UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK
----------x
UNITED STATES OF AMERICA,

Plaintiff,

Civil Action-
No. _____

against –

TOWN OF BROOKHAVEN,

Defendant.
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CONSENT JUDGMENT

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RECITATIONS

A. Plaintiff United States of America, on behalf of the United States Environmental Protection Agency ("EPA"), has filed a Complaint in this action, pursuant to Section 113(b) of the Clean Air Act ("CAA" or the "Act"), 42 U.S.C. § 7413(b), alleging, *inter alia*, that Defendant, Town of Brookhaven (the "Town") violated its CAA Title V operating permit ("Title V permit"), the Act, and the landfill regulations promulgated under the Act, codified at 40 C.F.R. Part 60, Subpart WWW ("Landfill NSPS") and at 40 C.F.R. Part 63, Subpart AAAA ("Landfill MACT"), at the Brookhaven Landfill (the "Landfill"), including the Brookhaven Landfill Gas Recovery Facility, located at 350 Horseblock Road, Yaphank, New York.

B. The Town has a population of approximately 450,000 residents. The Town owns and operates the Landfill for the benefit of the Town's residents and the surrounding Long Island region. The Landfill consists of six cells, the first of which was constructed in 1974. The Town currently uses Cell 6 where it accepts construction and demolition debris and ash residue as a byproduct of resource recovery for disposal. The Town is permitted to accept up to 2,700 tons a day of waste at the Landfill. The Town holds a solid waste management facility permit and a Title V permit for the Landfill, both issued by the New York State Department of Environmental Conservation ("NYSDEC").

C. In 2008, during NYSDEC's renewal process for the Town's Title V permit, EPA objected to one condition in the draft permit relating to operation of the Sulfa Treat hydrogen sulfide control system used to treat landfill gas. EPA required Sulfa Treat to be operated continuously and issued a Compliance Order to the Town in 2009. The Town timely complied with the Order. Between 2008 and 2011, EPA issued four Requests for Information under Section 114 of the Act and the Town cooperated by providing detailed responsive information.

In 2011, EPA issued a Finding of Violation to the Town alleging violations of the Act and its implementing regulations. The Town has worked cooperatively with EPA since 2011 in an effort to address the alleged violations.

D. The United States alleges in the Complaint that the Town violated the Landfill NSPS and the Landfill MACT.

E. The United States also alleges that the Town violated its Title V permit.

F. The Town does not admit any liability to the United States arising out of the transactions or occurrences alleged in the Complaint.

G. The Parties seek to avoid further litigation and work cooperatively on issues related to conditions at the Landfill, including addressing elevated temperatures in interior wellheads. The injunctive relief set forth in this Consent Judgment is intended to, *inter alia*, ensure operation of the Landfill in accordance with applicable law.

H. The Town represents that due to the COVID-19 public health emergency, it is experiencing significant budget shortfalls that are expected to endure for at least the next twelve months.

I. The Parties recognize, and the Court by entering this Consent Judgment finds, that this Consent Judgment has been negotiated by the Parties in good faith and will avoid litigation between the Parties and that this Consent Judgment is fair, reasonable, and in the public interest.

NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law, except as provided in Section I, and with the consent of the Parties,

IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action, pursuant to 28 U.S.C. §§ 1331, 1345, and 1355, and Section 113(b) of the Act, 42 U.S.C. § 7413(b), and over the Parties. Venue lies in this District pursuant to Section 113(b) of the Act, 42 U.S.C. § 7413(b), and 28 U.S.C. §§ 1391(b) and (c), and 1395(a), because the Landfill is located in this judicial district, and the violations alleged in the Complaint are alleged to have occurred in this judicial district. For purposes of this Consent Judgment, or any action to enforce this Consent Judgment, the Town consents to the Court's jurisdiction over this Consent Judgment and any such action and over the Town and consents to venue in this judicial district.

2. For purposes of this Consent Judgment, the Town agrees that the Complaint states claims upon which relief may be granted pursuant to Section 113(b) of the Act, 42 U.S.C. § 7413(b). Notice of commencement of this action has been given to the State of New York, specifically, the New York State Department of Environmental Conservation, as required by Section 113(b) of the Act, 42 U.S.C. § 7413(b). The Parties desire to resolve all claims that were asserted by the United States with respect to the matters covered herein without the necessity of litigation, and without admission, adjudication or determination of any issue of fact or law. The matters covered herein arise out of or in connection with the violations alleged in the Complaint.

II. APPLICABILITY

3. The provisions of this Consent Judgment apply to and are binding upon the United States, and upon the Town and any successors, assigns, or other entities or persons otherwise bound by law.

4. No transfer of ownership or operation of the Landfill, whether in compliance with the procedures of this Paragraph or otherwise, shall relieve the Town of its obligations to ensure that the terms of this Consent Judgment are implemented. At least 30 Days prior to such transfer, the Town shall provide a copy of this Consent Judgment to the proposed transferee and shall simultaneously provide written notice of the prospective transfer, together with a copy of the proposed or final written transfer agreement, to the United States and EPA.

5. Any attempt to transfer ownership or operation of the Landfill without complying with Paragraph 4 constitutes a violation of this Consent Judgment.

6. The Town shall provide a copy of this Consent Judgment to all officials, employees, and agents whose duties might reasonably include compliance with any provision of this Consent Judgment, as well as to any contractor retained to perform work required under this Consent Judgment. The Town shall condition any such contract upon performance of the work in conformity with the terms of this Consent Judgment.

7. In any action to enforce this Consent Judgment, the Town shall not raise as a defense the failure by any of its officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Judgment.

III. DEFINITIONS

8. Terms used in this Consent Judgment that are defined in the Act or in regulations promulgated pursuant to the Act shall have the meanings assigned to them in the Act or the regulations found at 40 C.F.R. § 60.751 unless otherwise provided in this Consent Judgment. Whenever the terms set forth below are used in this Consent Judgment, the following definitions shall apply:

a. “Complaint” shall mean the complaint filed by the United States in this

action;

b. "Consent Judgment" shall mean this Consent Judgment and all appendices attached hereto (listed in Section XVII);

c. "Day" shall mean a calendar day unless expressly stated to be a business day. In computing any period of time under this Consent Judgment, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next business day;

d. "The Town" shall mean the Town of Brookhaven, New York;

e. "EPA" shall mean the United States Environmental Protection Agency and any of its successor departments or agencies;

f. "Effective Date" shall have the definition provided in Section XV;

g. "Landfill" shall mean the landfill owned and operated by the Town, located at 350 Horseblock Road, Yaphank, New York, including the Brookhaven Landfill Gas Recovery Facility;

h. "Interest" shall mean the interest rate specified in 28 U.S.C. § 1961;

i. "Paragraph" shall mean a portion of this Consent Judgment identified by an Arabic numeral;

j. "Parties" shall mean the United States and the Town;

k. "Section" shall mean a portion of this Consent Judgment identified by a roman numeral;

l. "Supplemental Environmental Project" or "SEP" shall mean the environmentally beneficial project required by Section VI of this Consent Judgment;

m. "United States" shall mean the United States of America, acting on behalf of the Environmental Protection Agency.

IV. CIVIL PENALTY

9. Within 60 Days after the Effective Date, the Town shall pay $249,166 as a civil penalty.

10. The Town shall pay the civil penalty due by FedWire Electronic Funds Transfer ("EFT") to the United States Department of Justice in accordance with written instructions to be provided by the United States Attorney's Office to the Town, following entry of the Consent Judgment. At the time of payment, the Town shall send a copy of the EFT authorization form and the EFT transaction record, together with a transmittal letter to the United States in accordance with Section XIV of this Consent Judgment (Notices); by email to cinwd_acctsreceivable@epa.gov; or by mail to:

EPA Cincinnati Finance Office
26 West Martin Luther King Drive
Cincinnati, Ohio 45268
Attention: Finance, Mail Code: NWD

The letter shall state that the payment is for the civil penalty owed pursuant to the Consent Judgment in United States v. Town of Brookhaven, and shall reference the civil action number, the USAO number and DOJ case number 90-5-2-1-09884/1.

11. The Town shall not deduct any penalties paid under this Consent Judgment pursuant to this Section or Section VIII (Stipulated Penalties) in calculating its federal income tax.

V. COMPLIANCE REQUIREMENTS

12. General Duty Requirements. The Town shall comply with 40 C.F.R. §§ 60.11(d) and 63.6(e), and maintain and operate the Landfill and all associated air pollution control

equipment in a manner consistent with good air pollution control practices for minimizing emissions.

13. Landfill NSPS, Landfill MACT, and Title V Permit. Except as provided herein, as of the Effective Date, the Town shall comply with all provisions of Landfill NSPS (i.e., 40 CFR 60, Subpart WWW), the Landfill MACT, and the Town's Title V permit.

14. GCCS Design Plan. The Town shall continue to operate and expand a Gas Collection and Treatment System ("GCCS") for the entire Landfill as follows:

a. As of the Effective Date, the Town shall operate the GCCS in accordance with the existing GCCS design plan. The Town submitted to the United States a landfill gas collector (LGC) decommissioning request for inactive LGCs dated May 6, 2019, together with supporting data requested by EPA. The monitoring, recordkeeping and reporting provisions of the Landfill NSPS and the Landfill MACT shall not apply to the inactive LGCs identified pending EPA's decision on the request. If EPA approves the inactive status of one or more of the LGCs identified in the decommissioning request, the approved inactive LGCs will no longer be subject to the Landfill NSPS and the Landfill MACT. If EPA does not approve the inactive status of one or more LGCs identified in the decommissioning request, the Town will be required to bring those LGCs into compliance with the Landfill NSPS and the Landfill MACT within 30 Days of the date of EPA's disapproval of the inactive status of those LGCs.

b. The Town shall submit an updated GCCS design plan to EPA within ten months after the Effective Date. The design plan must meet the requirements of 40 C.F.R. §§ 60.752(b)(2) and 60.759.

c. The Town shall modify, as necessary, and continue to operate the GCCS as provided in the updated GCCS design plan within 120 Days after EPA approval of the

updated GCCS design plan.

d. The Town shall submit updated existing conditions site plans of the GCCS within 45 Days after modifying the GCCS or if no modifications have been made, submit updated existing conditions site plans of the GCCS within 45 Days of EPA's approval of the updated GCCS design plan.

15. SO_2 Control Operation. The Town shall continuously operate the Landfill's Sulfa Treat system such that the SO_2 emission rate shall not exceed 235.0 tons per year to be calculated on a 12-month rolling basis, and 53.7 pounds per hour on a 30-day rolling average basis, and an hourly emission rate of 195.8 pounds per hour.

16. New Flare. Within 30 days after the Effective Date, the Town shall begin the public procurement process for the design and installation of a new flare that comports with the specifications identified in the Air Quality Impact Analysis Report dated January 2015. The Town shall complete the major equipment procurement process by awarding a bid within 120 days after the Effective Date. The Town shall complete the field installation procurement process by awarding a bid within 180 Days after the Effective Date.

17. The Town shall commence construction of the field installation of the new flare within 60 days after awarding the bid for the field installation.

18. The Town shall complete the installation of the new flare within 300 days after the Effective Date.

19. The Town shall submit a performance test protocol for the new flare to EPA for review and approval within 60 days after the permitting authority issues a modified Title V permit.

20. The Town shall conduct a performance test of the new flare, in accordance with the approved performance test protocol, pursuant to 40 C.F.R. § 60.754(d) to demonstrate compliance with 40 C.F.R. § 60.752(b)(2)(iii)(B) within 180 days of the initial startup of the new flare.

21. The Town shall submit the performance test report for the new flare within 45 days after completion of the performance test.

22. SO_2 Monitoring Plan. To demonstrate compliance with the requirements of Paragraph 15 (SO_2 Control Operation), within 120 Days after the Effective Date, the Town shall install and operate a continuous hydrogen sulfide (H_2S) process/fuel gas monitoring system that collects a measurement at least every 30 minutes. Measured H_2S concentration of the landfill gas, along with gas flow rate, will be used to calculate hourly average SO_2 mass emissions. The SO_2 Monitoring Plan is more fully described in Appendix A. If the Town experiences one or more operational malfunction occurrences with the monitoring system that impede the collection of H_2S measurement data, the Town shall, within 48 hours of the occurrence of the malfunction, provide written notice to EPA of the type of operational malfunction that occurred. The Town shall follow up within 5 Days of such written notice with a brief report describing the possible cause of the malfunction, if it can be ascertained, and a schedule for investigation of the cause of the malfunction and a schedule for the repair or replacement of the monitoring system. EPA shall approve or disapprove the proposed schedule. If EPA approves the proposed schedule, the Town shall implement it. If EPA disapproves the proposed schedule, the Town may invoke dispute resolution in accordance with the provisions of Section X of this Consent Judgment. During any period of H_2S monitor unavailability, the Town shall provide for temporary

alternative monitoring until the H_2S monitoring system is available, which may include manual colorimetric indicator tube readings.

23. Surface Methane Monitoring Protocol. Within 60 days of the Effective Date, the Town shall submit to EPA for approval a Surface Methane Monitoring Protocol that meets the requirements of 40 CFR §§ 60.753(d) and 755(c), and describes the specific procedures the Town uses to monitor methane over the surface of the Landfill. The Surface Methane Monitoring Protocol is described more fully in Appendix B. Within 30 Days of approval of the Protocol by EPA, the Town shall implement and maintain performance of surface monitoring in accordance with the Protocol.

24. Permitting Requirements. Within 120 Days after the Effective Date, the Town shall apply to the appropriate permitting authority to permanently include any applicable requirements (e.g., SO_2 control operation, performance and operational requirements, inclusion of 40 C.F.R. Part 60, Subpart WWW, 40 C.F.R. Part 63, Subpart AAAA, 40 C.F.R. § 60.11(d) and 40 C.F.R. § 63.6(e)) (as applicable requirements) into a federally enforceable permit, in such a way that the requirements will survive termination of this consent decree, and that identifies the authority for inclusion of the requirements in the Title V permit. In accordance with applicable laws and their implementing regulations, the Town shall also file any applications necessary to incorporate the requirements of the permit into a Title V operating permit for the Landfill.

25. Other Permits. Where any compliance obligation under this Consent Judgment requires the Town to obtain a federal, state, or local permit or approval, the Town shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals. The Town may seek relief under the provisions of Section IX (Force Majeure) for any delay in the performance of any such obligation resulting from a failure to obtain, or a delay

in obtaining, any permit or approval required to fulfill such obligation, if the Town has submitted timely and complete applications and has taken all other actions necessary to obtain all such permits or approvals.

26. The compliance requirements of this Consent Judgment do not relieve the Town of any compliance obligations required by the Act or its implementing regulations, or by any other federal, state, or local law, regulation, permit, or other requirement.

27. Within 30 days of the Effective Date, the Town shall collect all the necessary monitoring data that will be used in performing the Elevated Temperature Analysis described in Paragraph 29. The Town intends to retain SCS Engineers to collect the monitoring data. The Town shall provide this monitoring data to the approved consultant performing the Elevated Temperature Analysis as provided in Paragraph 29.

28. Selection of Elevated Temperature Consultant. The Town shall identify to EPA for its approval a person or persons who will perform the Elevated Temperature Analysis. The person(s) shall have experience in successfully remediating subsurface elevated temperature events.

29. Elevated Temperature Analysis and Report. Within 60 days after the Effective Date, the Town shall, through the EPA-approved Elevated Temperature Consultant, commence a comprehensive evaluation of the landfill's elevated gas temperatures ("Elevated Temperature Analysis"). The Elevated Temperature Analysis shall be completed within ten months after the Effective Date. Within 60 days of completing the Elevated Temperature Analysis, the Town shall, through the EPA- approved Elevated Temperature Consultant, submit to EPA a report of the findings of the Elevated Temperature Analysis (the "Report"). The Report shall include, for EPA's approval, recommendations of corrective action to address the elevated temperatures at

the landfill and to bring the landfill's operations into compliance with the Landfill NSPS, and a schedule for completion of such corrective action. The Report must be signed by an official with knowledge of the analysis and shall bear the certification specified in Paragraph 41. Upon EPA's approval of the Report, the Town shall implement all recommendations for corrective action described in the Report and in accordance with the schedule in the Report, provided however, that if the Town believes one or more recommendations is not commercially reasonable, the Town may apply to EPA for relief, and if EPA approves, the Town is not required to implement such recommendation(s).

VI. SUPPLEMENTAL ENVIRONMENTAL PROJECT

30. The Town shall, within 240 Days of the Effective Date, implement the Supplemental Environmental Project ("SEP") described herein, in accordance with this Consent Judgment including Appendix C.

31. With regard to the SEP, the Town certifies the truth and accuracy of each of the following:

a. that, as of the date of executing this Consent Judgment, the Town is not required to perform or develop the SEP by any federal, state, or local law or regulation and is not required to perform or develop the SEP by agreement, grant, or as injunctive relief awarded in any other action in any forum;

b. that the SEP is not a project that the Town was planning or intending to construct, perform, or implement other than in settlement of the claims resolved in this Consent Judgment;

c. that the Town is not a party to any open federal financial assistance transaction that is funding or could be used to fund the same activities described in the SEP, nor

has the same activity been described in an unsuccessful federal financial assistance transaction proposal submitted to EPA within two years of the date of this settlement (unless the project was barred from funding as statutorily ineligible). For purposes of these certifications, the term "open federal financial assistance transaction" refers to a grant, cooperative agreement, loan, federally guaranteed loan, or other mechanism for providing federal financial assistance whose performance period has not yet expired; and

d. that the Town has not received and will not receive credit for the SEP in any other enforcement action; and that the Town will not receive any reimbursement for any portion of the SEP from any other person.

