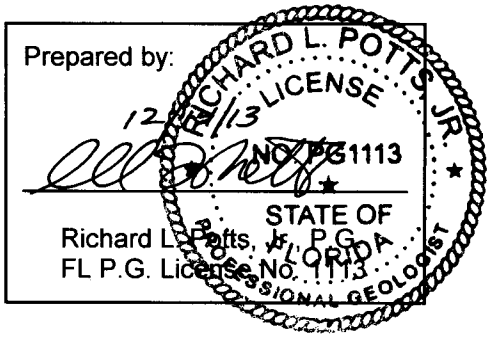
SUMTER COUNTY
(CLOSED) LANDFILL
QUARTERLY GROUNDWATER
MONITORING REPORT
Quarter IV (November) 2013

Prepared for:

SUMTER COUNTY
SOLID WASTE DEPARTMENT
SUMTER COUNTY, FLORIDA

Prepared by:

THE COLINAS GROUP, INC.
377 Maitland Avenue, Suite 2012
Altamonte Springs, Florida 32701



December 2013

Florida Department of Environmental Protection

3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767

Ground Water Monitoring Report Certification Form

Rule 62-520.600(11)

PART I GENERAL INFORMATION

(1) Facility Name Sumter County Closed Class I Landfill

Address 835 C.R. 529

City Lake Panasoffkee Zip 33538 County Sumter

Telephone Number (352)-793-3368 E-mail address jackey.jackson@sumtercountyfl.gov

(2) WACS_Facility 53008

(3) DEP Permit Number 22926-004-SF

(4) Authorized Representative's Name Jackey Jackson Title Ass't. Director Public Works

Address 319 E. Anderson Avenue

City Bushnell Zip 33513 County Sumter

Telephone Number (352)-793-0240 E-mail address jackey.jackson@sumtercountyfl.gov

(5) Type of Discharge NA

(6) Method of Discharge NA

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submission of false information including the possibility of fine and imprisonment.

1-11-14

Date

Owner or Authorized Representative's Signature

PART II QUALITY ASSURANCE REQUIREMENTS

Sampling Organization Name & DOH # The Colinas Group, Inc. / 870148G/3

Analytical Lab Organization DOH # E53076 E84589 E82574

Lab Name Advanced Environmental Laboratories, Inc.

Address 6601 Southport Parkway, Jacksonville, Florida 32216

Phone Number (904)-363-9350

E-mail Address msantiago@aellab.com

DER Form 62-520.900(2)
Effective April 14, 1994
1/13/2009m

THE COLINAS GROUP, INC.

HYDROGEOLOGISTS & ENGINEERS

January 10, 2014

Mr. F. Thomas Lubozynski, P.E.
Florida Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Subj: Quarter IV (November) 2013 Groundwater Monitoring Report
Sumter County Closed Class I Landfill
Sumter County, Florida
WACS_Facility ID #53008
FDEP Permit No. 22926-003-SF

Dear Mr. Lubozynski:

On behalf of Sumter County Board of County Commissioners, The Colinas Group, Inc. (TCG) herewith submits the Electronic Data Deliverable of the report prepared by TCG entitled:

Sumter County (Closed) Landfill Quarterly Groundwater Monitoring Report, Quarter IV (November) 2013

The report was prepared and is submitted in satisfaction of part of the requirements of the Sumter County Closed Landfill Long-Term Care Permit.

If you have any questions concerning the contents of the report please do not hesitate to contact me at your convenience.

Very truly yours,
THE COLINAS GROUP, INC.

01/10/14

Richard L. Potts, Jr., P.G.
Principal Consultant
Fl. P.G. Reg. No. 1113
rickpotts@cfl.rr.com

RICHARD L. POTTS, JR. LICENSED NO. PG1113 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

cc: Mr. Jackey Jackson (Sumter County)
Ms. Denise Warnock (Sumter County)

377 MAITLAND AVENUE, SUITE 2012, ALTAMONTE SPRINGS, FL 32701 • (407) 622-8176 • FAX: (407) 622-8196

SUMTER COUNTY (CLOSED) LANDFILL
GROUNDWATER MONITORING REPORT
SUMTER COUNTY, FLORIDA
Quarter IV (November) 2013

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Sumter County (Closed) Landfill
Quarterly Groundwater Monitoring Report
Quarter IV (November) 2013

INTRODUCTION

The Colinas Group, Inc. (TCG) has reviewed the groundwater monitoring well sampling and analytical results for the Quarter IV (November) 2013 sampling event at the Sumter County (Closed) Landfill near Lake Panasoffkee in Sumter County. The sampling event was completed in accordance with the quarterly water quality monitoring and reporting requirements of the closed landfill FDEP Long-Term Care Permit #22926-003-SF.

In accordance with Specific Condition 16d of the facility Long-Term Care Permit, sampling and analytical chemical parameters for this sampling event included the parameters listed in *40 CFR Part 258, Appendix I.* The expanded list of analytical parameters is required by permit for the fourth quarter of each year.

SAMPLING EVENT

The Quarter IV 2013 sampling event at the Sumter County Landfill occurred during the period November 15 - 19, 2013. Sampling was performed by TCG in accordance with the Florida Department of Environmental Protection (FDEP) Standard Operating Procedures (SOP) for Field Activities. Water samples collected from the facility groundwater monitoring wells were tested for the required field parameters. Monitoring wells were purged and the groundwater discharge allowed to stabilize prior to sample collection.

The results of field testing were recorded as part of the Field Reports (Attachment 3) and are listed in Table I. All samples were preserved and stored as required prior to shipment to the analytical laboratory.

Water table depth measurements in each facility groundwater monitoring well and piezometer were recorded on November 15, 2013. These measurements were used to develop the Groundwater Contour Map shown on Figure 1 (Attachment 1) for the uppermost receiving groundwater aquifer beneath the site. Depth to water table measurements and corresponding groundwater elevations are listed in Table II.

Laboratory analytical services were provided by Advanced Environmental Laboratories, Inc. (AEL) in accordance with the laboratory's NELAC and FDHRS Certification No. E53076, E84589, and E82574. The original analytical reports prepared by AEL are presented in Attachment 2 to this report. A summary of analytical results is presented on Table III.

