BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, Petitioner, vs. CHIQUITA CANYON, LLC a Delaware Corporation, [Facility ID No. 119219] Respondent.	**Case No. 6177-4** **DECLARATION OF ROBERT E. DICK, P.E., B.C.E.E.** Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150 _____ Hearing Date: April 24, 2024 Time: 9:30 am Place: Hearing Board South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765

I, Robert E. Dick, declare as follows:

1. I am of sufficient age and am competent to testify in this proceeding. I make this declaration based upon personal knowledge and am competent to testify to the facts set forth herein.

Background and Experience

2. As discussed in more detail in my prior declarations in Case No. 6177-4, I serve as the Senior Vice President and Solid Waste Division Leader and Business Unit Director for SCS Engineers, Inc. ("SCS") and have worked with SCS for approximately 34 years. I am a licensed professional engineer with over 30 years' experience on civil and environmental engineering projects related to solid waste management. My work focuses largely on municipal solid waste ("MSW") landfills like the Chiquita Canyon Landfill (the "Landfill").

3. I was retained by Chiquita Canyon, LLC ("Chiquita") to provide expert consulting services related to managing the elevated temperature landfill ("ETLF") conditions currently being experienced by the Landfill and its resulting impacts, including odors and liquids. I serve on the

Reaction Committee as the subject matter expert for chemical reaction(s) within landfills, which can result in atypical landfill conditions, such as heat accumulation, certain changes in landfill gas and leachate composition, distinct odors, accelerated settlement, formation of significant subsurface pressures, and elevated levels of hydrogen, dimethyl sulfide, and non-methane organic compounds.

4. This declaration is made for the April 24 and 25, 2024 status and modification hearing on the Modified Stipulated Order for Abatement with the South Coast AQMD issued on March 21, 2024 in Case No. 6177-4.

No Evidence that the Reaction Is Intensifying

5. As explained in my prior declarations, the Landfill is experiencing the typical symptoms of an ETLF event, including elevated temperatures, increased production of landfill gas and liquids, changes in landfill gas and liquids/leachate composition, distinct odors, accelerated settlement, and significant subsurface pressures. Nevertheless, recent data indicates that the reaction is not intensifying.

Assessment and Evaluation of the ETLF Event

6. Since January 17, 2024, Chiquita has continued to undertake numerous actions to assess, evaluate, measure, and investigate the ETLF event and its potential causes. As described in my prior declarations, these actions include measuring and tracking concentrations of landfill gas compounds, including sulfur compounds, methane, and hydrogen; measuring and tracking wellhead pressures and temperatures; conducting odor surveillance in the neighboring communities; enhancing the community air monitoring program; measuring and tracking liquid quantities collected, treated, and disposed offsite; measuring and tracking landfill surface settlement rates; installing in-situ waste temperature measurement equipment; and much more. Each of these actions continues to provide Chiquita with information on the status of the ETLF event, and based on the data received, it appears that the ETLF event is not propagating.

7. The number and position of landfill gas wellheads that have consistently recorded temperatures greater than 160 degrees Fahrenheit since September 2023 are relatively constant, which suggests that the location and intensity of the ETLF event has remained relatively unchanged during this period.

8. The number and position of landfill gas wellheads that have consistently recorded inverted methane-to-carbon dioxide ratios (ratios that are less than 1.0), as well as the wellheads that have consistently recorded hydrogen concentrations greater than 2 percent by volume, since September 2023, are relatively constant, which also suggests that the location and intensity of the ETLF event has remained relatively unchanged during this period.

9. The landfill surface area exhibiting accelerated settlement rates has been relatively constant since September 2023, which indicates that the location of the ETLF event has remained relatively unchanged during this period.

10. The overall size of the area of the Landfill affected by the reaction has remained fairly constant, and the physical boundaries of the area of the Landfill affected by the ETLF conditions have remained stable. The ETLF event remains confined to the northwestern portion of the Landfill. While there may have been some short-term fluctuations in the specific wells experiencing elevated temperatures on the boundaries of the area of the Landfill affected by the reaction, these short-term fluctuations do not necessarily mean that the overall ETLF event is either expanding or contracting.

11. Since January 17, 2024, the Reaction Committee, led by me, has continued to evaluate the size of the Reaction Area on a monthly basis (see **Condition 9(a) and (b)**). Each month, we review data compiled from the past month, including landfill gas wellhead temperatures, the composition of the landfill gas (e.g., levels of methane, nitrogen, and carbon dioxide), the concentration of hydrogen in the landfill gas, the accelerated settlement of the landfill surface (e.g., instances of pronounced and dramatic atypical settlement), first hand observations of leachate quantities and characteristics of odor, and drill cuttings from the bore holes in relation to the drilling of wells. Once the temperature monitoring probes required by the Local Enforcement Agency are installed and operational, we will also evaluate this temperature probe data as part of our monthly evaluations. Based on this data, we determine the boundaries of the area of the Landfill affected by the reaction, which we refer to as the "data-driven reaction area." We then compare this area to the boundaries of the Reaction Area as defined in **Condition 9(a)** by the boundary of Cells 1/2A, 2B/3, 4, and Module 2B/3/4 P2 and make a determination as to whether the boundaries of the Reaction Area need to change.

12. Each month, I submit reports to South Coast AQMD on behalf of the Reaction Committee presenting our determination. These reports include a narrative summary of our review and determination, and a revised map of the data-driven reaction area, outlined in magenta dashed lines, and the Reaction Area, outlined in solid black lines. Since January 17, 2024, I have submitted these reports to South Coast AQMD on February 7, March 7, and April 5, 2024. Correct and true copies of these reports are attached to this declaration as **Exhibits A through C**.

13. Since the issuance of the Stipulated Order on September 6, 2023, we have determined that the initial boundaries of the Reaction Area have remained the same. The ETLF event has not expanded to a new landfill cell or module.

14. While the data from February 2024 indicated that some areas of the data-driven reaction area demonstrated less evidence of the ETLF event as compared to the previous month, including less pronounced settlement and fewer wells exhibiting trigger thresholds for temperature, hydrogen, and poor gas quality, we felt it prudent to be conservative and to maintain the current boundaries of the data-driven reaction area for the month to enable evaluation as to whether this constituted a trend of contraction of ETLF conditions.

