

EN642 representative header file

```
* Sea-Bird SBE 9 Data File:
* FileName = D:\ctd\raw\642_002_01.hdr
* Software Version Seasave V 7.26.7.121
* Temperature SN = 4695
* Conductivity SN = 2822
* Number of Bytes Per Scan = 40
* Number of Voltage Words = 5
* Number of Scans Averaged by the Deck Unit = 1
* System UpLoad Time = Jul 21 2019 23:16:07
* NMEA Latitude = 29 05.99 N
* NMEA Longitude = 088 27.68 W
* NMEA UTC (Time) = Jul 21 2019 23:15:59
* Store Lat/Lon Data = Append to Every Scan
* SBE 11plus V 5.2
* number of scans to average = 1
* pressure baud rate = 9600
* NMEA baud rate = 4800
* surface PAR voltage added to scan
* A/D offset = 2
* Latitude/Longitude added to scan
* GPIB address = 1
* advance primary conductivity 0.073 seconds
* autorun on power up is disabled
* S>
** Ship: R/V Endeavor
** Cruise: EN642
** Chief Scientist: Joseph Montoya
** Organization: LDEO
** Area of Operation: Gulf of Mexico
** Dates: 21 July - 04 August 2019
** Gulfport, Mississippi to Gulfport, Mississippi
** Station: 001
** Bottom Depth: 340
** Operator: jpm
** Shakedown. Geochem cast.
* System UTC = Jul 21 2019 23:16:07
# interval = seconds: 0.0416667
# start_time = Jul 21 2019 23:16:07 [System UTC, header]
# <Sensors count="15" >
# <sensor Channel="1" >
# <!-- Frequency 0, Temperature -->
```

```
# <TemperatureSensor SensorID="55" >
#   <SerialNumber>4695</SerialNumber>
#   <CalibrationDate>01-Jan-19</CalibrationDate>
#   <UseG_J>1</UseG_J>
#   <A>0.00000000e+000</A>
#   <B>0.00000000e+000</B>
#   <C>0.00000000e+000</C>
#   <D>0.00000000e+000</D>
#   <F0_Old>0.000</F0_Old>
#   <G>4.39685694e-003</G>
#   <H>6.43712223e-004</H>
#   <I>2.15839307e-005</I>
#   <J>1.77633866e-006</J>
#   <F0>1000.000</F0>
#   <Slope>1.00000000</Slope>
#   <Offset>0.0000</Offset>
# </TemperatureSensor>
# </sensor>
# <sensor Channel="2" >
#   <!-- Frequency 1, Conductivity -->
#   <ConductivitySensor SensorID="3" >
#     <SerialNumber>2822</SerialNumber>
#     <CalibrationDate>06-Apr-18</CalibrationDate>
#     <UseG_J>1</UseG_J>
#     <!-- Cell const and series R are applicable only for wide range sensors. -->
#     <SeriesR>0.0000</SeriesR>
#     <CellConst>2000.0000</CellConst>
#     <ConductivityType>0</ConductivityType>
#     <Coefficients equation="0" >
#       <A>0.00000000e+000</A>
#       <B>0.00000000e+000</B>
#       <C>0.00000000e+000</C>
#       <D>0.00000000e+000</D>
#       <M>0.0</M>
#       <CPcor>-9.57000000e-008</CPcor>
#     </Coefficients>
#     <Coefficients equation="1" >
#       <G>-1.01731965e+001</G>
#       <H>1.38552072e+000</H>
#       <I>-7.63638531e-004</I>
#       <J>1.20854147e-004</J>
#       <CPcor>-9.57000000e-008</CPcor>
#       <CTcor>3.2500e-006</CTcor>
```

```
# <!-- WBOTC not applicable unless ConductivityType = 1. -->
# <WBOTC>0.00000000e+000</WBOTC>
# </Coefficients>
# <Slope>1.00000000</Slope>
# <Offset>0.00000</Offset>
# </ConductivitySensor>
# </sensor>
# <sensor Channel="3" >
# <!-- Frequency 2, Pressure, Digiquartz with TC -->
# <PressureSensor SensorID="45" >
# <SerialNumber>0712</SerialNumber>
# <CalibrationDate>02-May-18</CalibrationDate>
# <C1>-5.127137e+004</C1>
# <C2>-6.250695e-001</C2>
# <C3>1.463390e-002</C3>
# <D1>3.819700e-002</D1>
# <D2>0.000000e+000</D2>
# <T1>2.998602e+001</T1>
# <T2>-4.688386e-004</T2>
# <T3>4.060280e-006</T3>
# <T4>1.932470e-009</T4>
# <Slope>1.00000574</Slope>
# <Offset>-0.98745</Offset>
# <T5>0.000000e+000</T5>
# <AD590M>1.280800e-002</AD590M>
# <AD590B>-9.760950e+000</AD590B>
# </PressureSensor>
# </sensor>
# <sensor Channel="4" >
# <!