Hydrosphere Investigation

Data Sheet

School name: _____ Class or group name: _____

Name(s) of Student(s) collecting data: _____

Measurement Time: *

Year: _____ Month: ____ Day: ____ Time: __:__ (UT) Time: __:__ (Local)

Name of Site : _____

Water State: (check one) *

❒ Normal ❒ Flooded ❒ Dry ❒ Frozen ❒ Unreachable

Note: If Normal is selected, continue below; all other selections stop here

Transparency

Enter data below, depending on whether you are using the Secchi Disk or the Transparency Tube method.

Secchi Disk

Secchi Disk Test 1:

Distance **from water surface** to:

where disk disappears ____m where disk reappears ____ m

OR

❒ Secchi Disk reaches the bottom and does not disappear.
Depth to the bottom from the water surface ___ (m)

Important: The Secchi disk depth is from the water surface. The units are in meters to the nearest tenth of a meter.

Secchi Disk Test 2:

Distance **from water surface** to:

where disk disappears ____m where disk reappears ____ m

OR

❒ Secchi Disk reaches the bottom and does not disappear.
Depth to the bottom from the water surface ___ (m)

Secchi Disk Test 3:

Distance **from water surface** to:

where disk disappears ____m where disk reappears ____ m

OR

❒ Secchi Disk reaches the bottom and does not disappear.
Depth to the bottom from the water surface ___ (m)

Approximate distance from observer to the water surface ___ m

Transparency Tube

Transparency Tube Depth 1: ____ cm
❒ Greater than depth of Transparency Tube

Transparency Tube Depth 2: ____ cm
❒ Greater than depth of Transparency Tube

Transparency Tube Depth 3: ____ cm
❒ Greater than depth of Transparency Tube

Comments: _____
_____

Water Temperature: Measured with (check one) __ alcohol-filled thermometer __ probe

Temperature Test 1: ____ °C

Temperature Test 2: ____ °C

Temperature Test 3: ____ °C

Comments: _____
_____

Dissolved Oxygen:

Dissolved Oxygen kit: Manufacturer _____ Model _____ Salinity _____ (ppt)

Dissolved Oxygen Test 1: ____ (mg/L)

Dissolved Oxygen Test 2: ____ (mg/L)

Dissolved Oxygen Test 3: ____ (mg/L)

Dissolved Oxygen probe: Manufacturer _____ Model _____

	Probe Measure	Salinity Correction Factor	Dissolved Oxygen (mg/L)
Test 1			
Test 2			
Test 3			

Note: Salinity correction factor is taken from the manufacturer's instructions for the probe.

Comments: _____
_____

Electrical Conductivity:

Temperature of water sample being tested: ___°C
Conductivity of standard: ____ MicroSiemens/cm (µS/cm)

Conductivity Test 1: ____ µS/cm

Conductivity Test 2: ____ µS/cm

Conductivity Test 3: ____ µS/cm

Comments: _____

_____

Salinity

Tide Information

Time of High or Low Tide before Salinity Measurement (UTC 24hr): _____

Check one: ❒ High Tide: ❒ Low Tide

Time of High or Low Tide after Salinity Measurement (UTC 24hr): _____

Check one: ❒ High Tide: ❒ Low Tide

Location of tide: _____

Latitude of Measurement: _____ ❒ North ❒ South (of the equator)

Longitude of Measurement: _____ ❒ East ❒ West (of the prime meridien)

Salinity kit *(for Salinity Titration samples)* manufacturer _____ model _____

Salinity (Complete for method used)

Hydrometer Method

	Temperature of water sample in 500 mL tube (˚C)	Specific Gravity	Salinity of Sample (ppt)
Test 1			
Test 2			
Test 3			

Salinity Titration Method

Salinity Test 1: ____ ppt

Salinity Test 2: ____ ppt

Salinity Test 3: ____ ppt

Comments: _____

_____

Water pH: Measured with: (check one) ❒ pH Paper ❒ pH Meter

If salt added, conductivity (µS/cm)	pH
1.	
2.	
3.	

