



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE

DATE: See date of Section Chief signature

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
River Birch Landfill & Jefferson Parish Landfill, Avondale, LA¹

FROM: Daniel Heins, Environmental Scientist
Stationary Source Enforcement Branch, EPA OECA

THRU: Gregory Fried, Branch Chief
Stationary Source Enforcement Branch, EPA OECA

TO: File

BASIC INFORMATION

Facility Name: River Birch Landfill; Jefferson Parish Landfill

Facility Location: 2000 S Kenner Ave, Avondale, LA 70094 (River Birch)
5800 US-90, Avondale, LA 70094 (Jefferson Parish)

Date of Inspection: On Site Inspection: June 13-14, 2023
Virtual Conference: July 25 & August 3, 2023

EPA Inspector(s):

1. Daniel Heins, Environmental Scientist, EPA OECA^{a,c,d}
2. Daniel Hoyt, Environmental Engineer, EPA OECA^{a,c}
3. Colleen McCarthy, Life Scientist EPA Region 6^{a,c,d}
4. Kenneth McPherson, Life Scientist, EPA Region 6^{a,c,d}
5. Benjamin Rosenthal, Air Inspector, EPA Region 6^c

Facility Personnel:

1. Chris Casteix, Environmental Compliance Manager, River Birch LLC^{a,c,d}
2. Darren Ledet, Well Field North Manager, River Birch LLC^{a,d}
3. Michael Landry, Well Field South Manager, River Birch LLC^{a,d}
4. Jordan Baye, Gas Plant Lead Operator, River Birch LLC^{a,c,d}
5. Brian Dejean, Gas Plant Chief Operating Officer, River Birch^{a,c,d}
6. Dominic Fazio, CFO, River Birch LLC^b

¹ Note: Due to the consolidated and overlapped operations of the adjacent landfills under River Birch LLC with a single point of contact, EPA is consolidating its findings into a single report.

7. Josh Hebert, Jefferson Parish Wellfield Manager, River Birch LLC ^{a,c}
8. Rick Michaels, Independent Consultant ^{b,c,d}
9. Anica Haynes, Senior Principal, GeoSynTec Consultants ^{c,d}
10. Cristina Gravier, Senior Air Quality Engineer, GeoSynTec Consultants ^{c,d}
11. Phil Speeg, Air Quality Engineer, GeoSynTec Consultants ^d
12. Jesse Varsho, Senior Principal, GeoSyntec Consultants ^d
13. Jennifer Kidd, Consultant, GeoSynTec Consultants ^b
14. David Mauney, Landfill Gas Specialist, Hunter Group ^d
15. Katherine Costanza, Director, Jefferson Parish Dept. of Environmental Affairs ^c
16. Kathleen Collins, Assistant Director, Jefferson Parish Dept. of Environmental Affairs ^b
17. Kris Carlson, CEO, Carlson Environmental Consultants ^c
18. Neal Wohlgamuth, CQA Manager, Carlson Environmental Consultants ^c

Other Attendees:

1. Jodi Holewka, Air Technician, Louisiana Department of Environmental Quality (LDEQ) ^{a,c,d}

^a Attended on-site component during monitoring and walk through

^b Present during on-site but not during walk-through/monitoring

^c Attended virtual conference JP

^d Attended virtual conference RB

Contact Email Address: ccasteix@riverbirchllc.com

Purpose of Inspection: Surface monitoring and partial compliance evaluation for the Clean Air Act

Facility Type: Municipal solid waste (MSW) landfills and associated renewable gas plant

Regulations Central to Inspection: 40 C.F.R. Part 60, Subpart WWW; 40 C.F.R. Part 62, Subpart OOO; 40 C.F.R. Part 63, Subpart AAAA; 40 C.F.R. Part 98, Subpart HH

On Site (6/13) Arrival Time: 09:25

On Site (6/13) Departure Time: 17:00

On Site (6/14) Arrival Time: 09:00

On Site (6/14) Departure Time: 16:00

Virtual Conference (7/25) Start Time: 14:00

Virtual Conference (7/25) End Time: 16:00

Virtual Conference (8/3) Start Time: 14:00

Virtual Conference (8/3) End Time: 16:00

Inspection Type:

☒ Unannounced Inspection

☐ Announced Inspection

SITE OVERVIEW

The following information was obtained verbally from River Birch and Jefferson Parish representatives, including their consultants, during the virtual conferences.

Company Ownership and Site History:

The River Birch Landfill (“RB Landfill”) and Jefferson Parish Landfill (“JP Landfill”) are separately permitted and separately owned, but jointly operated by River Birch LLC (“River Birch”). River Birch is responsible for both waste and gas operations at the JP Landfill on behalf of Jefferson Parish. River Birch LLC owns the RB Landfill and the associated high BTU / renewable natural gas plant. See Appendix C for a map.

