# GROUNDWATER SAMPLING LOG

| SITE NAME: **Citrus County Central Landfill** | | SITE LOCATION: **Lecanto, Florida** |
|---|---|---|
| WELL NO: **MW-7** Special sampling | SAMPLE ID: **22M1CC-7** | DATE: 1-6-2022 |

## PURGING DATA

| WELL DIAMETER (in): **2 PVC** | TUBING DIAMETER (in): **3/8"** | WELL SCREEN LENGTH: **20ft** 119.06 to 139.06 | STATIC DEPTH TO WATER (feet): 118.05 | PURGE PUMP TYPE: Dedicated Bladder Pump |
|---|---|---|---|---|

**WELL VOLUME PURGE:** 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

1 WELL VOLUME = ( 139.06 feet – 118.05 feet) X 0.16 gallons/foot = 3.4 gallons Water Level Measured with: **MPM-GNV-01**

PURGE METHOD: 2.3 2.4 (2.5) OR FS2222

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

1 = 0.15 gallons + ( 0.006 gallons/foot X 148 feet) + 0.123 gallons = 1.2 gallons

| INITIAL PUMP OR TUBING DEPTH IN WELL (feet): **138** | FINAL PUMP OR TUBING DEPTH IN WELL (feet): **138** | PURGING INITIATED AT: 0841 | PURGING ENDED AT: 0947 | TOTAL VOLUME PURGED (gallons): 5.8 |
|---|---|---|---|---|

| TIME | VOLUME PURGED (gallons) | CUMUL. VOLUME PURGED (gallons) | PURGE RATE (gpm) | DEPTH TO WATER (feet) | pH (standard units) | TEMP. (°C) | COND. (µS/cm) | DISSOLVED OXYGEN (mg/L) | TURBIDITY (NTUs) | COLOR (describe) | ODOR | ORP (mVolts) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0919 | 3.4 | 3.4 | 0.09 | 130.18 | 5.13 | 24.5 | 126 | 0.51 | 1.56 | None clear | None | -146.2 |
| 0933 | 1.2 | 4.6 | ↓ | 130.22 | 5.04 | 24.5 | 121 | 0.48 | 1.71 | ↓ | ↓ | -147.5 |
| 0947 | 1.2 | 5.8 | ↓ | 130.25 | 4.97 | 24.6 | 118 | 0.46 | 1.63 | ↓ | ↓ | -148.1 |
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## SAMPLING DATA

| SAMPLED BY (Print) / AFFILIATION: **Steve Messick /Jones Edmunds Inc.** | SAMPLER(S) SIGNATURES: Steve Messick | SAMPLING INITIATED AT: 0949 | SAMPLING ENDED AT: 1006 |
|---|---|---|---|

| PUMP OR TUBING DEPTH IN WELL (feet): **138** | Sample pump VOC Sampling Rate 100-400 ml/min ☑ FLOW RATE Other Samples Rate (mL / min): +/-355 | TUBING MATERIAL CODE: **PE** | SAMPLING EQUIPMENT CODE: **DBP** |
|---|---|---|---|
| FIELD DECONTAMINATION: Y (N) | FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type: ____ | | DUPLICATE: Y (N) |

| SAMPLE CONTAINER SPECIFICATION | | | | SAMPLE PRESERVATION | | | |
|---|---|---|---|---|---|---|---|
| SAMPLE ID CODE | # CONTAINERS | MATERIAL CODE | VOL | PRES. USED | TOTAL VOL ADDED IN FIELD (mL) | FINAL PH | INTENDED ANALYSIS |
| 22M1CC-7 | 2 | CG | 40 ML | HCL | --- | N/A | 8260D AP-2 |
| 22M1CC-7 | 4 | AG | 40 ML | NONE | --- | N/A | 8011, 8260D AP-2, 8270E PAH SIM |
| 22M1CC-7 | 1 | PE | 250 ML | HNO3 | --- | ≤ 2 | Metals |
| 22M1CC-7 | 1 | PE | 250 ML | NONE | --- | N/A | Chlorides, Nitrate, TDS, SM2540C |
| 22M1CC-7 | 1 | PE | 250 ML | H2SO4 | --- | ≤ 2 | Total Ammonia-N |
| 22M1CC-7 | 1 | PE | 250 ML | NaOH | --- | 12 | Cyanide SM4500-CM |
| 22M1CC-7 | 1 | PE | 250 mL | P+ZnAc NaOH | --- | 12 | Sulfide SM4500-SF |
| 22M1CC-7 | 2 | AG | 250 ML | None | --- | N/A | 8270E PAH SIM, 8151A&B, 8082A AP-2 |
| 22M1CC-7 | 1 | AG | 1 L | None | --- | N/A | 8082A, 8151A, 8070E PAH SIM, 8082A - AP-2 |