15. For the March 2024 determination, we scrutinized the data to investigate whether the discontinuation of dewatering pump operations throughout the wellfield, which was in effect for most of February and March, had any definitive impact on the boundaries of the Reaction Area. Based on a comparison of the data recorded during February and March, as compared with data recorded and compiled during previous months, we did not find evidence that discontinuation of dewatering pump operations definitively contributed to an expansion of the reaction area. We will continue to evaluate trends in ETLF conditions over the coming months.

16. The measurements that have informed the monthly boundary assessment exercise, which have resulted in consistency of the delineated area affected by the reaction for the period of January through March, are good indications that the ETLF event is being contained and managed, and is not continuing to expand or intensify. Further efforts to address the ETLF event are anticipated to continue to remove heat and relieve pressure, which are expected to eventually diminish the ETLF conditions.

Actions Taken to Mitigate the ETLF Event

17. As described in my January 9 declaration, Chiquita continues to take numerous actions to slow and stop the ETLF event and to alleviate the potential impacts of the ETLF event, both under the Modified Stipulated Order, and in coordination with Chiquita's other regulators, including the U.S. Environmental Protection Agency.

18. To summarize, since January 17, 2024, Chiquita has:

a. Installed 44 new or replacement vertical landfill gas wells;

b. Re-activated 31 of the 42 dewatering sumps/pumps that had previously been installed in vertical wells in the Reaction Area and that had been temporarily decommissioned;

c. Continued to install the geosynthetic cover over portions of the Reaction Area;

d. Continued to install well boot seals in the Reaction Area;

e. Continued to provide California Air Resources Board-certified air filtration devices as well as replacement air filters to residents in the communities surrounding the Landfill; and

f. Implemented the Chiquita Canyon Landfill Community Relief Program.

Compliance with March Modified Order

19. On October 6, 2023, I notified the South Coast AQMD of the formation of the Reaction Committee, and I submitted the names and curriculum vitae or resumes of the committee members in accordance with **Condition 12**. On April 5, 2024, I notified the South Coast AQMD of the addition of Dr. Richard C. Pleus, PhD, MS, to the Reaction Committee, and provided his resume to South Coast AQMD.

20. As required by **Condition 12(f),** Chiquita is hosting a monthly virtual meeting with all members of the Reaction Committee and South Coast AQMD technical staff to provide an update on the progress of work and planned work. Chiquita provides an agenda to South Coast AQMD no later than 10 calendar days prior to each meeting, and posts on its Odor Mitigation webpage a summary of the meeting, including responses to any recommendations made, within 20 days after each meeting. The first such meeting was held on March 26, 2024. The next meeting will be held on April 26, 2024. True

and correct copies of the agenda and meeting summary from the March 26, 2024 meeting are attached to this declaration as **Exhibit D.**

21. As required by **Conditions 12, 26, and 32**, the Reaction Committee has conducted many investigations and studies into the cause of the landfill reaction, the impact of air pollutant emissions from sources at the Landfill, interim measures to limit malodorous emissions, and corrective measures to mitigate and abate the landfill reaction. The table below provides a summary of these reports, their respective status, and the expert consultant in charge of each report. Additional reports and updates prepared and submitted by the Reaction Committee are not included in this table. As required by **Condition 12(h),** Chiquita posts all Reaction Committee reports on its Odor Mitigation webpage.

Condition Number	Report Description	Status	Expert
12(g)(i)	A report on known and possible methods for effective treatment of dimethyl sulfide ("DMS") and preventative mechanisms for DMS formation in landfill gas.	In progress. Chiquita will submit this report by April 30, 2024.	Pat Sullivan
12(g)(ii)	A report on the cause of the alleged chemical reaction(s) resulting in the elevated well temperatures, elevated levels of DMS formation in the landfill gas, and formation of elevated levels of non-methane organic compounds in the landfill gas, in addition to solutions to slow and stop the reaction(s) in the landfill.	Submitted on December 8, 2023.	Bob Dick
12(g)(iii)	A report on the feasibility and availability of continuous community emission monitoring system to conduct continuous monitoring and provide estimates of DMS concentrations at the facility fence line and within the affected community.	Submitted on December 1, 2023.	Pat Sullivan
12(g)(iii)	A workplan for the installation of and operation of the continuous community emission monitoring system for DMS concentrations if monitoring is feasible.	The Reaction Committee determined that continuous monitoring of DMS is not feasible and	Pat Sullivan

		notified South Coast AQMD on December 31, 2023.	
12(g)(iv)	A report on landfill best management practices and alternative methods to minimize the release of fugitive surface gas and minimize odors from fugitive surface gas, including cover practices at the Reaction Area and working face, and how best to address related odorous emissions	Submitted on November 6, 2023.	Neal Bolton
12(g)(v)	A report on the known health risks from acute and long–term exposure to DMS, including any action levels from other public health or government entities, and including a summary of recommended actions for persons exposed to DMS for acute and long–term durations.	Submitted on January 15, 2024	Pablo Sanchez-Soria
12(g)(vi)	A report on the health impacts from ongoing and long–term exposure to hydrogen sulfide, or other speciated sulfur compounds, and any other hazardous air pollutants.	In progress. Chiquita will submit this report by August 1, 2024.	Pablo Sanchez-Soria and Rick Pleus
12(g)(vii)	A report on the development of a model to estimate the quantity of liquid left in the landfill.	In progress. Chiquita will submit this report by May 21, 2024.	Neal Bolton
12(i)	A report documenting the findings of the initial flux chamber study conducted pursuant to the direction of the Los Angeles County Department of Public Health.	Submitted on October 31, 2023.	Pat Sullivan
12(i)	A protocol for an additional flux chamber study, for methane, non-methane organic compounds, toxic air contaminants, total reduced sulfur, and speciated sulfur compounds to determine the surface flux throughout the landfill.	Submitted on December 28, 2023.	Pat Sullivan
12(i)	A report documenting the findings of the additional flux chamber study, including the differences between the initial and additional studies.	In progress. Chiquita will submit this report by June 3, 2024.	Pat Sullivan