The JP Landfill is publicly owned by Jefferson Parish, but Jefferson Parish contracts out its operations. In approximately 2014, Waste Connections took over the JP Landfill operational contract from Waste Management. In 2019, River Birch and Carlson Environmental Consultants began involvement in the air reporting and gas collection and control system (GCCS) operations from the JP Landfill. There was a medium BTU fuel gas plant on Jefferson Parish-owned land processing gas from the JP Landfill. River Birch took over operations of this plant from an independent entity for approximately 6 months before expanding the River Birch high BTU gas plant and merging the Jefferson Parish Landfill gas stream in to the plant. On January 1, 2021, River Birch took over the contract for all operations, including waste, from Waste Connections at the JP Landfill.

River Birch also owns the nearby Highway 90 Landfill, which receives wood waste and construction & demolition waste.

Due to the significant overlap in operation and management of the River Birch and Jefferson Parish Landfills, a single inspection report is being produced.

Waste Operations Overview (Joint)

Together, the landfills receive approximately 6,000 tons per day of waste. With consolidation of waste operation, trucks enter through a single scalehouse and primarily deposit waste at one single working face which can move between either landfill. River Birch stated that the target is to rotate with 75% of the year at the RB Landfill and 25% at the JP Landfill, but this is pending conditions. The current primary working face has been active at the JP Landfill for 8 months.

Last fiscal year, the landfills accepted 51,122 tons of Type I waste (industrial) and 1,338,423 tons of Type II waste (residential/commercial). Wastes received include residential/commercial MSW, plant trash, wood waste, incinerator waste, sewage sludge, contaminated soils, auto fluff, and asbestos wastes. All non-asbestos waste is deposited together at the working face. Friable asbestos is specifically deposited and buried and tracked.

No special wastes are used as alternative daily cover (ADC). Tarps are the primary daily cover, though the sites also use Enviro Cover (a geosynthetic film) and soils.

There is a liquids solidification pit at the RB Landfill, though the solidified waste is deposited wherever the active working face is.

The RB Landfill currently accepts small amounts of waste from certain industrial customers that specifically have only the RB Landfill and not the JP Landfill as an approved vendor.

Jefferson Parish Landfill Overview:

The JP Landfill has approximately 272 acres of waste in place. It started accepting waste in the late 1970s, with pre-RCRA Subtitle D unlined phases, specifically Phases 1 and 2.

There is approximately 13.2 million cubic yards of remaining permitted capacity, and room to expand the JP Landfill. The design capacity is greater than 2.5 million megagrams and cubic meters, and the uncontrolled non-methane organic compounds (NMOC) emission rate is greater than 50 megagrams. The design capacity has not been increased since prior to 2014. The JP Landfill has been subject to federal GCCS requirements throughout the past five years.

Phases 1 and 2 have a soil-only cover that, while not certified as final cover by LDEQ, is intended to be the final cover. Phases 3A and 3B have synthetic liner in their cover. Phase 4A is currently active and, excluding the working face, has an intermediate cover of 2 feet of soils. Phase 4B is permitted and reflected by the current design capacity, but not yet active.

The JP Landfill GCCS is designed to route all gas to either a flare or the high BTU plant (which also has additional flares). Currently Phases 3A, 3B, and 4A are routed to the high BTU plant, while Phases 1 and 2 are routed to a flare due to lower gas quality from the older waste. River Birch stated that they are planning on routing the Phase 1 and 2 gas to the high BTU plant. All gas collection is under vacuum (i.e., using active collection). There are approximately 278 vertical gas wells on the JP Landfill, with 19 horizontal collectors used in the active area. River Birch stated that none of the horizontals are used for New Source Performance Standards (NSPS) compliance per their design plan and that they add vertical collectors when waste has been in place for five years. Spacing for the horizontals is variable, with around 100' to 200' horizontally and 50' to 100' vertically.

The flare for the JP Landfill is a candlestick flare with approximately 2,000 standard cubic feet per minute (scfm) of capacity, generally receiving gas from just Phases 1 and 2. This is typically less than 200 scfm.

Wells are all manually tuned, with teams regularly adjusting collection (with all tuning activity recorded). There are variances/global alternatives in the design plan, but none are actively used. The highest wellhead temperatures at the JP Landfill are under 140 degrees Fahrenheit.