32. SEP Progress Reports. The Town shall submit quarterly SEP progress reports electronically to the United States and EPA in accordance with Section XIV (Notices). The first quarterly SEP progress report will be due no later than one month following the end of the calendar-year quarter (*i.e.*, by January 31, April 30, July 31, and October 31) after the Effective Date and will cover the first reporting period after the Effective Date. Each subsequent quarterly report will be due no later than 30 days after the end of the previous calendar quarter. The Town shall submit quarterly SEP reports from the Effective Date of the Consent Judgment until completion of the SEP. The progress reports shall contain the following information:

a. a detailed description of the steps that have been taken to implement the SEP; and

b. a description of any problems encountered in implementing the SEP and the solutions thereto.

33. SEP Completion Report. Within 60 Days after the deadline for completion of the SEP, the Town shall submit a SEP Completion Report to the United States and EPA in

accordance with Section XIV (Notices). The SEP Completion Report shall contain the following information:

a. a detailed description of the SEP as implemented;

b. a description of any problems encountered in completing the SEP and the solutions thereto; and

c. a certification that the SEP has been fully implemented pursuant to the provisions of this Consent Judgment, or, if not fully implemented, a description of the ways in which it has not been fully implemented.

34. If EPA requests information in addition to that described herein, in order to evaluate the Town's implementation of the SEP, the Town shall provide such information.

35. After receiving the SEP Completion Report, the United States shall notify the Town whether or not EPA determines that the Town has satisfactorily completed the SEP. If EPA determines that the Town has not completed the SEP in accordance with this Consent Judgment, stipulated penalties may be assessed under Section VIII of this Consent Judgment. Such stipulated penalties shall not accrue during EPA's consideration of the SEP Completion Report.

36. Each submission required under this Section shall be signed by an official with knowledge of the SEP and shall bear the certification language set forth in Paragraph 41.

37. Any public statement, oral or written, in print, film, or other media, made by the Town making reference to the SEP under this Consent Judgment shall include the following language: "This project was undertaken in connection with the settlement of an enforcement action, United States v. Town of Brookhaven, taken on behalf of the U.S. Environmental Protection Agency under the Clean Air Act."

VII. REPORTING REQUIREMENTS

38. The Town shall submit the following reports set forth in this Section to the United States and EPA from the Effective Date until the termination of the Consent Judgment. All submissions required by this Section shall indicate the case name and case docket number and be sent to EPA, with a copy of the transmittal correspondence, without attachments, sent to the United States in accordance with Section XV (Notices):

39. No later than one month following the end of each calendar-year quarter (*i.e.*, by January 31, April 30, July 31, and October 31) after the Effective Date, until termination of this Consent Judgment pursuant to Section XIX, the Town shall submit electronically to EPA a quarterly report for the preceding quarter that shall include the status of implementation of all compliance requirements under Section V, including performance of the Elevated Temperature Analysis; and all related corrective actions proposed in the Elevated Temperature Analysis Report; completion of milestones; problems encountered or anticipated, their causes, and implemented or proposed solutions; status of any permit applications submitted for approval to perform the work under this Consent Judgment, any non-compliances with the requirements of Section V, and the status of any Title V permit renewal or modification; and operation and maintenance of equipment used to implement work under this Consent Judgment. EPA reserves the right to request additional or follow-up information.

40. If the Town violates, or has reason to believe that it may violate, any requirement of this Consent Judgment, the Town shall notify the United States of such violation and its likely duration, in writing, within 10 Days of the Day the Town first becomes aware of the violation, with an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the

time the report is due, the Town shall so state in the report. The Town shall then investigate the cause of the violation and shall submit an amendment to the report, including a full explanation of the cause of the violation, or if the Town is unable to ascertain the cause of the violation, it shall include a full explanation of its efforts to do so, within 30 Days of the Day the Town becomes aware of the cause of the violation. Nothing in this Paragraph relieves the Town of its obligation to provide the notice required by Section IX (Force Majeure).

41. Each report submitted by the Town under this Section shall be signed by an official of the Town and include the following certification:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

This certification requirement does not apply to emergency situations or similar instances where compliance with this requirement would be impractical.

42. The reporting requirements of this Consent Judgment do not relieve the Town of any reporting obligations required by the Act or its implementing regulations, or by any other federal, state, or local law, regulation, permit, or other requirement.

43. Any information provided pursuant to this Consent Judgment may be used by the United States in any proceeding to enforce the provisions of this Consent Judgment and as otherwise permitted by law.

44. Annual Report to the Court: On or before January 1 of each year after the lodging of this Consent Judgment, until termination of this Judgment pursuant to Section XIX,

the United States, in consultation with the Town, shall submit to the Court an annual report on compliance and/or noncompliance with the requirements of this Judgment. The Town may submit to the Court a response or supplement to the United States' annual report to the Court on or before April 1 of each year.

VIII. STIPULATED PENALTIES

45. The Town shall be liable for stipulated penalties to the United States for violations of this Consent Judgment as specified below, unless excused under Section IX (Force Majeure). A violation includes failing to perform any obligation required by the terms of this Consent Judgment, including, the transfer provisions, the compliance and reporting requirements, the SEP requirements, and any work plan or schedule approved under this Consent Judgment, according to all applicable requirements of this Consent Judgment and within the specified time schedules established by or approved under this Consent Judgment.

46. Late Payment of Civil Penalty. If the Town fails to pay the civil penalty required under Section IV when due, the Town shall pay a stipulated penalty of $2,500 per Day for each Day that the payment is late.

47. Failure to Operate GCCS. The following stipulated penalties shall accrue per violation per day for each failure to operate the GCCS in accordance with 40 C.F.R. § 60.757(f)(4) and for each failure to implement corrective action specified in the approved Elevated Temperature Analysis Report:

Penalty Per Violation Per Day	**Period of Noncompliance**
$500	1st through 14th Day
$1,000	15th through 30th Day
$2,000	31st Day and beyond

Notwithstanding the foregoing, stipulated penalties shall not accrue with respect to any noncompliance with the Landfill NSPS or Landfill MACT that may be associated with (a) the

elevated gas temperatures in certain gas wells at the Landfill that are the subject of the Elevated Temperature Analysis; and (b) the inactive LGC decommissioning request submitted prior to the Effective Date as provided for in Paragraph 14 above, during the pendency of EPA's review and response and also for 30 days after any disapproval issued by EPA regarding one or more LGCs identified as inactive.

48. Flare Compliance. The following stipulated penalties shall accrue per violation per Day for each failure to timely comply with the design and installation milestones of the new flare:

Penalty Per Violation Per Day	**Period of Noncompliance**
$500	1st through 14th Day
$1,000	15th through 30th Day
$2,000	31st Day and beyond

49. SO_2 Emission Standards. The following stipulated penalties shall accrue per violation per Day for each failure to comply with the SO_2 emission standards identified in Paragraph 15.

a. $5,000 per Day for violation of the hourly limit.

b. $7,500 for violation of the rolling 30-day limit plus $2,000 for any subsequent period that includes any overlap of the initial 30-day rolling period.

c. $20,000 for violation of the rolling 12-month limit plus $5,000 for any subsequent period that includes any overlap of the initial 12-month rolling period.

50. Delays in Submission of Reports. The following stipulated penalties shall accrue per violation per Day for each failure to timely submit a report under this Consent Judgment, pursuant to Section VII (Reporting Requirements), Paragraph 19 (Performance Test Protocol Submittal), Paragraph 21 (Performance Test Report Submittal), Paragraph 32 (SEP Progress Reports) and Paragraph 33 (SEP Completion Report):

Penalty Per Violation Per Day	Period of Noncompliance
$500	1st through 14th Day
$1,000	15th through 30th Day
$1,500	31st Day and beyond

51. SEP Compliance. The following stipulated penalties shall accrue for each day of each failure to timely implement the SEP in accordance with Section VI and Appendix C:

Penalty Per Violation Per Day	Period of Noncompliance
$500	1st through 14th day
$1,000	15th through 30th day
$1,500	31st day and beyond

a. If the Town fails to implement the SEP or halts or abandons the SEP, the Town shall pay a stipulated penalty of $450,000. The penalty under this sub-paragraph shall accrue as of the date specified for completing the SEP or the date performance ceases, whichever is earlier.

52. Stipulated penalties under this Section shall begin to accrue on the Day after performance is due or on the Day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases.

53. The Town shall pay any stipulated penalty within 30 Days of receiving the United States' written demand therefor.

54. The United States may in the unreviewable exercise of its discretion, reduce or waive stipulated penalties otherwise due it under this Consent Judgment.

55. Stipulated penalties shall continue to accrue as provided in Paragraph 71, during any Dispute Resolution, but need not be paid until the following:

a. If the dispute is resolved by a decision of the United States that is not appealed to the Court or by agreement, the Town shall pay accrued penalties determined to be owing, together with Interest, to the United States within 30 Days of receipt of the United States'

decision or within the time frame set forth in the agreement.

b. If the dispute is appealed to the Court and the United States prevails in whole or in part, the Town shall pay all accrued penalties determined by the Court to be owing, together with Interest, within 30 Days of receiving the Court's decision or order, except as provided in subparagraph c, below.

c. If any Party appeals the District Court's decision, the Town shall pay all accrued penalties determined to be owing, together with Interest, within 15 Days of receiving the final appellate court decision.

56. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Judgment.

57. If the Town fails to pay stipulated penalties according to the terms of this Consent Judgment, the Town shall be liable for Interest on such penalties, as provided for in 28 U.S.C. § 1961, accruing as of the date payment became due. Nothing in this Paragraph shall be construed to limit the United States from seeking any remedy otherwise provided by law for the Town's failure to pay any stipulated penalties.

58. Subject to the provisions of Section XII (Effect of Settlement/Reservation of Rights), the stipulated penalties provided for in this Consent Judgment shall be in addition to any other rights, remedies, or sanctions available to the United States for the Town's violation of this Consent Judgment or applicable law. Where a violation of this Consent Judgment is also a violation of the Act and its implementing regulations, the Town shall be allowed a credit, for any stipulated penalties paid, against any statutory penalties imposed for such violation.

IX. FORCE MAJEURE

59. "Force majeure," for purposes of this Consent Judgment, is defined as any event arising from causes beyond the control of the Town, of any entity controlled by the Town, or of the Town's contractors that delays or prevents the performance of any obligation under this Consent Judgment despite the Town's best efforts to fulfill the obligation. The requirement that the Town exercises "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any such event (a) as it is occurring and (b) after it has occurred to prevent or minimize any resulting delay to the greatest extent possible. "Force Majeure" does not include the Town's financial inability to perform any obligation under this Consent Judgment.

60. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Judgment, whether or not caused by a force majeure event, the Town shall provide notice orally or by electronic or facsimile transmission to EPA, within 72 hours of when the Town first knew that the event might cause a delay. Within seven days thereafter, the Town shall provide in writing to the United States an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; the Town's rationale for attributing such delay to a force majeure event if it intends to assert such a claim; and a statement as to whether, in the opinion of the Town, such event may cause or contribute to an endangerment to public health, welfare or the environment. The Town shall include with any notice all available documentation supporting the claim that the delay was attributable to a force majeure. Failure to comply with the above requirements shall preclude the Town from asserting any claim of force

majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. The Town shall be deemed to know of any circumstance of which the Town, any entity controlled by the Town, or the Town's contractors knew or should have known.

61. If EPA agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Judgment that are affected by the force majeure event will be extended by the United States for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. The United States will notify the Town in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

62. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, the United States will notify the Town in writing of its decision. The United States' position shall be binding unless the Town invokes Dispute Resolution under Section X.

63. If the Town elects to invoke the dispute resolution procedures set forth in Section X (Dispute Resolution), it shall do so no later than 30 Days after receipt of EPA's notice. In any such proceeding, the Town shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that the Town complied with the requirements of Paragraph 60, above. If the Town carries this

burden, the delay at issue shall be deemed not to be a violation by the Town of the affected obligation of this Consent Judgment identified to EPA and the Court.

X. DISPUTE RESOLUTION

64. Unless otherwise expressly provided for in this Consent Judgment, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Judgment. The Town's failure to seek resolution of a dispute under this Section shall preclude the Town from raising the lack of dispute resolution as a defense to an action by the United States to enforce any obligation of the Town arising under this Consent Judgment.

65. Informal Dispute Resolution. Any dispute subject to dispute resolution under this Consent Judgment shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when the Town sends the United States a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed 60 Days from the date the dispute arises, unless that period is modified by written agreement. If the Parties cannot resolve a dispute by informal negotiations, then the position advanced by the United States shall be considered binding unless, within 30 Days after the conclusion of the informal negotiation period, the Town invokes formal dispute resolution procedures as set forth below.

66. Formal Dispute Resolution. The Town shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by delivery to the United States pursuant to Section XIV (Notices) a written Statement of Position regarding the matter in dispute. The Statement of Position shall include, but need not be limited to, any factual

data, analysis, or opinion supporting the Town's position and any supporting documentation relied upon by the Town.

67. The United States shall serve its Statement of Position within 45 Days of receipt of the Town's Statement of Position. The United States' Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by the United States. The United States' Statement of Position shall be binding on the Town, unless the Town files a motion for judicial review of the dispute in accordance with the following Paragraph.

68. The Town may seek judicial review of the dispute by filing with the Court and serving on the United States, in accordance with Section XIV (Notices), a motion requesting judicial resolution of the dispute. The motion must be filed within 30 Days of receipt of the United States' Statement of Position pursuant to the preceding Paragraph. The motion shall contain a written statement of the Town's position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Judgment.

69. The United States shall respond to the Town's motion within the time period allowed by the Local Rules of the United States District Courts for the Eastern District of New York ("Local Rules"). The Town may file a reply memorandum, to the extent permitted by the Court and the Local Rules.

70. Standard of Review.

a. Disputes Concerning Matters Accorded Record Review. Except as otherwise provided in this Consent Judgment, in judicial review of any dispute brought under

Paragraph 68 pertaining to the adequacy or appropriateness of plans, procedures to implement plans, schedules or other items requiring EPA approval under this Consent Judgment, and all other disputes that are accorded review on the administrative record under applicable principles of administrative law, the Town shall have the burden of demonstrating, based on the administrative record, that the position of the United States is arbitrary and capricious or otherwise not in accordance with law.

b. Other Disputes. Except as otherwise provided in this Consent Judgment, in any other dispute brought under Paragraph 68, the Town shall bear the burden of demonstrating that its position complies with this Consent Judgment.

71. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of the Town under this Consent Judgment, unless and until final resolution of the dispute so provides. Stipulated penalties with respect to the disputed matter shall continue to accrue from the first Day of noncompliance, but payment shall be stayed pending resolution of the dispute as provided in Paragraph 55. If the Town does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section VIII (Stipulated Penalties).

XI. INFORMATION COLLECTION AND RETENTION

72. The United States and its representatives, including attorneys, contractors, and consultants, shall have the right of entry into the Landfill covered by this Consent Judgment, at all reasonable times, upon presentation of credentials, to:

a. monitor the progress of activities required under this Consent Judgment;

b. verify any data or information submitted to the United States in accordance with the terms of this Consent Judgment;

c. obtain samples and, upon request, splits of any samples taken by the Town or its representatives, contractors, or consultants;

d. obtain documentary evidence, including photographs and similar data; and

e. assess the Town's compliance with this Consent Judgment.

73. Upon request, the Town shall provide EPA or its authorized representatives splits of any samples taken by the Town. Upon request, EPA shall provide the Town splits of any samples taken by EPA.

74. Until five years after the termination of this Consent Judgment, the Town shall retain, and shall instruct its contractors and agents to preserve, all non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) in its or its contractors' or agents' possession or control, or that come into its or its contractors' or agents' possession or control, and that relate in any manner to the Town's performance of its obligations under this Consent Judgment. This information-retention requirement shall apply regardless of any contrary Town, corporate or institutional policies or procedures. At any time during this information-retention period, upon request by the United States, the Town shall provide copies of any documents, records, or other information required to be maintained under this Paragraph.

75. At the conclusion of the information-retention period provided in the preceding Paragraph, the Town shall notify the United States at least 90 Days prior to the destruction of any documents, records, or other information subject to the requirements of the preceding Paragraph and, upon request by the United States, the Town shall deliver any such documents, records, or other information to the United States. The Town may assert that certain documents, records, or other information is privileged under the attorney-client privilege or any other privilege

recognized by federal law. If the Town asserts such a privilege, it shall provide the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of each author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by the Town. However, no documents, records, or other information created or generated pursuant to the requirements of this Consent Judgment shall be withheld on grounds of privilege.

76. The Town may also assert that information required to be provided under this Section is protected as Confidential Business Information ("CBI") under 40 C.F.R. Part 2. As to any information that the Town seeks to protect as CBI, the Town shall follow the procedures set forth in 40 C.F.R. Part 2.

77. This Consent Judgment in no way limits or affects any right of entry and inspection, or any right to obtain information, held by the United States pursuant to applicable federal laws, regulations, or permits, nor does it limit or affect any duty or obligation of the Town to maintain documents, records, or other information imposed by applicable federal or state laws, regulations, or permits.

XII. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

78. This Consent Judgment resolves the civil claims of the United States for the violations alleged in the Complaint filed in this action through the Effective Date.

79. The United States reserves all legal and equitable remedies available to enforce the provisions of this Consent Judgment, except as expressly stated in Paragraph 78. This Consent Judgment shall not be construed to limit the rights of the United States to obtain penalties or injunctive relief under the Act or implementing regulations, or under other federal

laws, regulations, or permit conditions, except as expressly specified in Paragraph 78. The United States further reserves all legal and equitable remedies to address any imminent and substantial endangerment to the public health or welfare or the environment arising at, or posed by, the Landfill, whether related to the alleged violations addressed in this Consent Judgment or otherwise.

