



CARLSON ENVIRONMENTAL CONSULTANTS, PC

LANDFILL GAS AND SOLID WASTE SPECIALISTS

May 7, 2018

Mr. Brian Durden
Florida Department of Environmental Protection
Northeast District Office
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Jacksonville, FL 32256-7590
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RE: Trail Ridge Landfill
WACS ID 33628
Notification of Resample Results and Recommendations

Dear Mr. Durden:

On behalf of Trail Ridge Landfill, Inc. (TRL), Carlson Environmental Consultants, PC (CEC) is submitting notification of the resample results related to the initial detections and potential exceedances of water quality standards in select groundwater monitoring wells and surface water sampling points that occurred during the first 2018 semiannual water quality monitoring event. TRL initially notified the Department of these issues on March 23, 2018 and provided a follow up response and notification of resampling on March 28, 2018. The semiannual report was submitted on April 13, 2018 and the resampling occurred on April 9th, 2018. Results for the resampling were received on April 23, 2018.

Chloromethane

In the initial sampling event, chloromethane was detected in MWB-2(S) and MWB-40(S) as well as at surface water monitoring points SW-1, SW-4, SW-5, SW-6, and SW-7 at levels below the Class III WQS of 470.8 ug/L. The pattern of detection in two isolated monitoring wells (each on opposite sides of the landfill and with no obvious other impacts) and at nearly all surface water monitoring points suggested some sort of contamination or a non-landfill source. However, chloromethane is not a common lab contaminant and the lab was not aware of any potential sources of contamination, so TRLF elected to resample these points to verify the detections.

In the resample event, chloromethane was again detected in all resampled points but at significantly lower concentrations. As shown in Table 1 below, concentrations at all points decreased by an order of magnitude.

Table 1. Chloromethane Concentrations (ug/L) in February and April 2018¹

MWB-2(S)		MWB-40(S)		SW-1		SW-4		SW-5		SW-6		SW-7	
Feb	Apr	Feb	Apr	Feb	Apr	Feb	Apr	Feb	Apr	Feb	Apr	Feb	Apr
120	5.6	150	4.7	40	5.5	150	4.6	190	5.9	72	4.8	79	8.4

1. Chloromethane has no MCL or SMCL. The GCTL is 2.7 ug/L. The Class III WQS is 470.8 ug/L respectively.

There are no known sources of chloromethane associated with TRL, and again, the pattern of detection suggests a non-landfill source. Chloromethane is a refrigerant, known as R-40, but has not been permitted for that use for many years. It occurs naturally and has been reported to be detected in water samples with no obvious explanation. Based on the drastic decrease in the resample, coupled with the detection pattern, TRL recommends that no additional action be taken relative to chloromethane detections at this time. TRL proposes to collect a split sample at affected wells during the second semiannual monitoring event and send to a secondary lab to determine if these detections are laboratory related. TRL will evaluate the compound during the second semiannual monitoring in 2018 to ensure concentrations continue to decline.

Ethylene Dibromide

In the initial sampling event, ethylene dibromide (EDB) was detected at MWB-3(S) and MWB-12(S) at the MCL of 0.02 ug/L. During the resample event, it was not detected at either well. These detections were not verified and no further action is required.

Metals in Surface Water

In the initial sampling event, iron, mercury, lead, and beryllium were each detected in at least one surface water sampling point at concentrations exceeding Class III water quality standards. Exceedances occurred both in the older landfill stormwater management system (SW-1 and SW-3) and the new stormwater management system (SW-4 through SW-7). SW-B, intended to be a background sampling point, was not sampled because it was dry.

The new stormwater management system generally consists of:

- An outer perimeter ditch, called the interceptor ditch, which was designed and constructed to intercept shallow groundwater and surface water migrating onto the Trail Ridge Landfill property from the west. SW-B is located in this ditch. The ditch routes the flow around the landfill into retention Pond 4. SW-4 is situated at the discharge from Pond 4. SW-4 is the northernmost sampling point (e.g. farthest from the active landfill) and by design does not receive runoff from landfill operations.
- An inner perimeter ditch, which was designed and constructed to convey runoff from the expanded landfill footprint and route it to retention Pond 3. SW-5 and SW-6 are situated

at the two discharges from Pond 3. SW-7 is a downgradient sample point below SW-4, SW-5, and SW-6. SW-5 and SW-6 do receive runoff from landfill operations.