REMARKS: **Purge slowly to limit drawdown.**

* Verified Sample pH as <2 or >12 (as applicable) at MW-7
Sky Conditions: clear Ambient Air Temperature: 13°C
Approx. Wind Speed and Direction: <3mph

Bladder Pump: CPM 1 Refill/Discharge 45/15 sec Pressure 65 PSI
Total Tubing Length: ~~28~~ feet

**Comments:**

Note: This well historically draws down into screen so I am doing purge method 2.5

# GROUNDWATER SAMPLING LOG

| SITE NAME: Citrus County Central Landfill | SITE LOCATION: Lecanto, Florida | |
|---|---|---|
| WELL NO: EQUBLK-1 | SAMPLE ID: 22M1CC-EQB1 | DATE: 1-6-2022 |

## PURGING DATA

| WELL DIAMETER (in): | TUBING DIAMETER (in): ~~3/8"~~ Sm | WELL SCREEN LENGTH: ft | STATIC DEPTH TO WATER (feet): | PURGE PUMP TYPE Sm ~~Dedicated Bladder Pump~~ |
|---|---|---|---|---|

**WELL VOLUME PURGE:** **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

**1 WELL VOLUME** = ( feet – feet) X **0.16** gallons/foot = gallons Water Level Measured with:

PURGE METHOD: 2.3 2.4 2.5 OR FS2222

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

= gallons + ( gallons/foot X feet) + **0.123** gallons = gallons

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

| TIME | VOLUME PURGED (gallons) | CUMUL. VOLUME PURGED (gallons) | PURGE RATE (gpm) | DEPTH TO WATER (feet) | pH (standard units) | TEMP. (°C) | COND. (µS/cm) | DISSOLVED OXYGEN (mg/L) | TURBIDITY (NTUs) | COLOR (describe) | ODOR | ORP (mVolts) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| | | | | | S. Messick | | | | | | | |
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## SAMPLING DATA

| SAMPLED BY (Print) / AFFILIATION: | SAMPLER(S) SIGNATURES: | SAMPLING INITIATED AT: | SAMPLING ENDED AT: |
|---|---|---|---|
| Steve Messick /Jones Edmunds Inc. | Steve Messick | 1040 | 1055 |

| PUMP OR TUBING DEPTH IN WELL (feet): | Sample pump VOC Sampling Rate 100-400 ml/min ☐ FLOW RATE Other Samples Rate (mL / min): ~~+/-~~ 500 | TUBING MATERIAL CODE: PE | SAMPLING EQUIPMENT CODE: DBP |
|---|---|---|---|
| N/A | | | |
| FIELD DECONTAMINATION: Y (N) | FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type: | | DUPLICATE: Y (N) |

| SAMPLE CONTAINER SPECIFICATION | | | | SAMPLE PRESERVATION | | | |
|---|---|---|---|---|---|---|---|
| SAMPLE ID CODE | # CONTAINERS | MATERIAL CODE | VOL | PRES. USED | TOTAL VOL ADDED IN FIELD (mL) | FINAL PH | INTENDED ANALYSIS |
| 22M1CC-EQB1 | 2 | CG | 40 ML | HCL | --- | N/A | 8260D AP-2 |
| 22M1CC-EQB1 | 4 | AG | 40 ML | NONE | --- | N/A | 8011, 8260D AP-2, 8270E PAH SIM |
| 22M1CC-EQB1 | 1 | PE | 250 ML | HNO3 | --- | * | Metals |
| 22M1CC-EQB1 | 1 | PE | 250 ML | NONE | --- | N/A | Chlorides, Nitrate, TDS, SM2540C |
| 22M1CC-EQB1 | 1 | PE | 250 ML | H2SO4 | --- | * | Total Ammonia-N |
| 22M1CC-EQB1 | 1 | PE | 250 ML | NaOH | --- | * | Cyanide SM4500-CM |
| 22M1CC-EQB1 | 1 | PE | 250 mL | P+ZnAc NaOH | --- | * | Sulfide SM4500-SF |
| 22M1CC-EQB1 | 2 | AG | 250 ML | None | --- | N/A | 8270E PAH SIM, 8151A&B, 8082A AP-2 |
| 22M1CC-EQB1 | 1 | AG | 1 L | None | --- | N/A | 8082A, 8151A, 8070E PAH SIM, 8082A - AP-2 |