RESULTS

Field Tested Parameters

Results of field testing completed at groundwater monitoring wells for the Quarter IV 2013 sampling event are summarized in Table I. Field tests were completed in strict accordance with FDEP SOP requirements.

pH

The field testing results indicate pH of groundwater in the uppermost aquifer was within the FDEP secondary standard (6.5 - 8.5 pH units) at seven (7) of the nine (9) groundwater monitoring wells sampled during the November 2013 event. The nearly neutral to slightly basic pH values measured are consistent across the landfill property and appear normal considering the monitoring well screen intervals at and near the top of carbonate rocks and sediments.

One well (**MW-4B**) produced groundwater with a pH above the upper FDEP range at 9.16 pH units. This well has produced pH values above 8.5 since sampling of the well began in Quarter II of 2006. Monitoring well **MW-11** reported pH below the range at 6.28 pH units.

Fluid Temperature

Temperature of each water sample was measured in the field immediately following discharge into the flow cell used to accept flow from the purging pump. Temperature measurements of groundwater from the nine (9) monitoring wells varied through a narrow range, from a low of 24.39 C at well **MW-8** to 27.34 C at **MW-2**.

Dissolved Oxygen

Dissolved oxygen (DO) exceeded the FDEP sampling guidance level of 20% saturation at four (4) of the nine (9) monitoring wells sampled, including the facility background monitoring well **MW-6A**. Most of these wells typically produce groundwater with dissolved oxygen levels above 20% saturation.

Specific Conductance

Specific conductance of groundwater samples collected during this sampling event are included in Table I. Specific conductance values varied through a relatively narrow range of 117 umhos/cm to 896 umhos/cm.

Turbidity

The FDEP recommends attainment of turbidity values less than 10 to 20 NTUs in groundwater samples obtained from monitoring wells. As shown in Table I, groundwater samples collected had measured turbidity values less than 20 NTUs at each of the nine (9) wells.

Regulatory Exceedances

A summary of groundwater laboratory analytical results that exceeded the regulatory level for the particular parameter in the Quarter IV 2013 sample set is presented in Table III. As shown, five (5) parameters were reported for certain monitoring wells at concentrations that exceed applicable regulatory levels. Exceeded analytical parameters were aluminum, iron, manganese, nitrate nitrogen and total dissolved solids (TDS).

Aluminum

Aluminum was reported in water samples from one monitoring well, **MW-9A**, at 250 ug/l, slightly above the Florida Secondary Drinking Water Standards (FSDWS) MCL of 200 ug/l.

Iron

Dissolved iron was detected in one monitoring well at a concentration above the FSDWS MCL of 300 ug/l. Iron was reported at 1,600 ug/l at detection well **MW-9A** and was not detected above the laboratory method detection limit at seven (7) wells.

Manganese

Manganese was reported at a concentration above the FSDWS MCL of 50 ug/l at monitoring well **MW-9A** at 100 ug/l. Manganese was reported at seven (7) other monitoring wells, including background well **MW-6A**, at lower concentrations ranging from 0.41 ug/l to 17 ug/l.

Nitrate Nitrogen

Nitrate was reported above the 10 mg/l FPDWS MCL at monitoring well **MW-4A** at 12 mg/l. An elevated nitrate concentration, less than the MCL, is reported for background monitoring well **MW-6A** at 5.2 mg/l. Remaining detection wells reported nitrate at values less than the background level.

TDS

TDS was reported at 510 mg/l at well **MW-9A**, slightly above the 500 mg/l FSDWS MCL. Remaining monitoring wells reported TDS in the range of 66 mg/l to 350 mg/l.

No other exceedance of a parameter regulatory concentration level was reported in the laboratory analytical results for samples from groundwater monitoring wells at the Sumter County Closed Landfill.

Other Significant Detected Parameters

Chloride concentrations reported for seven(7) of the nine (9) monitoring wells, including the facility background monitoring well **MW-6A**, appear consistent between individual wells and typical for natural shallow groundwaters in Florida. Chloride concentrations at monitoring wells **MW-4A** and **MW-9A** (22 mg/l - 24 mg/l) appear slightly elevated as compared to the other wells. The SDWS MCL for chloride in groundwater is 250 mg/l.

Sodium also appears slightly higher at monitoring wells **MW-4**, **MW-4A** and **MW-9A** (19 mg/l - 28 mg/l) as compared to background and other detection wells. The PDWS MCL for sodium is 160 mg/l.

40 CFR Part 228 Appendix I Volatiles

Annual analyses for 40 CFR Part 258 Appendix I parameters were completed for this sampling event. As indicated on the attached laboratory reports of analyses from AEL and summarized in Table III, none of the Appendix I volatile organic compounds were detected above the laboratory method detection limits in groundwater samples from the facility groundwater monitoring wells. Laboratory detections limits are less than the Chapter 62-777, F.A.C. Groundwater Cleanup Target Level for each respective parameter.

SUMMARY AND RECOMMENDATIONS

Chemical characteristics of groundwater monitored at the Sumter County Landfill are reported for the Quarter IV (November) 2013 sampling event. Exceedances of certain constituent regulatory maximum concentration levels (MCLs) for analtyical constituents are reported at specific monitoring wells for aluminum, iron, manganese, nitrate nitrogen and total dissolved solids (TDS).

Elevated **dissolved oxygen** (DO) levels were measured in four of the nine groundwater monitoring wells, including the facility background monitoring well **MW-6A** and up-gradient well **MW-8**. These wells routinely produce groundwater with elevated DO levels. Field sampling methods do not appear to be the source of elevated DO in collected water samples.

Aluminum was reported by the laboratory at concentrations above the FSDWS MCL (200 ug/l) at well **MW-9A**. Aluminum has routinely been reported above the MCL in monitoring wells at the Sumter County closed landfill, including background well **MW-6A**. The most likely source of dissolved aluminum in groundwater is naturally-occurring aluminum-silicate clay minerals occurring near the top of rock throughout the landfill property.

Iron was reported above the FSDWS MCL (300 ug/l) at monitoring well **MW-9A**. **Manganese** was also reported above the FSDWS MCL (50 ug/l) at **MW-9A**. Both iron and manganese occur naturally in sediments and carbonate rocks penetrated by the monitoring wells.

Nitrate nitrogen was reported slightly above the FPDWS MCL (10 mg/l)at monitoring well **MW-4A** at 12 mg/l. Background well **MW-6A** continues to report elevated nitrate levels at values less than the MCL.