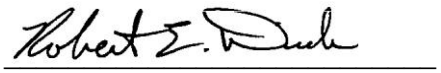
26	A report on the feasibility of temporary containment measures for the purposes of controlling leachate and possible discharges of pressurized leachate when drilling additional holes for wells, liquid pumps, temperature devices, or other purposes.	Submitted on March 12, 2024.	Neal Bolton
32, 32(a)	An air modeling report on odor and emission transport of odors from the landfill, including the identification of effective techniques to remedy potential odor impacts on the nearby community, an evaluation of the efficacy of odor control measures, and a recommendation on whether additional modeling is recommended to fully address the current odor circumstances at the landfill and potential odor impacts on the nearby community.	Submitted on December 1, 2023.	Neal Bolton
32(b)	A proposal for additional air modeling.	Submitted on January 15, 2024.	Neal Bolton
32(b)	A report on the results of the additional air modeling.	In progress. Chiquita will submit this report within 150 days of South Coast AQMD approval for the study proposal.	Neal Bolton

22. Chiquita continues to post reports and information submitted to the South Coast AQMD and its other regulators on its Odor Mitigation webpage as required by **Condition 39**. Chiquita is also continuing to translate the information into Spanish. Once Chiquita finalizes a report or submits information to a regulator, it submits the report or information to a translation service capable of providing translations of legal documents. Once the translation service provides the translated version, Chiquita posts the translated information on its webpage.

23. In accordance with **Condition 67**, Chiquita designated Steve Cassulo, District Manager, as the Inspection Liaison responsible for coordinating the exchange of information between Chiquita and South Coast AQMD. Chiquita notified South Coast AQMD of this designation on March 25, 2024.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct to my personal knowledge.

Executed on this 19th day of April 2024, in Powhatan, Virginia.



Robert E. Dick
Senior Vice President
SCS Engineers

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, Petitioner, vs. CHIQUITA CANYON, LLC a Delaware Corporation, [Facility ID No. 119219] Respondent.	**Case No. 6177-4** **EXHIBIT A TO DECLARATION OF ROBERT E. DICK, P.E., B.C.E.E.** Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150 Hearing Date: April 24, 2024 Time: 9:30 am Place: Hearing Board South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765

February 7, 2024
File No. 01204123.21-13

Mr. Baitong Chen
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Subject: Monthly Reaction Committee Determination on Reaction Area Boundary
Chiquita Canyon Landfill – Castaic, California

Dear Mr. Chen:

In accordance with Condition Nos. 9a and 9b of the Stipulated Order for Abatement (SOFA) pertaining to the Chiquita Canyon Landfill (Landfill or Facility) (Case No. 6177-4), the Reaction Committee has reviewed newly acquired applicable data recorded during the month of January 2024, considered revisions of the estimated extent of elevated temperature landfill (ETLF) conditions exhibited at the subject Facility (referred to as the "Reaction Area" limits), and has prepared this determination on potentially revising the Reaction Area map.

Attachment A presents the Drawing, titled "Reaction Area Map", prepared by SCS Engineers (SCS) and dated 2/5/24. The Drawing depicts the Reaction Area boundary as prescribed in Condition No. 9a, which corresponds to the limits of Cells 1/2A, 2B/3, 4, and Module 2B/3/4 P2 as a solid black line. The Drawing also depicts the estimated extent of ETLF conditions being experienced at the site based on the Reaction Committee's review of scientific data as a dashed magenta line. As presented on the Drawing, the estimated extent of ETLF conditions (dashed magenta line) is fully contained within the Reaction Area boundary decreed in the SOFA (solid black line). Because the ETLF conditions are fully contained within the Reaction Area boundary and have not expanded into a new cell, the Reaction Committee finds no basis to modify the Reaction Area boundary at this time. Please note the following:

- The rationale serving as the basis for considering adjustments and modifications to the Reaction Area boundary (or the determination to maintain the decreed boundary), include:
  - Landfill gas (LFG) wellhead temperatures in excess of approximately 160 degrees Fahrenheit.
  - Poor gas quality (defined as methane levels of less than 30 percent) in conjunction with methane-to-carbon dioxide (CH_4:CO_2) ratios less than 1.0.
  - The concentration of hydrogen (H_2) in the LFG measured greater than 2 percent by volume.
  - Accelerated settlement of the landfill surface, defined as approximately 6 inches or greater within a 60-day period, and cracks in landfill cover.

- First-hand observations of Landfill and/or SCS engineering, construction, and operations and maintenance (O&M) field personnel who are on-site related to: 1) atypical excess leachate quantities (presence and quantity of liquids); 2) instances of pressurized liquids emitting from the landfill surface, from boreholes during drilling, and from LFG wells; and, 3) the characteristics of the odors originating from the select areas of the waste footprint (often described as "chemical-like" and distinctly different from typical LFG or landfill working face odors).

- There was no dissenting opinion among the Reaction Committee members regarding this monthly determination.

- Supporting data is presented on the Drawing included as Attachment A.

Please contact either of the undersigned if you have questions or require additional information.