The February 2018 sampling event was the first time that SW-4 though SW-7 were sampled. The new stormwater management system was under construction during this event and turbidities in the samples were elevated. For the resample, the stormwater management system remained under construction (construction is still ongoing at the time of this letter). Samples were collected at SW-4, SW-5, SW-6, and SW-7 and analyzed for total metals, dissolved metals, and hardness. Dissolved fraction samples were collected by field filtering through a 0.45 micron filter. Neither Pond 3 nor Pond 4 were discharging at the time of sampling and turbidities were substantially higher in the resample than in the initial sampling.

Results are presented in Table 2. In general, results were higher during the April resample than February. This is likely due to very high turbidity during the April event associated with construction. All beryllium sample results were below the Class III WQS. Total concentrations of mercury at SW-4 and SW-6 dropped below the Class III WQS. Total concentrations of mercury at SW-5 and SW-7 remained above the Class III WQS. Total concentrations of iron at SW-4, SW-5, and SW-7 remained above the Class III WQS. Total concentrations of lead at SW-4 and SW-5 remained above the calculated Class III WQS (2.5 ug/L and 4.0 ug/L respectively).

Table 2. Select parameters in surface water February and April 2018. All results ug/L unless specified. Bold indicates a verified exceedance of a Class III WQS. U=not detected. I=detected between MDL and PQL.

		SW-4				SW-5				SW-6				SW-7			
Analyte	Class III WQS	Feb		April		Feb		April		Feb		April		Feb		April	
BERYLLIUM	<.3	0.4	U	0.69	I	0.58	I	2.3		0.4	U			0.4	U		
BERYLLIUM DISSOLVED				0.4	U			0.4	U								
IRON	1000	1900		2900		2900		4400		870				1300		4200	
IRON DISSOLVED				100	U			1800								1800	
LEAD	Calculated	7.5		8.9		9.5		15		2.9	U			2.9	U		
LEAD DISSOLVED				2.9	U			4.2									
MERCURY	0.012	0.049	I	0.011	U	0.087	I	0.04	I	0.02	I	0.012	I	0.028	I	0.052	I
TURBIDITY (NTU)	>29 NTU above background	96.2		391		166.3		431		34.5		91.6		55.5		272	
HARDNESS (mg/L)		90		84		78		120		96		NS		60		NS	

The dissolved fraction samples of iron and lead at SW-4 were substantially lower than the total metals and were both below their applicable Class III WQS. The dissolved fraction samples at

SW-5 and SW-7 were also lower than total metals but not as significantly as SW-4. The dissolved fractions of lead and iron at SW-5, and iron at SW-7, all exceeded their respective Class III WQS.

Overall, the resample results verified many of the exceedances but also supported the conclusion that the elevated metals are not due to a landfill release but are rather related to stormwater management system construction (and/or run-on from the adjacent property to the west) and associated elevated turbidity. TRL intends to conduct and submit an alternate source demonstration (ASD) in accordance with Chapter 62-701.510(6)(a) within 60 days of this notification. TRL will also begin voluntarily implementing some of the BMPs utilized at Pond 2 to address these turbidity-related impacts. At this time, these BMPs will include:

- Installation of turbidity curtains in select locations
- Periodic flocculation of Ponds 3 and 4 to reduce turbidity

Additional BMPs may be implemented in the future.

TRL takes these exceedances very seriously and we look forward to a successful resolution. This notification, the laboratory results, and ADaPT files will be uploaded to the FDEP Solid Waste FTP site. If you have any questions or guidance regarding these resamples results and notification, please contact either me at 321-704-4162 or Eric Parker at 904-289-9100.

Sincerely,



Jim Christiansen
Project Director
Carlson Environmental Consultants, PC

cc: Seth Ramaley, P.G., Waste Management
Eric Parker, Waste Management In. of Florida
Eric Fuller, City of Jacksonville
Peter Walls, P.E., P.G., CEC