Technicians check for liquids levels in the gas wells on a quarterly basis as part of their maintenance cycle. The majority of the wells on Phases 3B and 4A have pumps. The pumps route the liquids to the leachate system. The leachate system for the JP Landfill is currently separate from the RB Landfill, with leachate going from a tank to a transfer pump to the publicly owned treatment works (POTW) for Jefferson Parish. There is a project planned to route the JP Landfill leachate to the RB Landfill leachate ponds. Leachate varies from 0.04 to 0.1 million gallons per day.

River Birch Landfill Overview

The RB Landfill has approximately 322 acres of waste in place. It began accepting waste in 1999. The entire landfill is lined. The landfill has a design capacity of 45.8 million megagrams. It has an uncontrolled NMOC emission rate of greater than 50 megagrams, and has been subject to federal GCCS requirements throughout the past five years.

The RB Landfill began filling in the northeast corner of the site. The southern end of the eastern lobe contains waste from post-Hurricane Katrina (though this is not a segregated unit of special waste). The eastern half and the northwest corner are the areas where waste has been in place for longer than five years. The landfill is permitted to a height of 199' and is currently at approximately 82' in its highest locations. River Birch plans to fill the full footprint to the South Leachate Pond to approximately 80' and then begin work on the next lift. Closure is not anticipated for decades. Sixty-seven (67) cells of the landfill have waste in place.

No areas are under final cover. Some areas have synthetic liners on the slope and top, including part of the northernmost part of the landfill and the southern area with Katrina waste.

The RB Landfill is approved for leachate recirculation but does not do it in practice. Collected leachate in the northern portion of the hill is routed to the north leachate pond, while the southern portion goes directly to the south pond. The ponds have aeration. Liquids from the north pond are sent to the south pond. From the south pond, liquids are disposed of by an underground injection control (UIC) well. Condensate from the gas plant goes to the north pond. Condensate pumped out of wells either goes directly to either pond or into the leachate pipes to the ponds.

The GCCS on the RB Landfill has 569 wells, approximately 20% of which are horizontal. The horizontal wells are used throughout the landfill. Vertical wells are spaced with an approximately 75' radius of influence. There is roughly 200' spacing between the horizontals, which are in one layer. Almost every vertical well has a dewatering pump, which is checked on a quarterly basis for maintenance. All wells are manually tuned, with tunes and monitoring records all logged. There is gas collection from the leachate system.

Gas Plant Overview

The renewable natural gas plant (alternatively referred to as the high BTU plant or RNG plant) began operations in 2010, taking gas from just the RB Landfill. It had a 6,000 scfm capacity. In 2017, it was expanded to be able to handle 8,000 scfm. In 2019, it began receiving gas from the JP Landfill. In June of 2022, another expansion came online increasing the capacity to 12,000 scfm, bringing the plant to its current configuration. This expansion added a new building to the south end of the plant for a new carbon dioxide removal unit. The old tox unit (thermal oxidizer) was replaced with a new unit.

The JP and RB Landfills each have their own headers routing to the gas plant. Six centrifugal blowers pull from RB and three from JP. Gas then goes to positive displacement blowers and merge gas streams ahead of the sulfur removal system. A biological treatment system removes sulfur from the gas and creates an elemental sulfur waste stream, which is deposited back in the landfills. After this, the gas goes through dewatering, with condensate sent to the north pond. Gas then goes through primary compression and to the carbon dioxide removal step (utilizing

pressure swing adsorption or PSA beds). Waste gas from the PSA beds is routed to additional gas recovery and then to a thermal oxidizer. Fuel gas then goes to sales gas compressor and ultimately to the Atmos Energy pipeline to join the local gas grid. There is no nitrogen or oxygen removal step, with those gas quality parameters being handled by wellfield tuning. Prior to the June 2022 expansion, the process still had the same sequence but with a different CO2 removal step.

If the sales gas does not meet specifications (such as for heat content or too much moisture), it is sent to the flares. There are two candlestick flares at the RNG plant, both Zeeco flares. River Birch stated that they are permitted together with a joint limit of 16,000 scfm, and a total rating of 20,000 scfm. River Birch stated that typically only one flare is used at a time, but there is flexibility to use either or both. These flares can also take gas from the RB Landfill as well as the parts of the JP Landfill being routed to the gas plant. If there is a plant upset, vacated gas is routed to the flares.

SITE TOUR — JUNE 13 & 14, 2023

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☒ Provided CBI warning to facility, no CBI identified is contained in report, though River Birch stated that the images of wellheads themselves may be CBI.

EPA conducted an abbreviated SEM survey on the RP Landfill and a tour of the gas plant with monitoring equipment on June 13, 2023, and then did an abbreviated SEM survey on the JP Landfill and brief conference to discuss preliminary follow-up on June 14, 2023.