Volatile organic compounds (VOCs) were analyzed as part of this monitoring event in accordance with the annual requirements of the landfill's Long-Term Care Permit. None of the parameters listed in 40 CFR Part 258 Appendix I were detected by the laboratory in any of the monitoring well samples.

Considering the historical lack of significant VOC detections in groundwater at the landfill, we recommend that Sumter County consider requesting a minor permit modification from the FDEP to delete the requirement for annual VOC sampling and analysis specified in the landfill's Long-Term Care Permit.

As the Sumter County Closed Landfill is an "existing installation" as defined in Rule 62-520.420(1), F.A.C., we further recommend that Sumter County request modification of the Long-Term Care Permit to delete the requirement for sampling and analysis of parameters regulated under the Florida Secondary Drinking Water Standards.

* * * * *

TABLE I

FIELD PARAMETER RESULTS SUMMARY
SUMTER COUNTY (CLOSED) LANDFILL
SUMTER COUNTY, FLORIDA
Quarter IV (November) 2013

Sampling Point	Temp. (C)	Dissolved Oxygen (mg/l)	pH	Specific Conductance (umhos/cm)	Turbidity (NTU)
MW-2	27.34	**5.75**	7.05	214	0.69
MW-4	26.32	0.63	7.29	500	0.77
MW-4A	25.94	0.92	7.15	585	1.76
MW-4B	25.60	**6.56**	**9.16**	117	3.01
MW-6A	24.86	**7.11**	7.92	246	8.93
MW-8	24.39	**6.62**	7.47	314	0.36
MW-9A	25.06	0.22	6.55	896	12
MW-10	25.30	0.89	6.98	558	3.3
MW-11	25.89	1.38	**6.28**	324	9.14

Notes: 1). **Bold** lettering indicates: Exceedance of FDEP 20% saturation dissolved oxygen limit
Exceedance of secondary standards pH range (6.5 - 8.5)
Exceedance of FDEP-recommended turbidity (20 NTU)

TABLE II

SUMMARY OF GROUNDWATER LEVELS
SUMTER COUNTY (CLOSED) LANDFILL
SUMTER COUNTY, FLORIDA
Quarter IV (November) 2013

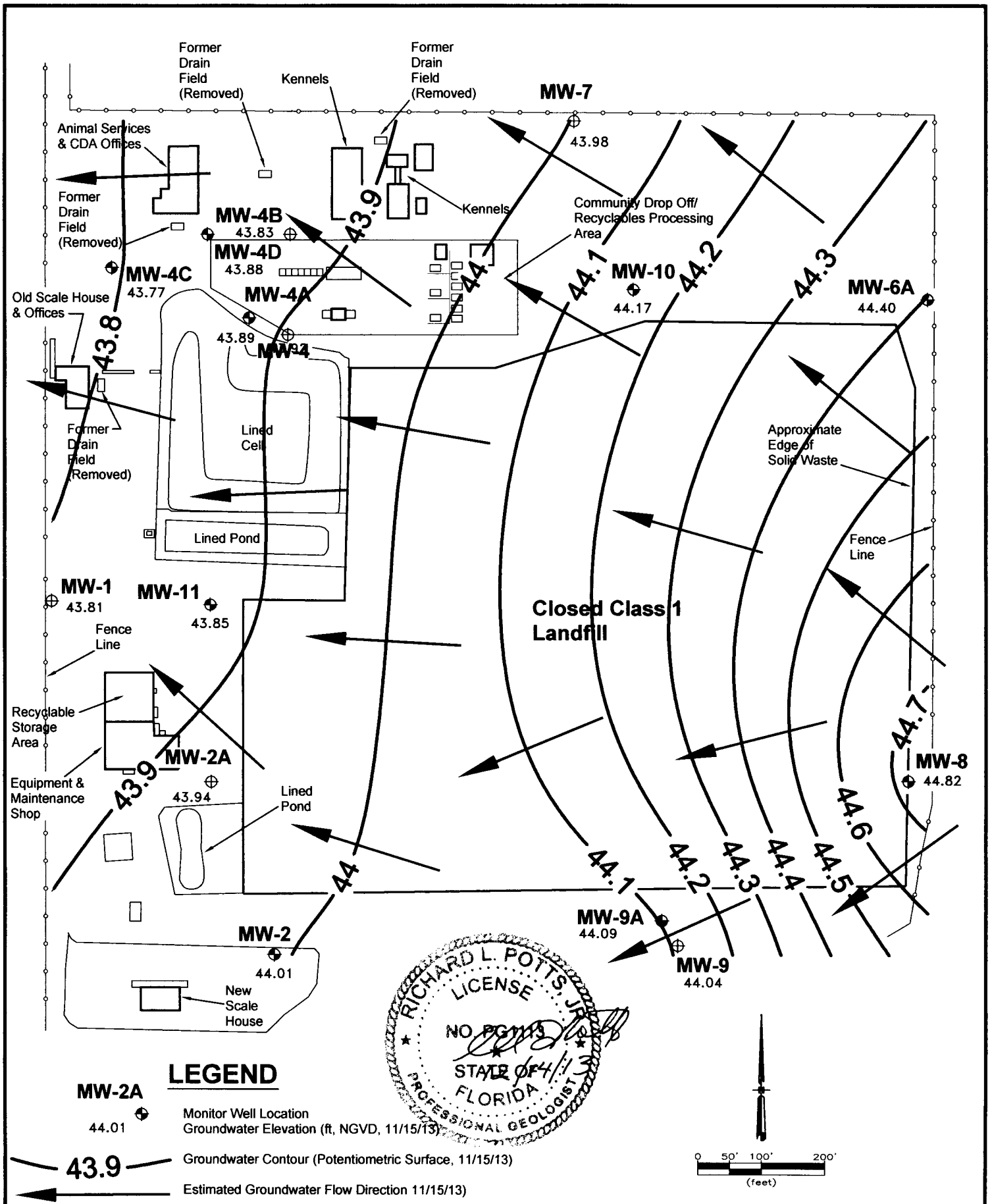
Well No.	MP Elev. 1/ (ft. +NGVD)	Depth to Water 2/ (ft. - MP)	Groundwater Elevation (ft. +NGVD)
MW-1	70.10	26.29	43.81
MW-2	68.96	24.95	44.01
MW-2A	71.98	28.04	43.94
MW-4	70.33	26.41	43.92
MW-4A	75.49	31.60	43.89
MW-4B	73.49	29.66	43.83
MW-4C	70.64 3/	26.87	43.77
MW-4D	70.20 3/	26.32	43.88
MW-6A	77.48	33.08	44.40
MW-7	72.93	28.95	43.98
MW-8	68.63	23.81	44.82
MW-9	72.62	28.58	44.04
MW-9A	75.14	31.05	44.09
MW-10	68.14	23.97	44.17
MW-11	70.02	26.17	43.85