REMARKS:

* Verified Sample pH as <2 or >12 (as applicable) at MW-7

Sky Conditions: clear Ambient Air Temperature: 25°C

Approx. Wind Speed and Direction: <3 MPH

Bladder Pump: CPM — Refill/Discharge — sec Pressure — PSI

Total Tubing Length: — feet

**Comments:**

New lab bottle blank with Zeph. Dist. Water Lot# 092821271WF233

# GROUNDWATER SAMPLING LOG

| SITE NAME: Citrus County Central Landfill | SITE LOCATION: Lecanto, Florida | |
|---|---|---|
| WELL NO: MW-20 flush mount well | SAMPLE ID: 22M1CC-20 | DATE: 1-6-2022 |

## PURGING DATA

| WELL DIAMETER (in): 2 PVC | TUBING DIAMETER (in): 3/8" | WELL SCREEN LENGTH: 20ft 105.70 to 125.70 | STATIC DEPTH TO WATER (feet): 110.09 | PURGE PUMP TYPE: Dedicated Bladder Pump |
|---|---|---|---|---|

**WELL VOLUME PURGE:** 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY

1 WELL VOLUME = ( 125.70 feet – 110.09 feet) X 0.16 gallons/foot = 2.5 gallons Water Level Measured with: MPM-GNV-01

PURGE METHOD: 2.3 2.4 (2.5) OR FS2222

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

1 = 0.15 gallons + ( 0.006 gallons/foot X 130 feet) + 0.123 gallons = 1.1 gallons

| INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 124 | FINAL PUMP OR TUBING DEPTH IN WELL (feet): 124 | PURGING INITIATED AT: 1106 | PURGING ENDED AT: 1152 | TOTAL VOLUME PURGED (gallons): 4.7 |
|---|---|---|---|---|

| TIME | VOLUME PURGED (gallons) | CUMUL. VOLUME PURGED (gallons) | PURGE RATE (gpm) | DEPTH TO WATER (feet) | pH (standard units) | TEMP. (°C) | COND. (µS/cm) | DISSOLVED OXYGEN (mg/L) | TURBIDITY (NTUs) | COLOR (describe) | ODOR | ORP (mVolts) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1130 | 2.5 | 2.5 | 0.10 | 110.48 | 6.23 | 26.0 | 949 | 0.29 | 3.33 | None clear | None | -150.4 |
| 1141 | 1.1 | 3.6 | ↓ | 110.48 | 6.23 | 26.0 | 954 | 0.29 | 3.97 | ↓ slight orange tint | ↓ | -150.7 |
| 1152 | 1.1 | 4.7 | ↓ | 110.48 | 6.23 | 26.0 | 958 | 0.30 | 4.11 | ↓ | ↓ | -150.2 |
| | | | | | | | | | | | | |
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## SAMPLING DATA

| SAMPLED BY (Print) / AFFILIATION: Steve Messick /Jones Edmunds Inc. | SAMPLER(S) SIGNATURES: Steve Messick | SAMPLING INITIATED AT: 1154 | SAMPLING ENDED AT: 1208 |
|---|---|---|---|

| PUMP OR TUBING DEPTH IN WELL (feet): 124 | Sample pump VOC Sampling Rate 100-400 ml/min ☑ FLOW RATE Other Samples Rate (mL / min): +/-380 | TUBING MATERIAL CODE: PE | SAMPLING EQUIPMENT CODE: DBP |
|---|---|---|---|
| FIELD DECONTAMINATION: Y (N) | FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type: ____ | | DUPLICATE: Y (N) |