Surface Emission Monitoring

EPA used three ThermoFisher Toxic Vapor Analyzers 2020 (TVA2020) to perform EPA Reference Method 21 for the SEM. For River Birch, Chris Casteix provided confirmation readings with a SEM5000. The monitoring was in conditions of relatively high heat and humidity, resulting in abbreviated coverage out of consideration for both site and EPA personnel.

EPA observed Chris Casteix as he calibrated the SEM5000. He stated that the instrument was serviced around 5 or 6 months prior to the inspection. The response time was in the 6 to 12 second range, with the calibration cylinders being connected directly to the instrument box, rather than being routed through the probe extender. Readings for the 500 ppm gas stabilized at approximately 460 ppm for all three rounds.

On June 13, 2023, EPA monitored an area of approximately 14 acres on the northern end RB Landfill from approximately 10:15 to 11:15. This area had some synthetic liner in place as part of the cover. During the monitoring, River Birch personnel stated that they believed EPA was monitoring in an area outside of applicability of collection/monitoring requirements due to the age of the waste. The area monitored that morning was covered during the 2022 Quarter 4 SEM survey and was confirmed by River Birch after lunch to be part of the subject area. EPA inspectors found four exceedances in this area, at an active well, an abandoned well, in an area of

distressed vegetation with strong odors, and from an open pipe bubbling surrounded by discolored soils. EPA also observed liquid and odors emanating from an outlet from the dewatering pump at CT4-1. At other locations EPA observed discolored soils and distressed vegetation and some exposed waste.

After breaking for lunch, monitoring resumed from approximately 13:30 to 15:15, covering an area of approximately 19 acres on the north-central portion of the RB Landfill. As EPA began monitoring in areas with un-vegetated cover and exceedances were found more frequently, River Birch staff again stated that they believed EPA was monitoring in an area outside of the collection/monitoring requirements. EPA continued to monitor, emphasizing that GPS was showing the monitoring to be in areas that prior discussion of the site and historic satellite imagery had shown to have accepted waste more than 5 years prior and had been covered in facility quarterly SEM surveys. River Birch later confirmed that this area was in fact subject to collection/monitoring requirements. EPA detected 10 exceedances in this area, primarily at penetrations but also around exposed waste. EPA noted an area of unkempt vegetation in this area of the landfill, including a tree with a well-developed trunk. EPA observed some exposed waste, including a tire poking through the cover.

On June 14, 2023, EPA monitored approximately 17 acres of the JP Landfill in Phase 4A from approximately 10:00 to 12:00. EPA detected 15 exceedances, at a mixture of penetrations, exposed waste, and areas of open soil. EPA documented various locations with exposed waste, including pieces of foam and a tire poking through the cover.

In total, EPA detected 29 total exceedances over the two days. River Birch provided confirmation readings for 26 of these exceedances, and only failed to confirm one exceedance on the JP Landfill (B3). River Birch made the measurement significantly later than the EPA detection at B3, as Casteix was providing confirmation readings for both EPA monitoring teams.

While EPA was monitoring, River Birch personnel began tuning wells where exceedances had been observed as corrective actions.

Renewable Natural Gas Plant

On June 13, 2023, after the afternoon SEM, EPA inspectors walked through the gas plant, equipped with one of the TVA2020s and a FLIR camera. Inspectors walked through and observed the full treatment process with the FLIR, observed background methane concentrations with the TVA2020, and viewed the control room.

After detecting an increase in background methane concentrations on the TVA2020 from less than 50 ppm to steadily over 100 ppm with spikes of over 450 ppm in the ambient air, EPA identified a plume of gas coming from an uncovered pressure release vent using the FLIR camera. The vent had a yellow cover that was dislodged. The vent was coming from the primarily compressor discharge at the liquid removal step of the gas treatment, labeled V610.

EPA asked River Birch staff if the site walkthrough checklist would include checking the covers on the vents to see if they were in place. The River Birch staff said that this would be made an

explicit part of the check going forward. River Birch staff stated that these vent covers were just to keep rain out, but that they may be dislodged by venting events.

EPA documented two other vents with dislodged covers (one fully off, one partially dislodged) on the vents at the roof of the CO2 removal building, but did not observe emissions with the FLIR camera from these locations.

Inside the CO2 removal building, ambient methane concentrations rose to the 200 – 350 ppm range. By the gas chromatograph, concentrations rose to 1500 ppm. River Birch staff indicated that the chromatograph needs to have a small continuous vent, and that the vent outlet goes inside the building.

Photos and/or Videos: were taken during the inspection. See Appendix A.

Field Measurements: were taken during this inspection. See Appendix B.

