	NA	09/12/22	R317907
Chlorophyll-a, Correcte	1.00	1.00		67.1	MG/CU.M.	10200H	10200H	09/08/22	09/27/22	10057128
E. Coliform	1.00	1.00		45.0	COL/100 ML	NONE	1604	NA	09/07/22	10057131
Kjeldahl Nitrogen	0.475	1.00		1.4	MG/L	351.2	351.2	09/09/22	09/12/22	196486
Nitrate as Nitrogen	0.000.0	0.0500		0.165	MG/L	NONE	353.2	NA	09/14/22	R318037
Nitrite as Nitrogen	0.0190	0.0200		0.027	MG/L	NONE	354.1	NA	09/08/22	10057132
Pheophytin-a	1.00	1.00		32.7	MG/CU.M.	10200H	10200H	09/08/22	09/27/22	10057128
Phosphorus	0.0660	0.100		0.131	MG/L	365.2	365.4	09/09/22	09/12/22	196484
Solids, Total Suspended	2.86	2.86		20.0	MG/L	NONE	160.2	NA	09/08/22	10057129
Solids, Volatile Suspen	2.86	2.86		8.57	3G/L	NONE	160.4	NA	09/08/22	10057130
Total Organic Carbon	0.500	1.00		3.56	MG/L	NONE	415.1	NA	09/15/22	R318089

(a) DOD and/or NELAC Accredited Analyte.

Sample 008997-07, Inorganic Analyses

Lab Report No: 008997 Report Date: 09/23/2022

Project Name:	SHELBYVILLE LAKE		-	PESTICII	DES (827	70SIM-MO	D)
Project No.:	Aı	nalytical M	ethod: 82	270D			
NELAC Certi	fied - IL100308	Prep M	ethod: 3	510C			
Field ID:	SVL-15		ARDL	Lab No.:	00899	97-08	
Desc/Location:	SHELBYVILLE LAKE		Lab F	ilename:	E092	1214	
Sample Date:	09/07/2022		Recei	ved Date:	09/0	7/2022	
Sample Time:	1159		Prep.	Date:	09/12	2/2022	
Matrix:	WATER		Analy	sis Date:	09/2:	1/2022	
Amount Used:	900 mL		Instr	ument ID:	AG5		
Final Volume:	1 mL		QC Bat	tch:	B1152	24	
% Moisture:	NA		Level	:	LOW		
					Data		Dilution
Parameter		LOD	LOQ	Result	Flag	Units	Factor
Trifluralin		0.222	0.222	ND		UG/L	1
Atrazine		0.222	0.222	0.278		UG/L	1
Metribuzin		0.222	0.222	ND		UG/L	1
Alachlor		0.222	0.222	ND		UG/L	1
Metolachlor		0.222	0.222	0.356		UG/L	1
Chlorpyrifos		0.222	0.222	ND		UG/L	1
Cyanazine		0.222	0.222	ND		UG/L	1
Pendimethalin		0.222	0.222	ND		UG/L	1
SURROGATE RECOV	ERIES:	Lim	its		Res	sults	
riphenylphosph	ate	30-	130		1	39%	3 * 1 1