Sincerely,

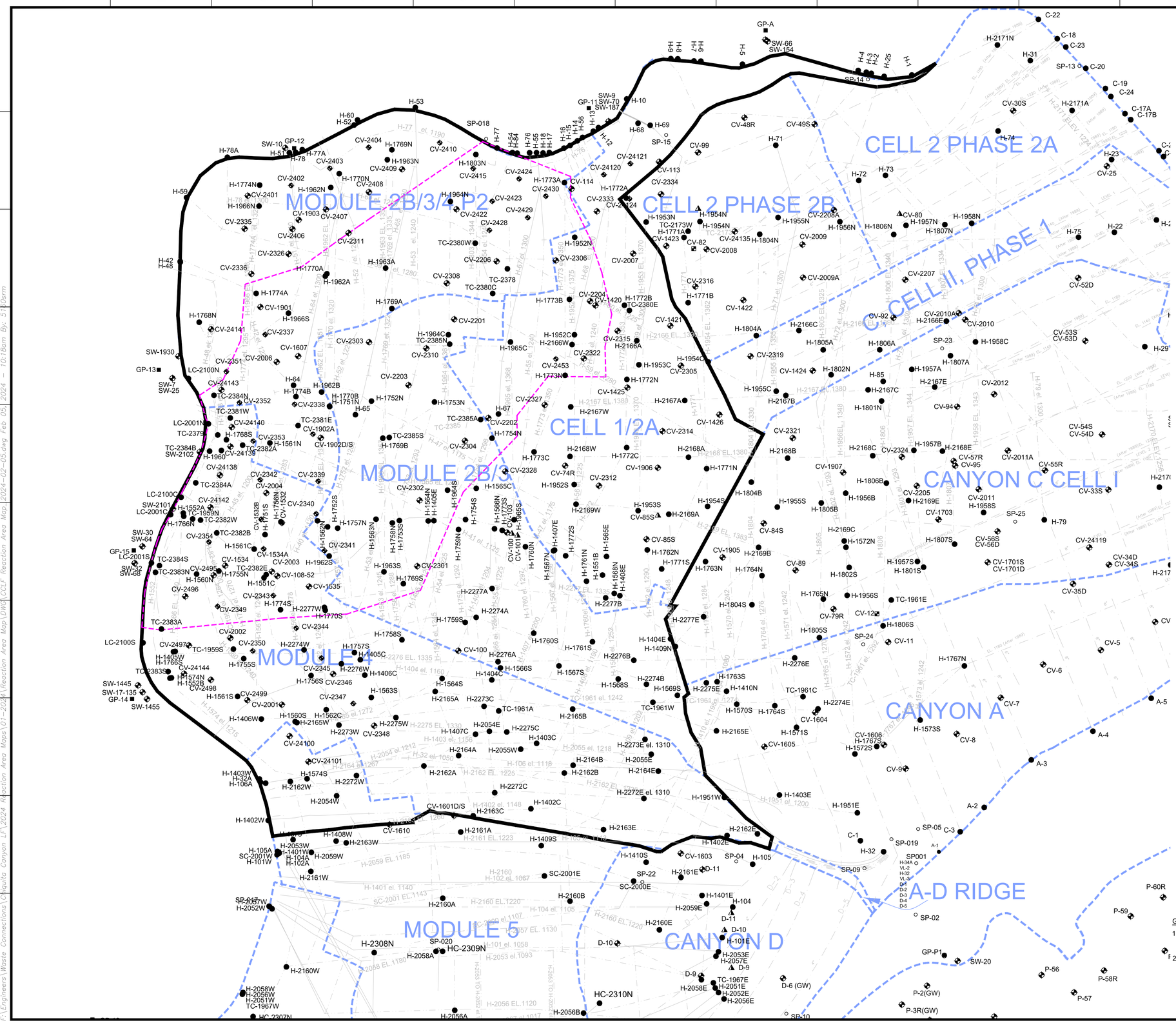
Robert E. Dick, PE, BCEE
Senior Vice President
SCS Engineers

Patrick S. Sullivan, BCES, CCP
Senior Vice President
SCS Engineers

RED/PSS

cc: Nathaniel Dickel, SCAQMD
Christina Ojeda, SCAQMD
Pablo Sanchez Soria, PhD, CIH, CTEH
Neal Bolton, PE, Blue Ridge Services, Inc.
Angie Perez, PhD, CIH, CTEH
Srividhya Viswanathan, PE, SCS Engineers

Enclosure:
Attachment A – Reaction Area Map



GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAT VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

NO.	REVISION	DATE

SHEET TITLE: REACTION AREA MAP JANUARY, 2024

PROJECT TITLE: CHIQUITA LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX: (562) 427-0805

PROJ. NO.	DSN. BY:	CHK. BY:	DWN. BY:	APP. BY:	ACAD FILE
01204123.35	-	JH/WCH	SRM/JH	WCH	ENGINEERS

DATE: 02/05/2024

SCALE: AS SHOWN

SHEET: 1

F:\Engineers\Waste Connections\Chiquita Canyon LF\2024 Reaction Area Maps\01-2024 Reaction Area Map\DWG\CCLF Reaction Area Map_2024-02-05.dwg Feb 05, 2024 - 10:18am By: SRM/JH

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, Petitioner, vs. CHIQUITA CANYON, LLC a Delaware Corporation, [Facility ID No. 119219] Respondent.	**Case No. 6177-4** **EXHIBIT B TO DECLARATION OF ROBERT E. DICK, P.E., B.C.E.E.** Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150 Hearing Date: April 24, 2024 Time: 9:30 am Place: Hearing Board South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765

March 7, 2024
File No. 01204123.21-13

Mr. Baitong Chen
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Subject: Monthly Reaction Committee Determination on Reaction Area Boundary
Chiquita Canyon Landfill – Castaic, California

Dear Mr. Chen:

In accordance with Condition Nos. 9a and 9b of the Modified Stipulated Order for Abatement (SOFA) pertaining to the Chiquita Canyon Landfill (Landfill or Facility) (Case No. 6177-4), the Reaction Committee has reviewed newly acquired applicable data recorded during the month of February 2024, considered revisions of the estimated extent of elevated temperature landfill (ETLF) conditions exhibited at the subject Facility (referred to as the "Reaction Area" limits), and has prepared this determination on potentially revising the Reaction Area map.

Attachment A presents the Drawing, titled "Reaction Area Map", prepared by SCS Engineers (SCS) and dated 2/5/24. The Drawing depicts the Reaction Area boundary as prescribed in Condition No. 9a, which corresponds to the limits of Cells 1/2A, 2B/3, 4, and Module 2B/3/4 P2 as a solid black line. The Drawing also depicts the estimated extent of ETLF conditions being experienced at the site based on the Reaction Committee's review of scientific data as a dashed magenta line. Data from the past month shows that there is an area within the dashed magenta line (the southwestern portion of the area) that demonstrated less evidence of reaction characteristics in February compared to the previous month, including less pronounced settlement and fewer wells exhibiting trigger thresholds for temperature, hydrogen, and poor gas quality. However, the Reaction Committee feels that it is prudent to not contract the magenta line this month to enable evaluation as to whether this constitutes a trend of contraction of ETLF conditions in this area over the next several months.

As presented on the Drawing, the estimated extent of ETLF conditions (dashed magenta line) is fully contained within the Reaction Area boundary decreed in the SOFA (solid black line). Although the dashed magenta line has been modified since the Reaction Committee's prior monthly review to incorporate one additional landfill gas well, the Reaction Committee finds no basis to modify the Reaction Area boundary at this time because these ETLF conditions are fully contained within the Reaction Area boundary and have not expanded into a new cell. Please note the following:

- The rationale serving as the basis for considering adjustments and modifications to the Reaction Area boundary (or the determination to maintain the decreed boundary), include:

  - Landfill gas (LFG) wellhead temperatures in excess of approximately 160 degrees Fahrenheit.

- Poor gas quality (defined as methane levels of less than 30 percent) in conjunction with methane-to-carbon dioxide (CH_4:CO_2) ratios less than 1.0.