INSPECTION CONFERENCES — JULY 25 & AUGUST 3, 2023

- ☒ Provided U.S. EPA point of contact to the facility
- ☒ Provided CBI warning to facility, no CBI identified is directly contained in report.
- ☒ Provided Small Business Resource Information Sheet (via email)

At the conclusion of the monitoring on June 14th, EPA and River Birch had a short conference to discuss the inspection and agreed to have follow up conferences to discuss the detailed operations of each landfill and the gas plant with the relevant staff available. The first conference focused primarily on the JP Landfill, consolidated waste operations, and SEM. The second conference focused primarily on the RB Landfill and the gas plant.

Joint Operations and SEM Follow Up

SEM for both landfills is done by the same technicians and has been done in-house by River Birch on both landfills since 2019. River Birch has not historically tracked corrective actions, though this is typically additional cover. They have not had exceedances that warranted gas field expansion. Technicians use a SEM5000 and do retain the GPS track.

When discussing the EPA measured exceedances and corrective actions, River Birch stated that all was corrected with regular cover corrections except one exceedance on the JP Landfill where the penetration had a skirt and bentonite added. Chris Casteix asked about the EPA SEM procedure, particularly the time spent monitoring at individual penetrations. He stated that River Birch technicians typically spend about 3.5 seconds at each penetration, and that if they walk up to a well and don't see a spike in reading within 15 seconds that they would move on. EPA asked about the response time on the instruments, noting that some surveys had response times as long as 29 seconds. Chris Casteix stated that he spoke to the SEM5000 manufacturer and that they said that regardless of the response time measured, that the instrument should respond within 5 seconds. EPA responded explaining that the purpose of measuring the response time was to know how long it would take the instrument to respond to elevated readings, and that Method 21 requires that a technician first slowly move the sample probe around to find the location of the highest reading, and *then* wait twice the response time to record the maximum reading. EPA

explained that this was the procedure that they follow while inspecting, and emphasized that the requirement to slowly sample and find the highest reading point may take more time to do correctly, particularly at wellheads, than River Birch staff have been accustomed to.

Both the RB and JP Landfills went from NSPS Subpart WWW to the Federal Plan Subpart OOO, and uses the compliance parameters of NESHAP AAAA.

There is a 24 hour odor hotline. When complaints are received, River Birch staff check the day's logs for the gas plant, wellfield, and waste operations at the RB Landfill, JP Landfill, and Highway 90 and see if anything needs addressing. Odor/hydrogen sulfide monitoring is done 2-5 times a week. Complaints vary by season, with more complaints in summer. Since May, River Birch has received about 20 complaints, but in winter received less than one per month. Prior to 2019, complaints were much more frequent, on a closer to daily basis.

Both landfills monitor for gas migration using perimeter probes near the haul road that are checked on a quarterly basis. River Birch staff stated that they had no current issues and could not recall any historic migration issues.

Jefferson Parish Landfill

In response to community and state interest, River Birch and Jefferson Parish started making improvements to the gas and leachate management at the JP Landfill starting in 2018/19. This included expansion of the gas field on Phases 3B & 4A, with 40-50 new wells. River Birch added a header to route gas to the high BTU plant, and with that increased the vacuum on the landfill. Work was done on improving the leachate collection system to handle flooded wells that were contributing to previous performance issues with the JP Landfill GCCS. In 2021, they added a new main header for leachate to go to the POTW.

Various consent orders for the JP Landfill with LDEQ have been settled since 2018. Wellhead exceedances were addressed by wellfield expansion and by the removal of the oxygen standard with the updated landfill NESHAP. Upgrades to the leachate and stormwater management systems addressed previously raised issues. The compliance orders were consolidated into one order in 2019, and were recently settled out earlier in 2023 with LDEQ, returning the JP Landfill to regular permitted reporting and operations. The JP Landfill is awaiting updated air and solid waste permits, and plans on updating its GCCS Design Plan as part of that process.

River Birch Landfill

The RB Landfill received a warning letter from LDEQ regarding fugitive emissions and condensate being discharged from the tops of landfill gas wells. River Birch and LDEQ are currently discussing the matter. River Birch stated that this was the result of an air release mechanism for when compressed air from the pneumatic pumps blocks the liquids management lines. River Birch stated that this should just be compressed air, but did not believe they had checked to confirm this. EPA noted that it has observed pneumatic pump outlet hoses venting landfill gas at other facilities, potentially due to bad seals. Separately, River Birch and LDEQ settled solid waste violations regarding tires and an uncovered portion of the working face.

Gas Plant

Technicians look for leaks during walkthroughs at the plant twice a shift, four times a day total, using a DISTRAN ultrasonic leak detector. The walkthrough also includes checks on vessel levels, oil levels, and pressure. As a result of the EPA inspection, River Birch stated that they would include specific checks of the rain caps on the outlet pipes for the pressure relief valves into the walkthrough.