| SAMPLE CONTAINER SPECIFICATION | | | | SAMPLE PRESERVATION | | | |
|---|---|---|---|---|---|---|---|
| SAMPLE ID CODE | # CONTAINERS | MATERIAL CODE | VOL | PRES. USED | TOTAL VOL ADDED IN FIELD (mL) | FINAL PH | INTENDED ANALYSIS |
| 22M1CC-20 | 2 | CG | 40 ML | HCL | --- | N/A | 8260D AP-2 |
| 22M1CC-20 | 4 | AG | 40 ML | NONE | --- | N/A | 8011, 8260D AP-2, 8270E PAH SIM |
| 22M1CC-20 | 1 | PE | 250 ML | HNO3 | --- | ≤2 | Metals |
| 22M1CC-20 | 1 | PE | 250 ML | NONE | --- | N/A | Chlorides, Nitrate, TDS, SM2540C |
| 22M1CC-20 | 1 | PE | 250 ML | H2SO4 | --- | ≤2 | Total Ammonia-N |
| 22M1CC-20 | 1 | PE | 250 ML | NaOH | --- | 12 | Cyanide SM4500-CM |
| 22M1CC-20 | 1 | PE | 250 mL | P+ZnAc NaOH | --- | 12 | Sulfide SM4500-SF |
| 22M1CC-20 | 2 | AG | 250 ML | None | --- | N/A | 8270E PAH SIM, 8151A&B, 8082A AP-2 |
| 22M1CC-20 | 1 | AG | 1 L | None | --- | N/A | 8082A, 8151A, 8070E PAH SIM, 8082A - AP-2 |

REMARKS: **Flush mount well vented >15 minutes before reading water level.**

* Verified Sample pH as <2 or >12 (as applicable) at MW-20

Sky Conditions: clear Ambient Air Temperature: 27°C

Approx. Wind Speed and Direction: <3 MPH

Bladder Pump: CPM 2 Refill/Discharge 15/15 sec Pressure 60 PSI

Total Tubing Length: 8 feet

**Comments:**

The purge water gets a light orange tint as it sets in the purge bucket.

# ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

www.encolabs.com

10775 Central Port Dr. Orlando, FL 32824 (407) 826-5314
4810 Executive Park Court, Suite 111 Jacksonville, FL 32216-6069 (904) 296-3007 Fax (904) 296-6210
102-A Woodwinds Industrial Ct. Cary, NC 27511 (919) 467-3090 Fax (919) 467-3515



| | |
|---|---|
| Client Name: Jones Edmunds & Associates, Inc. (JO006) | Project Number: 39859 |
| Address: 730 N.E.Waldo Road Bldg.A | Project Name/Desc: Citrus Co. LF |
| City/ST/Zip: Gainesville, FL 32641 | PO # / Billing Info: 03860-086-01 |
| Tel: (352) 377-5821 Fax: (352) 377-3166 | Reporting Contact: Elizabeth Kennelley |
| Sampler(s) Name, Affiliation (Print): Steve Mesrick, Jonesedmunds, Inc. | Billing Contact: Accounts Payable |
| Sampler(s) Signature: Steve Mesrick | Site Location / Time Zone: Levy to, FL / EST |

Requested Analyses

| Item # | Sample ID (Field Identification) | Collection Date | Collection Time | Comp / Grab | Matrix (see codes) | Total # of Containers | 8011 | 8260D Appendix 2 FL | 8270 App2,8270E PAH SIM | 8151A Appendix 2 | 8081B Appendix 2, 8082A Appendix 2 | Ag,As,Ba,Be,Cd,Co,Cr,Cu,Fe,Na,Ni,Pb,Sb,Se,Sn,Tl,V,Zn,Hg | Cyanide SM4500-CN E, Sulfide SM4500-S F | Ammonia 350.1 | Chloride 300, Nitrate as N 300, TDS SM2540C | | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Preservation (See Codes) (Combine as necessary) | | | | | | | | | | |
| 1 | MW-7 (22MICC-7) | 1-6-22 | 0747 | G | GW | 14 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| 2 | EQUIPBLK#1 (22MICC-EQBL) | | 1040 | G | O | 14 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | New bottle rinse w/dist. water |
| 3 | TripBlank#1 (22MICC-TB1) | | — | — | O | 2 | | ✓ | | | | | | | | | QA/QC |
| 4 | MW-20 (22MICC-20) | | 1154 | G | GW | 14 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| 5 | TripBlank#2 (22MICC-TB2) | | — | — | O | 2 | | ✓ | | | | | | | | | QA/QC |
| | | | | | | | | | | | | | | | | | |
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S. Mesrick