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008	166800						Ľ,	Report Date:	: 10/10/2022	022
Project Name: SHELBYVI Project No:	SHELBYVILLE LAKE	144 Care Care Care Care Care Care Care Care					Z	Analysis: Inorganics NELAC Certified - IL100308	: Inorganics fied - IL1003	ics 00308
ARDL No: 008997-08 Field ID: SVL-15 Received: 09/07/2022	122	Samp Sami Sami	Sampling Loc'n: Sampling Date: Sampling Time:		SHELBYVILLE LAKE 09/07/2022 1159			Matrix: Moisture:	: WATER : NA	
Analyte	LOD	TOO	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0540	0.200		QN	MG/L	NONE	350.1	NA	09/13/22	R317956
Chlorophyll-a, Correcte	1.00	1.00		8.99	MG/CU.M.	10200H	10200H	09/08/22	09/27/22	10057128
Kjeldahl Nitrogen	0.475	1.00		1.3	MG/L	351.2	351.2	09/09/22	09/12/22	196486
Nitrate as Nitrogen	00600.0	0.0500		0.143	MG/L	NONE	353.2	NA	09/14/22	R318037
Nitrite as Nitrogen	0.0190	0.0200		0.032	MG/L	NONE	354.1	NA	09/08/22	10057132
Pheophytin-a	1.00	1.00		19.8	MG/CU.M.	10200H	10200H	09/08/22	09/27/22	10057128
Phosphorus	0.0660	0.100		0.14	MG/L	365.2	365.4	09/09/22	09/12/22	196484
Solids, Total Suspended	1 2.50	2.50		19.8	MG/L	NONE	160.2	NA	09/08/22	10057129
Solids, Volatile Suspen	2.50	2.50		8.75	MG/L	NONE	160.4	NA	09/08/22	10057130
Total Organic Carbon	0.500	1.00		3.78	MG/L	NONE	415.1	NA	09/15/22	R318089

(a) DOD and/or NELAC Accredited Analyte.

Sample 008997-08, Inorganic Analyses

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Report Date: 10/10/2022	Analysis: Inorganics NELAC Certified - IL100308	Matrix: WATER Moisture: NA	Analysis Prep Analysis Run Method Date Date Number	1604 NA 09/07/22 10057131
			Prep Analysis Method Method	NONE
		Sampling Loc'n: SHELBYVILLE LAKE Sampling Date: 09/07/2022 Sampling Time: 1108	Units	COL/100 ML NONE
		n: SHEL1 e: 09/0	Result	8.0
		ampling Loc'n: Sampling Date: Sampling Time:	Flag Result	
		Samp Samp	TOO	1.00
008997	SHELBYVILLE LAKE	008997-09 LS MARINA 09/07/2022	TOD	1.00
Lab Report No: 008997	Project Name: SHELL Project No:	ARDL No: 008997-09 Field ID: LS MARINA Received: 09/07/2022	Analyte	E. Coliform

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report	Lab Report No: 008997	7.6						Re	port Date	Report Date: 10/10/2022	022
Project Name: Project No:	SHELBYVILLE LAKE	E LAKE						Η Ν H	Analysis	Analysis: Inorganics NELAC Certified - IL100308	ics 00308
ARDL No: Field ID: Received:	ARDL No: 008997-10 Field ID: FIN MARINA Received: 09/07/2022	4	Samp Samj Samj	Sampling Loc'n: Sampling Date: Sampling Time:	Loc'n: SE Date: 09 Time: 11	Loc'n: SHELBYVILLE LAKE r Date: 09/07/2022 r Time: 1148			Matrix: Moisture:	Matrix: WATER isture: NA	
Analyte	t e	LOD	TOO	Flag	Result	Units	Prep Method	Prep Analysis Method Method	Prep Date	Analysis Date	Run Number
E. Coliform		1.00	1.00		39.0	COL/100 ML NONE	NONE	1604	NA	09/07/22 10057131	10057131
			***************************************								

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Report Date: 10/10/2022	Analysis: Inorganics NELAC Certified - IL100308	Matrix: WATER	Analysis Run Date Number	09/07/22 10057131
port Dat	Analysi LLAC Cert	Matrix: Moisture:	Prep Date	NA
Re	ΞN		Analysis Method	1604
			Prep Method	NONE
		SHELBYVILLE LAKE 09/07/2022 1237	Units	COL/100 ML
			Result	200
		Sampling Loc'n: Sampling Date: Sampling Time:	Flag	
		Samp Samp Samp	001	1.00
766800	SHELBYVILLE LAKE	008997-11 SUL MARINA 09/07/2022	TOD	1.00
rt No:		ARDL No: 008997-11 ield ID: SUL MARIN eceived: 09/07/202	Analyte	
Lab Report No: 008997	Project Name: Project No:	ARDL No: Field ID: Received:	Ana	E. Coliform

(a) DOD and/or NELAC Accredited Analyte.