Notes: 1/ Measuring Point is top of PVC well casing.
2/ Water levels recorded on November 15, 2013.
3/ New post-wellhead repair TOC elevation (Steven B. Wiley, PSM, August 31, 2013)

TABLE III
SUMMARY OF LABORATORY RESULTS
SUMTER COUNTY (CLOSED) LANDFILL
QUARTER IV (November) 2013

Parameter	units	MW-2	MW-4	MW-4A	MW-4B	MW-6A	MW-8	MW-9A	MW-10	MW-11	GCTL
Ammonia	mg/l	BDL	0.02	BDL	BDL	BDL	0.01	0.66	BDL	BDL	**2.8**
Aluminum	ug/l	BDL	BDL	BDL	190	BDL	BDL	**250**	BDL	79	**200**
Antimony	ug/l	0.51	0.24	0.12	0.14	0.090	0.081	0.11	0.30	0.61	**6**
Arsenic	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	0.80	BDL	BDL	**10**
Barium	ug/l	14	6.9	12	3.7	2.3	3.4	16	11	5.2	**2,000**
Beryllium	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.16	**4**
Cadmium	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	0.92	0.61	2.3	**5**
Cobalt	ug/l	BDL	0.60	BDL	BDL	BDL	BDL	24	BDL	BDL	**420**
Copper	ug/l	0.97	1.3	1.4	0.70	14	0.19	3.2	0.39	1.8	**1,000**
Chloride	mg/l	BDL	11	24	2.0	6.3	5.9	22	7.8	4.8	**250**
Chromium	ug/l	BDL	0.97	1.2	2.0	3.3	3.0	7.9	BDL	1.3	**100**
Fluoride	mg/l	0.13	0.12	BDL	BDL	BDL	BDL	BDL	0.080	0.090	**4**
Gross Alpha	pCi/l	1.0 ±0.6	5.6 ±1.7	3.0 ±1.0	1.7 ± 0.7	1.2 ± 0.8	1.5 ± 1.0	8.1 ± 1.7	11.6±2.1	6.3 ±1.4	**15**
Iron	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	**1,600**	93	BDL	**300**
Lead	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	0.17	BDL	BDL	**15**
Manganese	ug/l	0.60	6.3	1.6	BDL	0.41	1.3	**100**	17	6.4	**50**
Mercury	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	0.015	0.020	BDL	**2**
Nickel	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	12	BDL	BDL	**100**
Nitrate, as N	mg/l	2.0	4.6	**12**	2.2	5.2	1.8	0.22	1.6	4.8	**10**
pH	s.u.	7.05	7.29	7.15	**9.16**	7.92	7.47	6.55	6.98	**6.28**	**6.5-8.5**
Radium -226	pCi/l	<0.7±0.4	1.9 ± 0.7	1.3 ± 0.6	0.5 ± 0.3	1.1 ± 0.6	1.0 ± 0.6	4.8 ±1.1	2.2 ± 0.8	3.2 ± 0.9	—
Radium- 228	pCi/l	<1.0±0.7	<1.0±0.8	<1.0±0.8	<1.0±0.7	<1.0±0.7	<1.0±0.7	<1.0±0.7	<1.0±0.7	<1.0±0.8	—
Selenium	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**50**
Silver	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**100**
Sodium	mg/l	2.1	28	19	7.4	2.8	4.3	21	6.3	7.0	**160**
TDS	mg/l	130	300	350	66	140	200	**510**	320	200	**500**
Thallium	ug/l	0.070	0.11	0.20	BDL	BDL	BDL	0.21	0.16	0.15	**2**
Vanadium	ug/l	0.99	11	5.5	13	7.6	8.3	2.9	10	7.7	**49**
Zinc	ug/l	12	12	13	12	11	11	16	13	15	**5,000**

Notes: 1). BDL means below laboratory method detection limit
2). **Bold lettering** indicates result exceeds GCTL
3). GCTL is Chapter 62-777, F.A.C. Groundwater Cleanup Target Level



The Colinas Group, Inc. 377 Maitland Avenue Suite 2012 Altamonte Springs, Florida 32701	PROJ. NO.: P-483 DATE: DECEMBER 2013 SCALE: 1" = 200'	**GROUNDWATER CONTOUR MAP** **QUARTER IV (NOVEMBER) 2013** **SUMTER COUNTY LANDFILL**	**FIGURE 1**

FIELD LOG

PROJ # 9-483 NAME: Dale Clayton

PROJECT NAME: Sumter County Landfill DATE: 11/15/13

PROJECT LOCATION: Sumterville, FL

TIME	COMMENTS
	Well # — WL (ft. btoc)
	MW-1 — 26.29'
	MW-2 — 24.95'
	MW-2A — 28.04'
	MW-4 — 26.41'
	MW-4A — 31.60'
	MW-4B — 29.66'
	MW-4C — 26.87'
	MW-4D — 26.32'
	MW-6A — 33.08'
	MW-7 — 28.95'
	MW-8 — 23.81'
	MW-9 — 28.58'
	MW-9A — 31.05'
	MW-10 — 23.97'
	MW-11 — 26.17'

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-2	SAMPLE ID: MW-2	DATE: 11/18/13

PURGING DATA

WELL DIAMETER (Inches): 2" PVC	TUBING DIAMETER (inches): 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 25.00	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

1 Well Vol = (31.92' feet – 25.00 feet) X .16 gallons/foot = 1.1072 gallons

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

1 Equip Vol = .02 gallons + (.006 gallons/foot X feet) + .125 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~27'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~27'	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. (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1140	1.50	1.50	.06	25.10	7.07	22.32	216	5.89	0.67	Clear	None
1142	.12	1.62	.06	25.10	7.06	22.31	215	5.81	0.61	Clear	None
1144	.12	1.74	.06	25.10	7.05	22.34	214	5.75	0.69	Clear	None
									No sheen		