<-- Total # of Containers

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

✓ Standard

___ Expedited

Due ___/___/___

Lab Workorder: AF00046

| Sample Kit Prepared By | Date/Time | Relinquished By | Date/Time | Received By | Date/Time |
|---|---|---|---|---|---|
| | 01/04/22 13:17 | | 01/04/22 13:17 | Steve Mesrick | 1-5-22 @ 1550 |
| Comments/Special Reporting Requirements | | Relinquished By | Date/Time 1-6-22 @ 1600 | Received By | Date/Time |
| Samples shipped by FedEx Std Overnight from Gainesville, FL. to Orlando, FL. 2 Coolers | | Steve Mesrick | | | |
| | | Relinquished By | Date/Time | Received By | Date/Time |
| | | Cooler #'s & Temps on Receipt | | Condition Upon Receipt: ___ Acceptable ___ Unacceptable | |

**Matrix** : **GW**-Groundwater **SO**-Soil **DW**-Drinking Water **SE**-Sediment **SW**-Surface Water **WW**-Wastewater **A**-Air **O**-Other (detail in comments)

**Preservation:** **I**-Ice **H**-HCl **N**-HNO3 **S**-H2SO4 **NO**-NaOH **O**-Other (detail in comments)

**CALIBRATION LOG** 

**Meter ID:** YSI-GNV-05 **RQ:** 22M1CC **Project:** Citrus County Central Class I landfill

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification **01/05/2022**

| DO (FT 1500) | Name | Date | Time ET | Temp. (°C) | DO Chart (mg/L) | Meter DO (mg/L) | Pass/Fail |
|---|---|---|---|---|---|---|---|
| Calibr. | **Steve Messick** | 1-6-2022 | 0821 | 19.3 | 9.22 | 9.24 | (P) / F |
| ICV | ↓ | ↓ | 0842 | 18.2 | 9.42 | 9.44 | (P) / F |
| CCV | ↓ | ↓ | 1207 | 22.8 | 8.61 | 8.66 | (P) / F |
| Calibr. | | | | | | | P / F |
| ICV | | | | | | | P / F |
| CCV | | | | | | | P / F |
| Calibr. | | | | | | | P / F |
| ICV | | | | | | | P / F |
| CCV | | | | | | | P / F |
| Calibr. | | | | | | | P / F |
| ICV | | | | | | | P / F |
| CCV | | | | | | | P / F |

**DO Acceptance Criteria from Table ± 0.3 mg/L.**

| Spec. Cond. (FT 1200) | Name | Date | Time ET | Lot # | Expir. Date | Standard (µmhos/cm) | Meter Read. (µmhos/cm) | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| Calibr. | **Steve Messick** | 1-6-22 | 0844 | CC21387 | 6-16-22 | 1413 | 1413 | (P) / F |
| ICV | ↓ | ↓ | 0847 | CC21390 | 6-17-22 | 84 | 84 | (P) / F |
| CCV | ↓ | ↓ | 1209 | CC21390 | 6-17-22 | 84 | 85 | (P) / F |
| CCV | ↓ | ↓ | 1210 | CC21387 | 6-16-22 | 1413 | 1416 | (P) / F |
| Calibr. | | | | | | | | P / F |
| ICV | | | | | | | | P / F |
| CCV | | | | | | | | P / F |
| CCV | | | | | | | | P / F |
| Calibr. | | | | | | | | P / F |
| ICV | | | | | | | | P / F |
| CCV | | | | | | | | P / F |
| CCV | | | | | | | | P / F |
| Calibr. | | | | | | | | P / F |
| ICV | | | | | | | | P / F |
| CCV | | | | | | | | P / F |
| CCV | | | | | | | | P / F |