-- Frequency 3, Temperature, 2 -->
# <TemperatureSensor SensorID="55" >
# <SerialNumber>4333</SerialNumber>
# <CalibrationDate>27-Dec-18</CalibrationDate>
# <UseG_J>1</UseG_J>
# <A>0.00000000e+000</A>
# <B>0.00000000e+000</B>
# <C>0.00000000e+000</C>
# <D>0.00000000e+000</D>
# <F0_Old>0.000</F0_Old>
# <G>4.39861285e-003</G>
# <H>6.47699445e-004</H>
# <I>2.26254086e-005</I>
# <J>1.80776199e-006</J>
```

```
# <F0>1000.000</F0>
# <Slope>1.00000000</Slope>
# <Offset>0.0000</Offset>
# </TemperatureSensor>
# </sensor>
# <sensor Channel="5" >
# <!-- Frequency 4, Conductivity, 2 -->
# <ConductivitySensor SensorID="3" >
# <SerialNumber>1749</SerialNumber>
# <CalibrationDate>12-Apr-18</CalibrationDate>
# <UseG_J>1</UseG_J>
# <!-- Cell const and series R are applicable only for wide range sensors. -->
# <SeriesR>0.0000</SeriesR>
# <CellConst>2000.0000</CellConst>
# <ConductivityType>0</ConductivityType>
# <Coefficients equation="0" >
# <A>0.00000000e+000</A>
# <B>0.00000000e+000</B>
# <C>0.00000000e+000</C>
# <D>0.00000000e+000</D>
# <M>0.0</M>
# <CPcor>-9.57000000e-008</CPcor>
# </Coefficients>
# <Coefficients equation="1" >
# <G>-4.02069658e+000</G>
# <H>5.07427251e-001</H>
# <I>-5.95189790e-004</I>
# <J>5.62956472e-005</J>
# <CPcor>-9.57000000e-008</CPcor>
# <CTcor>3.2500e-006</CTcor>
# <!-- WBOTC not applicable unless ConductivityType = 1. -->
# <WBOTC>0.00000000e+000</WBOTC>
# </Coefficients>
# <Slope>1.00000000</Slope>
# <Offset>0.00000</Offset>
# </ConductivitySensor>
# </sensor>
# <sensor Channel="6" >
# <!-- A/D voltage 0, Transmissometer, WET Labs C-Star -->
# <WET_LabsCStar SensorID="71" >
# <SerialNumber>969DR</SerialNumber>
# <CalibrationDate>29-Mar-18</CalibrationDate>
# <M>19.5111</M>
```

```
# <B>-1.1316</B>
# <PathLength>0.250</PathLength>
# </WET_LabsCStar>
# </sensor>
# <sensor Channel="7" >
# <!-- A/D voltage 1, Fluorometer, WET Labs ECO-AFL/FL -->
# <FluoroWetlabECO_AFL_FL_Sensor SensorID="20" >
# <SerialNumber>231</SerialNumber>
# <CalibrationDate>10-Jan-19</CalibrationDate>
# <ScaleFactor>7.00000000e+000</ScaleFactor>
# <!-- Dark output -->
# <Vblank>0.1120</Vblank>
# </FluoroWetlabECO_AFL_FL_Sensor>
# </sensor>
# <sensor Channel="8" >
# <!-- A/D voltage 2, Altimeter -->
# <AltimeterSensor SensorID="0" >
# <SerialNumber>49899</SerialNumber>
# <CalibrationDate>30-Mar-15</CalibrationDate>
# <ScaleFactor>15.000</ScaleFactor>
# <Offset>0.000</Offset>
# </AltimeterSensor>
# </sensor>
# <sensor Channel="9" >
# <!-- A/D voltage 3, PAR/Irradiance, Biospherical/Licor -->
# <PAR_BiosphericalLicorChelseaSensor SensorID="42" >
# <SerialNumber>70513</SerialNumber>
# <CalibrationDate>02-Jan-2019</CalibrationDate>
# <M>1.00000000</M>
# <B>0.00000000</B>
# <CalibrationConstant>9803921569.00000000</CalibrationConstant>
# <ConversionUnits>1</ConversionUnits>
# <Multiplier>1.00000000</Multiplier>
# <Offset>-0.10346660</Offset>
# </PAR_BiosphericalLicorChelseaSensor>
# </sensor>
# <sensor Channel="10" >
# <!-- A/D voltage 4, Oxygen, SBE 43 -->
# <OxygenSensor SensorID="38" >
# <SerialNumber>1230</SerialNumber>
# <CalibrationDate>21-Mar-19</CalibrationDate>
# <Use2007Equation>1</Use2007Equation>
# <CalibrationCoefficients equation="0" >
```