80. In any subsequent administrative or judicial proceeding initiated by the United States for injunctive relief, civil penalties, other appropriate relief relating to the Landfill or to the Town's alleged violations, the Town shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been brought in the instant case, except with respect to claims that have been specifically resolved pursuant to Paragraph 78.

81. This Consent Judgment is not a permit, or a modification of any permit issued or obtained pursuant to any federal, State, or local laws or regulations. The Town is responsible for achieving and maintaining complete compliance with all applicable federal, State, and local laws, regulations, and permits; and the Town's compliance with this Consent Judgment shall be no defense to any action commenced pursuant to any such laws, regulations, or permits, except as set forth herein. The United States does not, by its consent to the entry of this Consent Judgment, warrant or aver in any manner that the Town's compliance with any aspect of this Consent Judgment will result in compliance with provisions of the Act, its implementing regulations, or with any other provisions of federal, State, or local laws, regulations, or permits.

82. This Consent Judgment does not limit or affect the rights of the Town or of the United States against any third parties, not party to this Consent Judgment, nor does it limit the rights of third parties, not party to this Consent Judgment, against the Town, except as otherwise provided by law.

83. This Consent Judgment shall not be construed to create rights in, or grant any cause of action to, any third party not party to this Consent Judgment.

XIII. COSTS

84. The Parties shall bear their own costs of this action, including attorneys' fees, except that the United States shall be entitled to collect the costs (including attorneys' fees) incurred in any action necessary to collect any portion of the civil penalty or any stipulated penalties due but not paid by the Town.

XIV. NOTICES

85. Unless otherwise specified herein, whenever notifications, submissions, or communications are required by this Consent Judgment, they shall be made in writing and addressed as follows:

To the United States:

Diane C. Leonardo
Assistant United States Attorney
Eastern District of New York
610 Federal Plaza, Central Islip, New York 11722
via email: diane.beckmann@usdoj.gov

EES Case Management Unit
U.S. Department of Justice
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-2-1-09884/1
via email: eescdcopy.enrd@usdoj.gov

To EPA:
Liliana Villatora
Chief, Air Branch
Office of Regional Counsel
U.S. Environmental Protection Agency, Region 2
290 Broadway
New York, New York 10007-1866
via email: villatora.liliana@epa.gov

Robert Buettner
Chief, Air Compliance Branch
Division of Enforcement and Compliance Assistance
U.S. Environmental Protection Agency, Region 2
290 Broadway
New York, New York 10007-1866
via email: buettner.robert@epa.gov

To The Town:

Robert R. Tyson, Esq.
Bond, Schoeneck & King
One Lincoln Center
Syracuse, New York 13202-1355
via email: rtyson@bsk.com

86. Any Party may, by written notice to the other Parties, change its designated notice recipient or notice address provided above.

87. Notices submitted pursuant to this Section shall be deemed submitted upon mailing, unless otherwise provided in this Consent Judgment or by mutual agreement of the Parties in writing.

XV. EFFECTIVE DATE

88. The Effective Date of this Consent Judgment shall be the date upon which this Consent Judgment is entered by the Court or a motion to enter the Consent Judgment is granted, whichever occurs first, as recorded on the Court's docket. In the event the United States withdraws or withholds consent to this Consent Judgment before entry, or the Court declines to enter the Consent Judgment, then the preceding requirement to perform duties scheduled to occur before the Effective Date shall terminate.

XVI. RETENTION OF JURISDICTION

89. The Court shall retain jurisdiction over this case until termination of this Consent Judgment, for the purpose of resolving disputes arising under this Consent Judgment or entering orders modifying this Consent Judgment, pursuant to Sections X (Dispute Resolution) and XVIII (Modification), or effectuating or enforcing compliance with the terms of this Consent Judgment.

XVII. APPENDICES

90. The following appendices are attached to and part of this Consent Judgment:

Appendix A is the SO_2 Monitoring Plan described in Paragraph 22;
Appendix B is the Surface Methane Monitoring Protocol discussed in Paragraph 23;
Appendix C is the description of the SEP.

XVIII. MODIFICATION

91. The terms of this Consent Judgment, including the attached appendices, may be modified only by a subsequent written agreement signed by all the Parties. Where the modification constitutes a material change to this Consent Judgment, it shall be effective only upon approval by the Court. Reasonable compliance schedule adjustment(s) requested by the Town for good cause shown and approved by EPA shall not constitute a material change to this Consent Judgment.

92. Any disputes concerning modification of this Consent Judgment shall be resolved pursuant to Section X of this Consent Judgment (Dispute Resolution), provided, however, that, instead of the burden of proof provided by Paragraph 70, the Party seeking the modification bears the burden of demonstrating that it is entitled to the requested modification in accordance with Federal Rule of Civil Procedure 60(b).

XIX. TERMINATION

93. After the Town has (a) satisfactorily complied with the compliance, and reporting requirements of Sections V and VII, for a period of three years, (b) completed the payment and SEP requirements of Sections IV and VI, and (c) paid any accrued stipulated penalties as required by this Consent Judgment, the Town may serve upon the United States a Request for Termination of the Consent Judgment. In that Request, the Town must state that it has satisfied all requirements of the Consent Judgment, together with all necessary supporting documentation.

94. Following receipt by the United States of the Town's Request for Termination, the Parties shall confer informally concerning the Request and any disagreement that the Parties may have as to whether the Town has satisfactorily complied with the requirements for termination of this Consent Judgment. If the United States agrees that the Consent Judgment may be terminated, the Parties shall submit, for the Court's approval, a joint stipulation terminating the Consent Judgment.

95. If the United States does not agree that the Consent Judgment may be terminated, the Town may invoke Dispute Resolution under Section X of this Consent Judgment. However, the Town shall not seek Dispute Resolution of any dispute regarding termination, under Paragraph 65, until 60 Days after service of their Request for Termination.

XX. PUBLIC PARTICIPATION

96. This Consent Judgment shall be lodged with the Court for a period of not less than 30 Days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Judgment disclose facts or considerations indicating that the Consent Judgment is inappropriate, improper, or inadequate. The Town consents to entry of this Consent Judgment without further notice and agrees not to withdraw from or oppose entry of this Consent Judgment by the Court or to challenge any provision of the Consent Judgment, unless the United States has notified the Town in writing that it no longer supports entry of the Consent Judgment.

XXI. SIGNATORIES/SERVICE

97. The undersigned representatives of the Town and of the Department of Justice each certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Judgment and to execute and legally bind the Party he or she represents to this document.

98. This Consent Judgment may be signed in counterparts, and its validity shall not be challenged on that basis. The Town agrees to accept service of process by mail with respect to all matters arising under or relating to this Consent Judgment and to waive the formal service requirements set forth in Rules 4 and 5 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including service of a summons.

XXII. INTEGRATION

99. This Consent Judgment constitutes the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in the Consent Judgment and supersedes all prior agreements and understandings, whether oral or written,

concerning the settlement embodied herein. Other than the submissions that are subsequently made and approved pursuant to this Consent Judgment, no other document, nor any representation, inducement, agreement, understanding, or promise, constitutes any part of this Consent Judgment or the settlement it represents, nor shall it be used in construing the terms of this Consent Judgment.

XXIII. FINAL JUDGMENT

100. Upon approval and entry of this Consent Judgment by the Court, this Consent Judgment shall constitute a final judgment of the Court as to the United States and the Town.

IT IS SO ORDERED:

_____ Dated: _____
United States District Judge

FOR PLAINTIFF UNITED STATES OF AMERICA

Dated: . _____, 2020

SETH D. DuCHARME
Acting United States Attorney
Eastern District of New York
Attorney for Plaintiff
610 Federal Plaza
Central Islip, New York 11722

By: DIANE LEONARDO-BECKMANN Digitally signed by DIANE LEONARDO-BECKMANN Date: 2020.09.23 16:13:05 -04'00'

DIANE C. LEONARDO
MATTHEW SILVERMAN
Assistant United States Attorneys
631-715-7854

ERIC SCHAAF Digitally signed by ERIC SCHAAF Date: 2020.08.18 17:43:41 -04'00'

ERIC SCHAAF
Regional Counsel, Region 2
United States Environmental Protection Agency

FOR THE TOWN OF BROOKHAVEN:

Dated: August 17, , 2020

[redacted]

Edward P. Romaine, Supervisor
Town of Brookhaven

APPENDIX A

APPENDIX B

APPENDIX C

U.S. v. Town of Brookhaven (E.D.N.Y.)

Consent Judgment

Appendix A

SO_2 Monitoring Plan with Two Attachments

Attachment A: MRU Technical Description

Attachment B: ALS analytical results from 11/18 through 7/19

BROOKHAVEN LANDFILL - LANDFILL GAS SO_2 MONITORING PLAN

Prepared by RTP Environmental Associates, Inc. and SCS Engineers of New York, PC
September 3, 2019

In order to demonstrate compliance with the proposed 1-hour, 30-day rolling and annual sulfur dioxide (SO_2) landfill gas (LFG) combustion emission limits for the Brookhaven Landfill (Landfill), the Town of Brookhaven (Town) has agreed to install and operate a continuous hydrogen sulfide (H_2S) process/fuel gas monitoring system at the Landfill. In this case, continuous monitoring means two H_2S measurements will be collected each hour. Measured H_2S concentrations, along with LFG flow rate, will be used to calculate hourly average SO_2 mass emissions. The continuous monitoring system will monitor the H_2S concentration of LFG collected from Landfill Cells 1 through 6.

Monitoring System Details

The Town has purchased and installed, and currently operates, a single continuous H_2S process gas monitoring system designed and fabricated by MRU Instruments, Inc. (MRU). MRU develops, manufactures and sells emission monitoring systems, including portable and stationary gas analyzers. MRU's headquarters are in Germany, with a US distributor office in Humble, Texas.

H_2S concentrations are measured using a MRU SWG 100 biogas analyzer (Analyzer). The Analyzer extracts LFG samples from the LFG header, located downstream of the LFG sulfur removal system (SulfaTreat) and upstream of the flares (the current location allows monitoring of LFG sent to the existing enclosed flare [E-Flare]; upon operation of the new enclosed flare [E1-Flare], expected in early 2020, the Analyzer will be able to monitor LFG sent to the E1-Flare and the candlestick flare [C-Flare]). Data is recorded to an internal, removable data storage card approximately twice per hour, and will be used along with LFG flow data (from the flow meter) to estimate hourly average SO_2 emissions from the flare (as discussed further below). Data will be collected manually from the data storage card on a regular basis by the Town. Other technical details regarding this system are provided in Attachment 1.

Because the LFG sample extraction point for the Analyzer is located downstream of the SulfaTreat system, the Analyzer will provide representative H_2S concentration data for the inlet of the flare to calculate flare SO_2 emissions regardless of the GCCS operational scenario. If the SulfaTreat system is inoperable for emergency or maintenance purposes, the SulfaTreat system will be bypassed; however, H_2S concentrations in the untreated LFG will still be measured by the Analyzer prior to combustion at the flare. Significant periods of SulfaTreat system bypass are not anticipated.

SO_2 Emission Estimates, Recordkeeping and Reporting

The Town will calculate SO_2 mass emissions, in pounds per hour, using the measured H_2S concentrations and temperature/pressure-corrected LFG flow rate. Utilizing the ideal gas law, and conservatively assuming complete (i.e., 100 percent) conversion of H_2S to SO_2 at the flare(s), SO_2 mass emissions will be estimated as follows:

$$\dot{m_{SO_2}} = \frac{PQ_{LFG}X_{H_2S}M_{SO_2}}{RT}$$

Where:

$\dot{m_{SO_2}}$ = emission rate of SO_2 from flare(s) (lb/hour)
P = pressure of LFG at standard conditions (1 atm)
Q_{LFG} = measured flow rate of LFG (from flare flow meter), corrected to standard pressure and temperature (scf/hour)
X_{H_2S} = measured concentration of H_2S (from Analyzer) downstream of SulfaTreat system (ppm)
M_{SO_2} = molecular weight of SO_2 (64.06 lb/lbmol)
R = ideal gas law constant (0.7302 atm·ft^3/(lbmol·°R)
T = temperature of LFG at standard conditions (520°R)

Incorporating unit conversions and reducing this formula for input of flare inlet flow rates (Q_{LFG} in scfm) and H_2S concentrations (X_{H_2S} in ppm) as measured in the field, SO_2 emissions ($\dot{m_{SO_2}}$ in lb/hour) will be estimated using the following formula:

$$\dot{m_{SO_2}} = 1.012 \cdot 10^{-5} \times Q_{LFG} \times X_{H_2S}$$

The Town will utilize LFG flow and H_2S concentration on a routine (e.g., daily/weekly) basis to estimate flare SO_2 emission rates. On a minimum monthly basis, the Town will collect/download LFG flow and H_2S concentration data. Using this data, the Town will estimate hourly SO_2 emissions, to be completed by the end of the following month. The Town will maintain records of LFG flow and H_2S data, as well as SO_2 emission estimates, for at least 5 years.

The estimated hourly SO_2 emissions will be compared against SO_2 emission limits (i.e., 235.0 tons/year on 12-month rolling basis, 53.7 lb/hr on a 30-day rolling average basis and 195.8 lb/hr in any individual hour), and will notify NYSDEC and EPA of emission exceedances and take appropriate corrective actions as required under its Title V air permit. Estimated SO_2 emissions will also be utilized in preparation of the Town's annual emissions statement, as required in the Title V air permit.

Quality Control and Quality Assurance

The Analyzer installation has been verified and calibrated in accordance with MRU's specifications. The Town has collected LFG samples from the enclosed flare inlet header on a monthly basis since November 2018 for analysis by ALS of Simi Valley, California for fixed gases via EPA Method 3C and H_2S via ASTM D 5504-12. The ALS sample analysis reports are included in Attachment 2, and the corresponding samples in each report are identified as BRKN-MH (analyses of other samples in these ALS reports are not relevant to this SO_2 Monitoring Plan). Readings were recorded from the Analyzer before and after LFG sample collection. The ALS sample analysis results and average Analyzer readings over the sampling event, along with field-recorded H_2S concentration readings using Draeger colorimetric gas indicator tubes (Draeger tubes), as confirmation of sample quality, are summarized below:

Sample/ Reading Date	H_2S Concentration (ppm)				
	ALS	Analyzer	Analyzer Error[1]	Draeger Tubes	Draeger Tubes Error[1]
11/14/2018	1,000	1,054	5.4%	950	5.0%
12/10/2018	990	1,696	71.3%	1,250	26.3%
1/7/2019	780	1,484	90.3%	1,200	53.8%
2/4/2019	920	900.5	2.1%	800	13.0%
3/27/2019[2]	1,800	1,818	1.0%	1450	19.4%
4/22/2019	1,500	1,691	12.7%	1400	6.7%
5/29/2019	430	471.0	9.5%	450	4.7%
6/24/2019	1,300	1,429	9.9%	1150	11.5%
7/15/2019	2,200	1,834	16.6%	1450	34.1%

Notes: [1] Error expressed as a percentage of corresponding ALS analytical results.
[2] Analyzer recalibration occurred on February 11, 2019, prior to March 27, 2019 sample collection event.
Red readings are higher than corresponding ALS results; green readings are lower.

Based on the above results, the Analyzer provided H_2S concentration readings within an average error of approximately 24 percent of ALS H_2S analytical results since November 2018, while Draeger tubes provided H_2S concentration readings within an average error of approximately 19 percent of ALS results. The Analyzer was recalibrated on February 11, 2019. Since that time, the Analyzer provided H_2S concentration readings within an average error of approximately 10 percent of ALS H_2S analytical results, while Draeger tubes provided H_2S concentration readings within an average error of approximately 15 percent of ALS results.

The Analyzer H_2S concentration reading accuracy is comparable to, and possibly better than, the corresponding accuracy of Draeger tubes. Additionally, the Analyzer eliminates operator

sampling error (e.g., air leakage into sample) and provides continuous monitoring capability (i.e., readings twice per hour), which are important advantages over Draeger tubes. Finally, the Analyzer more often overestimates H_2S concentration with respect to laboratory analyses, whereas the Draeger tubes more often underestimate H_2S concentration. Thus, we believe the Analyzer is suitable and the best available option for use in estimating SO_2 emissions.

The Analyzer will continue to be operated and maintained in accordance with MRU's recommendations. MRU recommends monthly inspections of the analyzer to confirm the condition of the filters and quarterly calibrations of the sensors with certified calibration gas. Since this system is not a continuous emissions monitoring system (CEMS), the quality control procedures of 40 CFR 60 Appendix F do not apply.

ATTACHMENT 1

MRU Instruments, Inc. SWG 100 Stationary Analyzer for H_2S, CH_4, CO_2, and O_2
Technical Description

MRU Instruments, Inc.
188838 S. Memorial Drive
Humble, Texas 77338

Technical Description
SWG 100 Biogas Stationary Analyzer
For H_2S, CH_4, CO_2, and O_2 Monitoring
Brookhaven Landfill, 350 Horseblock Road, Yaphank, NY 11980

The MRU Instruments SWG 100 Biogas Analyzer (Analyzer) was supplied to the Town of Brookhaven (Town) at the Brookhaven Landfill (Landfill) to provide semi-continuous monitoring of hydrogen sulfide (H_2S), methane (CH_4), carbon dioxide (CO_2), and oxygen (O_2) in landfill gas (LFG) collected from the Landfill. LFG samples are extracted from a single location on the LFG header, downstream of the SulfaTreat system and upstream of the flare. The Teflon sampling line is heat-traced and insulated from the sample extraction point to the Analyzer to prevent condensate from developing, freezing and obstructing sample flow in the sample line.