EPA inquired about the response to the leaking PSV. River Birch stated that they depressurized the PSV and replaced it, with the original being sent for repairs. They stated that post-replacement they monitored it with the SEM5000 and that readings returned to background. Before the correction, they did not attempt to monitor with the SEM5000. They stated that they confirmed the leak with the DISTRAN ultrasonic leak detector. EPA noted that the quantification function on the DISTRAN ultrasonic leak detector is, per discussions had with DISTRAN representatives, only expected to be accurate for pinhole leaks with a known pressure and gas. Leaks from larger points, particularly open-ended lines, would be significantly underestimated (if detected at all). At the time of the conference, River Birch still believed that the power outage mentioned during the inspection would have been the most likely time for the vent to have popped and begun leaking.

Remote Sensing Methane Plumes

EPA shared that Carbon Mapper, an independent, third-party monitoring nonprofit, had identified large plumes of methane that appeared to be coming from the RB Landfill and the gas plant in 2021 and 2022. River Birch stated that they were aware of the data but were unsure of the sources of the plumes.

Reviewed documents:

EPA reviewed publicly available semi-annuals compliance reports for 2021 and 2022 for both the RB and JP Landfills prior to the inspection.

- Neither set of reports included the coordinates of the SEM exceedances
- River Birch technicians identified the following number of exceedances each quarter:

Report		RB	JP	Total
2021	Q1	3	0	3
	Q2	0	0	0
	Q3	7	0	7
	Q4	3	1	4
2022	Q1	2	1	3
	Q2	3	0	3
	Q3	0	0	0
	Q4	0	1	1

- Response times for the SEM5000 were up to 29 seconds, including in the 2022 Q4 SEM surveys

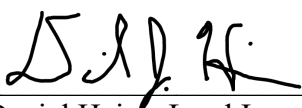
Provided as follow-up to inspection:

- Documentation of SEM re-monitoring – all exceedances were remediated to less than 500 ppm by well tuning or addition of cover within 30 days.

Concerns:

At the closing of the conferences, EPA identified the following concerns based off its inspection.

- The difference between EPA SEM findings and historic SEM rates as well as discussions of SEM procedures indicates potential shortcomings in River Birch's SEM at both Landfills
 - River Birch staff stated that they would spend less than the response time at penetration points
 - EPA found a total of 29 exceedances on limited surveys of the two landfills, compared with a maximum combined number of 7 between the two landfills over the past 8 sets of surveys
- Some SEM surveys had instrument response times as long as 29 seconds, which is just below the allowable limit for Method 21 and in practice would make proper monitoring very difficult.
- SEM reports did not include coordinates of exceedances as required under NESHAP Subpart AAAAA.
- EPA observed various locations with exposed waste (including protruding tires and foam), a tree, and areas of discolored soils indicating gas and/or liquids leaking, all of which should be identified and corrected during cover integrity monitoring events. Many of these issues appeared to be in place for extended periods of time.
 - At the time of the inspection, River Birch did not maintain cover integrity monitoring records, making it difficult to evaluate what work had been done as part of the program.
- The leaking PRV at the plant was an uncontrolled venting of methane
- EPA identified that third party remote sensing data from Carbon Mapper indicated large plumes of methane originating both from the RB Landfill and the gas plant in May 2021 and May/June of 2022

DIGITAL SIGNATURES

Daniel Heins, Lead Inspector

Gregory Fried, Supervisor

APPENDICES AND ATTACHMENTS

Appendix A: Digital Image Log

Appendix B: Field Measurement

Appendix C: Maps

APPENDIX A: DIGITAL IMAGE LOG

Inspector Name: Daniel Heins

Archival Record Location: US EPA SharePoint

Digital Camera Photos (1 of 2)

Note: River Birch claimed that images of gas collection wells may contain CBI in the form of proprietary design information.