- The concentration of hydrogen (H_2) in the LFG measured greater than 2 percent by volume.

- Accelerated settlement of the landfill surface, defined as approximately 6 inches or greater within a 60-day period, and cracks in landfill cover.

- First-hand observations of Landfill and/or SCS engineering, construction, and operations and maintenance (O&M) field personnel who are on-site related to: 1) atypical excess leachate quantities (presence and quantity of liquids); 2) instances of pressurized liquids emitting from the landfill surface, from boreholes during drilling, and from LFG wells; and, 3) the characteristics of the odors originating from the select areas of the waste footprint (often described as "chemical-like" and distinctly different from typical LFG or landfill working face odors).

- Observations of subsurface waste conditions and characteristics as noted on borehole drilling logs for recently installed new wells and/or probes.

- There was no dissenting opinion among the Reaction Committee members regarding this monthly determination.

- Supporting data is presented on the Drawing included as Attachment A.

Please contact either of the undersigned if you have questions or require additional information.

Sincerely,

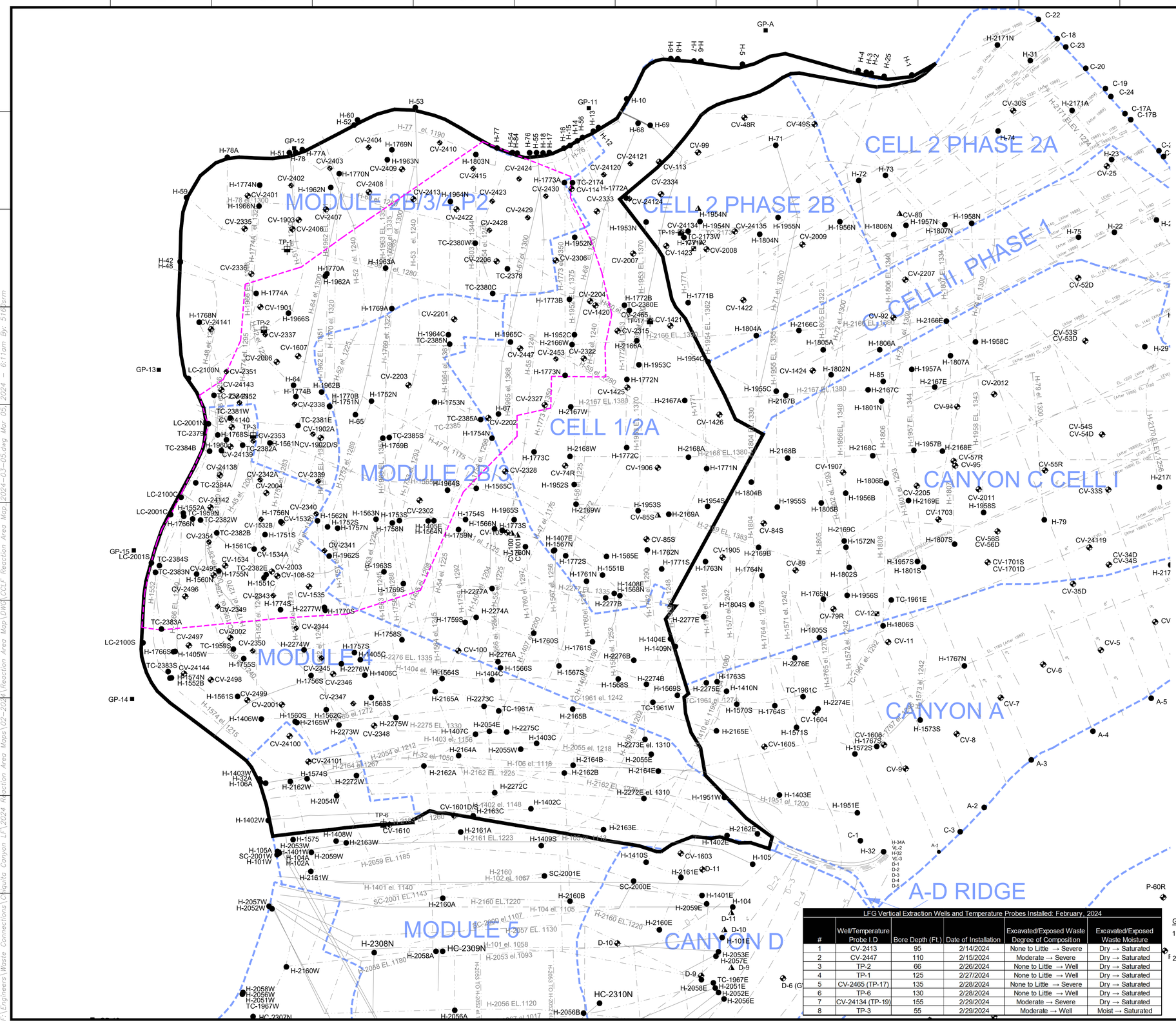
Robert E. Dick, PE, BCEE
Senior Vice President
SCS Engineers

Patrick S. Sullivan, BCES, CCP
Senior Vice President
SCS Engineers

RED/PSS

cc: Nathaniel Dickel, SCAQMD
Christina Ojeda, SCAQMD
Pablo Sanchez Soria, PhD, CIH, CTEH
Neal Bolton, PE, Blue Ridge Services, Inc.
Angie Perez, PhD, CIH, CTEH
Srividhya Viswanathan, PE, SCS Engineers

Enclosure:
Attachment A – Reaction Area Map



LFG Vertical Extraction Wells and Temperature Probes Installed: February, 2024					
#	Well/Temperature Probe I.D	Bore Depth (Ft.)	Date of Installation	Excavated/Exposed Waste Degree of Composition	Excavated/Exposed Waste Moisture
1	CV-2413	95	2/14/2024	None to Little → Severe	Dry → Saturated
2	CV-2447	110	2/15/2024	Moderate → Severe	Dry → Saturated
3	TP-2	66	2/26/2024	None to Little → Well	Dry → Saturated
4	TP-1	125	2/27/2024	None to Little → Well	Dry → Saturated
5	CV-2465 (TP-17)	135	2/28/2024	None to Little → Severe	Dry → Saturated
6	TP-6	130	2/28/2024	None to Little → Well	Dry → Saturated
7	CV-24134 (TP-19)	155	2/29/2024	Moderate → Severe	Dry → Saturated
8	TP-3	55	2/29/2024	Moderate → Well	Moist → Saturated

GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAT VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

DATE / REVISION / NO.