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dale Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1145	SAMPLING ENDED AT: 1208
PUMP OR TUBING DEPTH IN WELL (feet): ~27'	SAMPLE PUMP FLOW RATE (mL per minute): VOCs ≤100mL, ≤ 250 mL	TUBING MATERIAL CODE: PE	
FIELD DECONTAMINATION: (Y) N WL probe only	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION				
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
MW-2	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	APP
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	APP
"	1	PE	250 mL	HN03	None	—	Metals	APP
"	1	PE	500 mL	None Methio	None	—	Chloride, Fluoride, Nitrate, TDS	APP
"	3/23	CG	40 mL	HCl None	None	—	VOA 8260/8011	ESP

REMARKS:
Well: Set dedicated 1/4" PE tubing at ~27' btoc and started pump at .06
1115: 9pm.
1121: WL 25.10' at .06 gpm, GW is clear.
1128: WL 25.10' at .06 gpm, drawdown is stable. DO is high at 7.26 mg/L, but is typical for this well. Will use optional stabilization criteria for DO if necessary.
1133: WL 25.10' at .06 gpm. DO is still high at 6.22 mg/L, but is slowly dropping. Will purge until it stabilizes. All other parameters are stable or in range.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes
2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)y

Notes: 1. The above do not constitute all the information required by Chapter 62-160, F.A.C. 2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-4	SAMPLE ID: MW-4	DATE: 11/18/13

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): .3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 26.42'	PURGE PUMP TYPE OR BAILER: ~~ESP~~ PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)

= (36.35' feet – 26.42' feet) X .16 gallons/foot = 1.584 gallons

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

1 Equip Vol = ~~.072~~ gallons + (~~.006~~ gallons/foot X feet) + .125 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. (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1432	1.60	1.60	.05	26.56	7.30	26.37	500	0.63	0.80	Clear	Organics
1434	.1	1.70	.05	26.56	7.29	26.35	500	0.62	0.32	Clear	Some
1436	.1	1.80	.05	26.56	7.29	26.32	500	0.63	0.39	Clear	Some
									No Sheen		

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dale Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1437	SAMPLING ENDED AT: 1500
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP FLOW RATE (mL per minute): VOCs < 100mL, < 250 mL	TUBING MATERIAL CODE: PE	
FIELD DECONTAMINATION: (Y) N WL Probe only	FIELD-FILTERED: Y (N) Filtration Equipment Type: FILTER SIZE: ____ µm	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
MW-4	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	APP ~~ESP~~
"	1	PE	250 mL	H2S04	None	—	Ammonia	APP ~~ESP~~
"	1	PE	250 mL	HN03	None	—	Metals	APP ~~ESP~~
"	1	PE	500 mL	None Nathio	None	—	Chloride, Fluoride, Nitrate, TDS	APP ~~ESP~~
"	3/3	CG	40 mL	HCL/~~None~~	None	—	8260/8011	APP ~~ESP~~

REMARKS:

1400: Set dedicated 1/4" PE tubing at ~ 28' btoc and started pump at .05 gpm.

1415: WL 26.56' at .05 gpm, GW is Clear.

1425: WL 26.56' at .05 gpm, drawdown is Stable.

1431: WL 26.56' at .05 gpm, all parameters are stable or in range.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes
2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)y

Notes: 1. The above do not constitute all the information required by Chapter 62-160, F.A.C. 2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-4A	SAMPLE ID: MW-4A	DATE: 11/19/13

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 31.60'	PURGE PUMP TYPE OR BAILER: ESP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
1 Well Vol = (45.23' feet − 31.60' feet) X .16 gallons/foot = 2.1808 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
1 Equip Vol = .02 gallons + (.006 gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~33.5'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~33.5'	PURGING INITIATED AT: 1128	PURGING ENDED AT: 1145	TOTAL VOLUME PURGED (gallons): 5.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1141	4.75	4.75	.25	~~7.06~~	~~7.15~~	~~25.95~~	~~585~~	~~1.18~~	2.89	Clear	None
1143	.5	5.25	.25	31.75'	7.15	25.95	585	1.02	1.80	Clear	None
1145	.5	5.75	.25	31.75	7.15	25.94	585	0.92	1.36	Clear	None
									No sheen		

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dale Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1146	SAMPLING ENDED AT: 1158
PUMP OR TUBING DEPTH IN WELL (feet): ~33.5	SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL (VOC's < 100 mL)	TUBING MATERIAL CODE: PE	
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	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
MW-4A	2	PE	1 Ltr	HN03	None	---	GrossAlpha, RA226RA228	ESP
"	1	PE	250 mL	H2S04	None	---	Total Ammonia	ESP
"	1	PE	250 mL	HN03	None	---	Metals	ESP
"	1	PE	500 mL	None	None	---	Chloride, Fluoride, Nitrate, TDS	ESP
"	3/~~4~~ 3	CG	40 mL	HCL/~~None~~	None	---	~~8260~~ 8260/8011	ESP

REMARKS:
1128: Inserted SS ESP and dedicated 3/8" PE tubing to ~ 33.5' BTOC and started pump at .5 gpm.
1130: WL 31.84' at .5 gpm, GW is turbid at 41 NTUs.
1134: Turbidity is at 14 NTUs, reduced flow to .25 gpm. DO is high at 2.25 mg/L, but is slowly dropping.
1138: WL 31.75' at .25 gpm, DO has dropped to within range. All other parameters are stable or in range.
1140: WL 31.75' at .25 gpm, drawdown is stable.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes
2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)y

Notes: 1. The above do not constitute all the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

2.00

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-4B	SAMPLE ID: MW-4B	DATE: 11/19/13

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 29.68	PURGE PUMP TYPE OR BAILER: ESP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

1 Well Vol = (38.49' feet – 29.68' feet) X .16 gallons/foot = 1.4096 gallons

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

1 Equip Vol = .02 gallons + (.006 gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~31.5'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~31.5'	PURGING INITIATED AT: 1216	PURGING ENDED AT: 1232	TOTAL VOLUME PURGED (gallons): 5.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (mS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1228	4.00	4.00	.25	29.80	9.18	25.58	115	6.92	3.89	Clear	None
1230	.5	4.50	.25	29.80	9.17	25.55	116	6.73	2.95	Clear	None
1232	.5	5.00	.25	29.80	9.16	25.60	113	6.56	3.01	Clear	None
									No Sheen		

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dale Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1233	SAMPLING ENDED AT: 1245
PUMP OR TUBING DEPTH IN WELL (feet): ~31.5'	SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL & VOC's 100mL	TUBING MATERIAL CODE: PE	
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	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
MW-4B	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	ESP
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	ESP
"	1	PE	250 mL	HN03	None	—	Metals	ESP
"	1	PE	500 mL	None NaThio	None	—	Chloride, Fluoride, Nitrate, TDS	ESP
"	3	CG	40 mL	HCL None	None	—	8260/8011	ESP

REMARKS:

1216: Inserted SS ESP and dedicated 3/8" PE tubing to ~31.5' BTOC and started pump at .5 gpm.