# METHOD BLANK REPORT ARDL, Inc. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, Illinois 62864

Lab Report No: 008997 Report Date: 09/23/2022

-	SHELBYVILLE LA	•	sis: NP PES'	ricides (8	270SIM-M	OD)
Project No.:		Analytical Met				
NELAC Certi	fied - IL100308	Prep Met	hod: 3510C			
Field ID:	NA		ARDL Lab No		997-01B1	
Desc/Location:			Lab Filenar		21204	
Sample Date:	NA		Received Da			
Sample Time:	NA		Prep. Date		12/2022	
Matrix:	QC Material		Analysis Da	ate: 09/	21/2022	
Amount Used:	1000 mL		Instrument	ID: AG5		
Final Volume:	1 mL		QC Batch:	B11	524	
% Moisture:	NA		Level:	LOW		
					Data	
Parameter		LOD	LOQ	Result	Flag	Units
Trifluralin		0.200	0.200	ND		UG/L
Atrazine		0.200	0.200	ND		UG/L
Metribuzin		0.200	0.200	ND		UG/L
Alachlor		0.200	0.200	ND		UG/L
Metolachlor		0.200	0.200	ND		UG/L
Chlorpyrifos		0.200	0.200	ND		UG/L
Cyanazine		0.200	0.200	ND		UG/L
Pendimethalin		0.200	0.200	ND		UG/L
dinbodyma becom	DD T D A	<b>-</b> 1.1.				
SURROGATE RECOV	EKTED:	Limit	S	R	esults	

Surrogate recoveries marked with '\*' indicates they are outside standard limits.

30-130

Triphenylphosphate

89%

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

Mt. Vernon, IL 400 Aviation Drive; P.O. Box 1566 BLANK SUMMARY REPORT ARDL, INC.

62864

Lab Report No: 008997	766							Report Date:		10/10/2022
Project Name:	SHELBY	SHELBYVILLE LAKE	KE					NELA	NELAC Certified	ed - IL100308
Analyte	LOD	Ŏ01	Blank Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run	QC Lab Number
(a) Iron (a) Manganese	0.040	0.050	ON ON	MG/L MG/L	3010A 3010A	6010C 6010C	09/12/22	09/14/22	P7847 P7847	008995-01B1 008995-01B1
Ammonia Nitrogen	0.027	0.10	QN Q	MG/L	NONE	350.1	NA	09/12/22	R317907	008982-08B1
Ammonia Nitrogen	0.027	0.10	QN	MG/L	NONE	350.1	NA	09/13/22	R317956	008995-01B1
Chlorophyll-a, Corre	1.0	1.0	N ON	MG/CU.M.	10200H	10200H	09/08/22	09/27/22	10057128	008997-04B1
Kjeldahl Nitrogen	0.48	1.0	N	MG/L	351.2	351.2	09/09/22	09/12/22	196486	008996-01B1
Kjeldahl Nitrogen	0.48	1.0	S	MG/L	351.2	351.2	09/12/22	09/13/22	196543	008997-03B1
Nitrate as Nitrogen	600.0	0.050	S	MG/L	NONE	353.2	NA	09/14/22	R318037	008995-06B1
Nitrate as Nitrogen	600.0	0.050	S	MG/L	NONE	353.2	NA	09/15/22	R318114	008996-02B1
Nitrite as Nitrogen	0.019	0.020	S	MG/L	NONE	354.1	NA	09/08/22	10057132	008997-01B1
Pheophytin-a	1.0	1.0	N	MG/CU.M.	10200H	10200H	09/08/22	09/27/22	10057128	008997-04B1
Phosphorus	990.0	0.10	N	MG/I	365.2	365.4	09/09/22	09/12/22	196484	008997-03B1
Solids, Total Suspen	1.0	1.0	S	MG/L	NONE	160.2	NA	09/08/22	10057129	008997-06B1
Solids, Volatile Sus	1.0	1.0	ΩN	MG/L	NONE	160.4	NA	09/08/22	10057130	008997-06B1
Total Organic Carbon	0.50	1.0	QN	MG/L	NONE	415.1	NA	09/15/22	R318089	008995-01B1

(a) DOD and/or NELAC Accredited Analyte Inorganic Method Blanks for 008997

Mt. Vernon, IL BLANK SPIKE/SPIKE DUPLICATE REPORT 400 Aviation Drive; P.O. Box 1566 ARDL, INC.