SHEET TITLE: REACTION AREA MAP FEBRUARY, 2024

PROJECT TITLE: CHIQUITA LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX: (562) 427-0805

PROJ. NO: 01204123.35
DSN. BY: -
DWN. BY: SRM/JH
CHK. BY: JH/WCH
APP. BY: WCH
ACAD. FILE: ENGINEERS

DATE: 03/05/2024

SCALE: AS SHOWN

SHEET: 1

F:\Engineers\Waste Connections\Chiquita Canyon_LF\2024 Reaction Area Maps\02-2024 Reaction Area Map\DWG\CCLF Reaction Area Map_2024-03-05.dwg Mar 05, 2024 - 6:11am By: 516jsrm

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, Petitioner, vs. CHIQUITA CANYON, LLC a Delaware Corporation, [Facility ID No. 119219] Respondent.	**Case No. 6177-4** **EXHIBIT C TO DECLARATION OF ROBERT E. DICK, P.E., B.C.E.E.** Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150 Hearing Date: April 24, 2024 Time: 9:30 am Place: Hearing Board South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765

April 5, 2024
File No. 01204123.21-13

Mr. Baitong Chen
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Subject: Monthly Reaction Committee Determination on Reaction Area Boundary
Chiquita Canyon Landfill – Castaic, California

Dear Mr. Chen:

In accordance with Condition Nos. 9a and 9b of the Modified Stipulated Order for Abatement (SOFA) pertaining to the Chiquita Canyon Landfill (Landfill or Facility) (Case No. 6177-4), the Reaction Committee has reviewed newly acquired applicable data recorded during the month of March 2024, considered revisions of the estimated extent of elevated temperature landfill (ETLF) conditions exhibited at the subject Facility (referred to as the "Reaction Area" limits), and has prepared this determination on potentially revising the Reaction Area map.

Attachment A presents the Drawing, titled "Reaction Area Map", prepared by SCS Engineers (SCS) and dated 4/3/24. The Drawing depicts the Reaction Area boundary as prescribed in Condition No. 9a, which corresponds to the limits of Cells 1/2A, 2B/3, 4, and Module 2B/3/4 P2 as a solid black line. The Drawing also depicts the estimated extent of ETLF conditions being experienced at the site based on the Reaction Committee's review of scientific data as a dashed magenta line. As presented on the Drawing, the estimated extent of ETLF conditions (dashed magenta line) is fully contained within the Reaction Area boundary decreed in the SOFA (solid black line). Because the ETLF conditions are fully contained within the Reaction Area boundary and have not expanded into a new cell, the Reaction Committee finds no basis to modify the Reaction Area boundary at this time. Please note the following:

- The rationale serving as the basis for considering adjustments and modifications to the Reaction Area boundary (or the determination to maintain the decreed boundary), include:
  - Landfill gas (LFG) wellhead temperatures in excess of approximately 160 degrees Fahrenheit.
  - Poor gas quality (defined as methane levels of less than 30 percent) in conjunction with methane-to-carbon dioxide (CH_4:CO_2) ratios less than 1.0.
  - The concentration of hydrogen (H_2) in the LFG measured greater than 2 percent by volume.
  - Accelerated settlement of the landfill surface, defined as approximately 6 inches or greater within a 60-day period, and cracks in landfill cover.

- First-hand observations of Landfill and/or SCS engineering, construction, and operations and maintenance (O&M) field personnel who are on-site related to: 1) atypical excess leachate quantities (presence and quantity of liquids); 2) instances of pressurized liquids emitting from the landfill surface, from boreholes during drilling, and from LFG wells; and, 3) the characteristics of the odors originating from the select areas of the waste footprint (often described as "chemical-like" and distinctly different from typical LFG or landfill working face odors).

- Observations of subsurface waste conditions and characteristics as noted on borehole drilling logs for recently installed new wells and/or probes.

- Upon completion of probe and instrumentation installation activities, the subsurface temperatures recorded at the in-situ waste temperature probes will be considered.

- There was no dissenting opinion among the Reaction Committee members regarding this monthly determination.

- Supporting data is presented on the Drawing included as Attachment A.

Please contact either of the undersigned if you have questions or require additional information.

Sincerely,

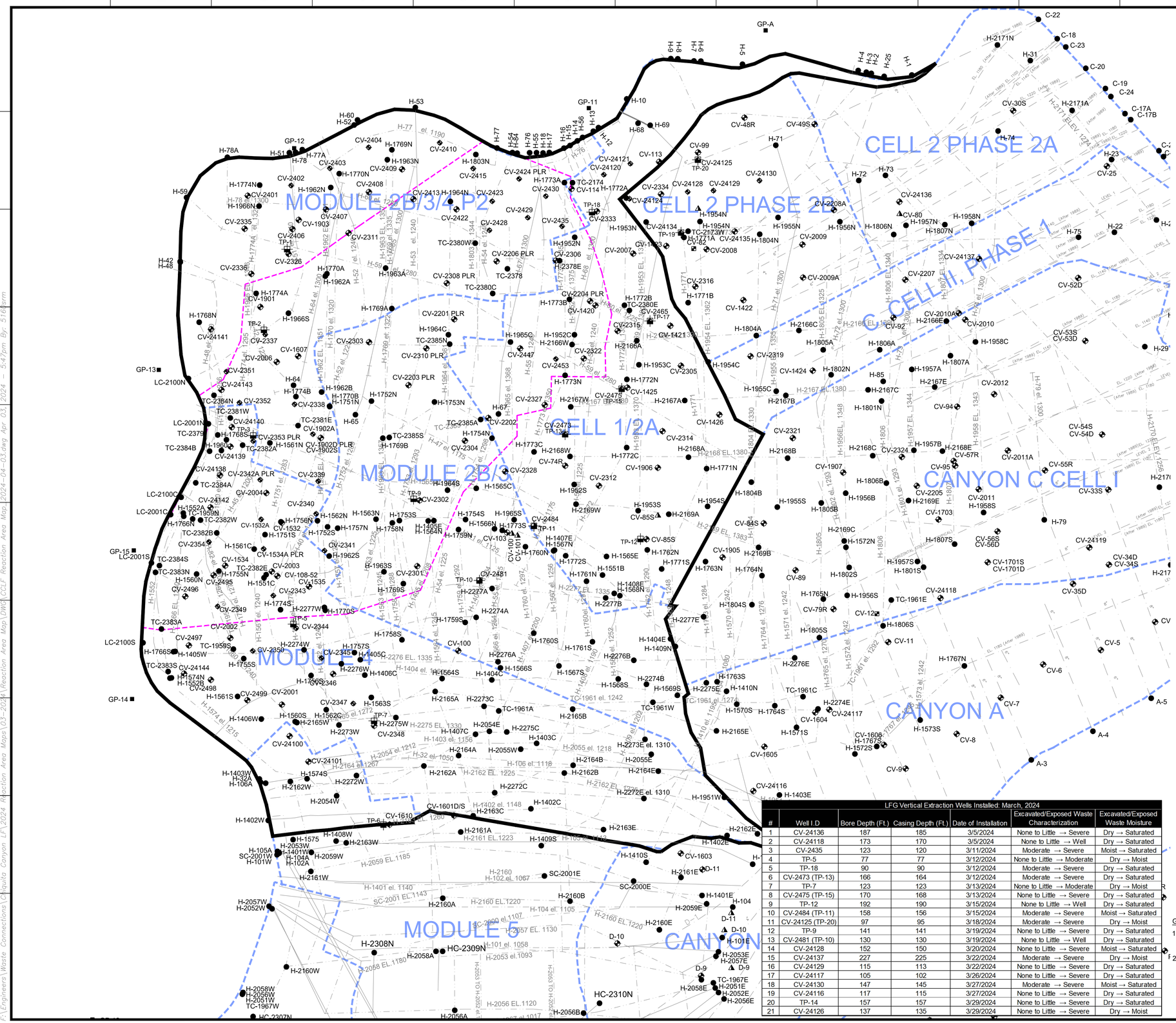
Robert E. Dick, PE, BCEE
Senior Vice President
SCS Engineers