1220: Reduced flow to .25 gpm, GW is clear.

1224: WL 29.80' at .25 gpm, DO is high at 7.91 mg/L, but is typical for this well. Will use optional stabilization criteria for DO and pH (pH is at 9.20 s/u's and also is typical for this well). All other parameters are stable or in range.

1227: WL 29.80' at .25 gpm, drawdown is stable.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes
2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

Notes: 1. The above do not constitute all the information required by Chapter 62-160, F.A.C. 2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

9.50

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-6A	SAMPLE ID: MW-6A	DATE: 11/19/13

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 33.13	PURGE PUMP TYPE OR BAILER: ESP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (50.84' feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME X3=1.335
(only fill out if applicable)

1 Equip Vol = .02 gallons + (.006 gallons/foot X 50 feet) + .125 gallons = 1.45 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): N45'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): N45'	PURGING INITIATED AT: 1321	PURGING ENDED AT: 1412	TOTAL VOLUME PURGED (gallons): 17.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (mS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1408	16.5	16.5	.25	33.15	7.92	25.00	246	7.10	9.12	Clear	None
1410	.5	17.0	.25	33.15	7.92	25.00	246	7.06	8.63	Clear	None
1412	.5	17.5	.25	33.10	7.92	24.86	246	7.11	8.93	Clear	None
									No Sheen		

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dale Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1413	SAMPLING ENDED AT: 1425
PUMP OR TUBING DEPTH IN WELL (feet): N45'	SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL	TUBING MATERIAL CODE: PE	
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	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
MW-6A	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	ESP
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	ESP
"	1	PE	250 mL	HN03	None	—	Metals	ESP
"	1	PE	500 mL	None NaThio	None	—	Chloride, Fluoride, Nitrate, TDS	ESP
"	3/~~4~~3	CG	40 mL	HCL/~~None~~	None	—	8260/8011	ESP

REMARKS:

1321: Inserted SS ESP and dedicated 3/8" PE tubing to N45' bloc and started pump at .5 gpm. GW is extremely turbid, but is typical for this well and requires over purging at a higher flow rate to clear it up.
1330: WL 33.21' at .5 gpm, turbidity is at 120 NTUs. Continuing purge.
1340: Turbidity is at 46 NTUs, reduced flow to .25 gpm.
1353: Turbidity is at 55 NTUs, WL 33.17' at .25 gpm.
1400: Turbidity is fluctuating, was down to 25 NTUs, now back up to 50. Continuing purge. WL 33.15' at .25 gpm. DO is high at 7.33 mg/L, (over) but is typical for this well.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes
2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

Notes: 1. The above do not constitute all the information required by Chapter 62-160, F.A.C. 2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-8	SAMPLE ID: MW-8	DATE: 11/18/13

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 23.84	PURGE PUMP TYPE OR BAILER: ~~ESP~~ PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (43.24' feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME x3: .7104
(only fill out if applicable)

1 Equip Vol = ~~.020~~ .0026 gallons + (~~.008~~ gallons/foot X 43' feet) + .125 gallons = gallons .2368

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~38'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~38'	PURGING INITIATED AT: 1226	PURGING ENDED AT: 1240	TOTAL VOLUME PURGED (gallons): 1.40

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1236	1.00	1.00	.1	23.86	7.47	24.32	313	6.22	0.82	Clear	None
1238	.2	1.20	.1	23.86	7.47	24.38	314	6.39	0.49	Clear	None
1240	.2	1.40	.1	23.86	7.47	24.39	314	6.62	0.36	Clear	None
									No sheen		

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dale Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1241	SAMPLING ENDED AT: 1300
PUMP OR TUBING DEPTH IN WELL (feet): ~38'	SAMPLE PUMP FLOW RATE (mL per minute): VOC's <100mL < 250 mL	TUBING MATERIAL CODE: PE	
FIELD DECONTAMINATION: (Y) N WL 8260	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION Only				SAMPLE PRESERVATION				
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
MW-8	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	APP ~~ESP~~ DC
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	APP ~~ESP~~ DC
"	1	PE	250 mL	HN03	None	—	Metals	APP ~~ESP~~ DC
"	1	PE	500 mL	None Nathio	None	—	Chloride, Fluoride, Nitrate, TDS	APP ~~ESP~~ DC
"	3/2 3	CG	40 mL	HCL ~~None~~	None	—	APP 8260/8011	APP ~~ESP~~

REMARKS:

1226: Set dedicated 1/4" PE tubing to ~38' btoc and started pump at .1 gpm.

1232: WL 23.86' at .1 gpm, GW is Clear.

1234: WL 23.86' at .1 gpm, drawdown is stable. DO is high at 6.69 mg/L, but is typical for this well. Will use optional stabilization criteria for DO. All other parameters are stable or in range.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes
2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)y

Notes: 1. The above do not constitute all the information required by Chapter 62-160, F.A.C. 2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or + 10% (whichever is greater)

2.50
5.75
3.60

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-9A	SAMPLE ID: MW-9A	DATE: 11/19/13

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 31.06	PURGE PUMP TYPE OR BAILER: ESP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (50.17' feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME X 3 = 1.335
(only fill out if applicable)
1 Equip Vol = .02 gallons + (.006 gallons/foot X 50' feet) + .125 gallons = 45 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~40'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~45'	PURGING INITIATED AT: 0912	PURGING ENDED AT: 1044	TOTAL VOLUME PURGED (gallons): 21.85

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1040	20.85	20.85	.25	32.80'	6.55	25.05	894	0.26	15.5	Clear	Sulfer
1042	.5	21.35	.25	32.80'	6.55	25.05	895	0.23	12.1	Clear	Same
1044	.5	21.85	.25	32.80'	6.55	25.06	896	0.22	12.0	Clear	Same
									No Sheen		