Portion	Image #	File Name	Flag	Description	Date	Time
RB Landfill, Morning	1	DSCN0828.JPG		CT4-1 - Strong odor from dewatering outlet	6/13	10:31
	2	DSCN0625.JPG	D1	Abandoned well	6/13	10:38
	3	DSCN0829.JPG	A1	ECW32-04	6/13	10:51
	4	DSCN0626.JPG	D2	Patch of distressed vegetation among high vegetation area	6/13	11:02
	5	DSCN0830.JPG	A2	Open pipe bubbling with discolored vegetation and soils by ECW33-06	6/13	11:07
	6	DSCN0831.JPG	A2	EW33-06	6/13	11:08
	7	20230613_111638.jpg		Discolored soils and distressed vegetation extending from capped well by EW34-02	6/13	11:16
	8	20230613_111851.jpg		Discolored soils, distressed vegetation, and exposed waste by well	6/13	11:18
RB Landfill, Afternoon	9	20230613_135249.jpg		Tree by EW15-04	6/13	13:52
	10	DSCN0832.JPG	A3	Grassy area	6/13	13:53
	11	DSCN0833.JPG	D3	Decommissioned well near EW2102	6/13	14:15
	12	DSCN0834.JPG	D3	Decommissioned well near EW2102	6/13	14:15
	13	DSCN0835.JPG	A4	EW21-22	6/13	14:24
	14	DSCN0627.JPG	D5	EW 19-28 well cluster with cracked soils	6/13	14:47
	15	DSCN0628.JPG	D6	CT 19-2, gaps in soil around penetration	6/13	14:49
	16	DSCN0629.JPG	D7	EW19-30 cluster with cracked soils	6/13	14:52
	17	DSCN0630.JPG	D8	EW19-24 in cracked soils	6/13	14:58
	18	DSCN0631.JPG		Exposed tire through cover	6/13	15:02
Plant	19	DSCN0632.JPG		Popped off sock on PRV in area of elevated methane (leak seen on FLIR)	6/13	16:06
	20	DSCN0633.JPG		Two popped off socks on vents on roof of south building	6/13	16:34

Digital Camera Photos (2 of 2)

Portion	Image #	File Name	Flag	Description	Date	Time
JP Landfill	21	DSCN0634.JPG	E1	HW16 well cluster and exposed waste	6/14	10:11
	22	DSCN0836.JPG	B1	GW544	6/14	10:15
	23	DSCN0635.JPG	E2	HP "Curiosity" cluster	6/14	10:18
	24	DSCN0837.JPG	B2	Unmarked capped penetration	6/14	10:19
	25	20230614_102418.jpg	E3	GW-524 cluster	6/14	10:24
	26	DSCN0838.JPG	B3	Bare soil ~4 yards from HW-23R	6/14	10:27
	27	DSCN0636.JPG	E4	HW17	6/14	10:34
	28	20230614_103519.jpg		Exposed waste in grass	6/14	10:35
	29	DSCN0637.JPG		Exposed waste through grass	6/14	10:35
	30	DSCN0638.JPG		Tire exposed through grass	6/14	10:37
	31	DSCN0639.JPG		Tire on top of cover	6/14	10:38
	32	DSCN0640.JPG		Exposed waste	6/14	10:51
	33	DSCN0641.JPG		Exposed waste	6/14	10:52
	34	DSCN0642.JPG	E5	TD04N	6/14	10:58
	35	DSCN0839.JPG	B4	Open soil	6/14	11:15
	36	DSCN0643.JPG	E6	Landfill surface/bare soils	6/14	11:19
	37	DSCN0644.JPG	E7	Exposed waste and discolored soils	6/14	11:25
	38	20230614_113058.jpg	E8	Cracked surface	6/14	11:30
	39	20230614_113134.jpg	E8	Cracked surface	6/14	11:31
	40	DSCN0645.JPG		Exposed waste	6/14	11:32
	41	DSCN0646.JPG		Exposed waste (foam)	6/14	11:41
	42	DSCN0647.JPG	E9	Exposed waste (carpet and others)	6/14	11:44
	43	DSCN0840.JPG	B5	HW-25	6/14	11:45
	44	DSCN0841.JPG	B6	GW515	6/14	11:50

Note: A data issue prevented retention of a video taken with the FLIR camera of the gas plume from the PSV on V610 at 16:10 on 6/13.

APPENDIX B: FIELD MEASUREMENT DATA

Measured Exceedances (1 of 2)