**Conductivity Acceptance Criteria ±5%**

| pH (FT 1100) | Name | Date | Time ET | Lot # | Expir. Date | Standard (S.U.) | Meter Read (S.U.) | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| Calibr. | **Steve Messick** | 1-6-22 | 0849 | CC722414 | 4-29-23 | 7.00 | 7.00 | (P) / F |
| Calibr. | ↓ | ↓ | 0851 | CC728551 | 6-30-23 | 4.01 | 4.01 | (P) / F |
| Calibr. | ↓ | ↓ | 0853 | CC723464 | 5-11-23 | 10.01 | 10.01 | (P) / F |
| ICV | ↓ | ↓ | 0855 | CC684409 | 8-10-22 | 9.18 | 9.06 | (P) / F |
| CCV | ↓ | ↓ | 1212 | CC722414 | 4-29-23 | 7.00 | 7.00 | (P) / F |
| CCV | ↓ | ↓ | 1214 | CC728551 | 6-30-23 | 4.01 | 4.00 | (P) / F |
| Calibr. | | | | | | | | P / F |
| Calibr. | | | | | | | | P / F |
| CCV | | | | | | | | P / F |
| CCV | | | | | | | | P / F |
| Calibr. | | | | | | | | P / F |
| Calibr. | | | | | | | | P / F |
| CCV | | | | | | | | P / F |
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| Calibr. | | | | | | | | P / F |
| Calibr. | | | | | | | | P / F |
| CCV | | | | | | | | P / F |
| CCV | | | | | | | | P / F |

**Instrument pH Gain** −5.126 **Weekly (-4.579 to -5.597 acceptable) Date Determined** 1-6-2022

## Form FD 9000-8: FIELD INSTRUMENT CALIBRATION RECORDS

SITE NAME **Citrus County Central Class I landfill** DATE 1-6-2022

**INSTRUMENT (MAKE/MODEL#)** **YSI 556 MPS** **INSTRUMENT #** **YSI - GNV - 05**

**PARAMETER:** *[check only one]*

☐ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☐ pH **X** ORP
☐ TURBIDITY ☐ RESIDUAL Cl ☐ DO ☐ OTHER _____

**STANDARDS:** *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

*Standard A* **Zobell's Solution Mixed Standard** **Expiration Date** ***04/04/22***

**Stock Solution Lot # 21C100633 Mix Date: 01/04/2022** **Expiration Date** **2026-04-08**

| DATE (yy/mm/dd) | TIME (hr:min) | STD (A, B, C) | STD VALUE (mV) | Temperature (Deg C) | INSTRUMENT RESPONSE (mV) | (+/- 10 mV) DEV | CALIBRATED (YES, NO) | TYPE (INIT, CONT) | SAMPLER INITIALS |
|---|---|---|---|---|---|---|---|---|---|
| 22/01/06 | 0857 | A | 240.6 | 15.3 | 240.6 | Ø | Yes | Init. | SM |
| ↓ | 1216 | A | 239.7 | 16.0 | 240.1 | 0.4 | Yes | Cont. | SM |
| | | | | | | | | | |
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**Turbidity Calibration Log (DEP SOPs FT1000 & FT1600)** PAGE 1 OF 1

**Regional Operations Centers**

Meter ID: **TB-GNV-01** Date of Last Calibration: **01-04-2022** Project Name: **Citrus County Central Class I landfill**

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**Quarterly Calibration**

Sampler Name: **Steve Messick** Date: **01-04-2022** Time: **1030 Hrs. ETZ**

| Standard Value *(Use Primary Formazin Standards)* | | | Exp. Date | Lot # | Type of Information Displayed During Calibration? | Value Displayed NTU | Calibration Pass / Fail |
|---|---|---|---|---|---|---|---|
| <0.1 NTU | | | Nov -22 | A1205 | Meter Reading | 0.1 | Pass |
| 20 NTU | | | Nov -22 | A1207 | Meter Reading | 19.4 | Pass |
| 100 NTU | | | Nov -22 | A1202 | Meter Reading | 99.2 | Pass |
| 800 NTU | | | Nov - 22 | A1204 | Meter Reading | 795 | Pass |

**Initial Calibration Verification (ICV)** *(Only perform ICV immediately after quarterly calibr. Do not use < 0.1 NTU standard for ICV.)*

Sampler Name: **Steve Messick** Date: **01-04-2022** Time: **1030 Hrs. ETZ**

| Standard Value *(Use A Primary Formazin Standard)* | | | Exp. Date | Lot # | Meter Reading NTU | Pass / Fail |
|---|---|---|---|---|---|---|
| 20 NTU | | | Nov - 22 | A1207 | 19.4 | Pass |