H_2S concentrations are measured using an electrochemical sensor with an upper limit of 2,000ppm, which has high resiliency to various cross-sensitivities from other constituents found in landfill gas. The Analyzer includes an external water separator and an internal Peltier chiller to reduce moisture in the LFG samples to a dewpoint below the internal temperature of the Analyzer panel, as the H_2S sensor is sensitive to moisture. The external water separator is also installed to reduce excessive moisture and to keep the internal Peltier chiller from being overwhelmed with condensate. The weatherproof analyzer enclosure is outfitted with an internal heater to maintain operability over an ambient temperature range of -4°F to 113°F (-20°C to 45°C), and to maintain enclosure internal temperatures above 5°C (i.e., dewpoint of LFG samples following internal Peltier chiller), to prevent formation of condensate on H_2S sensor. The Analyzer is mounted under an overhang/awning to protect it from rain and sunlight.

MRU has also installed a 50:1 sample dilution system for the H_2S concentration measurements. As the sensor has an operating life of 20,000 ppm-hours, a sample dilution system was installed to provide a reasonable sensor operating life. O_2 concentrations are measured directly by a long-life (i.e., 4-5 years) electrochemical sensor. CH_4 and CO_2 concentrations are directly measured via a non-dispersed infrared (NDIR) sensor. For added safety, a methane sensor is installed inside the analyzer panel, to provide alerts to operators in the unlikely event that methane should accumulate to explosive concentrations in the panel/enclosure.

The analyzer is configured to take two measurements per hour. A cycle is a 25 minute purge cycle followed by a 5 minute measuring cycle. The value at the end of the measuring cycle is held in the display until the next measuring cycle. The data is recorded to an internal 16GB SD card, and data is collected manually by the Town. The analyzer is outfitted with Modbus and four (4) analog outputs so the data collected will also be logged in the new enclosed flare control system data logger. The new enclosed flare control system will provide alarm capability to alert Landfill staff in the event of an analyzer shutdown or other operational failure.

MRU recommends monthly inspections of the analyzer to confirm condition of the filters and quarterly calibrations of the sensors with certified calibration gas. The purpose of these proactive measures is to assure the accuracy and performance specifications of the analyzer. In accordance with the operating manual, the recommended standard H_2S span calibration gas concentration is 500ppm, but a 1,000ppm standard can also be used and would be appropriate to this installation. Full instructions are included in the operating manual. Monthly inspections and quarterly calibrations can be performed by qualified

MRU Instruments, Inc.
188838 S. Memorial Drive
Humble, Texas 77338

Town personnel that have been trained by MRU. This service can also be contracted to qualified, local contractors or by MRU. MRU has a qualified contractor who performs service on Long Island.

For additional technical information, the SWG 100 operating manual is available which provides detailed technical, operational, and maintenance information.

ATTACHMENT 2

ALS LFG Sample Analysis Reports

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

LABORATORY REPORT

November 26, 2018

Kenneth Skipka
RTP Environmental Associates, Inc.
400 Post Avenue, Suite 405
Westbury, NY 11590

RE: Brookhaven Landfill Gas / BRKNH2S

Dear Kenneth:

Enclosed are the results of the samples submitted to our laboratory on November 15, 2018. For your reference, these analyses have been assigned our service request number P1806281.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

[redacted]
By Kate Kaneko at 2:25 pm, 11/26/18

Kate Kaneko
Laboratory Director

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client:	RTP Environmental Associates, Inc.	Service Request No:	P1806281
Project:	Brookhaven Landfill Gas / BRKNH2S	New York Lab ID:	11221

CASE NARRATIVE

The samples were received intact under chain of custody on November 15, 2018 and were stored in accordance with the analytical method requirements. The samples were received past the recommended holding time for the hydrogen sulfide analysis. The analysis was performed as soon as possible after receipt by the laboratory. The data is flagged to indicate the holding time exceedance.Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample(s) at the time of sample receipt.

Fixed Gases Analysis

The samples were analyzed for fixed gases (hydrogen, oxygen, nitrogen, carbon monoxide, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

Hydrogen Sulfide Analysis

The samples were also analyzed for hydrogen sulfide per ASTM D 5504-12 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). Method ASTM D 5504-12 is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation.

Total Gaseous Non-Methane Organics as Methane Analysis

The samples were also analyzed for total gaseous non-methane organics as methane per modified EPA Method TO-3 using a gas chromatograph equipped with a flame ionization detector (FID). This procedure is described in laboratory SOP VOA-TO3C1C6. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1347317
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-18-9
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272018-9
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: RTP Environmental Associates, Inc. Service Request: P1806281
Project ID: Brookhaven Landfill Gas / BRKNH2S

Date Received: 11/15/2018
Time Received: 15:50

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	TO-3 Modified - C1C6+ Bag	3C Modified - Fxd Gases Bag	ASTM D 5504-12 - H2S Bag
BRKN-MH	P1806281-001	Air	11/14/2018	10:30	X	X	X
BRKN-IN	P1806281-002	Air	11/14/2018	10:30	X	X	X
BRKN-OUT	P1806281-003	Air	11/14/2018	10:30	X	X	X

CHAIN OF CUSTODY RECORD

P1806281

RTP ENVIRONMENTAL ASSOCIATES, INC.®
AIR • WATER • SOLID WASTE CONSULTANTS
400 Post Avenue
Westbury, New York 11590
(www.rtpenv.com)
(516) 333-4626
Fax (516) 333-4671

Page 1 of 1

Project name:	Brookhaven Landfill Gas
Project ID:	BRKNH$_2$S
Project Location:	Brookhaven Landfill
Laboratory:	ALS Environmental - Simi Valley, CA
Samplers: (Signature)	JKB, KJS, JLB, GG

Test ID	Sample ID	Matrix (A, L, S)	Date	Time	Sample Method	Sample Duration	Number of Containers	Analysis Requested
111418	BRKN - MH	A	11/14/2018	10:30	Grab	30 mins	1	*** See Below ***
111418	BRKN - IN	A	11/14/2018	10:30	Grab	30 mins	1	
111418	BRKN - OUT	A	11/14/2018	10:30	Grab	30 mins	1	

Relinquished by: (Signature) Gary Grunseich Gary Grunseich	Date/Time: 11/14/2018 14:00 EST	Received By: (Signature)	Date/Time:
Relinquished by: (Signature)	Date/Time:	Received By: (Signature) [redacted]	Date/Time: 11/15/18 1500

Remarks: ATTN: Kate Kaneko

Please perform EPA TO-3 (total NMOCs), EPA 3C (CH_4, O_2, CO_2 & N_2) and ASTM D 5504-01 (H_2S) analyses.

If any questions, please call Gary Grunseich at number above. Thank you.

Delivery Method: FedEx Priority Overnight

Custody Seals Intact: Yes No

ALS Environmental
Sample Acceptance Check Form

Client: RTP Environmental Associates, Inc. Work order: P1806281

Project: Brookhaven Landfill Gas / BRKNH2S

Sample(s) received on: 11/15/18 Date opened: 11/15/18 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1806281-001.01	1.0 L Tedlar Bag					
P1806281-002.01	1.0 L Tedlar Bag					
P1806281-003.01	1.0 L Tedlar Bag					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-MH**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S**

ALS Project ID: P1806281
ALS Sample ID: P1806281-001

Test Code: ASTM D 5504-12
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Magaly Rodriguez
Sample Type: 1.0 L Tedlar Bag
Test Notes: **H3**

Date Collected: 11/14/18
Time Collected: 10:30
Date Received: 11/15/18
Date Analyzed: 11/15/18
Time Analyzed: 17:53
Volume(s) Analyzed: 0.0050 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	**1,500,000**	1,400	**1,000,000**	1,000	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H3 = Sample was received and analyzed past holding time.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-IN** ALS Project ID: P1806281
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1806281-002

Test Code: ASTM D 5504-12 Date Collected: 11/14/18
Instrument ID: Agilent 7890A/GC22/SCD Time Collected: 10:30
Analyst: Magaly Rodriguez Date Received: 11/15/18
Sample Type: 1.0 L Tedlar Bag Date Analyzed: 11/15/18
Test Notes: **H3** Time Analyzed: 17:51
Volume(s) Analyzed: 0.0050 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	**3,500,000**	1,400	**2,500,000**	1,000	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H3 = Sample was received and analyzed past holding time.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-OUT** ALS Project ID: P1806281
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1806281-003

Test Code: ASTM D 5504-12 Date Collected: 11/14/18
Instrument ID: Agilent 7890A/GC22/SCD Time Collected: 10:30
Analyst: Magaly Rodriguez Date Received: 11/15/18
Sample Type: 1.0 L Tedlar Bag Date Analyzed: 11/15/18
Test Notes: **H3** Time Analyzed: 17:47
Volume(s) Analyzed: 0.0050 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	**2,300,000**	1,400	**1,700,000**	1,000	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H3 = Sample was received and analyzed past holding time.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S**

ALS Project ID: P1806281
ALS Sample ID: P181115-MB

Test Code: ASTM D 5504-12
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Magaly Rodriguez
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: NA
Time Collected: NA
Date Received: NA
Date Analyzed: 11/15/18
Time Analyzed: 07:50
Volume(s) Analyzed: 1.0 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-MH** ALS Project ID: P1806281
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1806281-001

Test Code: EPA Method 3C Modified Date Collected: 11/14/18
Instrument ID: HP5890 II/GC1/TCD Date Received: 11/15/18
Analyst: Gilbert Gutierrez Date Analyzed: 11/16/18
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.76**	0.10	
7782-44-7	**Oxygen***	**9.23**	0.10	
7727-37-9	**Nitrogen**	**49.1**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**20.8**	0.10	
124-38-9	**Carbon Dioxide**	**19.1**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-IN** ALS Project ID: P1806281
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1806281-002

Test Code: EPA Method 3C Modified Date Collected: 11/14/18
Instrument ID: HP5890 II/GC1/TCD Date Received: 11/15/18
Analyst: Gilbert Gutierrez Date Analyzed: 11/16/18
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**2.58**	0.10	
7782-44-7	**Oxygen***	**6.61**	0.10	
7727-37-9	**Nitrogen**	**42.6**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**24.2**	0.10	
124-38-9	**Carbon Dioxide**	**24.0**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-OUT** ALS Project ID: P1806281
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1806281-003

Test Code: EPA Method 3C Modified Date Collected: 11/14/18
Instrument ID: HP5890 II/GC1/TCD Date Received: 11/15/18
Analyst: Gilbert Gutierrez Date Analyzed: 11/16/18
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**2.33**	0.10	
7782-44-7	**Oxygen***	**7.82**	0.10	
7727-37-9	**Nitrogen**	**45.0**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**22.9**	0.10	
124-38-9	**Carbon Dioxide**	**21.9**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1806281
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P181116-MB

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Gilbert Gutierrez Date Analyzed: 11/16/18
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen*	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1806281

Total Gaseous Nonmethane Organics (TGNMO) as Methane

Test Code: EPA TO-3 Modified
Instrument ID: HP5890 II/GC8/FID
Analyst: Gilbert Gutierrez
Sampling Media: 1.0 L Tedlar Bag(s)
Test Notes:

Date(s) Collected: 11/14/18
Date Received: 11/15/18
Date Analyzed: 11/16/18

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	**Result ppmV**	MRL ppmV	Data Qualifier
BRKN-MH	P1806281-001	0.10	**3,600**	10	
BRKN-IN	P1806281-002	0.10	**4,600**	10	
BRKN-OUT	P1806281-003	0.10	**4,400**	10	
Method Blank	P181116-MB	1.0	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

[redacted]

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www.alsglobal.com

LABORATORY REPORT

December 18, 2018

Kenneth Skipka
RTP Environmental Associates, Inc.
400 Post Avenue, Suite 405
Westbury, NY 11590

RE: Brookhaven Landfill Gas / BRKNH2S

Dear Kenneth:

Enclosed are the results of the samples submitted to our laboratory on December 11, 2018. For your reference, these analyses have been assigned our service request number P1806760.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

A[redacted]

[redacted]

By Kate Kaneko at 1:49 pm, 12/18/18

[redacted]

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client:	RTP Environmental Associates, Inc.	Service Request No:	P1806760
Project:	Brookhaven Landfill Gas / BRKNH2S	New York Lab ID:	11221

CASE NARRATIVE

The samples were received intact under chain of custody on December 11, 2018 and were stored in accordance with the analytical method requirements. The samples were received past the recommended holding time for the sulfur analysis. The analysis was performed as soon as possible after receipt by the laboratory. The data is flagged to indicate the holding time exceedance. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Fixed Gases Analysis

The samples were analyzed for fixed gases (hydrogen, oxygen, nitrogen, carbon monoxide, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

Hydrogen Sulfide Analysis

The samples were also analyzed for hydrogen sulfide per ASTM D 5504-12 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). Method ASTM D 5504-12 is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation.

Total Gaseous Non-Methane Organics as Methane Analysis

The samples were also analyzed per modified EPA Method TO-3 for total gaseous non-methane organics as methane using a gas chromatograph equipped with a flame ionization detector (FID). This procedure is described in laboratory SOP VOA-TO3C1C6. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1521096
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-18-9
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272018-9
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: RTP Environmental Associates, Inc. Service Request: P1806760
Project ID: Brookhaven Landfill Gas / BRKNH2S

Date Received: 12/11/2018
Time Received: 11:00

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	TO-3 Modified - C1C6+ Bag	3C Modified - Fxd Gases Bag	ASTM D 5504-12 - H2S Bag
BRKN-MH	P1806760-001	Air	12/10/2018	10:30	X	X	X
BRKN-IN	P1806760-002	Air	12/10/2018	10:30	X	X	X
BRKN-OUT	P1806760-003	Air	12/10/2018	10:30	X	X	X

CHAIN OF CUSTODY RECORD

P180G760

RTP ENVIRONMENTAL ASSOCIATES, INC.®
AIR • WATER • SOLID WASTE CONSULTANTS
400 Post Avenue
Westbury, New York 11590
(www.rtpenv.com)
(516) 333-4626
Fax (516) 333-4571

Project name:	Brookhaven Landfill Gas
Project ID:	BRKNH$_2$S
Project Location:	Brookhaven Landfill
Laboratory:	ALS Environmental - Simi Valley, CA
Samplers: (Signature)	JKB, KJS, JLB, GG

Test ID	Sample ID	Matrix (A, L, S)	Date	Time	Sample Method	Sample Duration	Number of Containers	Analysis Requested
121018	BRKN - MH	A	12/10/2018	10:30	Grab	30 mins	1	*** See Below ***
121018	BRKN - IN	A	12/10/2018	10:30	Grab	30 mins	1	
121018	BRKN - OUT	A	12/10/2018	10:30	Grab	30 mins	1	

Relinquished by: (Signature) Gary Grunseich Gary Grunseich	Date/Time: 12/10/2018 14:00 EST	Received By: (Signature)	Date/Time:
Relinquished by: (Signature)	Date/Time:	Received By: (Signature)	Date/Time: 12-11-18 1100

Remarks: ATTN: Kate Kaneko

Please perform EPA TO-3 (total NMOCs), EPA 3C (CH_4, O_2, CO_2 & N_2) and ASTM D 5504-01 (H_2S) analyses.

If any questions, please call Gary Grunseich at number above. Thank you.