	Flag	EPA reading (ppm)	Inspector	RB reading (ppm)	Description / Notes	Latitude	Longitude
RB Landfill, Morning	D1	1800	Hoyt	1800	Abandoned well in Section K or J	29.938235	-90.258656
	D2	2800	Hoyt	1200	Distressed vegetation area with odors (widespread exceedance)	29.938453	-90.259140
	A1	588	McCarthy	n/a	ECW32-04	29.937981	-90.259082
	A2	1155	McCarthy	n/a	Open pipe bubbling with discolored vegetation and soils by ECW33-06	29.937767	-90.260156
	D3	7800	Heins	1210	Decommissioned well near EW2102 (out of flange)	29.933799	-90.258881
RB Landfill, Afternoon	D4	600	Hoyt	>500	Area in tall vegetation	[GPS Error]	[GPS Error]
	D5	12000	Heins	1400	EW 19-28 well cluster with cracked soils	29.934294	-90.259353
	D6	20000	Heins	7000	CT19-2, gaps in soil around penetration	29.934395	-90.259243
	D7	4200	Heins	1700	CT 19-2, gaps in soil around penetration	29.934520	-90.259470
	D8	700	Hoyt	600	EW19-24 in cracked soils	29.934469	-90.259759
	A3	2600	McCarthy	9000	Grassy area	29.934235	-90.257080
	A4	1265	McCarthy	>500	EW21-22 with exposed waste and erosion	29.933966	-90.259316
	A5	1700	McCarthy	1250	Grass on side of road	29.933274	-90.259509
	A6	1700	McCarthy	2600	EW21-20	29.934112	-90.259682
	E1	1600	Hoyt	1500	HW-16 cluster with exposed waste	29.927350	-90.254644
JP Landfill	E2	1100	Hoyt	>500	HP "Curiosity" cluster (1060 ppm with second EPA TVA)	29.927104	-90.255064
	E3	1700	Heins	2600	GW-524 cluster	29.927644	-90.254602
	E4	700	Heins	1700	HW17	29.927765	-90.255114
	E5	5000	Heins	3300	TD04N	29.927896	-90.256002
	E6	1600	Hoyt	1200	Landfill surface/bare soils	29.926781	-90.255004
	E7	4000	Hoyt	1700	Exposed waste and discolored soils	29.926740	-90.254726
	E8	800	Heins	550	Cracked surface	29.926528	-90.254592
	E9	2200	Heins	2200	Exposed waste (area), carpet and other protruding	29.926367	-90.253946
	B1	7800	McCarthy	3800	GW-544	29.927437	-90.253595

Measured Exceedances (2 of 2)

	Flag	EPA reading (ppm)	Inspector	RB reading (ppm)	Description / Notes	Latitude	Longitude
JP Landfill	B2	1100	McCarthy	1500	Unmarked capped penetration	29.927429	-90.253775
	B3	980	McCarthy	250	Bare soil ~4 yards from HW-23R	29.927445	-90.253977
	B4	854	McCarthy	545	Open soil	29.926902	-90.255736
	B5	890	McCarthy	>500	HW-25	29.926584	-90.253310
	B6	4534	McCarthy	>500	GW515 (multiple points)	29.926657	-90.253333

Notes:

- River Birch only attempted confirmation readings with one of the EPA monitoring teams during the morning monitoring on the RB Landfills.
- Some readings River Birch simply stated that they confirmed, which are recorded above as “>500”.
- At B3, the confirmation reading was attempted significantly after the time of the EPA measurement.
- Flag designations reflect the monitoring team, with A & B coming from McCarthy and McPherson and D & E coming from Heins and Hoyt.

Calibration and Instrument Information

EPA used three ThermoFisher Toxic Vapor Analyzers 2020 (TVA2020), designated as “AED”, “R6 H1”, and “R6 H2”. The EPA TVA2020 response times are approximately 4.5 seconds.

EPA calibrated off site just prior to arrival.

	Calibration gas ppm	AED	R6 H1	R6 H2
7/13 Morning calibration check	500	497	503	503
	2000	2040	1946	2160
	10000	1.02%	1.00%	1.06%
7/13 Mid-day drift check	500	540	481	580 (515 after recalibration)
7/13 End of day drift check	500	530	490	510
7/14 Morning calibration check	500	466	515	530
	2000	1989	2025	2040
	10000	0.99%	1.03%	1.05%
7/14 End of day drift check	500	475	423	587

EPA calibration gases

Composition	Lot #	Expiration
Air zero grade THC <1 ppm	304-402397605-1	4/11/2026
Methane in air 500 ppm	304-402415358-1	4/20/2026
Methane in air 2000 ppm	304-402415357-1	4/20/2026
Methane in air 10,000 ppm	304-402403612-1	4/11/2026

Background readings 7/13: Upwind: 2 ppm Downwind: 4 ppm
Background readings 7/14: Upwind: 0 ppm Downwind: -1 ppm

APPENDIX C: MAPS

Facility Overview Map



Blue highlights approximate areas of EPA SEM survey.

Imagery Date: 3/11/22, as depicted on Google Earth.

JP 1 – 4B label the respective phases of the Jefferson Parish Landfill. Note: At the time of the inspection Phase 4B had not begun accepting waste and Phase 4A was the primary working face for the joint operations, with trucks going through the River Birch main scales.

RB Landfill SEM 6/13



JP Landfill SEM 6/14



Both: Imagery Date: 3/11/22, as depicted on Google Earth. Blue and red lines show approximate paths of each EPA survey team.