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dale Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1045	SAMPLING ENDED AT: 1058
PUMP OR TUBING DEPTH IN WELL (feet): ~45'	SAMPLE PUMP FLOW RATE (mL per minute): VOC's <100mL <250mL	TUBING MATERIAL CODE: PE	
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	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
MW-9A	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	ESP
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	ESP
"	1	PE	250 mL	HN03	None	—	Metals	ESP
"	1	PE	500 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP
"	3/1 3	CG	40 mL	HCL/~~None~~ No Thio	None	—	App I 8260/8011	ESP

REMARKS:
0912: Inserted SS ESP and dedicated 3/8" PE tubing to ~40' btoc and started pump at .5 gpm. This well typically required over purging at a higher flow rate to clear up the GW. GW is extremely turbid.
0917: Well drew down to pump at 40' btoc, reduced flow to .25 gpm and lowered pump to ~45' btoc. GW is extremely turbid.
0933: WL 32.54' at .25 gpm, turbidity is at 95 NTUs. Continuing purge.
0940: Turbidity is at 64 NTUs, reduced flow to .15 gpm. Continuing purge.
1004: Turbidity is at 62 NTUs, increased flow to .25 gpm.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes
2) Packed samples on ice immediately upon collection (Ice)

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

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)y

Notes: 1. The above do not constitute all the information required by Chapter 62-160, F.A.C. 2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-10	SAMPLE ID: MW-10	DATE: 11/18/13

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 24.00	PURGE PUMP TYPE OR BAILER: ~~ESP~~ PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)

= (45.35' feet – feet) X gallons/foot = gallons

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

1 Equip Vol = ~~.02~~ 0 gallons + (~~.006~~ .0026 gallons/foot X 45 feet) + .125 gallons = .242 gallons X3 = .726

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~40'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~40'	PURGING INITIATED AT: 1314	PURGING ENDED AT: 1327	TOTAL VOLUME PURGED (gallons): 1.30

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (mS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1323	.90	.90	.1	24.55	6.98	25.31	560	1.32	4.04	Clear	None
1325	.2	1.10	.1	24.55	6.98	25.30	559	1.08	3.82	Clear	None
1327	.2	1.30	.1	24.55	6.98	25.30	558	0.89	3.30	Clear	None
									No sheen		

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dale Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1328	SAMPLING ENDED AT: 1345
PUMP OR TUBING DEPTH IN WELL (feet): ~40'	SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL	TUBING MATERIAL CODE: PE	
FIELD DECONTAMINATION: (Y) N Hose only	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION				
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
MW-10	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	APP ~~ESP~~
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	APP ~~ESP~~
"	1	PE	250 mL	HN03	None	—	Metals	APP ~~ESP~~
"	1	PE	500 mL	None Methyl	None	—	Chloride, Fluoride, Nitrate, TDS	APP ~~ESP~~
"	3/2 3	CG	40 mL	HCL ~~None~~	None	—	App 2 8260/8011	RFPP ~~ESP~~

REMARKS:

1314: Set dedicated 1/4" PE tubing at ~ 40' btoc and started pump at .1 gpm.

1318: WL 24.55' at .1 gpm, GW is clear.

1320: WL 24.55' at .1 gpm, drawdown is stable. All parameters are stable or in range.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes
2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)y

Notes: 1. The above do not constitute all the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-11	SAMPLE ID: MW-11	DATE: 11/18/13

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 26.19'	PURGE PUMP TYPE OR BAILER: ~~ESP~~ PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (40.15' feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
1 Equip Vol = ~~.02~~ 0 gallons + (~~.006~~ .0026 gallons/foot X 65' feet) + .125 gallons = .294 gallons X3: .882

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~35'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~35'	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. (mS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1021	1.26	1.26	.07	26.22	6.29	25.86	326	1.52	4.70	Clear	None
1023	.14	1.40	.07	26.22	6.29	25.87	327	1.42	5.16	Clear	None
1025	.14	1.54	.07	26.22	6.28	25.89	324	1.38	5.14	Clear	None

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dale Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1026	SAMPLING ENDED AT: 1045
PUMP OR TUBING DEPTH IN WELL (feet): ~35'	SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL	TUBING MATERIAL CODE: PE	
FIELD DECONTAMINATION: (Y) N WL probe only	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION				
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
MW-11	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226,RA228	APP ~~ESP~~ dc
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	APP ~~ESP~~ dc
"	1	PE	250 mL	HN03	None	—	Metals	APP ~~ESP~~ dc
"	1 dc	PE	500 mL	None ~~HN03~~	None	—	Chloride,Fluoride, Nitrate, TDS	APP ~~ESP~~ dc
"	0 dc 3 3	CG	41 mL	HCL ~~None~~ dc	None	—	8260/8011 (App2)	RAPP ~~ESP~~ dc

REMARKS:
1023: Set dedicated 1/4" PE tubing at ~35' btoc and started pump at .07 gpm.
1010: WL 26.22' at .07 gpm, GW is clear. DO is high at 4.06 mg/L, but is slowly dropping. Will over purge to get it in range.
1019: WL 26.22' at .07 gpm, drawdown is stable. DO is in range. All other parameters are stable or in range.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes
2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)y

Notes: 1. The above do not constitute all the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: NA	SAMPLE ID: EQB	DATE: 11/19/13

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER: ESP

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

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

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

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
NA											

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dale Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0850	SAMPLING ENDED AT: 0900
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL	TUBING MATERIAL CODE: PE	
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	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
EQB	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	ESP
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	ESP
"	1	PE	250 mL	HN03	None	—	Metals	ESP
"	1	PE	500 mL	None	None	—	Chloride,Fluoride, Nitrate, TDS	ESP
"	3/2	CG	40 mL	HCL/None	None	—	8260/8011	ESP

REMARKS:

Field decon'd SS ESP and WL probe IAW DEP-SOP-001/01, FC 1000. Inserted ESP and WL probe into field decon'd 5 gallon PE bucket, poured in 1 gallon of DI Water, and circulated DI water through pump and over WL probe for several minutes, then collected EQB Samples.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes
2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)y

Notes: 1. The above do not constitute all the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

LAE

A1308521

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CLIENT NAME:	The Colinas Group, Inc.
ADDRESS:	377 Maitland Ave Suite 2012
	Altamonte Springs, FL 32701
PHONE:	407-622-8176
FAX:	407-622-8196
CONTACT:	Dale Claytor
SAMPLED BY:	Dale Claytor
TURN AROUND TIME:	X STANDARD ☐ RUSH
Sumter Co. Landfill - GW Sampling	
P.O. NUMBER/PROJECT NUMBER:	P-483
PROJECT LOCATION:	Sumterville, FL
REMARKS/SPECIAL INSTRUCTIONS:	