62864

Lab Report No:	008997							Rep	oort Date:	Report Date: 09/23/2022
Project Name: SHELBYVILLE LAKE Project No.:	HELBYVILLE LAKE	Ana	Analysis: NP P	ESTICIDE	s: NP PESTICIDES (8270SIM-MOD)	M-MOD)	Analy	rtical Me Prep Me	Analytical Method: 8270D Prep Method: 3510C	0D 0C
Matrix: Amount Used:	QC Material 1000 mL		QC Batch: Level:	B11524 LOW	524		Prep. Date: Analysis Da	Date: Is Date:	Prep. Date: 09/12/2022 Analysis Date: 09/21/2022	2.2
Par	Parameter	Spike Result	Spike Level	Spike % Rec	Duplicate Result	Duplicate Level	Duplicate % Rec	Recovery	RPD	RPD Limit
Trif	Trifluralin	2.99	4	75		1	1	30-130	-	
At	Atrazine	3.29	4	82	;	;	;	30-130	;	:
Met	Metribuzin	3.24	4	81	;	!	i t	30-130	;	;
AL	Alachlor	3.23	4	81	;	;	1	30-130	1 1	!
Meto	Metolachlor	3.18	4	80	;	į. J	!	30-130	1	;
Chlo	Chlorpyrifos	2.95	4	74	;	;	;	30-130	;	;
Cya	Cyanazine	3.34	4	84	;	1	;	30-130	j	;
Pendi	Pendimethalin	2.81	4	7.0	;	;	;	30~130	;	;
		A Part of the second se								

%R Limits	30-130
Duplicate %R	1
Spike %R	86.3
SURROGATE RECOVERIES:	${\tt Triphenylphosphate}$

!\*! indicates a recovery outside of standard limits. Spike Blanks for 008997-01, NP PESTICIDES (8270SIM-MOD)

(a) DoD and/or NELAC Accredited Analyte.

62864 Mt. Vernon, IL LABORATORY CONTROL SAMPLE REPORT iation Drive; P.O. Box 1566 Mt. 400 Aviation Drive; P.O. ARDL, INC.

Lab Report No: 008997	3997								Report Da	Report Date: 10/10/2022
Project Name:	SHELBYVILLE LAKE	LE LAKE							NELAC Certified -	tified - IL100308
	LCS 1	LCS 1	LCS 1	LCS 2	LCS 2	LCS 2	% Rec	Mean	Analytical	QC Lab
Analyte	Result	Level	% Rec	Result	Level	% Rec	Limits	% Rec	Run	Number
(a) Iron	5.0	5.0	100	que su			87-115		P7847	008995-01C1
(a) Manganese	0.76	0.75	102	1	;	1	90-114	1	P7847	008995-01C1
Ammonia Nitrogen	1.0	1.0	104	1	;	;	90-110	;	R317956	008995-01C1
Ammonia Nitrogen	1.1	1.0	106	;	;	;	80-120	;	R317907	008982-08C1
Kjeldahl Nitrogen	7.6	10.0	97	!	1	!	90-110	1	196543	008997-03C1
Kjeldahl Nitrogen	9.4	10.0	94	1	1	1	90-110	<b>¦</b>	196486	008996-01C1
Nitrate as Nitrogen	0.49	0.50	86	1	;	ł	90-110	;	R318037	008995-06C1
Nitrate as Nitrogen	0.52	0.50	104	1	;	1	90-110	!	R318114	008996-02C1
Nitrite as Nitrogen	0.94	1.0	94	!	1		80-120	1	10057132	008997-01C1
Phosphorus	0.91	1.0	91	1	1	1	85-115	<b>¦</b>	196484	008997-03C1
Total Organic Carbon	55.4	59.3	93	1	1	;	90-110	1	R318089	008995-01C1

NOTE: Any values tabulated above marked with an asterisk are outside of acceptable limits.