Patrick S. Sullivan, BCES, CCP
Senior Vice President
SCS Engineers

RED/PSS

cc: Nathaniel Dickel, SCAQMD
Christina Ojeda, SCAQMD
Pablo Sanchez Soria, PhD, CIH, CTEH
Neal Bolton, PE, Blue Ridge Services, Inc.
Richard Pleus, PhD, MS, Intertox, Inc,
Srividhya Viswanathan, PE, SCS Engineers

Enclosure:
Attachment A – Reaction Area Map



LFG Vertical Extraction Wells Installed: March, 2024

#	Well I.D	Bore Depth (Ft.)	Casing Depth (Ft.)	Date of Installation	Excavated/Exposed Waste Characterization	Excavated/Exposed Waste Moisture
1	CV-24136	187	185	3/5/2024	None to Little → Severe	Dry → Saturated
2	CV-24118	173	170	3/5/2024	None to Little → Well	Dry → Saturated
3	CV-2435	123	120	3/11/2024	Moderate → Severe	Moist → Saturated
4	TP-5	77	77	3/12/2024	None to Little → Moderate	Dry → Moist
5	TP-18	90	90	3/12/2024	Moderate → Severe	Dry → Saturated
6	CV-2473 (TP-13)	166	164	3/12/2024	Moderate → Severe	Dry → Saturated
7	TP-7	123	123	3/13/2024	None to Little → Moderate	Dry → Moist
8	CV-2475 (TP-15)	170	168	3/13/2024	None to Little → Severe	Dry → Saturated
9	TP-12	192	190	3/15/2024	None to Little → Well	Dry → Saturated
10	CV-2484 (TP-11)	158	156	3/15/2024	Moderate → Severe	Moist → Saturated
11	CV-24125 (TP-20)	97	95	3/18/2024	Moderate → Severe	Dry → Moist
12	TP-9	141	141	3/19/2024	None to Little → Severe	Dry → Saturated
13	CV-2481 (TP-10)	130	130	3/19/2024	None to Little → Well	Dry → Saturated
14	CV-24128	152	150	3/20/2024	None to Little → Severe	Moist → Saturated
15	CV-24137	227	225	3/22/2024	Moderate → Severe	Dry → Moist
16	CV-24129	115	113	3/22/2024	None to Little → Severe	Dry → Saturated
17	CV-24117	105	102	3/26/2024	None to Little → Severe	Dry → Saturated
18	CV-24130	147	145	3/27/2024	Moderate → Severe	Moist → Saturated
19	CV-24116	117	115	3/27/2024	None to Little → Severe	Dry → Saturated
20	TP-14	157	157	3/29/2024	None to Little → Severe	Dry → Saturated
21	CV-24126	137	135	3/29/2024	None to Little → Severe	Dry → Moist

GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

DATE / REVISION / NO.

SHEET TITLE: REACTION AREA MAP MARCH 2024

PROJECT TITLE: CHIQUITA LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX: (562) 427-0805

ACAD FILE: ENGINEERS
DWN. BY: SRM/JH
CHK. BY: JH/WCH
APP. BY: WCH
PROJ. NO. 01204123.35
DSN. BY: -

DATE: 04/03/2024

SCALE: AS SHOWN

SHEET: 1

F:\Engineers\Waste Connections\Chiquita Canyon_LF\2024 Reaction Area Maps\03-2024\Reaction Area Map\DWG\CCLF Reaction Area Map_2024-04-03.dwg Apr 03, 2024 - 5:47pm By: 516srm

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, Petitioner, vs. CHIQUITA CANYON, LLC a Delaware Corporation, [Facility ID No. 119219] Respondent.	**Case No. 6177-4** **EXHIBIT D TO DECLARATION OF ROBERT E. DICK, P.E., B.C.E.E.** Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150 Hearing Date: April 24, 2024 Time: 9:30 am Place: Hearing Board South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765

Chiquita Canyon, LLC – Case No. 6177-4
Reaction Committee & South Coast Air Quality Management District Monthly Meeting
Tuesday, March 26, 2024 at 1:00 pm PT

AGENDA

I. Leachate Updates (leachate seep and dewatering updates)
Presentation Leaders – Vidhya Viswanathan & Neal Bolton

II. Landfill Gas Well Expansion Updates and Containment Feasibility Study
Presentation Leaders – Vidhya Viswanathan & Neal Bolton