**Secondary Gel Standard Quarterly Verification** *(perform gel standard verification immediately after quarterly calib. and ICV)*

Sampler Name: **Steve Messick** Date: **01-04-2022** Time: **1030 Hrs. ETZ**

| Standard Value Range NTU | Previous Value Assigned NTU | Exp. Date | Lot # | Meter Reading NTU *(new value assigned)* | Acceptable Range, NTU *(Calculate using new value assigned & acceptance criteria*)* |
|---|---|---|---|---|---|
| 0 – 10 | 3.56 | N/A | N/A | 3.50 | <2 |
| 10 – 100 | 40.2 | N/A | N/A | 40.9 | <2 |
| 100 - 1000 | 423 | N/A | N/A | 429 | <2 |

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**Daily Continuing Calibration Verification (CCV)** *(required every day that meter is used)*

| Date | Time (24hr) ET | Sampler Name | Standard Type | Standard Value NTU | Exp. Date | Lot # | Meter Reading NTU | Pass / Fail |
|---|---|---|---|---|---|---|---|---|
| 1-6-22 | 0900 | Steve Messick | Gel | 3.50 | N/A | N/A | 3.51 | (P) / F |
| ↓ | 0901 | ↓ | Gel | 40.9 | ↓ | ↓ | 41.1 | (P) / F |
| | 0901 | | Blank Cell | <0.25 | | | 0.15 | (P) / F |
| | 1218 | | Gel | 3.50 | | | 3.56 | (P) / F |
| | 1218 | | Gel | 40.9 | | | 41.5 | (P) / F |
| ↓ | 1219 | ↓ | Blank Cell | <0.25 | ↓ | ↓ | 0.22 | (P) / F |
| | | | GEL | 3.50 | | | | P / F |

*Acceptance Criteria: 0.1-10 NTU → ± 10 %; 11-40 NTU → ± 8 %; 41-100 NTU → ± 6.5 %; >100 NTU → ± 5 %;

Acceptable ranges for common standards: 20 NTU (18.4 - 21.6 NTU); 100 NTU (93.5 – 106.5 NTU); 800 NTU (760 - 840 NTU)

## Form FD 9000-8: FIELD INSTRUMENT CALIBRATION RECORDS

SITE NAME: **Quarterly Temperature check** DATE: **01/05/2022**

INSTRUMENT (MAKE/MODEL#) **YSI 556 MPS** INSTRUMENT # **YSI-GNV-05**

**PARAMETER:** *[check only one]*

**X TEMPERATURE** ☐ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP

☐ TURBIDITY ☐ RESIDUAL Cl ☐ DO ☐ OTHER _____

**STANDARDS:** *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

*Standard A* **NIST Thermometer 10.0 °C** **#94748 Cal Date: 06/26/21**

Standard B **NIST Thermometer 25.0 °C** **#94748 Exp. Date: 06/26/22**

*Standard C* **NIST Thermometer 40.0 °C**

| DATE (yy/mm/dd) | TIME (hr:min) | STD (A, B, C) | STD VALUE (°C) | INSTRUMENT RESPONSE (°C) | (+/- 0.5°C) DEV | CALIBRATED (YES, NO) | TYPE (INIT, CONT) | CALIBRATOR INITIALS |
|---|---|---|---|---|---|---|---|---|
| **Meter 05** | | | | | | | | |
| **22/01/05** | **0917** | **C** | **40.0** | **40.2** | **0.2** | **yes** | **init** | **SMM** |
| **22/01/05** | **0923** | **B** | **25.0** | **25.0** | **0.0** | **yes** | **cont** | **SMM** |
| **22/01/05** | **0928** | **A** | **10.0** | **9.9** | **0.1** | **yes** | **cont** | **SMM** |
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GENERAL SAMPLING NOTES AND CONVENTIONS

1. All sampling was performed according to the FDEP Standard Operating Procedures as listed in DEP-SOP-001/01 (Field Procedures) dated March 31, 2008 (Effective 12/3/08).

2. Field cleaning and decontamination has been done in accordance with DEP-SOP-001/01 (Field Procedures), FC-1000.

3. Tubing and filter cartridge lot numbers for all sampling points and wells are the same as those listed for that tubing type on the Equipment Blank data form(s) covering that equipment system.