Delivery Method: FedEx Priority Overnight

Custody Seals Intact: Yes No

ALS Environmental
Sample Acceptance Check Form

Client: RTP Environmental Associates, Inc. Work order: P1806760

Project: Brookhaven Landfill Gas / BRKNH2S

Sample(s) received on: 12/11/18 Date opened: 12/11/18 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1806760-001.01	1.0 L Tedlar Bag					
P1806760-002.01	1.0 L Tedlar Bag					
P1806760-003.01	1.0 L Tedlar Bag					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-MH** ALS Project ID: P1806760
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1806760-001

Test Code: EPA Method 3C Modified Date Collected: 12/10/18
Instrument ID: HP5890 II/GC1/TCD Date Received: 12/11/18
Analyst: Gilbert Gutierrez Date Analyzed: 12/11/18
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**0.823**	0.10	
7782-44-7	**Oxygen***	**6.61**	0.10	
7727-37-9	**Nitrogen**	**39.0**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**30.8**	0.10	
124-38-9	**Carbon Dioxide**	**22.8**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-IN** ALS Project ID: P1806760
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1806760-002

Test Code: EPA Method 3C Modified Date Collected: 12/10/18
Instrument ID: HP5890 II/GC1/TCD Date Received: 12/11/18
Analyst: Gilbert Gutierrez Date Analyzed: 12/11/18
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.03**	0.10	
7782-44-7	**Oxygen***	**7.48**	0.10	
7727-37-9	**Nitrogen**	**40.5**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**28.8**	0.10	
124-38-9	**Carbon Dioxide**	**22.2**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-OUT** ALS Project ID: P1806760
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1806760-003

Test Code: EPA Method 3C Modified Date Collected: 12/10/18
Instrument ID: HP5890 II/GC1/TCD Date Received: 12/11/18
Analyst: Gilbert Gutierrez Date Analyzed: 12/11/18
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.04**	0.10	
7782-44-7	**Oxygen***	**7.55**	0.10	
7727-37-9	**Nitrogen**	**40.8**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**28.7**	0.10	
124-38-9	**Carbon Dioxide**	**22.0**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1806760
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P181211-MB

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Gilbert Gutierrez Date Analyzed: 12/11/18
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen*	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1806760

Hydrogen Sulfide

Test Code: ASTM D 5504-12
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Magaly Rodriguez
Sample Type: 1.0 L Tedlar Bag(s)
Test Notes:

Date(s) Collected: 12/10/18
Date Received: 12/11/18
Date Analyzed: 12/12/18

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Time Analyzed	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
BRKN-MH	P1806760-001	0.0020	14:15	**1,400,000**	3,500	**990,000**	2,500	**H3**
BRKN-IN	P1806760-002	0.0020	14:21	**3,000,000**	3,500	**2,100,000**	2,500	**H3**
BRKN-OUT	P1806760-003	0.0020	14:28	**2,300,000**	3,500	**1,600,000**	2,500	**H3**
Method Blank	P181212-MB	1.0	09:03	ND	7.0	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H3 = Sample was received and analyzed past holding time.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1806760

Total Gaseous Nonmethane Organics (TGNMO) as Methane

Test Code: EPA TO-3 Modified
Instrument ID: HP5890 II/GC8/FID
Analyst: Gilbert Gutierrez
Sampling Media: 1.0 L Tedlar Bag(s)
Test Notes:

Date(s) Collected: 12/10/18
Date Received: 12/11/18
Date Analyzed: 12/11/18

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	**Result ppmV**	MRL ppmV	Data Qualifier
BRKN-MH	P1806760-001	0.10	**4,200**	10	
BRKN-IN	P1806760-002	0.10	**4,400**	10	
BRKN-OUT	P1806760-003	0.10	**4,300**	10	
Method Blank	P181211-MB	1.0	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

2655 Park Center Dr., Suite A
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www.alsglobal.com

LABORATORY REPORT

January 14, 2019

Kenneth Skipka
RTP Environmental Associates, Inc.
400 Post Avenue, Suite 405
Westbury, NY 11590

RE: Brookhaven Landfill Gas / BRKNH2S

Dear Kenneth:

Enclosed are the results of the samples submitted to our laboratory on January 8, 2019. For your reference, these analyses have been assigned our service request number P1900059.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

[redacted]
By Kate Kaneko at 11:47 am, 01/15/19

Kate Kaneko
Laboratory Director

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client:	RTP Environmental Associates, Inc.	Service Request No:	P1900059
Project:	Brookhaven Landfill Gas / BRKNH2S	New York Lab ID:	11221

CASE NARRATIVE

The samples were received intact under chain of custody on January 8, 2019 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Fixed Gases Analysis

The samples were analyzed for fixed gases (hydrogen, oxygen, nitrogen, carbon monoxide, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

Hydrogen Sulfide Analysis

The samples were also analyzed for hydrogen sulfide per modified SCAQMD Method 307-91 and ASTM D 5504-12 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). Method ASTM D 5504-12 is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation. Method SCAQMD 307-91 is not included on the laboratory's NELAP or DoD-ELAP accreditation.

Total Gaseous Non-Methane Organics as Methane Analysis

The samples were also analyzed per modified EPA Method TO-3 for total gaseous non-methane organics as methane using a gas chromatograph equipped with a flame ionization detector (FID). This procedure is described in laboratory SOP VOA-TO3C1C6. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1521096
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-18-9
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272018-9
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: RTP Environmental Associates, Inc. Service Request: P1900059
Project ID: Brookhaven Landfill Gas / BRKNH2S

Date Received: 1/8/2019
Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	TO-3 Modified - C1C6+ Bag	3C Modified - Fxd Gases Bag	ASTM D 5504-12 - H2S Bag
BRKN-MH	P1900059-001	Air	1/7/2019	10:30	X	X	X
BRKN-IN	P1900059-002	Air	1/7/2019	10:30	X	X	X
BRKN-OUT	P1900059-003	Air	1/7/2019	10:30	X	X	X

CHAIN OF CUSTODY RECORD

P1900059

Page 1 of 1

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400 Post Avenue
Westbury, New York 11590
(www.rtpenv.com)
(516) 333-6726
Fax (516) 333-4671

Project name:	Brookhaven Landfill Gas
Project ID:	BRKNH_2S
Project Location:	Brookhaven Landfill
Laboratory:	ALS Environmental - Simi Valley, CA
Samplers: (Signature)	JKB, KJS, JLB, GG

Test ID	Sample ID	Matrix (A, L, S)	Date	Time	Sample Method	Sample Duration	Number of Containers	Analysis Requested
010719	BRKN - MH	A	1/7/2019	10:30	Grab	30 mins	1	*** See Below ***
010719	BRKN - IN	A	1/7/2019	10:30	Grab	30 mins	1	
010719	BRKN - OUT	A	1/7/2018	10:30	Grab	30 mins	1	

5 of 12

Relinquished by: (Signature) Gary Grunseich Gary Grunseich	Date/Time: 1/7/2019 14:00 EST	Received By: (Signature)	Date/Time: 1/8/19 0930
Relinquished by: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:

Remarks: ATTN: Kate Kaneko

Please perform EPA TO-3 (total NMOCs), EPA 3C (CH_4, O_2, CO_2 & N_2) and ASTM D 5504-01 (H_2S) analyses.

If any questions, please call Gary Grunseich at number above. Thank you.

Delivery Method: FedEx Priority Overnight

Custody Seals Intact: Yes No

ALS Environmental
Sample Acceptance Check Form

Client: RTP Environmental Associates, Inc. Work order: P1900059

Project: Brookhaven Landfill Gas

Sample(s) received on: 1/8/19 Date opened: 1/8/19 by: AARON GONZALEZ

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1900059-001.01	1.0 L Tedlar Bag					
P1900059-002.01	1.0 L Tedlar Bag					
P1900059-003.01	1.0 L Tedlar Bag					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1900059

Hydrogen Sulfide

Test Code: ASTM D 5504-12
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Magaly Rodriguez
Sample Type: 1.0 L Tedlar Bag(s)
Test Notes:

Date(s) Collected: 1/7/19
Date Received: 1/8/19
Date Analyzed: 1/8/19

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Time Analyzed	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
BRKN-MH	P1900059-001	0.0020	09:58	**1,100,000**	3,500	**780,000**	2,500	
BRKN-IN	P1900059-002	0.0020	10:05	**1,500,000**	3,500	**1,100,000**	2,500	
BRKN-OUT	P1900059-003	0.0050	10:11	**1,900,000**	1,400	**1,400,000**	1,000	
Method Blank	P190108-MB	1.0	09:02	ND	7.0	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-MH** ALS Project ID: P1900059
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1900059-001

Test Code: EPA Method 3C Modified Date Collected: 1/7/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 1/8/19
Analyst: Gilbert Gutierrez Date Analyzed: 1/8/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**0.714**	0.10	
7782-44-7	**Oxygen***	**8.33**	0.10	
7727-37-9	**Nitrogen**	**47.1**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**24.1**	0.10	
124-38-9	**Carbon Dioxide**	**19.7**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-IN** ALS Project ID: P1900059
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1900059-002

Test Code: EPA Method 3C Modified Date Collected: 1/7/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 1/8/19
Analyst: Gilbert Gutierrez Date Analyzed: 1/8/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**0.908**	0.10	
7782-44-7	**Oxygen***	**8.19**	0.10	
7727-37-9	**Nitrogen**	**45.7**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**24.6**	0.10	
124-38-9	**Carbon Dioxide**	**20.7**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-OUT** ALS Project ID: P1900059
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1900059-003

Test Code: EPA Method 3C Modified Date Collected: 1/7/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 1/8/19
Analyst: Gilbert Gutierrez Date Analyzed: 1/8/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**0.804**	0.10	
7782-44-7	**Oxygen***	**9.30**	0.10	
7727-37-9	**Nitrogen**	**48.2**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**22.5**	0.10	
124-38-9	**Carbon Dioxide**	**19.1**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1900059
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P190108-MB

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Gilbert Gutierrez Date Analyzed: 1/08/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen*	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1900059

Total Gaseous Nonmethane Organics (TGNMO) as Methane

Test Code: EPA TO-3 Modified
Instrument ID: HP5890 II/GC8/FID — Date(s) Collected: 1/7/19
Analyst: Gilbert Gutierrez — Date Received: 1/8/19
Sampling Media: 1.0 L Tedlar Bag(s) — Date Analyzed: 1/8/19
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	**Result ppmV**	MRL ppmV	Data Qualifier
BRKN-MH	P1900059-001	0.10	**3,600**	10	
BRKN-IN	P1900059-002	0.10	**4,000**	10	
BRKN-OUT	P1900059-003	0.10	**3,500**	10	
Method Blank	P190108-MB	1.0	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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LABORATORY REPORT

February 15, 2019

Kenneth Skipka
RTP Environmental Associates, Inc.
400 Post Avenue, Suite 405
Westbury, NY 11590

RE: Brookhaven Landfill Gas / BRKNH2S

Dear Kenneth:

Enclosed are the results of the samples submitted to our laboratory on February 5, 2019. For your reference, these analyses have been assigned our service request number P1900535.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

[redacted]
By Kate Kaneko at 3:01 pm, 02/15/19

For Hayden Akers
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client:	RTP Environmental Associates, Inc.	Service Request No:	P1900535
Project:	Brookhaven Landfill Gas / BRKNH2S	New York Lab ID:	11221

CASE NARRATIVE

The samples were received intact under chain of custody on February 5, 2019 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

C1 through C6 Hydrocarbon Analysis

The samples were analyzed per modified EPA Method TO-3 for C1 through >C6 hydrocarbons using a gas chromatograph equipped with a flame ionization detector (FID). This procedure is described in laboratory SOP VOA-TO3C1C6. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

Manual integration of the chromatographic ranges in each sample with reported concentrations was required to correct the integration performed by the automated data processing program. The raw data states the rationale and specific ranges impacted by the manual integration.

Fixed Gases Analysis

The samples were also analyzed for fixed gases (hydrogen, oxygen, nitrogen, carbon monoxide, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

Hydrogen Sulfide Analysis

The samples were also analyzed for hydrogen sulfide per modified SCAQMD Method 307-91 and ASTM D 5504-12 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). Method ASTM D 5504-12 is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation. Method SCAQMD 307-91 is not included on the laboratory's NELAP or DoD-ELAP accreditation.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1521096
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-18-9
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272018-9
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: RTP Environmental Associates, Inc. Service Request: P1900535
Project ID: Brookhaven Landfill Gas / BRKNH2S

Date Received: 2/5/2019
Time Received: 09:00

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	TO-3 Modified - C1C6+ Bag	3C Modified - Fxd Gases Bag	ASTM D 5504-12 - H2S Bag
BRKN-MH	P1900535-001	Air	2/4/2019	10:30	X	X	X
BRKN-IN	P1900535-002	Air	2/4/2019	10:30	X	X	X
BRKN-OUT	P1900535-003	Air	2/4/2019	10:30	X	X	X

CHAIN OF CUSTODY RECORD

PA 60535

Page 1 of 1

RTP ENVIRONMENTAL ASSOCIATES, INC.®
AIR • WATER • SOLID WASTE CONSULTANTS
400 Post Avenue
Westbury, New York 11590
(www.rtpenv.com)
(516) 333-1636
fax (516) 333-4571

Project name:	Brookhaven Landfill Gas
Project ID:	BRKNH$_2$S
Project Location:	Brookhaven Landfill
Laboratory:	ALS Environmental - Simi Valley, CA
Samplers: (Signature)	JKB, KJS, JLB, GG

Test ID	Sample ID	Matrix (A, L, S)	Date	Time	Sample Method	Sample Duration	Number of Containers	Analysis Requested
020419	BRKN - MH	A	2/4/2019	10:30	Grab	30 mins	1	*** See Below ***
020419	BRKN - IN	A	2/4/2019	10:30	Grab	30 mins	1	
020419	BRKN - OUT	A	2/4/2019	10:30	Grab	30 mins	1	

5 of 12

Relinquished by: (Signature) Gary Grunseich Gary Grunseich	Date/Time: 2/4/2019 14:00 EST	Received By: (Signature)	Date/Time:
Relinquished by: (Signature)	Date/Time:	Received By: (Signature) [redacted]	Date/Time: 2/5/19 0900

Remarks: ATTN: Kate Kaneko

Please perform EPA TO-3 (total NMOCs), EPA 3C (CH_4, O_2, CO_2 & N_2) and ASTM D 5504-01 (H_2S) analyses.

If any questions, please call Gary Grunseich at number above. Thank you.

Delivery Method: FedEx Priority Overnight

Custody Seals Intact: Yes No

ALS Environmental
Sample Acceptance Check Form

Client: RTP Environmental Associates, Inc. Work order: P1900535

Project: Brookhaven Landfill Gas / BRKNH2S

Sample(s) received on: 2/5/19 Date opened: 2/5/19 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1900535-001.01	1.0 L Tedlar Bag					
P1900535-002.01	1.0 L Tedlar Bag					
P1900535-003.01	1.0 L Tedlar Bag					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-MH** ALS Project ID: P1900535
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1900535-001

Test Code: EPA Method 3C Modified Date Collected: 2/4/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 2/5/19
Analyst: Gilbert Gutierrez Date Analyzed: 2/5/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**0.922**	0.10	
7782-44-7	**Oxygen***	**6.13**	0.10	
7727-37-9	**Nitrogen**	**39.0**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**31.0**	0.10	
124-38-9	**Carbon Dioxide**	**22.9**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-IN** ALS Project ID: P1900535
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1900535-002

Test Code: EPA Method 3C Modified Date Collected: 2/4/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 2/5/19
Analyst: Gilbert Gutierrez Date Analyzed: 2/5/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.48**	0.10	
7782-44-7	**Oxygen***	**4.68**	0.10	
7727-37-9	**Nitrogen**	**34.8**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**32.8**	0.10	
124-38-9	**Carbon Dioxide**	**26.3**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-OUT** ALS Project ID: P1900535
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1900535-003

Test Code: EPA Method 3C Modified Date Collected: 2/4/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 2/5/19
Analyst: Gilbert Gutierrez Date Analyzed: 2/5/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.34**	0.10	
7782-44-7	**Oxygen***	**6.74**	0.10	
7727-37-9	**Nitrogen**	**39.9**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**28.9**	0.10	
124-38-9	**Carbon Dioxide**	**23.2**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1900535
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P190205-MB

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Gilbert Gutierrez Date Analyzed: 2/05/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen*	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1900535

Hydrogen Sulfide

Test Code: ASTM D 5504-12
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Magaly Rodriguez
Sample Type: 1.0 L Tedlar Bag(s)
Test Notes:

Date(s) Collected: 2/4/19
Date Received: 2/5/19
Date Analyzed: 2/5/19

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Time Analyzed	**Result µg/m³**	MRL µg/m³	**Result ppbV**	MRL ppbV	Data Qualifier
BRKN-MH	P1900535-001	0.050	09:34	**1,300,000**	140	**920,000**	100	
BRKN-IN	P1900535-002	0.0010	10:02	**1,900,000**	7,000	**1,400,000**	5,000	
BRKN-OUT	P1900535-003	0.0010	10:20	**1,800,000**	7,000	**1,300,000**	5,000	
Method Blank	P190205-MB	1.0	08:48	ND	7.0	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1900535

Total Gaseous Nonmethane Organics (TGNMO) as Methane

Test Code: EPA TO-3 Modified
Instrument ID: HP5890 II/GC8/FID — Date(s) Collected: 2/4/19
Analyst: Gilbert Gutierrez — Date Received: 2/5/19
Sampling Media: 1.0 L Tedlar Bag(s) — Date Analyzed: 2/5/19
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	**Result ppmV**	MRL ppmV	Data Qualifier
BRKN-MH	P1900535-001	0.10	**3,500**	10	
BRKN-IN	P1900535-002	0.10	**5,300**	10	
BRKN-OUT	P1900535-003	0.10	**4,700**	10	
Method Blank	P190205-MB	1.0	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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LABORATORY REPORT

April 11, 2019

Kenneth Skipka
RTP Environmental Associates, Inc.
400 Post Avenue, Suite 405
Westbury, NY 11590

RE: Brookhaven Landfill Gas / BRKNH2S

Dear Kenneth:

Enclosed are the results of the sample submitted to our laboratory on March 28, 2019. For your reference, these analyses have been assigned our service request number P1901645.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Hayden Akers at 2:47, April 11, 2019

Hayden Akers
Project Manager

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Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client: RTP Environmental Associates, Inc.
Project: Brookhaven Landfill Gas / BRKNH2S

Service Request No: P1901645
New York Lab ID: 11221

CASE NARRATIVE

The samples were received intact under chain of custody on March 28, 2019 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Fixed Gases Analysis

The samples were analyzed for fixed gases (hydrogen, oxygen, nitrogen, carbon monoxide, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

Hydrogen Sulfide Analysis

The samples were also analyzed for hydrogen sulfide per ASTM D 5504-12 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). Method ASTM D 5504-12 is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation.

The samples were received with insufficient hold time remaining to complete the analysis within the recommended limit. The analysis was performed as soon as possible after receipt by the laboratory and the data flagged to indicate the holding time exceedance.