III. 28-day Air Monitoring Study Updates
Presentation Leader – Pablo Sanchez-Soria

IV. Reaction Area (e.g., temperatures, settlement)
Presentation Leader – Bob Dick

V. Permitting
Presentation Leader – Pat Sullivan

MEETING SUMMARY

Attendees: Reaction Committee & Chiquita—Neal Bolton, Bob Dick, Pablo Sanchez-Soria, Pat Sullivan, Vidhya Viswanathan, Leigh Barton

South Coast Air Quality Management District (SCAQMD)—Kathryn Roberts, Mary Reichert, Ryan Mansell, Nathaniel Dickel, Olga Pikelnaya, Jason Aspell, Angela Shibata, Christina Ojeda, Larry Israel, Amanda Sanders, Devorlyn Celestine, Gerardo Vergara, Chris Chen, Terrence Mann, Payam Pakbin

I. Leachate Updates (leachate seep and dewatering updates)

a. Mr. Bolton presented on the ongoing twice daily inspection efforts to detect leachate seeps as well as corrective measures being employed by Landfill personnel to contain and mitigate detected leachate seeps.

i. Outstanding Question: Ms. Celestine inquired about how the Landfill is marking seeps (e.g., through GPS, flags).

1. Response: The seeps are marked with a physical flag in the field.

ii. Outstanding Question: Ms. Shibata inquired about whether the Landfill maintained a running, active list of every location where there is or has been a seep and whether that list is available for review.

1. Response: The leachate seeps observed during the twice daily leachate seep inspections are logged. Those logs are collected on a weekly basis and submitted to SCAQMD in weekly reports. The weekly reports are available on Chiquita's website. The weekly reports are also included within the monthly Condition 8 reports that are submitted to SCAQMD. The monthly reports are also available on Chiquita's website.

iii. Outstanding Question: Ms. Roberts inquired about how turning most of the pumps off has affected leachate seeps and why the frequency of leachate seep occurrence has diminished recently despite the discontinuation of wellfield dewatering pump operations.

1. Response: It appears that turning off the pumps did not result in an increased number of seeps. Leachate has continued to flow to the toe drain and through the sump pumps to the leachate collection system. Further, even though the well pumps were shut off, the sump pumps were still working, so there was some continuation of dewatering pump operations.

b. Ms. Viswanathan presented on the status of the dedicated dewatering pumps installed within select vertical landfill gas (LFG) extraction wells and noted recent efforts to reinstall and reactivate the pumps.

II. Landfill Gas Well Expansion Updates and Containment Feasibility Study

a. Ms. Viswanathan presented on the status of the LFG collection system expansion efforts, details on the numbers of LFG wells drilled since last summer, and how these numbers correlate to certain specified well count requirements in the Modified Stipulated Order for Abatement (Stipulated Order).

i. Outstanding Question: Ms. Roberts inquired about whether the new wells are all new additional wells or whether they are replacements of former wells that stopped functioning.

1. Response: As of the date of the meeting, they were additional wells, not replacements.

ii. Outstanding Question: Ms. Roberts inquired about the net growth in well numbers.

1. Response: As of the date of the meeting, there was a net growth of 100 wells since July 2023.

b. Mr. Bolton presented on his findings from the study on the feasibility of containing discharges of pressurized leachate, also referred to as pressurized leachate releases (PLRs), including recommendations on how Chiquita can prevent and address PLRs. Mr. Bolton also addressed questions related to health and safety protocols implemented when drilling or repairing a well.

III. 28-day Air Monitoring Study Updates

a. Mr. Sanchez-Soria provided a detailed summary of and answered questions about the 28-day air monitoring study that was currently ongoing. He reviewed the procedures and protocols governing this study and relayed some of the initial data and results recorded and collected to-date.

i. Outstanding Question: Ms. Shibata inquired about whether a two-hour break is sufficient to combat odor fatigue.

    1. Response: Yes, in our experience, a two-hour break allows odor panelists to reduce the likelihood of olfactory fatigue during their data collection activities. Olfactory fatigue from the daily routine, as designed in this study, is not anticipated for various reasons. Odors evaluated in the community are largely considered to fall in the category of ambient odors. The majority of these are faint in nature. Adaptation to these odors is minimized prior to capturing additional measurements by breathing in 100% carbon-filtered air. Odor assessments are separated by a period of data collection and travel from one location to the next. On average, the odor panelists document about 5-6 measurements per hour using this methodology. This reduces the possibility of short-term desensitization from one measurement to the next.

ii. Outstanding Question: Ms. Reichert inquired about whether there was a plan to incorporate the testing being conducted under the Stipulated Order into the health study, including the Condition 36 testing and the odor surveillance data from Condition 1.

    1. Response: The 24-hour samples collected under Condition 36 will be incorporated into the study. The odor surveillance data is under evaluation for potential inclusion in the health study.

iii. Outstanding Question: Ms. Pikelnaya inquired about the link to the air monitoring study website.

    1. Response: The website for the Chiquita Canyon Landfill Air Quality Study can be found here: https://chiquitalandfillairqualitydata.sensible-edp.com/. A link to this website can also be found on Chiquita's Odor Mitigation webpage, here: https://chiquitacanyon.com/reports/odor-mitigation/.

IV. Reaction Area (e.g., temperatures, settlement)

a. Mr. Dick presented on the six data acquisition parameters being assessed by the Reaction Committee on a monthly basis as part of the monthly Reaction Area boundary determination exercise and outlined the interpretation of this data to prepare an estimated delineation. Mr. Dick also provided an update on the status of various corrective measures and best management practices to contain and manage the reaction and opined on the apparent stability (lack of movement or propagation) of the elevated temperature landfill conditions.

V. Permitting

a. Mr. Sullivan provided additional information on Chiquita's ongoing air monitoring program, focusing specifically on the air monitoring that has been expanded in accordance with the Modified Stipulated Order and an order issued by the Environmental Protection Agency. Mr. Sullivan also presented on ongoing and pending permitting activities, including the newly required permit applications related to the leachate tanks, thermal oxidizer, leachate treatment system, LFG collection system, and landfill gas flares.

b. Outstanding Question: Ms. Shibata recommended that permit applications be submitted for the gas extraction system underneath the geosynthetic cover, which she stated would be considered an aboveground mitigation system requiring a Title V revision.

    i. Response: We will submit this permit application as required by the newly proposed modifications to the Stipulated Order for Abatement.