Inorganic LCS Results for 008997

<sup>(</sup>a) DOD and/or NELAC Accredited Analyte

MATRIX SPIKE/SPIKE DUPLICATE REPORT 400 Aviation Drive; P.O. Box 1566

Report Date: 09/23/2022 Prep Method: 3510C Analytical Method: 8270D Received Date: 09/07/2022 62864 008997-01 Mt. Vernon, IL ARDL Lab No.: Lab Filename: Analysis: NP PESTICIDES (8270SIM-MOD) 09/12/2022 Amount Used: 900 mL Prep. Date: % Moisture: ARDL, INC. SHELBYVILLE LAKE Project Name: SHELBYVILLE LAKE 09/07/2022 008997 SVL-1 Lab Report No: Desc/Location: Project No.: Sample Date: Field ID:

Analysis Date: 09/21/2022

B11524 LOW

QC Batch: Level:

WATER

1012

Sample Time:

Matrix:

RPD Limit	30	30	30	30	30	30	30	30
RPD	0	0.3	1.9	1.3	0.3	7.0	0	0
% Rec Limits	30-130	30-130	30-130	30-130	30-130	30-130	30-130	30-130
MSD % Rec	71	83.5	79.5	76.8	77.3	70	84.3	69
MSD Level	4.44	4.44	4.44	4.44	4.44	4.44	4.44	4.44
MSD Result	3.16	3.71	3.53	3.41	3.66	3.11	3.74	3.07
MS % Rec	7.1	83.8	78	77.8	77	70.5	84.3	69
MS Level	4.44	4.44	4.44	4.44	4.44	4.44	4.44	4.44
MS Result	3.16	3.72	3.47	3.46	3.64	3.13	3.74	3.07
Sample Result	QN.	Q	Q	Q	0.222	Q	Q.	ď
Parameter	Trifluralin	Atrazine	Metribuzin	Alachlor	Metolachlor	Chlorpyrifos	Cyanazine	Pendimethalin

%R Limits	30-130	
MSD %R	83	
MS &R	80	
SURROGATE RECOVERIES:	Triphenylphosphate	

<sup>(</sup>a) DoD and/or NELAC Accredited Analyte.

<sup>&#</sup>x27;nc' indicates sample >4X spike level.

Matrix Spikes for 008997-01, NP PESTICIDES (8270SIM-MOD) !\*! indicates a recovery outside of standard limits.

62864 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL MATRIX SPIKE/SPIKE DUPLICATE REPORT ARDL, INC.

Report Date: 10/10/2022 Lab Report No: 008997

Project Name:	SHELB	SHELBYVILLE LAKE	LAKE								NELAC	Certif	NELAC Certified - IL100308
Sample	ole Sample	ole	MS	SE	MS	MSD	MSD	MSD	* % %		RPD		QC Lab
Matrix	ix Result	ılt	Result	Level	& Rec	Result	Level	& Rec	Limits	RPD	Limit	Run	Number
WA	WATER 1	1.5	1.5	1.0	*	1.5	1.0	*	87-115	1	20	P7847	008997-01MS
WA	WATER C	0.34	0.81	0.50	95	0.81	0.50	95	90-114	1	20	P7847	008997-01MS
WA	WATER C	0.58	2.3	2.0	* 85	2.3	2.0	* 84	90-110	П	10	R317907	008997-01MS
WA	WATER J	J 0.67	9.6	10.0	91	9.6	10.0	92	90-110	1	15	196543	008997-03MS
WA	WATER	0.42	1.1	0.50	128 *	1.0	0.50	126 *	90-110	1	10	R318114	008997-02MS
WA	WATER 0.	0.026	0.98	1.0	96	0.98	1.0	96	75-125	0	20	10057132	008997-01MS
WA	WATER	QN	0.98	1.0	86	0.98	1.0	86	85-115	0	15	196484	SME0-766800
WA	WATER 3	3.1	7.8	5.0	66	7.6	5.0	06	85-115	2	10	R318089	008997-01MS

NOTE: Values tabulated above marked with an asterisk are explained in the associated narrative.