Methane Analysis

The samples were also analyzed for methane per modified EPA Method TO-3 using a gas chromatograph equipped with a flame ionization detector (FID). This procedure is described in laboratory SOP VOA-TO3C1C6. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1521096
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-006
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-18-9
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272018-9
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: RTP Environmental Associates, Inc. Service Request: P1901645
Project ID: Brookhaven Landfill Gas / BRKNH2S

Date Received: 3/28/2019
Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	TO-3 Modified - C1C6+ Bag	3C Modified - Fxd Gases Bag	ASTM D 5504-12 - H2S Bag
BRKN-MH	P1901645-001	Air	3/27/2019	10:30	X	X	X
BRKN-IN	P1901645-002	Air	3/27/2019	10:30	X	X	X
BRKN-OUT	P1901645-003	Air	3/27/2019	10:30	X	X	X

CHAIN OF CUSTODY RECORD

P190645

RTP ENVIRONMENTAL ASSOCIATES, INC.®
AIR • WATER • SOLID WASTE CONSULTANTS
400 Post Avenue
Westbury, New York 11590
(516) 333-4926
Fax (516) 333-4971

Page 1 of 1

Project name:	Brookhaven Landfill Gas
Project ID:	BRKNH_2S
Project Location:	Brookhaven Landfill
Laboratory:	ALS Environmental - Simi Valley, CA
Samplers: (Signature)	JKB, KJS, JLB, GG

Test ID	Sample ID	Matrix (A, L, S)	Date	Time	Sample Method	Sample Duration	Number of Containers	Analysis Requested
032719	BRKN - MH	A	3/27/2019	10:30	Grab	30 mins	1	*** See Below ***
032719	BRKN - IN	A	3/27/2019	10:30	Grab	30 mins	1	
032719	BRKN - OUT	A	3/27/2019	10:30	Grab	30 mins	1	

Relinquished by: (Signature) Gary Grunseich Gary Grunseich	Date/Time: 3/27/2019 14:00 EST	Received By: (Signature)	Date/Time:
Relinquished by: (Signature)	Date/Time:	Received By: (Signature)	Date/Time: 3/28/19 0930

Remarks: ATTN: Kate Kaneko

Please perform EPA TO-3 (total NMOCs), EPA 3C (CH_4, O_2, CO_2 & N_2) and ASTM D 5504-01 (H_2S) analyses.

If any questions, please call Gary Grunseich at number above. Thank you.

Delivery Method: FedEx Priority Overnight

Custody Seals Intact: Yes No

ALS Environmental
Sample Acceptance Check Form

Client: RTP Environmental Associates, Inc. Work order: P1901645

Project: Brookhaven Landfill Gas / BRKNH2S

Sample(s) received on: 3/28/19 Date opened: 3/28/19 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1901645-001.01	1 L Zefon Bag					
P1901645-002.01	1 L Zefon Bag					
P1901645-003.01	1 L Zefon Bag					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-MH** ALS Project ID: P1901645
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1901645-001

Test Code: EPA Method 3C Modified Date Collected: 3/27/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 3/28/19
Analyst: Gilbert Gutierrez Date Analyzed: 3/28/19
Sample Type: 1 L Zefon Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**0.837**	0.10	
7782-44-7	**Oxygen***	**6.49**	0.10	
7727-37-9	**Nitrogen**	**45.5**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**25.5**	0.10	
124-38-9	**Carbon Dioxide**	**21.7**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-IN** ALS Project ID: P1901645
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1901645-002

Test Code: EPA Method 3C Modified Date Collected: 3/27/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 3/28/19
Analyst: Gilbert Gutierrez Date Analyzed: 3/28/19
Sample Type: 1 L Zefon Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.07**	0.10	
7782-44-7	**Oxygen***	**5.93**	0.10	
7727-37-9	**Nitrogen**	**43.1**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**26.4**	0.10	
124-38-9	**Carbon Dioxide**	**23.5**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-OUT** ALS Project ID: P1901645
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1901645-003

Test Code: EPA Method 3C Modified Date Collected: 3/27/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 3/28/19
Analyst: Gilbert Gutierrez Date Analyzed: 3/28/19
Sample Type: 1 L Zefon Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.07**	0.10	
7782-44-7	**Oxygen***	**6.66**	0.10	
7727-37-9	**Nitrogen**	**44.6**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**25.1**	0.10	
124-38-9	**Carbon Dioxide**	**22.5**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1901645
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P190328-MB

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Gilbert Gutierrez Date Analyzed: 3/28/19
Sample Type: 1 L Zefon Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen*	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1901645

Hydrogen Sulfide

Test Code: ASTM D 5504-12
Instrument ID: Agilent 7890A/GC22/SCD Date(s) Collected: 3/27/19
Analyst: Wade Henton Date Received: 3/28/19
Sample Type: 1 L Zefon Bag(s) Date Analyzed: 3/28/19
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Time Analyzed	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
BRKN-MH	P1901645-001	0.0020	11:38	**2,500,000**	3,500	**1,800,000**	2,500	**H1**
BRKN-IN	P1901645-002	0.0020	11:54	**4,100,000**	3,500	**2,900,000**	2,500	**H1**
BRKN-OUT	P1901645-003	0.0020	12:10	**3,700,000**	3,500	**2,600,000**	2,500	**H1**
Method Blank	P190328-MB	1.0	08:38	ND	7.0	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1901645

Total Gaseous Nonmethane Organics (TGNMO) as Methane

Test Code: EPA TO-3 Modified
Instrument ID: HP5890 II/GC8/FID
Analyst: Wade Henton
Sampling Media: 1 L Zefon Bag(s)
Test Notes:

Date(s) Collected: 3/27/19
Date Received: 3/28/19
Date Analyzed: 3/28/19

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	**Result ppmV**	MRL ppmV	Data Qualifier
BRKN-MH	P1901645-001	0.10	**4,400**	10	
BRKN-IN	P1901645-002	0.10	**4,400**	10	
BRKN-OUT	P1901645-003	0.10	**5,900**	10	
Method Blank	P190328-MB	1.0	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

[redacted]

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

LABORATORY REPORT

May 7, 2019

Kenneth Skipka
RTP Environmental Associates, Inc.
400 Post Avenue, Suite 405
Westbury, NY 11590

RE: Brookhaven Landfill Gas / BRKNH2S

Dear Kenneth:

Enclosed are the results of the samples submitted to our laboratory on April 23, 2019. For your reference, these analyses have been assigned our service request number P1902233.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

[redacted]

[redacted] 8:53, May 07, 2019

[redacted]

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client: RTP Environmental Associates, Inc.
Project: Brookhaven Landfill Gas / BRKNH2S

Service Request No: P1902233
New York Lab ID: 11221

CASE NARRATIVE

The samples were received intact under chain of custody on April 23, 2019 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Fixed Gases Analysis

The samples were analyzed for fixed gases (hydrogen, oxygen, nitrogen, carbon monoxide, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

Hydrogen Sulfide Analysis

The samples were also analyzed for hydrogen sulfide per ASTM D 5504-12 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). Method ASTM D 5504-12 is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation.

Total Gaseous Non-Methane Organics as Methane Analysis

The samples were also analyzed for total gaseous non-methane organics (TGNMO) as methane in accordance with modified EPA Method TO-3 using a gas chromatograph equipped with a flame ionization detector (FID). This procedure is described in laboratory SOP VOA-TO3C1C6. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1521096
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-006
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-18-9
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272018-9
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: RTP Environmental Associates, Inc. Service Request: P1902233
Project ID: Brookhaven Landfill Gas / BRKNH2S

Date Received: 4/23/2019
Time Received: 10:00

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	TO-3 Modified - C1C6+ Bag	3C Modified - Fxd Gases Bag	ASTM D 5504-12 - H2S Bag
BRKN-MH	P1902233-001	Air	4/22/2019	10:30	X	X	X
BRKN-IN	P1902233-002	Air	4/22/2019	10:30	X	X	X
BRKN-OUT	P1902233-003	Air	4/22/2019	10:30	X	X	X

CHAIN OF CUSTODY RECORD

PI902233

Page 1 of 1

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400 Post Avenue
Westbury, New York 11590
(www.rtpenv.com)
(516) 333-4596
fax (516) 333-4571

Project name:	Brookhaven Landfill Gas
Project ID:	BRKNH_2S
Project Location:	Brookhaven Landfill
Laboratory:	ALS Environmental - Simi Valley, CA
Samplers: (Signature)	JKB, KJS, JLB, GG

Test ID	Sample ID	Matrix (A, L, S)	Date	Time	Sample Method	Sample Duration	Number of Containers	Analysis Requested
042219	BRKN - MH	A	4/22/2019	10:30	Grab	30 mins	1	*** See Below ***
042219	BRKN - IN	A	4/22/2019	10:30	Grab	30 mins	1	
042219	BRKN - OUT	A	4/22/2019	10:30	Grab	30 mins	1	

Relinquished by: (Signature) Gary Grunseich	Date/Time: 4/22/2019 14:00 EST	Received By: (Signature)	Date/Time:
Relinquished by: (Signature)	Date/Time:	Received By: (Signature)	Date/Time: 1000 SK 4/23/19 0930

Remarks: ATTN: Kate Kaneko

Please perform EPA TO-3 (total NMOCs), EPA 3C (CH_4, O_2, CO_2 & N_2) and ASTM D 5504-01 (H_2S) analyses.

If any questions, please call Gary Grunseich at number above. Thank you.

Delivery Method: FedEx Priority Overnight

Custody Seals Intact: Yes No

5 of 14

ALS Environmental
Sample Acceptance Check Form

Client: RTP Environmental Associates, Inc. Work order: P1902233

Project: Brookhaven Landfill Gas / BRKNH2S

Sample(s) received on: 4/23/19 Date opened: 4/23/19 by: SEAN.KNEPPER

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☐	☒
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1902233-001.01	1 L Zefon Bag					
P1902233-002.01	1 L Zefon Bag					
P1902233-003.01	1 L Zefon Bag					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-MH** ALS Project ID: P1902233
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1902233-001

Test Code: EPA Method 3C Modified Date Collected: 4/22/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 4/23/19
Analyst: Gilbert Gutierrez Date Analyzed: 4/23/19
Sample Type: 1 L Zefon Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.24**	0.10	
7782-44-7	**Oxygen***	**3.96**	0.10	
7727-37-9	**Nitrogen**	**34.8**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**33.6**	0.10	
124-38-9	**Carbon Dioxide**	**26.4**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-IN** ALS Project ID: P1902233
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1902233-002

Test Code: EPA Method 3C Modified Date Collected: 4/22/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 4/23/19
Analyst: Gilbert Gutierrez Date Analyzed: 4/23/19
Sample Type: 1 L Zefon Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.60**	0.10	
7782-44-7	**Oxygen***	**3.43**	0.10	
7727-37-9	**Nitrogen**	**31.2**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**34.9**	0.10	
124-38-9	**Carbon Dioxide**	**28.8**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-OUT** ALS Project ID: P1902233
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1902233-003

Test Code: EPA Method 3C Modified Date Collected: 4/22/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 4/23/19
Analyst: Gilbert Gutierrez Date Analyzed: 4/23/19
Sample Type: 1 L Zefon Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.44**	0.10	
7782-44-7	**Oxygen***	**4.96**	0.10	
7727-37-9	**Nitrogen**	**34.8**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**32.0**	0.10	
124-38-9	**Carbon Dioxide**	**26.8**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1902233
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P190423-MB

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Gilbert Gutierrez Date Analyzed: 4/23/19
Sample Type: 1 L Zefon Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen*	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1902233
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P190423-LCS

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Gilbert Gutierrez Date Analyzed: 4/23/19
Sample Type: 1 L Zefon Bag Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount ppmV	Result ppmV	% Recovery	ALS Acceptance Limits	Data Qualifier
1333-74-0	Hydrogen	40,000	**44,100**	**110**	97-113	
7782-44-7	Oxygen*	40,000	**42,400**	**106**	96-112	
7727-37-9	Nitrogen	50,000	**50,800**	**102**	94-110	
630-08-0	Carbon Monoxide	50,000	**52,700**	**105**	96-111	
74-82-8	Methane	40,000	**42,600**	**107**	96-112	
124-38-9	Carbon Dioxide	50,000	**51,800**	**104**	92-107	

* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1902233

Hydrogen Sulfide

Test Code: ASTM D 5504-12
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Magaly Rodriguez
Sample Type: 1 L Zefon Bag(s)
Test Notes:

Date(s) Collected: 4/22/19
Date Received: 4/23/19
Date Analyzed: 4/23/19

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Time Analyzed	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
BRKN-MH	P1902233-001	0.0020	10:25	**2,100,000**	3,500	**1,500,000**	2,500	
BRKN-IN	P1902233-002	0.0020	10:28	**3,400,000**	3,500	**2,500,000**	2,500	
BRKN-OUT	P1902233-003	0.0020	10:22	**2,600,000**	3,500	**1,900,000**	2,500	
Method Blank	P190423-MB	1.0	09:03	ND	7.0	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1902233

Total Gaseous Nonmethane Organics (TGNMO) as Methane

Test Code: EPA TO-3 Modified
Instrument ID: HP5890 II/GC8/FID — Date(s) Collected: 4/22/19
Analyst: Gilbert Gutierrez — Date Received: 4/23/19
Sampling Media: 1 L Zefon Bag(s) — Date Analyzed: 4/23/19
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	**Result ppmV**	MRL ppmV	Data Qualifier
BRKN-MH	P1902233-001	0.050	**5,300**	20	
BRKN-IN	P1902233-002	0.050	**6,800**	20	
BRKN-OUT	P1902233-003	0.050	**6,800**	20	
Method Blank	P190423-MB	1.0	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1902233
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P190423-LCS

Test Code: EPA TO-3 Modified Date Collected: NA
Instrument ID: HP5890 II/GC8/FID Date Received: NA
Analyst: Gilbert Gutierrez Date Analyzed: 4/23/19
Sampling Media: 1 L Zefon Bag Volume(s) Analyzed: NA ml(s)
Test Notes:

Compound	Spike Amount ppmV	**Result ppmV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
Total Gaseous Nonmethane Organics (TGNMO) as Methane	1,000	**991**	**99**	NA	

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LABORATORY REPORT

June 13, 2019

Kenneth Skipka
RTP Environmental Associates, Inc.
400 Post Avenue, Suite 405
Westbury, NY 11590

RE: Brookhaven Landfill Gas

Dear Kenneth:

Enclosed are the results of the samples submitted to our laboratory on May 30, 2019. For your reference, these analyses have been assigned our service request number P1903056.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Hayden Akers at 10:32, June 13, 2019

Hayden Akers
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client: RTP Environmental Associates, Inc.
Project: Brookhaven Landfill Gas

Service Request No: P1903056
New York Lab ID: 11221

CASE NARRATIVE

The samples were received intact under chain of custody on May 30, 2019 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Fixed Gases Analysis

The samples were analyzed for fixed gases (hydrogen, oxygen, nitrogen, carbon monoxide, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

Hydrogen Sulfide Analysis

The samples were also analyzed for hydrogen sulfide per ASTM D 5504-12 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). Method ASTM D 5504-12 is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation.

Total Gaseous Non-Methane Organics as Methane Analysis

The samples were also analyzed for total gaseous non-methane organics as methane per modified EPA Method TO-3 using a gas chromatograph equipped with a flame ionization detector (FID). This procedure is described in laboratory SOP VOA-TO3C1C6. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1521096
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-006
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-18-9
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272018-9
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: RTP Environmental Associates, Inc. Service Request: P1903056
Project ID: Brookhaven Landfill Gas

Date Received: 5/30/2019
Time Received: 09:27

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	TO-3 Modified - C1C6+ Bag	3C Modified - Fxd Gases Bag	ASTM D 5504-12 - H2S Bag
BRKN - MH	P1903056-001	Air	5/29/2019	10:30	X	X	X
BRKN - IN	P1903056-002	Air	5/29/2019	10:30	X	X	X
BRKN - OUT	P1903056-003	Air	5/29/2019	10:30	X	X	X

CHAIN OF CUSTODY RECORD

P190 3056 Page 1 of 1

RTP ENVIRONMENTAL ASSOCIATES, INC.®
AIR • WATER • SOLID WASTE CONSULTANTS
400 Post Avenue
Westbury, New York 11590
(www.rtpenv.com)
(516) 333-4596
fax (516) 333-4571

Project name:	Brookhaven Landfill Gas
Project ID:	BRKNH_2S
Project Location:	Brookhaven Landfill
Laboratory:	ALS Environmental - Simi Valley, CA
Samplers: (Signature)	JKB, KJS, JLB, GG

Test ID	Sample ID	Matrix (A, L, S)	Date	Time	Sample Method	Sample Duration	Number of Containers	Analysis Requested
052919	BRKN - MH	A	5/29/2019	10:30	Grab	30 mins	1	*** See Below ***
052919	BRKN - IN	A	5/29/2019	10:30	Grab	30 mins	1	
052919	BRKN - OUT	A	5/29/2019	10:30	Grab	30 mins	1	

Relinquished by: (Signature) Gary Grunseich Gary Grunseich	Date/Time: 5/29/2019 14:00 EST	Received By: (Signature)	Date/Time: 5/30/19 0927
Relinquished by: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:

Remarks: ATTN: Kate Kaneko

Please perform EPA TO-3 (total NMOCs), EPA 3C (CH_4, O_2, CO_2 & N_2) and ASTM D 5504-01 (H_2S) analyses.

If any questions, please call Gary Grunseich at number above. Thank you.