SAMPLE ID	SAMPLE DESCRIPTION	Grab Comp	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. COUNT	PRESERVATION	Gross Alpha	Ra 226 + Ra 228	Sb, Al, Cd, Cr, Fe, Pb, Mn, Hg, Ag, Na, Tl, Ba, As, Be Co, Cu Ni Se, V Zn	Ammonia	F, Cl, NO3, TDS	8260 App I Vocs	8011 EDB and DBCP	LABORATORY I.D. NUMBER
							BOTTLE SIZE & TYPE	1 LP	1 LP	1 LP	250 mL P	125 mL P	40mL Vial	40 mL Vi	
							ANALYSIS REQUIRED								
							PRESER-VATION	N	N	N	S	I	H	NaThi	
	MW-10	G	11-18-13	1345	W	11		X	X	X	X	X	X	X	01
	MW-11	G		1045	W	11		X	X	X	X	X	X	X	02
	MW-2	G		1208	W	11		X	X	X	X	X	X	X	03
	MW-4	G		1500	W	11		X	X	X	X	X	X	X	04
	MW-4A	G	11-19-13	1158	W	11		X	X	X	X	X	X	X	05
	MW-4B	G		1245	W	11		X	X	X	X	X	X	X	06
	MW-6A	G		1425	W	11		X	X	X	X	X	X	X	07
	MW-8	G	11-18-13	1300	W	11		X	X	X	X	X	X	X	08
	MW-9A	G	11-19-13	1058	W	11		X	X	X	X	X	X	X	09
	Equp Blank	G		0900	W	11		X	X	X	X	X	X	X	10
	Trip Blank-1	G			W	3							X		11

Matrix Code: WW = wastewater SW = surface water GW = ground water DW = drinking water O = oil A = air SO = soil SL = sludge

Preservation Code: I = ice H=(HCl) S = (H2SO4) N = (HNO3) T = (Sodium Thiosulfate)

Received on Ice: X Yes ☐ No | X Temp taken from sample | ☐ Temp from temp blank | ☐ Where required, pH checked | Temperature when received 4 (in degrees celcius)

Form revised 2/8/08

Device used for measuring Temp by unique identifier (circle IR temp gun used) J : 9A G: LT-1 LT-2 T: 10A

	Relinquished by:	Date	Time	Received by:	Date	Time
1		11-19-13	1551		11-19-13	1551
2						
3						
4						

FOR DRINKING WATER USE:

(When PWS information not otherwise supplied) PWS ID:_____

Contact Person:_____ Phone:_____

Supplier of Water:_____

Site Address:_____

Field Instrument Calibration Records

INSTRUMENT *(MAKE/MODEL#)* YSI 556/Hanna **INSTRUMENT #** _____

PARAMETERS:

☒ TEMPERATURE ☒ CONDUCTIVITY ☐ SALINITY ☒ pH ☐ ORP
☒ TURBIDITY ☐ RESIDUAL CL ☒ DO ☐ OTHER _____

STANDARDS: *[Bracket calibrated meters pH 4.01 – 7 and Turbidity 0.1 – 15 NTU's]*

Standard A Oakton pH Standard 4.01 Units Exp: 11/2014
Standard B Oakton pH Standard 7.00 Units Exp: 5/2015
Standard C Oakton Conductivity Standard 1500 uS/cm Exp: 4/2014
Standard D Hanna 0.1 NTU Standard Exp: 4/2015
Standard E Hanna 15 NTU Standard Exp: 4/2015

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS	
11/18/13	0920	A	4.01	4.01		Yes	IC	[illegible]	pH
		B	7.00	7.00					pH
		C	1500	1500					Cond
		--	--						DO
		--	--	23.79					Temp
		D	0.1	0.1					Turb
		E	15	15.0					Turb
11/18/13	0940	A	4.01	4.01		Yes	ICV	[illegible]	pH
		B	7.00	7.00					pH
		C	1500	1502					Cond
		--	--	8.41					DO
		--	--	24.00					Temp
		D	0.1	0.08					Turb
		E	15	14.9					Turb
11/18/13	1550	A	4.01	4.06		Yes	CC	[illegible]	pH
		B	7.00	7.06					pH
		C	1500	1497					Cond
		--	--	7.60					DO
		--	--	27.56					Temp
		D	0.1	0.08					Turb
		E	15	15.1					Turb

Field Instrument Calibration Records

INSTRUMENT *(MAKE/MODEL#)* YSI 556/Hanna **INSTRUMENT #** _____

PARAMETERS:

☒ TEMPERATURE ☒ CONDUCTIVITY ☐ SALINITY ☒ pH ☐ ORP
☒ TURBIDITY ☐ RESIDUAL CL ☒ DO ☐ OTHER _____

STANDARDS: *[Bracket calibrated meters pH 4.01 – 7 and Turbidity 0.1 – 15 NTU's]*

Standard A Oakton pH Standard 4.01 Units Exp: 11/2014
Standard B Oakton pH Standard 7.00 Units Exp: 5/2015
Standard C Oakton Conductivity Standard 1500 uS/cm Exp: 4/2014
Standard D Hanna 0.1 NTU Standard Exp: 4/2015
Standard E Hanna 15 NTU Standard Exp: 4/2015

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS	
11/19/13	0925	A	4.01	4.01		Yes	IC	[illegible]	pH
		B	7.00	7.00					pH
		C	1500	1500					Cond.
		--	--	8.92					DO
		--	--	20.88					Temp
		D	0.1	0.1					Turb
		E	15	15.0					Turb
11/19/13	0945	A	4.01	4.02		Yes	ICV	[illegible]	pH
		B	7.00	7.00					pH
		C	1500	1503					Cond
		--	--	8.84					DO
		--	--	21.30					Temp
		D	0.1	0.07					Turb
		E	15	15.0					Turb
11/19/13	1430	A	4.01	4.08		Yes	CC	[illegible]	pH
		B	7.00	7.05					pH
		C	1500	1501					Cond
		--	--	8.38					DO
		--	--	24.12					Temp
		D	0.1	0.08					Turb
		E	15	15.2					Turb