Inorganic Matrix Spikes for 008997

<sup>(</sup>a) DOD and/or NELAC Accredited Analyte.

62864 Mt. Vernon, IL SAMPLE DUPLICATE REPORT 400 Aviation Drive; P.O. Box 1566 ARDL, INC.

Lab Report No: 008997	7						Report Date: 10/10/2022	10/10/2022
Project Name: SHELB	SHELBYVILLE LAKE	AKE					NELAC Certifi	NELAC Certified - IL100308
	Sample	First	Second		Percent	Mean	Analvtical	OC Lab
Analyte	Conc'n	Conc'n Duplicate	Duplicate	Units	Diff	(Smp, D1, D2)	Run	Number
Chlorophyll-a, Corrected	7.68	90.8	   I	MG/CU.M.	1	1	10057128	008997-04D1
Pheophytin-a	46.4	43.0	i	MG/CU.M.	œ	1	10057128	008997-04D1
Solids, Total Suspended	0.09	57.5	ł	MG/L	4	!	10057129	008997-06D1
Solids, Volatile Suspend	11.2	11.5	!	MG/L	ю	!	10057130	008997-06D1

(a) DOD and/or NELAC Accredited Analyte Sample Duplicates for 008997



# Sample Receipt Information

Including as appropriate:

- COCs
- Cooler Receipts
- Airbills
- Email Communication / Instructions from Customer

ARDL Data Package 8997

76680

CHAIN OF CUSTODY RECORD

P.O. Box 1566, 400 Aviation Drive, Mt. Vernon, IL 62864

ARDL, Inc.

(618) 244-1149 Fax (618) 244-3235 Phone

z	719H																				
PRESERVATION	SPECIFY CHEMICALS ADDED AND FINAL PH IF	KNOWN																			
PRES	CED	)I		×	X	×	×	×	×	×	×		X	X	X						
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		REMARKS	SAMPLE LOCATION																		
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		3	COMP	<u> </u>	<u>  ^</u>	<u> </u>	^			~			1	^	~		_	Rec	Rec	Ship	100
		1 Rzk Arleh		(e 0)	9501	1921	1343	200	271	1154	1158		8011	8411	1937			Time	Time	Time No.20	) — AIL
	3	Rekus! DATE	9/7/A	4/7	6/7	4/7	110	1/6	LA	4/7	L/V		417	4/7	47			Date (V7/3)	Date Date		-
PROJECT Shelbyville Lake	SAMPLERS: (Signature)	Les Greeling/ Keles Relevis		SVL-1	SVL-2	SVL-2-10	SVL-4	SVL-12	SVL-13	SVL-11	S SVL-15		C Marina	1	SUL Marina		Por	Relinquished by: (Signature)	Relinquished by (Signature)	Beceived for Laboratory by:	