```

# <!-- Coefficients for Owens-Millard equation. -->
# <Boc>0.0000</Boc>
# <Soc>0.0000e+000</Soc>
# <offset>0.0000</offset>
# <Pcor>0.00e+000</Pcor>
# <Tcor>0.0000</Tcor>
# <Tau>0.0</Tau>
# </CalibrationCoefficients>
# <CalibrationCoefficients equation="1" >
# <!-- Coefficients for Sea-Bird equation - SBE calibration in 2007 and later. -->
# <Soc>4.6282e-001</Soc>
# <offset>-0.5101</offset>
# <A>-4.5510e-003</A>
# <B> 2.1257e-004</B>
# <C>-3.1781e-006</C>
# <D0> 2.5826e+000</D0>
# <D1> 1.92634e-004</D1>
# <D2>-4.64803e-002</D2>
# <E> 3.6000e-002</E>
# <Tau20> 1.1500</Tau20>
# <H1>-3.3000e-002</H1>
# <H2> 5.0000e+003</H2>
# <H3> 1.4500e+003</H3>
# </CalibrationCoefficients>
# </OxygenSensor>
# </sensor>
# <sensor Channel="11" >
# <!-- A/D voltage 5, Oxygen, SBE 43, 2 -->
# <OxygenSensor SensorID="38" >
# <SerialNumber>0348</SerialNumber>
# <CalibrationDate>18-Aug-18</CalibrationDate>
# <Use2007Equation>1</Use2007Equation>
# <CalibrationCoefficients equation="0" >
# <!-- Coefficients for Owens-Millard equation. -->
# <Boc>0.0000</Boc>
# <Soc>0.0000e+000</Soc>
# <offset>0.0000</offset>
# <Pcor>0.00e+000</Pcor>
# <Tcor>0.0000</Tcor>
# <Tau>0.0</Tau>
# </CalibrationCoefficients>
# <CalibrationCoefficients equation="1" >
# <!-- Coefficients for Sea-Bird equation - SBE calibration in 2007 and later. -->

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```
# <Soc>4.2760e-001</Soc>
# <offset>-0.4676</offset>
# <A>-3.2801e-003</A>
# <B> 1.7741e-004</B>
# <C>-2.4529e-006</C>
# <D0> 2.5826e+000</D0>
# <D1> 1.92634e-004</D1>
# <D2>-4.64803e-002</D2>
# <E> 3.6000e-002</E>
# <Tau20> 1.2200</Tau20>
# <H1>-3.3000e-002</H1>
# <H2> 5.0000e+003</H2>
# <H3> 1.4500e+003</H3>
# </CalibrationCoefficients>
# </OxygenSensor>
# </sensor>
# <sensor Channel="12" >
# <!-- A/D voltage 6, User Polynomial -->
# <UserPolynomialSensor SensorID="61" >
# <SerialNumber>783</SerialNumber>
# <CalibrationDate>28-Jul-2016</CalibrationDate>
# <SensorName>SUNA</SensorName>
# <A0>-6.80600000</A0>
# <A1>24.79800000</A1>
# <A2>0.00000000</A2>
# <A3>0.00000000</A3>
# </UserPolynomialSensor>
# </sensor>
# <sensor Channel="13" >
# <!-- A/D voltage 7, Free -->
# </sensor>
# <sensor Channel="14" >
# <!-- SPAR voltage, Unavailable -->
# </sensor>
# <sensor Channel="15" >
# <!-- SPAR voltage, SPAR, Biospherical/Licor -->
# <SPAR_Sensor SensorID="51" >
# <SerialNumber>20121</SerialNumber>
# <CalibrationDate>02-Jan-2019</CalibrationDate>
# <ConversionUnits>1</ConversionUnits>
# <ConversionFactor>1.5535e+003</ConversionFactor>
# <RatioMultiplier>1.00000000</RatioMultiplier>
# </SPAR_Sensor>
```

```
# </sensor>
# </Sensors>
# datcnv_date = Jul 26 2019 01:41:47, 7.26.7.129
# datcnv_in = D:\CTD\raw\642_002_01.hex D:\CTD\raw\642_002_01.XMLCON
# datcnv_ox_hysteresis_correction = yes
# datcnv_bottle_scan_range_source = scans marked with bottle confirm bit, 0, 2
# datcnv_scans_per_bottle = 49
# bottlesum_date = Jul 26 2019 01:42:06, 7.26.7.129
# bottlesum_in = D:\CTD\proc\642_002_01.ros D:\CTD\proc\642_002_01.XMLCON
# bottlesum_ox_tau_correction = yes
```