Delivery Method: FedEx Priority Overnight

Custody Seals Intact: Yes No

ALS Environmental
Sample Acceptance Check Form

Client: RTP Environmental Associates, Inc. Work order: P1903056

Project: Brookhaven Landfill Gas

Sample(s) received on: 5/30/19 Date opened: 5/30/19 by: HAYDEN.AKERS

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☐	☒
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1903056-001.01	1.0 L Tedlar Bag					
P1903056-002.01	1.0 L Tedlar Bag					
P1903056-003.01	1.0 L Tedlar Bag					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN - MH** ALS Project ID: P1903056
Client Project ID: **Brookhaven Landfill Gas** ALS Sample ID: P1903056-001

Test Code: EPA Method 3C Modified Date Collected: 5/29/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 5/30/19
Analyst: Gilbert Gutierrez Date Analyzed: 5/30/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.29**	0.10	
7782-44-7	**Oxygen***	**4.76**	0.10	
7727-37-9	**Nitrogen**	**36.4**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**31.4**	0.10	
124-38-9	**Carbon Dioxide**	**26.1**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN - IN** ALS Project ID: P1903056
Client Project ID: **Brookhaven Landfill Gas** ALS Sample ID: P1903056-002

Test Code: EPA Method 3C Modified Date Collected: 5/29/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 5/30/19
Analyst: Gilbert Gutierrez Date Analyzed: 5/30/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.55**	0.10	
7782-44-7	**Oxygen***	**4.67**	0.10	
7727-37-9	**Nitrogen**	**34.5**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**31.5**	0.10	
124-38-9	**Carbon Dioxide**	**27.8**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN - OUT** ALS Project ID: P1903056
Client Project ID: **Brookhaven Landfill Gas** ALS Sample ID: P1903056-003

Test Code: EPA Method 3C Modified Date Collected: 5/29/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 5/30/19
Analyst: Gilbert Gutierrez Date Analyzed: 5/30/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.49**	0.10	
7782-44-7	**Oxygen***	**5.33**	0.10	
7727-37-9	**Nitrogen**	**36.5**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**30.1**	0.10	
124-38-9	**Carbon Dioxide**	**26.6**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1903056
Client Project ID: **Brookhaven Landfill Gas** ALS Sample ID: P190530-MB

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Gilbert Gutierrez Date Analyzed: 5/30/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen*	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas** ALS Project ID: P1903056

Hydrogen Sulfide

Test Code: ASTM D 5504-12
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Wade Henton
Sample Type: 1.0 L Tedlar Bag(s)
Test Notes:

Date(s) Collected: 5/29/19
Date Received: 5/30/19
Date Analyzed: 5/30/19

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Time Analyzed	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
BRKN - MH	P1903056-001	0.10	10:11	**610,000**	70	**430,000**	50	
BRKN - IN	P1903056-002	0.020	10:19	**2,900,000**	350	**2,000,000**	250	
BRKN - OUT	P1903056-003	0.020	10:23	**990,000**	350	**710,000**	250	
Method Blank	P190530-MB	1.0	10:07	ND	7.0	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas** ALS Project ID: P1903056

Total Gaseous Nonmethane Organics (TGNMO) as Methane

Test Code: EPA TO-3 Modified
Instrument ID: HP5890 II/GC8/FID
Analyst: Gilbert Gutierrez
Sampling Media: 1.0 L Tedlar Bag(s)
Test Notes:

Date(s) Collected: 5/29/19
Date Received: 5/30/19
Date Analyzed: 5/30/19

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	**Result ppmV**	MRL ppmV	Data Qualifier
BRKN - MH	P1903056-001	0.10	**4,900**	10	
BRKN - IN	P1903056-002	0.10	**6,200**	10	
BRKN - OUT	P1903056-003	0.10	**4,900**	10	
Method Blank	P190530-MB	1.0	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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LABORATORY REPORT

July 9, 2019

Kenneth Skipka
RTP Environmental Associates, Inc.
400 Post Avenue, Suite 405
Westbury, NY 11590

RE: Brookhaven Landfill Gas / BRKNH2S

Dear Kenneth:

Enclosed are the results of the samples submitted to our laboratory on June 25, 2019. For your reference, these analyses have been assigned our service request number P1903717.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Hayden Akers at 3:11 pm, Jul 09, 2019

Hayden Akers
Project Manager

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Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client:	RTP Environmental Associates, Inc.	Service Request No:	P1903717
Project:	Brookhaven Landfill Gas BRKNH2S	New York Lab ID:	11221

CASE NARRATIVE

The samples were received intact under chain of custody on June 25, 2019 and were stored in accordance with the analytical method requirements. The samples were received past the recommended holding time for the hydrogen sulfide analysis. The analysis was performed as soon as possible after receipt by the laboratory. The data is flagged to indicate the holding time exceedance. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Fixed Gases Analysis

The samples were analyzed for fixed gases (hydrogen, oxygen, nitrogen, carbon monoxide, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

Hydrogen Sulfide Analysis

The samples were also analyzed for hydrogen sulfide per ASTM D 5504-12 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). Method ASTM D 5504-12 is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation.

Total Gaseous Non-Methane Organics as Methane Analysis

The samples were also analyzed for total gaseous non-methane organics as methane per modified EPA Method TO-3 using a gas chromatograph equipped with a flame ionization detector (FID). This procedure is described in laboratory SOP VOA-TO3C1C6. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1521096
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-006
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272019-10
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: RTP Environmental Associates, Inc. Service Request: P1903717

Project ID: Brookhaven Landfill Gas / BRKNH2S

Date Received: 6/25/2019

Time Received: 15:00

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	TO-3 Modified - C1C6+ Bag	3C Modified - Fxd Gases Bag	ASTM D 5504-12 - H2S Bag
BRKN - MH	P1903717-001	Air	6/24/2019	10:30	X	X	X
BRKN - IN	P1903717-002	Air	6/24/2019	10:30	X	X	X
BRKN - OUT	P1903717-003	Air	6/24/2019	10:30	X	X	X

P1903717

CHAIN OF CUSTODY RECORD

RTP ENVIRONMENTAL ASSOCIATES, INC.®
AIR • WATER • SOLID WASTE CONSULTANTS
400 Post Avenue
Westbury, New York 11590
(www.rtpenv.com)
(516) 333-4526
fax (516) 333-4571

Page 1 of 1

Project name:	Brookhaven Landfill Gas
Project ID:	BRKNH_2S
Project Location:	Brookhaven Landfill
Laboratory:	ALS Environmental - Simi Valley, CA
Samplers: (Signature)	JKB, KJS, JLB, GG

Test ID	Sample ID	Matrix (A, L, S)	Date	Time	Sample Method	Sample Duration	Number of Containers	Analysis Requested
062419	BRKN - MH	A	6/24/2019	10:30	Grab	30 mins	1	*** See Below ***
062419	BRKN - IN	A	6/24/2019	10:30	Grab	30 mins	1	
062419	BRKN - OUT	A	6/24/2019	10:30	Grab	30 mins	1	

Relinquished by: (Signature) Gary Grunseich Gary Grunseich	Date/Time: 6/24/2019 14:00 EST	Received By: (Signature)	Date/Time: 6/25/19 15:06
Relinquished by: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:

Remarks: ATTN: Kate Kaneko

Please perform EPA TO-3 (total NMOCs), EPA 3C (CH_4, O_2, CO_2 & N_2) and ASTM D 5504-01 (H_2S) analyses.

If any questions, please call Gary Grunseich at number above. Thank you.

Delivery Method: FedEx Priority Overnight

Custody Seals Intact: Yes No

5 of 12

ALS Environmental
Sample Acceptance Check Form

Client: RTP Environmental Associates, Inc. Work order: P1903717

Project: Brookhaven Landfill Gas / BRKNH2S

Sample(s) received on: 6/25/2019 Date opened: 6/25/2019 by: DENISE.POSADA

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☐	☒	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☐	☒
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1903717-001.01	1.0 L Tedlar Bag					
P1903717-002.01	1.0 L Tedlar Bag					
P1903717-003.01	1.0 L Tedlar Bag					

Explain any discrepancies: (include lab sample ID numbers):

Due to a local delivery restrictions, the package was not received until 1500, leading to the sample being received out of the specified holding time for the sulfur analysis.

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN - MH** ALS Project ID: P1903717
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1903717-001

Test Code: EPA Method 3C Modified Date Collected: 06/24/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 06/25/19
Analyst: Gilbert Gutierrez Date Analyzed: 6/26/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.10**	0.10	
7782-44-7	**Oxygen***	**4.18**	0.10	
7727-37-9	**Nitrogen**	**35.2**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**32.9**	0.10	
124-38-9	**Carbon Dioxide**	**26.5**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN - IN** ALS Project ID: P1903717
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1903717-002

Test Code: EPA Method 3C Modified Date Collected: 06/24/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 06/25/19
Analyst: Gilbert Gutierrez Date Analyzed: 6/26/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.27**	0.10	
7782-44-7	**Oxygen***	**5.06**	0.10	
7727-37-9	**Nitrogen**	**35.5**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**31.1**	0.10	
124-38-9	**Carbon Dioxide**	**27.1**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN - OUT** ALS Project ID: P1903717
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1903717-003

Test Code: EPA Method 3C Modified Date Collected: 06/24/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 06/25/19
Analyst: Gilbert Gutierrez Date Analyzed: 6/26/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.20**	0.10	
7782-44-7	**Oxygen***	**5.20**	0.10	
7727-37-9	**Nitrogen**	**36.4**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**31.0**	0.10	
124-38-9	**Carbon Dioxide**	**26.2**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1903717
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P190626-MB

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Gilbert Gutierrez Date Analyzed: 6/26/19
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen*	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1903717

Hydrogen Sulfide

Test Code: ASTM D 5504-12
Instrument ID: Agilent 7890A/GC22/SCD Date(s) Collected: 6/24/19
Analyst: Wade Henton Date Received: 6/25/19
Sample Type: 1.0 L Tedlar Bag(s) Date Analyzed: 6/25/19
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Time Analyzed	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
BRKN - MH	P1903717-001	0.0010	15:58	**1,800,000**	7,000	**1,300,000**	5,000	**H3**
BRKN - IN	P1903717-002	0.0010	16:02	**3,900,000**	7,000	**2,800,000**	5,000	**H3**
BRKN - OUT	P1903717-003	0.0010	16:29	**2,300,000**	7,000	**1,600,000**	5,000	**H3**
Method Blank	P190625-MB	1.0	13:43	ND	7.0	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H3 = Sample was received and analyzed past holding time.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1903717

Total Gaseous Nonmethane Organics (TGNMO) as Methane

Test Code: EPA TO-3 Modified
Instrument ID: HP5890 II/GC8/FID
Analyst: Gilbert Gutierrez
Sampling Media: 1.0 L Tedlar Bag(s)
Test Notes:

Date(s) Collected: 6/24/19
Date Received: 6/25/19
Date Analyzed: 6/26/19

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	**Result ppmV**	MRL ppmV	Data Qualifier
BRKN - MH	P1903717-001	0.10	**4,700**	10	
BRKN - IN	P1903717-002	0.10	**7,100**	10	
BRKN - OUT	P1903717-003	0.10	**4,800**	10	
Method Blank	P190626-MB	1.0	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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www.alsglobal.com

LABORATORY REPORT

July 29, 2019

Kenneth Skipka
RTP Environmental Associates, Inc.
400 Post Avenue, Suite 405
Westbury, NY 11590

RE: Brookhaven Landfill Gas / BRKNH2S

Dear Kenneth:

Enclosed are the results of the samples submitted to our laboratory on July 16, 2019. For your reference, these analyses have been assigned our service request number P1904155.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Hayden Akers at 3:50 pm, Jul 29, 2019

Hayden Akers
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client:	RTP Environmental Associates, Inc.	Service Request No:	P1904155
Project:	Brookhaven Landfill Gas / BRKNH2S	New York Lab ID:	11221

CASE NARRATIVE

The samples were received intact under chain of custody on July 16, 2019 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Fixed Gases Analysis

The samples were analyzed for fixed gases (hydrogen, oxygen, nitrogen, carbon monoxide, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

Hydrogen Sulfide Analysis

The samples were also analyzed for hydrogen sulfide per ASTM D 5504-12 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). Method ASTM D 5504-12 is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation.

The samples were analyzed outside of holding time due to insufficient time remaining from receipt.

Total Gaseous Non-Methane Organics as Methane Analysis

The samples were also analyzed for total gaseous non-methane organics as methane per modified EPA Method TO-3 using a gas chromatograph equipped with a flame ionization detector (FID). This procedure is described in laboratory SOP VOA-TO3C1C6. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1521096
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-006
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272019-10
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: RTP Environmental Associates, Inc. Service Request: P1904155

Project ID: Brookhaven Landfill Gas / BRKNH2S

Date Received: 7/16/2019

Time Received: 09:15

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	TO-3 Modified - C1C6+ Bag	3C Modified - Fxd Gases Bag	ASTM D 5504-12 - H2S Bag
BRKN-MH	P1904155-001	Air	7/15/2019	10:30	X	X	X
BRKN-IN	P1904155-002	Air	7/15/2019	10:30	X	X	X
BRKN-OUT	P1904155-003	Air	7/15/2019	10:30	X	X	X

CHAIN OF CUSTODY RECORD

P1904155

RTP ENVIRONMENTAL ASSOCIATES, INC.
AIR • WATER • SOLID WASTE CONSULTANTS
400 Post Avenue
Westbury, New York 11590
(www.rtpenv.com)
(516) 333-4585
fax (516) 333-4577

Project name:	Brookhaven Landfill Gas
Project ID:	BRKNH$_2$S
Project Location:	Brookhaven Landfill
Laboratory:	ALS Environmental - Simi Valley, CA
Samplers: (Signature)	JKB, KJS, JLB, GG

Test ID	Sample ID	Matrix (A, L, S)	Date	Time	Sample Method	Sample Duration	Number of Containers	Analysis Requested
071519	BRKN - MH	A	7/15/2019	10:30	Grab	30 mins	1	*** See Below ***
071519	BRKN - IN	A	7/15/2019	10:30	Grab	30 mins	1	
071519	BRKN - OUT	A	7/15/2019	10:30	Grab	30 mins	1	

Relinquished by: (Signature) Gary Grunseich Gary Grunseich	Date/Time: 7/15/2019 14:00 EST	Received By: (Signature)	Date/Time:
Relinquished by: (Signature)	Date/Time:	Received By: (Signature)	Date/Time: 7/16/19 0915

Remarks: ATTN: Kate Kaneko

Please perform EPA TO-3 (total NMOCs), EPA 3C (CH_4, O_2, CO_2 & N_2) and ASTM D 5504-01 (H_2S) analyses.

If any questions, please call Gary Grunseich at number above. Thank you.

Delivery Method: FedEx Priority Overnight

Custody Seals Intact: Yes No

ALS Environmental
Sample Acceptance Check Form

Client: RTP Environmental Associates, Inc. Work order: P1904155

Project: Brookhaven Landfill Gas / BRKNH2S

Sample(s) received on: 7/16/2019 Date opened: 7/16/2019 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1904155-001.01	1 L Zefon Bag					
P1904155-002.01	1 L Zefon Bag					
P1904155-003.01	1 L Zefon Bag					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-MH** ALS Project ID: P1904155
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1904155-001

Test Code: EPA Method 3C Modified Date Collected: 07/15/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 07/16/19
Analyst: Gilbert Gutierrez Date Analyzed: 7/16/19
Sample Type: 1 L Zefon Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.05**	0.10	
7782-44-7	**Oxygen***	**4.84**	0.10	
7727-37-9	**Nitrogen**	**39.9**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**29.3**	0.10	
124-38-9	**Carbon Dioxide**	**24.9**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-IN** ALS Project ID: P1904155
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1904155-002

Test Code: EPA Method 3C Modified Date Collected: 07/15/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 07/16/19
Analyst: Gilbert Gutierrez Date Analyzed: 7/16/19
Sample Type: 1 L Zefon Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.42**	0.10	
7782-44-7	**Oxygen***	**3.97**	0.10	
7727-37-9	**Nitrogen**	**36.1**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**30.5**	0.10	
124-38-9	**Carbon Dioxide**	**28.1**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **BRKN-OUT** ALS Project ID: P1904155
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P1904155-003

Test Code: EPA Method 3C Modified Date Collected: 07/15/19
Instrument ID: HP5890 II/GC1/TCD Date Received: 07/16/19
Analyst: Gilbert Gutierrez Date Analyzed: 7/16/19
Sample Type: 1 L Zefon Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**1.30**	0.10	
7782-44-7	**Oxygen***	**4.98**	0.10	
7727-37-9	**Nitrogen**	**38.5**	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	**Methane**	**29.0**	0.10	
124-38-9	**Carbon Dioxide**	**26.2**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1904155
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Sample ID: P190716-MB

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Gilbert Gutierrez Date Analyzed: 7/16/19
Sample Type: 1 L Zefon Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen*	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1904155

Hydrogen Sulfide

Test Code: ASTM D 5504-12
Instrument ID: Agilent 6890A/GC13/SCD Date(s) Collected: 7/15/19
Analyst: Wade Henton Date Received: 7/16/19
Sample Type: 1 L Zefon Bag(s) Date Analyzed: 7/16/19
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Time Analyzed	**Result µg/m³**	MRL µg/m³	**Result ppbV**	MRL ppbV	Data Qualifier
BRKN-MH	P1904155-001	0.020	12:13	**3,100,000**	350	**2,200,000**	250	**H1**
BRKN-IN	P1904155-002	0.020	13:00	**3,500,000**	350	**2,500,000**	250	**H1**
BRKN-OUT	P1904155-003	0.020	13:17	**2,800,000**	350	**2,000,000**	250	**H1**
Method Blank	P190716-MB	1.0	07:57	ND	7.0	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
H1 = Sample analysis performed past holding time. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **RTP Environmental Associates, Inc.**
Client Project ID: **Brookhaven Landfill Gas / BRKNH2S** ALS Project ID: P1904155

Total Gaseous Nonmethane Organics (TGNMO) as Methane

Test Code: EPA TO-3 Modified
Instrument ID: HP5890 II/GC8/FID — Date(s) Collected: 7/15/19
Analyst: Gilbert Gutierrez — Date Received: 7/16/19
Sampling Media: 1 L Zefon Bag(s) — Date Analyzed: 7/16/19
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	**Result ppmV**	MRL ppmV	Data Qualifier
BRKN-MH	P1904155-001	0.10	**3,700**	10	
BRKN-IN	P1904155-002	0.10	**3,200**	10	
BRKN-OUT	P1904155-003	0.10	**2,900**	10	
Method Blank	P190716-MB	1.0	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

U.S. v. Town of Brookhaven (E.D.N.Y.)

Consent Judgment

Appendix B

Surface Methane Monitoring Protocol

U.S. v. Town of Brookhaven (E.D.N.Y.)