4. Tubing suppliers/manufacturers are named in the following list:

| | |
|---|---|
| • HDPE disposable tubing | US Plastics |
| • Tygon tubing | Cole Parmer |
| • Norprene tubing | Cole Parmer |
| • Silicon tubing | Cole Parmer |

5. Field instrument calibrations were conducted in accordance with DEP-SOP-001/01 (Field Procedures), FT1000.

6. Calibration solution and gas suppliers are named in the following list:

| | |
|---|---|
| • pH calibration solutions | Cole Parmer/Oakton |
| • Conductivity calibration solutions | Cole Parmer/Oakton |
| • Dissolved Oxygen probe membranes | YSI |
| • ORP calibration solutions | YSI |
| • Turbidity calibration solutions/gel standards | Hach |
| • TVA calibration gas cylinders | Airgas |
| • Eagle RKI calibration gas cylinders | Airgas |

7. All samples collected were grab samples.

8. All sample containers requiring added preservative were supplied pre-preserved from the laboratory. No additional preservative was added in the field.

9. A combination of a front-bumper-mounted gasoline generator and an electric air compressor or compressed nitrogen is used to power the Grundfos electric submersible pump and bladder pump systems, as appropriate.

10. Screened intervals are assumed to be at the bottom of all monitoring wells sampled unless otherwise noted.

11. Well purge method indications on the field data sheets correspond to DEP-SOP-001/01 (Field Procedures), FS2000 sections as indicated below:

| Data Sheet Designation | SOP Designation |
|---|---|
| 2.3 | FS 2212.2.3 |
| 2.4 | FS 2212.2.4 |
| 2.5 | FS 2212.2.5 |
| 2222 or 3.7.1 | FS 2222 or 2212.3.7.1 |
| Private | FS 2215.1 & 2215.2 (Jones Edmunds SOP for private well sampling) |

Comments or Exceptions

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_____

_____

_____

_____

# REFERENCE FACTORS FOR FIELD SAMPLING DATA SHEETS

**WELL CAPACITY** (Gallons / Foot):

**0.75"** = 0.02
**1"** = 0.04
**1.25"** = 0.06
**2"** = 0.16
**3"** = 0.37
**4"** = 0.65
**5"** = 1.02
**6"** = 1.47
**12"** = 5.88

**TUBING INSIDE DIA. CAPACITY** (Gallons / Foot):

1/8" = **0.0006**
3/16" = **0.0014**
1/4" = **0.0026**
5/16" = **0.004**
3/8" = **0.006**
1/2" = **0.010**
5/8" = **0.016**

**MATERIAL CODES:** **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

**PURGING** EQUIPMENT CODES **B** = Bailer **BP** = Bladder Pump **ESP** = Electric Submersible Pump **PP** = Peristaltic Pump

**SAMPLING EQUIPMENT CODES:** **APP** = After Peristaltid Pump **RFPP** = Reverse Flow Peristaltic Pump **O** = Other (Specify) **SM** = Straw Method (Tubing Gravity Drain) **VT** = Vacuum Trap

**STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)**

pH: **± 0.2 units**

Temperature: **± 0.2 °C**

Specific Conductance: **± 5%**

Dissolved Oxygen: **all readings ≤ 20% saturation (see Table FS 2200-2) optionally, ± 0.2 mg/L or ± 10% (whichever is greater)**

Turbidity: **all readings ≤ 20 NTU optionally ± 5 NTU or ± 10% (whichever is greater)**

| gal/min | = ml/min | gal/min | = ml/min | gal/min | = ml/min |
|---|---|---|---|---|---|
| 0.026 | 100 | 0.211 | 800 | 0.396 | 1500 |
| 0.053 | 200 | 0.238 | 900 | 0.423 | 1600 |
| 0.079 | 300 | 0.264 | 1000 | 0.449 | 1700 |
| 0.106 | 400 | 0.291 | 1100 | 0.476 | 1800 |
| 0.132 | 500 | 0.317 | 1200 | 0.502 | 1900 |
| 0.159 | 600 | 0.343 | 1300 | 0.528 | 2000 |
| 0.185 | 700 | 0.370 | 1400 | | |