			, 1	ł		
	COOLER RECEIPT ARDL, INC.		Origi	nal 00	in	
	CD-1 60-1	· R1 . 4		D IA	V P	
\R[	DL#: <u>8996, 8997</u>	Cooler # DUE L	. 2		09/10/	
<sup>o</sup> roj	iect: Kaskaskia River, Shelbyville Lake,	Number of Coolers in Shipm Pate Received: 09/07/	ent: _ <b>Z</b> 2022	(	01/08/2	
٨.	PRELIMINARY EXAMINATION PHASE: Date cooler was opened:	8/2022 <sub>(Signature)</sub> LCB				
١.	Did cooler come with a shipping slip (airbill, etc.)?		YES	(NO)		
	If YES, enter carrier name and airbill number here:	Carier-Valerie				
2.	Were custody seals on outside of cooler?		YES	NO (	N/A	
	How many and where?,Seal Date	:,Seal Name:				
3.	Were custody seals unbroken and intact at the date and time of arrival?		YES	NO A	NA	
4.	Did you screen samples for radioactivity using a Geiger Counter?,		YES	NO		
5.	Were custody papers sealed in a plastic bag? Hand clefwer	led	YES	NO		
<b>3</b> .	Were custody papers filled out properly (ink, signed, etc.)?			) NO	N/A	
7.	Were custody papers signed in appropriate place by ARDL personnel?		YES	NO	N/A	
8.	Was project identifiable from custody papers? If YES, enter project name a	at the top of this form	(YÉS		N/A	
9.	Was a separate container provided for measuring temperature? YES	NOObserved Cooler Temp.		C	imple Temp	
В.	LOG-IN PHASE: Date samples were logged-in: 09/08/2022	(Signature & Corre	ction factor		_	
10. Describe type of packing in cooler: LOUSE Ice						
11.	Were all samples sealed in separate plastic bags?		YES	(NO)	N/A	
12.	Did all containers arrive unbroken and were labels in good condition?		(YES	NO.		
13.	Were sample labels complete?		(YES)	) NO		
14.	Did all sample labels agree with custody papers?		(£Š)	NO		
15.	Were correct containers used for the tests indicated?		YES	NO		
16.	Was pH correct on preserved water samples?		YES	NO	N/A	
17.	Was a sufficient amount of sample sent for tests indicated?		ES	) NO		
18.	Were bubbles absent in VOA samples? If NO, list by sample #:		YES	NO (	(N/A)	
19.	Was the ARDL project coordinator notified of any deficiencies?		YES	NO (	(N/Á)	
	Comments and/or Corrective Action:	Sample T				
		Fraction	Fraction	1		
-	,	Area#	Area #			
_		Walk-In	Ву			
		I TACK.				
		00000002	On	77.00		
		Chain of Custody #				
 	Rv. Signature) Date:	Chain-of-Custody #			······································	

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# COOLER RECEIPT REPORT ARDL, INC.

ARI	ol#: <u>899</u> 7	Cooler # Blue 2
		Number of Coolers in Shipment:
Pro	ect: Shelbyville Lake	Date Received: <u>09/07/2022</u>
A.	PRELIMINARY EXAMINATION PHASE: Date cooler was opened:	08/2022 (Signature) 10 CB
1.	Did cooler come with a shipping slip (airbill, etc.)?	YES (NO)
	If YES, enter carrier name and airbill number here:	Courier - Valeno
2.	Were custody seals on outside of cooler?	
	How many and where?,Seal Date	e:,Seal Name:
3.	Were custody seals unbroken and intact at the date and time of arrival?	YES NO (NA
4.	Did you screen samples for radioactivity using a Geiger Counter?	YES NO
5.	Were custody papers sealed in a plastic bag? Land Clelive	red YES NO
6.	Were custody papers filled out properly (ink, signed, etc.)?	
7.	Were custody papers signed in appropriate place by ARDL personnel?	
8.	Was project identifiable from custody papers? If YES, enter project name	at the top of this form
9.	Was a separate container provided for measuring temperature? YES	NO Observed Cooler Temp.
В.	LOG-IN PHASE: Date samples were logged-in: 09/08/2027	(Signature) Correction factor Q.O c Perm
10.	Describe type of packing in cooler: LOOSC ICC	
11.	Were all samples sealed in separate plastic bags?	YES NO N/A
12.	Did all containers arrive unbroken and were labels in good condition?	М но
13.	Were sample labels complete?	
14.	Did all sample labels agree with custody papers?	
15.	Were correct containers used for the tests indicated?	
16.	Was pH correct on preserved water samples?	
17.	Was a sufficient amount of sample sent for tests indicated?	YES NO
18.	Were bubbles absent in VOA samples? If NO, list by sample #:	YES NO N/A
19.	Was the ARDL project coordinator notified of any deficiencies?	YES NO (N/A)
	Comments and/or Corrective Action:	Sample Transfer
		Fraction Fraction
-	``	Area# A Area#
		Walk-In
		By C P
-		On On
		U1108/2022
		Chain-of-Custody#
/F	By: Signature) Date:	Chain-oi-Gustouy #

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