Consent Judgment

Appendix C

Summary of Supplemental Environmental Project

Brookhaven Supplemental Environmental Project:

The Town will implement a Supplemental Environmental Project ("SEP") consisting of the installation of a solar energy conversion system on the Town's mechanics garage and repair shop ("Shop"). The system will include solar panels to be installed on the Shop roof, an inverter, and other components needed to power the Town's operations. The system is projected to be approximately 120 kW (DC) and to include 350 solar panels. The Town anticipates the renewable energy equipment will consist of the following (estimated costs are in parentheses):

- Modules/Panels ($62,000)
- Inverters ($14,000)
- Racking ($18,000)
- Balance of Equipment ($45,000)
- Freight/Shipping ($15,000)
- Design Engineering, Procurement and Construction Support Services ($25,000)
- Construction Scope ($126,000)

The SEP will reduce emissions associated with the generation of electricity through conventional means, including SO2 (nexus to some of the violations in this matter). The emissions reduction from the SEP are in the same airshed impacted by the violations at the landfill. The estimated price for the purchase and installation of the system is $305,000. Because of permitting and construction timeframes it may take up to 35 months to complete the SEP.

Surface Emission Monitoring Protocol
Town of Brookhaven Landfill

Town of Brookhaven
1 Independence Hill
Farmingville, New York, 11738
631-451-9013

SCS ENGINEERS

07217152.00 | September 19, 2019

4 Executive Boulevard, Suite 303
Suffern, New York 10901
845-357-1510

Table of Contents

Appendices

1 INTRODUCTION

At the request of the U.S. Environmental Protection Agency (EPA), the Town of Brookhaven (Town) has prepared this Surface Methane Monitoring Protocol (SEM Protocol) for Cells 1-6 at the Town of Brookhaven Landfill and Recycling Area (Landfill) located in Yaphank, New York. Pursuant to 6 NYCRR Part 208, the gas collection and control system (GCCS) at a municipal solid waste (MSW) landfill must be installed and operated so that the surface methane concentration is less than 500 parts per million (ppm) above background, as measured during surface emission monitoring (SEM). This SEM Protocol is prepared to fulfill Clause V.23 of the Consent Judgment (Consent Judgment) between the U.S. Environmental Protection Agency (US EPA) and the Town.

When approved, this SEM Protocol will supercede the October 2002 SEM protocol for Cells 1-4 at the Landfill that was developed by RTP Environmental Associates, Inc. (RTP) on behalf of the Town and approved by the New York State Department of Environmental Conservation (NYSDEC). A GCCS Design Plan, prepared by Fred L. Wehran, Jr., PE and dated September 2016 (2016 GCCS Design Plan) included provisions relative to the performance of SEM. In response to Clause V.14.b of the Consent Judgment, an updated GCCS Design Plan (2019 GCCS Design Plan) will be prepared and submitted under separate cover, which will supercede the 2016 GCCS Design Plan. The 2019 GCCS Design Plan will include this SEM Protocol as an attachment.

2 SEM PROTOCOL

GENERAL

This protocol meets the provisions of 6 NYCRR Part 208, Subparts 4(d) and (g), 6(c) and (d) and 7(f), and describes the specific SEM procedures to be employed over the surface of Cells 1-6 of the Brookhaven Landfill.

The Landfill currently has six (6) cells. Cells 1-4 contain primarily MSW. Active landfilling in this group of cells ceased in 1996 and a permanent cap has been installed. Cells 5 and 6 contain solid waste consisting primarily of construction and demolition debris (C&D), alternative daily cover material (ADCM) and incinerator ash. Cell 5 is permanently capped. Active landfilling and capping is occurring in Cell 6. Portions of Cell 6 have been permanently capped. Some portions of Cell 6 are installed above portions of Cells 1-4, but are hydraulically separated from Cells 1-4 by the Cell 1-4 cap and the Cell 6 liner system.

SEM in Cells 1-4 was first conducted in December 2002. After the first full year of quarterly SEM, the Town requested a reduction in the frequency of SEM events from quarterly to annually. NYSDEC granted the reduction in monitoring frequency because no methane concentration at any of the monitoring location points had exceeded 500 ppm methane. Accordingly, since 2004, the Town has conducted annual SEM over Cells 1-4, for portions that are not overlain by Cell 6. Quarterly SEM for Cells 5-6 began in February/March 2012.

SEM APPROACH

SEM will be conducted quarterly in accordance with the requirements of 6 NYCRR Part 208. In accordance with Part 208.4(d), surface methane concentrations will be monitored along the entire perimeter of the collection area and along a pattern that traverses the Landfill at 30 meter intervals. Areas where visual observations indicate the potential for elevated concentrations of landfill gas, such as distressed vegetation, cracks or seeps in the cover, will also be monitored. Landfill gas well

casing penetrations through waste cover will also be monitored, but other cover penetrations such as survey stakes, fencing or litter fencing, flags, signs, trees, and utility poles will not be monitored. Areas with steep slopes or other dangerous areas will be excluded from SEM. These areas include: interior haul roads; working areas or working face; slopes steeper than or equal to 3:1; and, areas where the landfill cover material has been exposed for the express purpose of installing, expanding, replacing, or repairing components of the landfill gas, leachate, or gas condensate collection and removal systems.

The plan included in Appendix A indicates the SEM path for Cells 1-6. Field personnel will navigate along the anticipated walking path to each point and record a measurement at 30m intervals.

SEM EQUIPMENT

The equipment to be used for SEM will include a portable analyzer conforming to the specifications provided in Method 21 of 40 CFR Part 60, except that methane is substituted for volatile organic compounds (VOC). The portable analyzer will have a methane measurement range of 0-50,000 ppm with an accuracy of ±2.5 ppm.

ACCEPTABLE METEOROLOGICAL CONDITIONS

SEM will be performed during typical meteorological conditions as prescribed in 6 NYCRR Part 208.6(c)(3). SEM events will not be performed on days with precipitation or strong winds. Following each monitoring effort, meteorological data from the closest airport (i.e., Brookhaven Airport in Shirley, NY) will be downloaded for the SEM event day(s) and included in the corresponding SEM report.

PRE-SEM EQUIPMENT CALIBRATION AND CHECKS

For SEM, the field team will be trained on all instrument operations, calibrations, program objectives and health and safety. Prior to each SEM event, the portable analyzer will be calibrated by trained personnel. Certified zero gas and a calibration gas of 500 ppm methane will be used to check the precision and response time of the portable analyzer against the specifications in Method 21 prior to the start of every SEM event. If the instrument fails calibration or response time checks, the instrument will not be used for the SEM event.

SEM PERFORMANCE

The calibrated and checked portable analyzer will be used to first determine the background methane concentration by recording measurements upwind and downwind of the Landfill. The upwind concentration will be logged as the background methane concentration. At each SEM point, inlet of the portable analyzer will be held within 5-10 centimeters of the Landfill surface. The methane concentration, if any, will be recorded once the portable analyzer has sampled in excess of the measured response time as determined prior to each SEM event. The maximum observed concentration and SEM point identification will be recorded. This process will be repeated for each individual monitoring point.

For SEM points with methane concentrations exceeding 500 ppm, above-grade landmarks (e.g., nearby landfill gas collectors) will be recorded, and the location of the exceedance will be marked for performance of SEM re-checks.

SEM RECHECKS

SEM rechecks/re-monitoring will be performed in accordance with 6 NYCRR Part 208.6(c)(4) as follows:

> "(4) Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in subparagraphs (i) through (v) of this paragraph shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of section 208.4(d) of this Part.
>
> (i) The location of each monitored exceedance shall be marked and the location recorded.
>
> (ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.
>
> (iii) If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in subparagraph (v) of this paragraph shall be taken, and no further monitoring of that location is required until the action specified in subparagraph (v) of this paragraph has been taken.
>
> (iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in subparagraph (ii) or (iii) of this paragraph shall be re-monitored one month from the initial exceedance. If the one-month re-monitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the one-month re-monitoring shows an exceedance, the actions specified in subparagraph (iii) or (v) of this paragraph shall be taken.
>
> (v) For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the department for approval."

The following variance to the SEM recheck procedures of 6 NYCRR Part 208.6(c)(iii) and (iv) is proposed:

> The Town will operate with a variance to the 10-day Surface Emissions Re-monitoring Event (REM) window allotted for adjustments to the cover and/or GCCS. Industry experience with NSPS facilities suggests that this 10-day time frame may not be reasonable to effect comprehensive repairs during all quarters of a typical year. For example, if the facility experiences precipitation events following a surface scan, it may take several days or even weeks for the side slopes of the landfill to dry out enough to support construction equipment for cover repairs. If the side slopes are not completely dry, the repair equipment could cause

greater damage to the final and/or intermediate cap (and subsequently higher emissions) than the original erosion or crack. Poor weather conditions can prevent cover maintenance, causing the follow-up REM events 10 days later to automatically fail. This can ultimately force a facility to install an unnecessary LFG collection device when all that was required was time to effect a cover repair.

For this reason, the 10-day REM event time frame will be extended by an additional two (2) weeks, in the event of bad weather conditions after a quarterly SEM event. The Town can obtain this two-week extension automatically upon providing the department with the following written information:

- The date of the initial quarterly SEM event.
- The date of the inclement weather event.
- Description of inclement weather event.
- The name of the responsible sampling technician.

Please note that a copy of this information will also be maintained in the Town's files.

SEM CONFIRMED EXCEEDANCE REMEDY

6 NYCRR Part 208.6(c)(4)(v) requires the landfill owner or operator to take corrective measures to remedy any monitored surface methane concentration that equals or exceeds 500 parts per million (ppm) above background. The Town will perform the initial surface emission monitoring (SEM) events and the 10-day and 30-day re-monitoring events in accordance with Subpart WWW and Section 5.2.3 of this variance Section. If the 30-day re-monitoring does not demonstrate compliance with the 500 ppm standard, corrective measures may include corrective actions to the GCCS other than the installation of additional LFG collection devices. These corrective actions could include, but are not limited to, one or more of the following:

a. Adjustment/installation/upgrades to the blower/flare equipment (variable frequency drive (VFD) adjustments, bigger blowers, larger flare, additional blowers, etc.);
b. Re-drilling or installation of additional/replacement gas collection devices;
c. Repair of landfill cap to lessen the chance of encountering ambient air;
d. Adjust/repair/replace header, valves; and,
e. Rebalance the GCCS so as to vary the gas flow and vacuum at select gas collectors, as necessary.

Other actions that result in the remediation of an exceedance within the 120-day time frame would also be covered under this alternative. Any enhancements made to the existing GCCS will be documented in the semi-annual reports required under the Town's Title V air permit. Please note that the Town will be proactively implementing this variance to make certain that exceedances are addressed as expeditiously as possible. In the event that the GCCS cannot be brought back into compliance during the 120-day assessment period, the Town will submit an extended compliance schedule for review and approval by the department within 90 days of the initial exceedance.

SEM FOR CLOSED PORTIONS OF THE LANDFILL

Any portions of the Town's landfill that have been certified closed or have been closed and capped in accordance with the cover conditions contained in the 2019 GCCS Design Plan will be considered a

closed landfill for SEM events. These closed portions of the Landfill will be monitored in accordance with 6 NYCRR Part 208.7(f), which states the following:

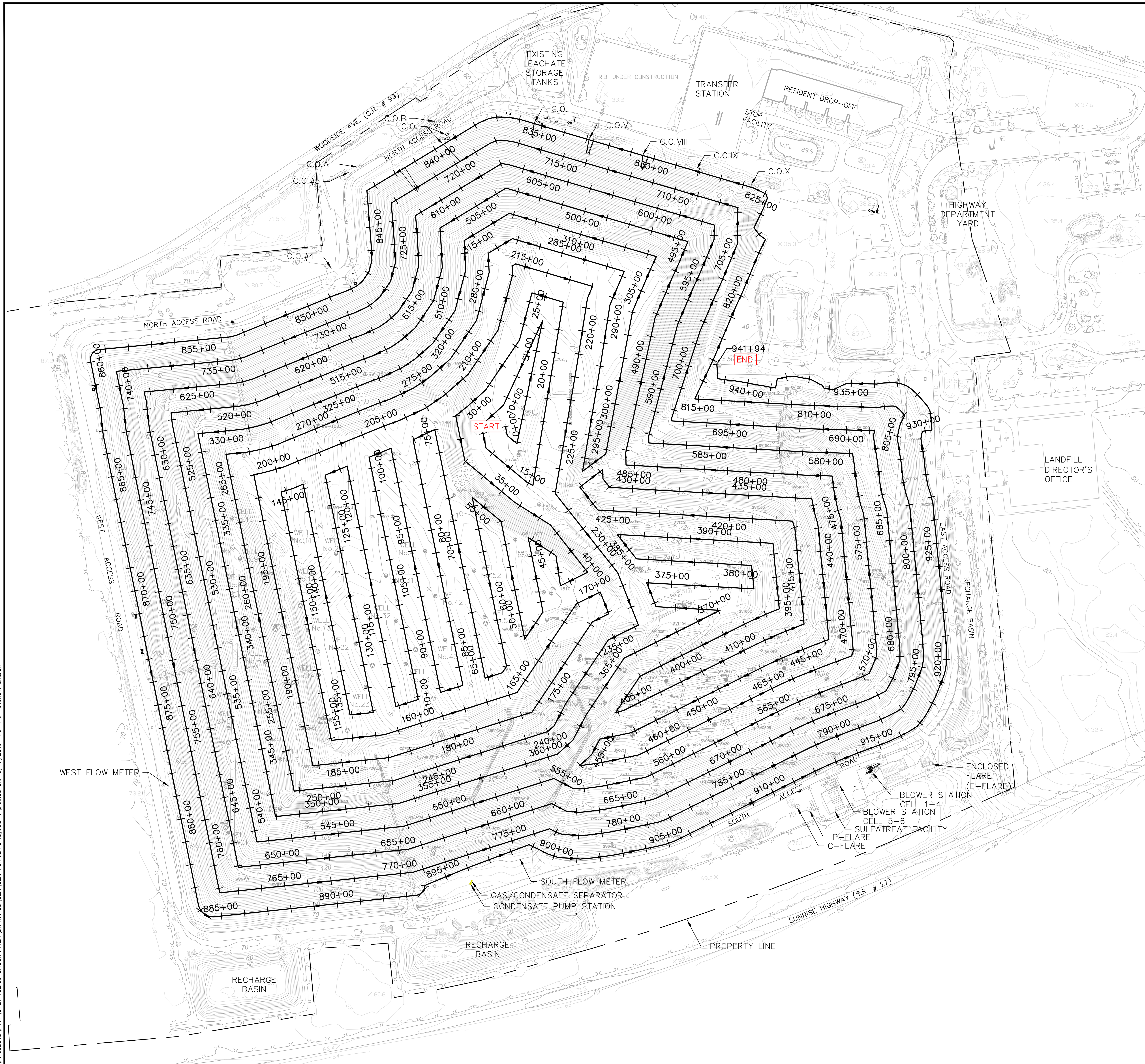
> "...Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the monitoring frequency for that landfill to quarterly monitoring."

3 SEM RECORDKEEPING AND REPORTING

SEM data records and corrective actions taken will be kept onsite for agency review. The results from each SEM event will be included in semi-annual NSPS reports.

Appendix A

SEM Path Plan



LEGEND

- 10' CONTOUR
- 2' CONTOUR
- LFG COLLECTOR
- GAS VENT OR RISER
- 10+00 — 5+00 SEM PATH/SAMPLE LOCATION

NOTE:

1. GAS COLLECTORS BASED ON AS-BUILT GAS SYSTEM PLANS PREPARED BY L.K.MCLEAN ASSOCIATES, P.C., ENTITLED "TOWN OF BROOKHAVEN, SUFFOLK COUNTY, NY, BROOKHAVEN LANDFILL, (NORTH) SHEET 1, (SOUTH-WEST) SHEET 2, & (SOUTH-EAST) SHEET 3, AS-BUILT GAS SYSTEM PLAN" DATED NOV. 2016, LAST REVISED 11/18/16.
2. A FINAL COVER SYSTEM IS INSTALLED COMPLETELY OVER CELL 1-4.
3. EXISTING TOPOGRAPHY BASED ON ELECTRONIC DRAWING FILES NAMED: 17001.000_DFF_SUR_OCTOBERQQ_0.DWG DATED 2-1-2018, 17001.000_DFF_XREF_BASEMAPJULY2017_0.DWG DATED 2-1-2018, 19001.000 QQ JULY.DWG DATED 9-13-2019 PROVIDED BY LKMA.

200 100 0 200 400
SCALE: 1"=200'

NO.	REVISION	DATE

SHEET TITLE: **SEM PLAN**

PROJECT TITLE: **2019 SEM PROTOCOL BROOKHAVEN LANDFILL**

CLIENT: **TOWN OF BROOKHAVEN DEPT. OF SUSTAINABILITY & MATERIALS MNGT.**
350 HORSEBLOCK RD BROOKHAVEN, NY 11719

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.
4 EXECUTIVE BLVD. SUITE 303, SUFFERN, NY 10901
PH. (845) 357-1510 FAX. (845) 357-1049

PROJ. NO. 07217152.00 | DSN. BY: SHY | DWN. BY: SHY | CHK. BY: MMS | Q/A RVW BY: GPM | APP. BY: MMS

CADD FILE: SEM Plan

DATE: 9/17/2019

SCALE: 1" = 200'

DRAWING NO. 1 of 1

I:\PROJECTS\YY17\07217152.00 BROOKHAVEN\DRAWINGS\SEM\SEM PLAN.DWG layout: 1 plotted on: 9/17/2019 4:01 PM Yevchak, Sharon