Value of buffers used: ❒ pH 4 ❒ pH 7 ❒ pH 10 (Check all used)

Comments: _____

_____

Alkalinity:

Alkalinity kit: manufacturer _____ model _____

Kit used reads alkalinity directly

Alkalinity Test 1: ____ mg/L as CaCO3

Alkalinity Test 2: ____ mg/L as CaCO3

Alkalinity Test 3: ____ mg/L as CaCO3

Kit used counts drops

	Number of drops	X	Conversion constant for your kit	=	Alkalinity (mg/L as $CaCO_3$)
Test 1					
Test 2					
Test 3					

Comments: _____

_____

Nitrate

Nitrate kit: manufacturer _____ model _____

	Nitrate and Nitrite (mg/L NO_3^-N + NO_2^-N)	Nitrate (mg/L NO2-N) *Optional*
Test 1		
Test 2		
Test 3		

Comments: _____

_____

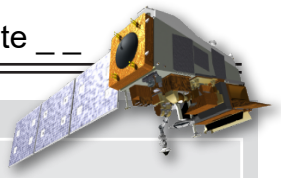
DEACTIVATED PROTOCOL: The GLOBE Hydrosphere Protocol - Salinity Titration has been deactivated as of September 2023. To learn more about the Deactivation Process, please visit the GLOBE.gov website.

SEE GLOBE CLOUD CHART FOR VISUAL REFERENCE

School/Observer Name:_____ Study Site:_____

Date (ex. 2017 01 13): Year: _ _ _ _ Month: _ _ Day: _ _

Time (ex. 24 Hour Clock: 14 26): Local: Hour _ _ Minute _ _ Universal: Hour _ _ Minute _ _



1. What is in Your Sky?

Total Cloud/Contrail Cover:

- ○ Sky is Obscured →
  - ○ Fog
  - ○ Heavy Rain
  - ○ Heavy Snow
  - ○ Blowing Snow
  - ○ Sand
  - ○ Spray
  - ○ Smoke
  - ○ Dust
  - ○ Haze
  - ○ Volcanic Ash

  Go to box 6
- ○ None (Go to box 2)
- ○ Few(<10%)
- ○ Isolated (10-25%)
- ○ Scattered (25-50%)
- ○ Broken (50-90%)
- ○ Overcast (90-100%)

*If you can observe sky color or visibility, complete box 2

2. Sky Color and Visibility

Color (Look Up): ○ Cannot Observe ○ Deep Blue ○ Blue ○ Light Blue ○ Pale Blue ○ Milky

Visibility (Look Across): ○ Cannot Observe ○ Unusually Clear ○ Clear ○ Somewhat Hazy ○ Very Hazy ○ Extremely Hazy

3. High Level Clouds

○ No High Level Clouds Observed (Go to box 4)

Cloud Type:

- ○ Contrails (number of): → #
- ○ Cirrus #
- ○ Cirrocumulus #
- ○ Cirrostratus #

short-lived

persistent

persistent spreading

Cloud Cover:

- ○ Few (<10%)
- ○ Isolated (10%-25%)
- ○ Scattered (25%-50%)
- ○ Broken (50%-90%)
- ○ Overcast (>90%)

Visual Opacity:

- ○ Opaque
- ○ Translucent
- ○ Transparent

4. Mid Level Clouds

○ No Mid Level Clouds Observed (Go to box 5)

Cloud Type:

- ○ Altostratus
- ○ Altocumulus

Cloud Cover:

- ○ Few (<10%)
- ○ Isolated (10%-25%)
- ○ Scattered (25%-50%)
- ○ Broken (50%-90%)
- ○ Overcast (>90%)

Visual Opacity:

- ○ Opaque
- ○ Translucent
- ○ Transparent

5. Low Level Clouds

○ No Low Level Clouds Observed (Go to box 6)

Cloud Type:

- ○ Fog
- ○ Nimbostratus
- ○ Cumulonimbus
- ○ Stratus
- ○ Cumulus
- ○ Stratocumulus

Cloud Cover:

- ○ Few (<10%)
- ○ Isolated (10%-25%)
- ○ Scattered (25%-50%)
- ○ Broken (50%-90%)
- ○ Overcast (>90%)

Visual Opacity:

- ○ Opaque
- ○ Translucent
- ○ Transparent

6. Surface Conditions

Mandatory:

	Yes	No		Yes	No
Snow/Ice	○	○	Dry Ground	○	○
Standing Water	○	○	Leaves on Trees	○	○
Muddy	○	○	Raining/Snowing	○	○

Optional:
You may submit any or all

Temperature: ___°C
Barometric Pressure: ___mb
Relative Humidity: ___%

Comments: