



February 28, 2025

Via E-Mail

Eric Morofuji

Environmental Health Specialist
Los Angeles County Department of Public
Health Local Enforcement Agency
Environmental Programs Division
5050 Commerce Drive
Baldwin Park, California 91706
emorofuji@ph.lacounty.gov

**Re: Chiquita Canyon, LLC Analysis of October 1, 2024 FLIR Survey in
Response to the December 24, 2024 LEA Letter Regarding
Milestone 2B Compliance, Chiquita Canyon Landfill**

Dear Mr. Morofuji:

Chiquita Canyon, LLC (“Chiquita”) hereby provides this additional analysis of the October 1, 2024 aerial Forward Looking Infrared (“FLIR”) survey of the geosynthetic cover area of the Chiquita Canyon Landfill (“Landfill”) in response to the December 24, 2024 letter from the Los Angeles County Department of Public Health, Solid Waste Management Program, acting as the Local Enforcement Agency (“LEA”).

Aerial FLIR Survey of the Geosynthetic Cover

As previously discussed in Chiquita’s November 12, 2024 response to the LEA, Chiquita engaged Sniffer Robotics, Inc. (“Sniffer”) to perform an aerial FLIR survey of the geosynthetic cover area of the Landfill via radiometric thermal imagery. Sniffer performed this survey on October 1, 2024. A radiometric thermal camera measured the temperature of the surface by interpreting the intensity of the infrared signal reaching the camera. Chiquita submitted the October 1, 2024 survey results, together with Chiquita’s analysis of the likely causes of certain high temperatures, in our November 12, 2024 response to the LEA. Chiquita explained that certain variables such as ambient temperature, humidity, dew on the geosynthetic cover, rain, the color of surface objects, and solar insolation can affect the accuracy and quality of these surveys. Considering these variables, Chiquita further explained that because the FLIR technology appeared to be detecting heat data not accurately representing

potential fissures or tension cracks, we had significant concerns about the reliability and accuracy of this technology for the purpose of identifying fissures and tension cracks.

Sniffer has prepared an updated report on its October 1, 2024 survey to address the LEA's requests in its December 24, 2024 letter; the updated report is included as **Attachment A**. As requested in the LEA's December 24, 2024 letter, the report has been updated to show GPS coordinates and quantitative thermal data. In addition, Chiquita has conducted further investigation of each area identified by the LEA and marked as Areas A through E in Figure 1 of CalRecycle's November 25, 2024 letter, and provides the following discussion:

Area A

The area designated by the LEA as "Area A" appears to be in grid 150. There is active gas collection occurring in this area. Chiquita's Gas Collection and Control System ("GCCS") conveys warm gas to the Landfill's flares, as designed. There is a high concentration of GCCS piping in this area relative to the rest of the Landfill, including multiple vertical paths (landfill gas wellheads), horizontal paths (landfill gas header lines), and conveyance lines that remove hot gases and liquids from the north slope of the Landfill. It is expected that the GCCS system will have higher temperatures in this area, particularly given the higher concentration of GCCS infrastructure.

Area B

The area designated by the LEA as "Area B" appears to be in grid 185. The Sniffer data reference points in Area B are points 0023 and 0025. As with the nearby Area A, GCCS infrastructure is highly concentrated in this area. As the GCCS system is designed to convey the landfill gas from the north slope to the flares, we would expect to see elevated temperatures here, particularly given the higher concentration of GCCS infrastructure. This area was also subject to elevated temperatures where the integrity of the dirt cover was compromised. Chiquita repaired the geomembrane cover and performed related work during the fourth quarter of 2024 to address this issue.

Area C

The area designated by the LEA as "Area C" appears to be in grid 181. There are no specific data reference points included in the October 1, 2024 Sniffer data for this area, though point 0007 is nearby. This area is along the western portion of the Landfill, where the reaction is closer to the surface relative to the rest of the reaction area, meaning elevated temperatures are closer to the surface and therefore more readily detected by the radiometric thermal camera. At the time of the October 1,

2024 survey, work along the western portion of the Landfill to complete the western toe drain installation project was being performed in order to install a new toe drain, secondary drain, and ancillary piping to facilitate leachate drainage into the Landfill's leachate collection system and to improve gas collection by replacing the temporary plastic cover with a continuous geosynthetic cover over the area, to further mitigate the elevated temperatures. That work is now complete. In addition, in late April to early May 2024, Chiquita installed a horizontal collector for the GCCS system in this area and the nearby Area D in order to collect additional hot gas for conveyance to the flares and thereby further address elevated temperatures in this area.

Area D

The area designated by the LEA as "Area D" appears to be in grid 181. The Sniffer data reference point within Area D is point 0001. The horizontal collector for the GCCS discussed above in Area C also runs through Area D. Chiquita installed the horizontal collector for the GCCS system in this area and the nearby Area C in order to collect additional hot gas for conveyance to the flares and thereby further address elevated temperatures in this area.

Area E

The area designated by the LEA as "Area E" appears to be in grid 177. The Sniffer data reference points within Area E are points 0019 and 0021. An abandoned gas well, well CV-2302, exists within Area E and is photographed on page 10 of Attachment A. Additional gas wells and dewatering pumps were installed in the area to replace CV-2302. However, the abandoned borehole for CV-2302 may be continuing to emit heat to the surface, which may explain the elevated temperatures detected in the area. The other gas wells and pumps installed in the area continue to remove hot gas and liquids from the Landfill.

Regards,



Steve Cassulo
District Manager
Chiquita Canyon, LLC

Attachment: Sniffer Robotics, Inc., Emission Study Thermal Report, dated October 2, 2024 (updated February 6, 2025)

cc: John Perkey, Waste Connections
Robert Ragland, Los Angeles County Department of Public Health
Liza Frias, Los Angeles County Department of Public Health
Nichole Quick, M.D., Los Angeles County Department of Public Health
Shikari Nakagawa-Ota, Los Angeles County Department of Public Health
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Terrence Mann, South Coast AQMD
Tyler Holybee, United States Environmental Protection Agency
Allison Watanabe, United States Environmental Protection Agency
Laura Friedl, United States Environmental Protection Agency
Trevor Anderson, California DTSC

ATTACHMENT A"



Proprietary and Confidential

Waste Connections Chiquita Canyon
Project: 2024 10 Thermal Study
Job: Thermal Study
Report Submitted Oct 2, 2024
Report Modified Feb 6, 2024

Emission Study Thermal Report

Information presented within provides results from the emissions monitoring inspection performed by technicians with Sniffer Robotics, Inc. associated with the emission study site and date listed herein. Following the inspection, this report will be updated and disseminated by no later than 12:00 PM local time the next day.

This report provides details of peak temperature locations as determined by photos taken from the SnifferDRONE™ and processed. Report details include: coordinates of image locations, date and time of data collection, measured maximum temperatures (Fahrenheit), additional notes, map(s) displaying image locations, and thermal photographic documentation.

Key

Peak Temperature ≥ 68 °F
Peak Temperature < 68 °F

This daily report is not meant for compliance purposes and only intended for customer review.

WEATHER CONDITIONS		Date: Sky: Ground: Temperature: Wind Direction: Wind Speed: Barometric Pressure: Humidity:
		1-Oct Clear Sky Dry 99 °F S 3 MPH 30.36" 26%

LOCATION DETAILS		INSPECTION RESULTS					
Ref	Image Location Latitude	Image Location Longitude	Date (UTC)	Time (UTC)	Class	Peak Temperature °F	Notes
0001	34.43523	-118.65072	10/1/2024	-	Thermal Imagery	118	
0003	34.43462	-118.65125	10/1/2024	-	Thermal Imagery	141	
0005	34.43467	-118.65124	10/1/2024	-	Thermal Imagery	141	
0007	34.43493	-118.65132	10/1/2024	-	Thermal Imagery	121	

Proprietary and Confidential

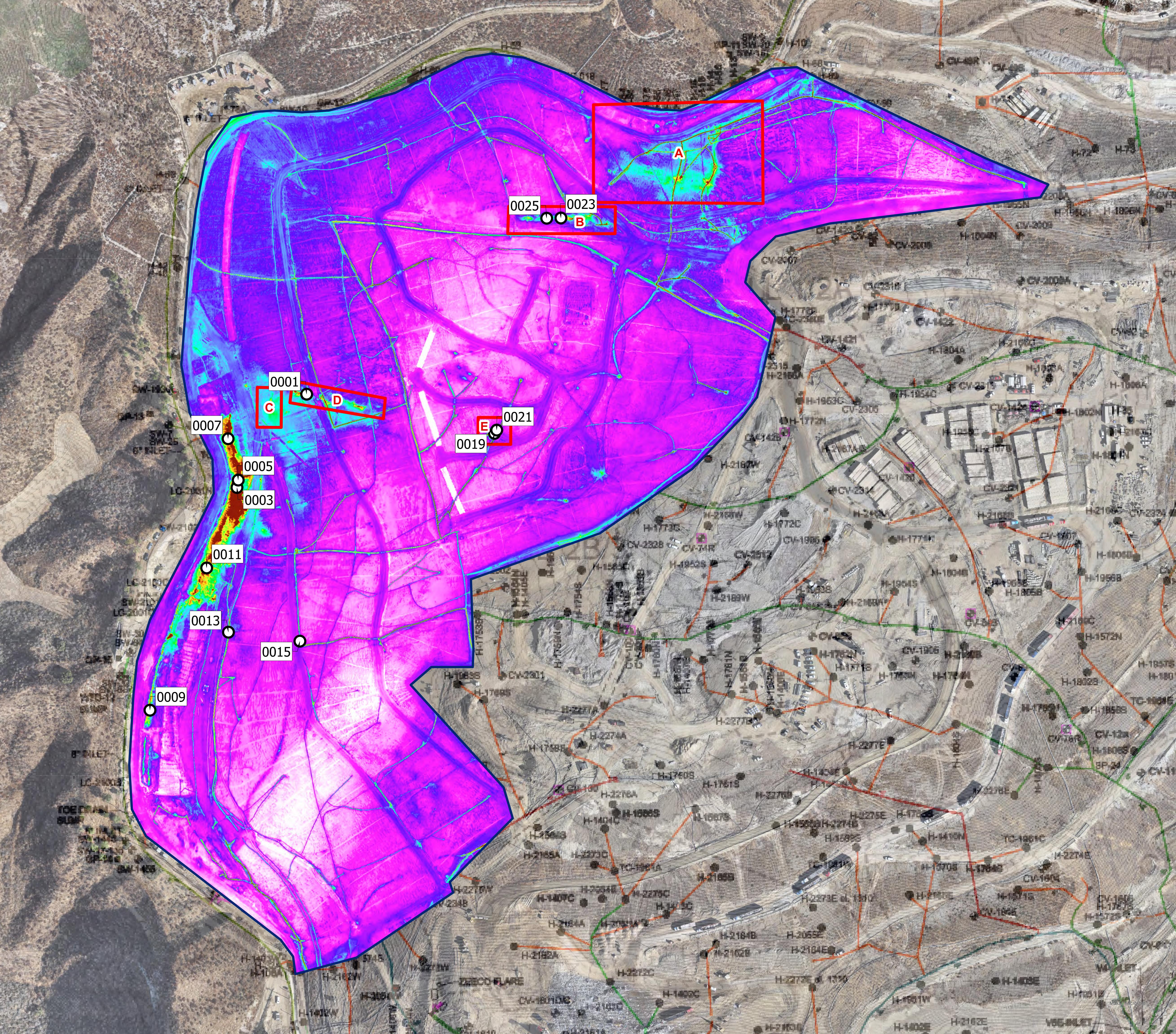
LOCATION DETAILS			INSPECTION RESULTS				
Ref	Image Location Latitude	Image Location Longitude	Date (UTC)	Time (UTC)	Class	Peak Temperature °F	Notes
0009	34.43319	-118.65189	10/1/2024	-	Thermal Imagery	83	
0011	34.43410	-118.65147	10/1/2024	-	Thermal Imagery	137	
0013	34.43370	-118.65130	10/1/2024	-	Thermal Imagery	118	
0015	34.43365	-118.65075	10/1/2024	-	Thermal Imagery	172	
0019	34.43499	-118.64927	10/1/2024	-	Thermal Imagery	159	
0021	34.43502	-118.64925	10/1/2024	-	Thermal Imagery	161	
0023	34.43638	-118.64879	10/1/2024	-	Thermal Imagery	159	
0025	34.43638	-118.64889	10/1/2024	-	Thermal Imagery	161	

Chiquita Canyon Discrete Thermal Image Locations over Thermal Reflectance, as Recorded by the SnifferDRONE™

Oct 1, 2024

Notes:

1. Basemap: high resolution RGB imagery provided by Chiquita Canyon dated Oct 2024
2. As-Built provided by SCS Engineers dated Dec 2023
3. Projected Coordinate System: WGS 1984 UTM Zone 11 N
4. Proprietary and Confidential



Reference #: 0001

Measurements

El1	Max	117.9 °F
	Min	32.8 °F
	Average	45.4 °F
Sp1		100.4 °F
Sp2		102.2 °F
Sp3		80.1 °F
Sp4		91.5 °F
Sp5		93.8 °F
Sp6		101.0 °F
Sp7		100.5 °F
Sp8		64.5 °F
Sp9		42.5 °F
Sp10		70.7 °F

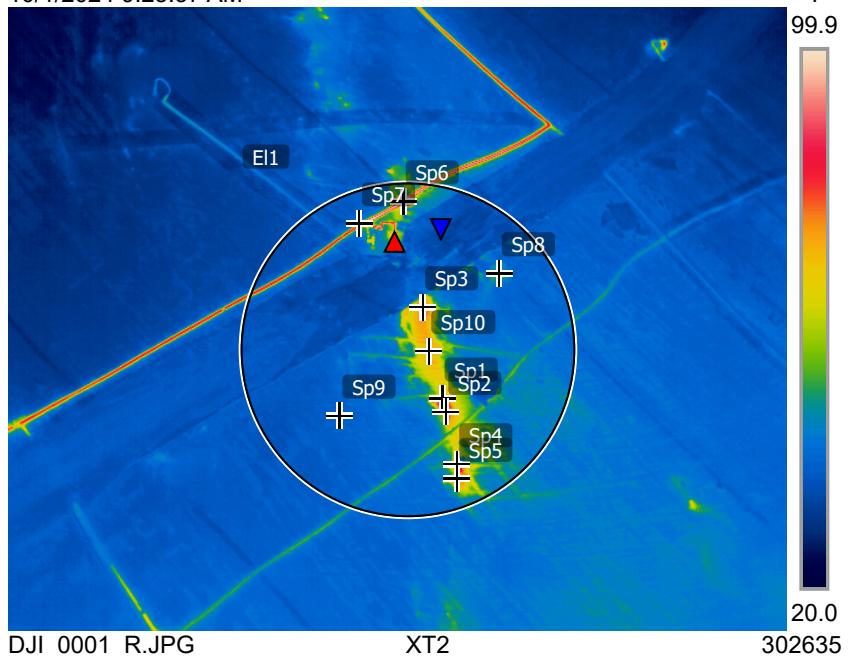
Parameters

Emissivity	1
Refl. temp.	68 °F

Geolocation

Location N 34° 26' 6.81", W 118° 39' 2.6"

10/1/2024 9:25:57 AM



10/1/2024 9:25:57 AM



Reference #: 0003

Measurements

Bx1	Max	141.1 °F
	Min	24.1 °F
	Average	45.8 °F
Sp1		103.1 °F
Sp2		83.1 °F
Sp3		113.8 °F
Sp4		113.2 °F
Sp5		75.5 °F
Sp6		102.0 °F
Sp7		99.4 °F
Sp8		89.4 °F
Sp9		88.2 °F
Sp10		68.6 °F
Sp11		70.9 °F
Sp12		97.9 °F
Sp13		85.1 °F
Sp14		102.9 °F
Sp15		68.1 °F
Sp16		29.7 °F
Sp17		37.6 °F
Sp18		85.0 °F
Sp19		62.5 °F
Sp20		63.1 °F

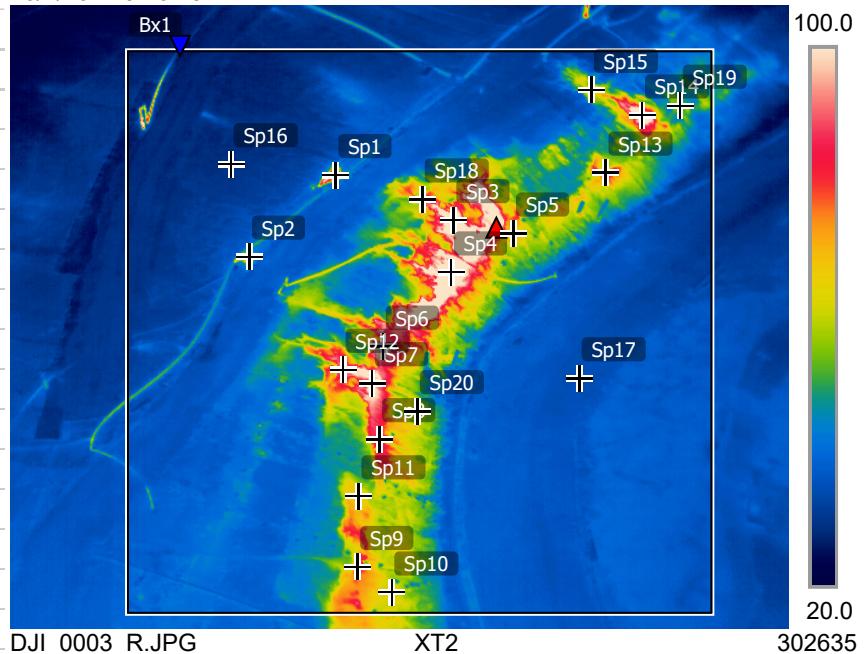
Parameters

Emissivity	1
Refl. temp.	68 °F

Geolocation

Location N 34° 26' 4.64", W 118° 39' 4.5"

10/1/2024 9:26:13 AM



10/1/2024 9:26:13 AM



Measurements

Bx1	Max	140.6 °F
	Min	30.1 °F
	Average	57.4 °F
Sp1		103.6 °F
Sp2		127.0 °F
Sp3		108.8 °F
Sp4		101.4 °F
Sp5		102.3 °F
Sp6		100.8 °F
Sp7		62.6 °F
Sp8		98.6 °F
Sp9		45.2 °F
Sp10		104.1 °F
Sp11		84.9 °F
Sp12		78.1 °F
Sp13		89.5 °F

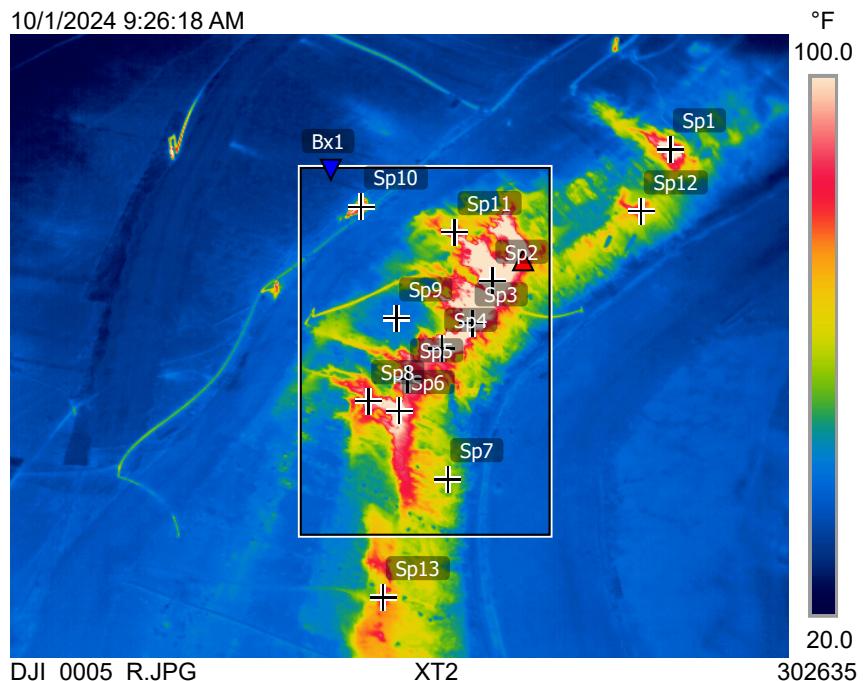
Parameters

Emissivity	1
Refl. temp.	68 °F

Geolocation

Location N 34° 26' 4.81", W 118° 39' 4.47"

Reference #: 0005



10/1/2024 9:26:18 AM



Measurements

Bx1	Max	108.2 °F
	Min	44.5 °F
	Average	60.4 °F
Sp1		120.8 °F
Sp2		120.1 °F
Sp3		111.0 °F
Sp4		110.4 °F
Sp5		99.2 °F
Sp6		99.8 °F
Sp7		99.9 °F
Sp8		79.0 °F
Sp9		100.0 °F
Sp10		97.5 °F
Sp11		87.3 °F
Sp12		75.9 °F
Sp13		53.9 °F

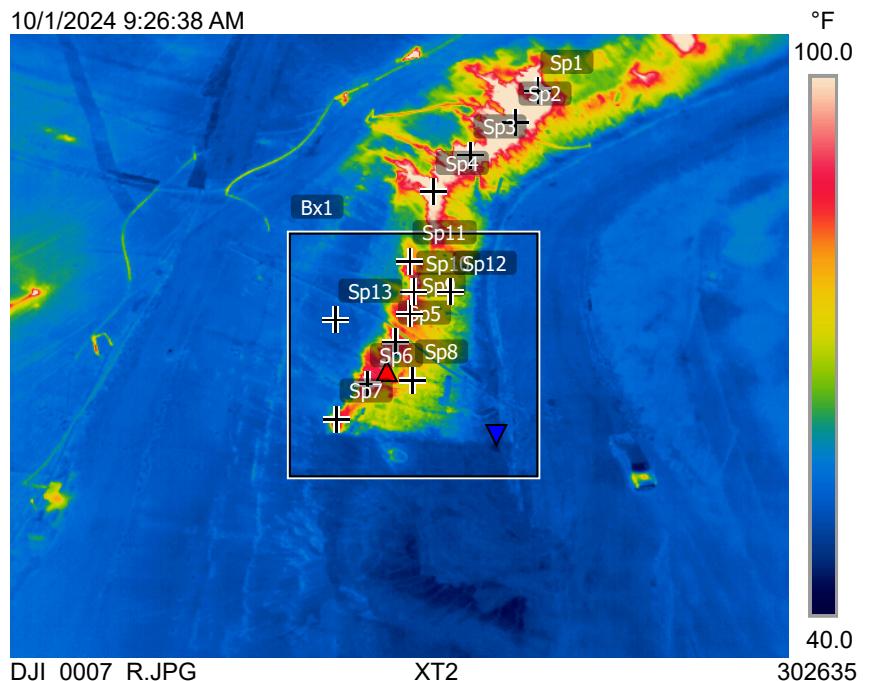
Parameters

Emissivity	1
Refl. temp.	68 °F

Geolocation

Location N 34° 26' 5.76", W 118° 39' 4.77"

Reference #: 0007



10/1/2024 9:26:38 AM



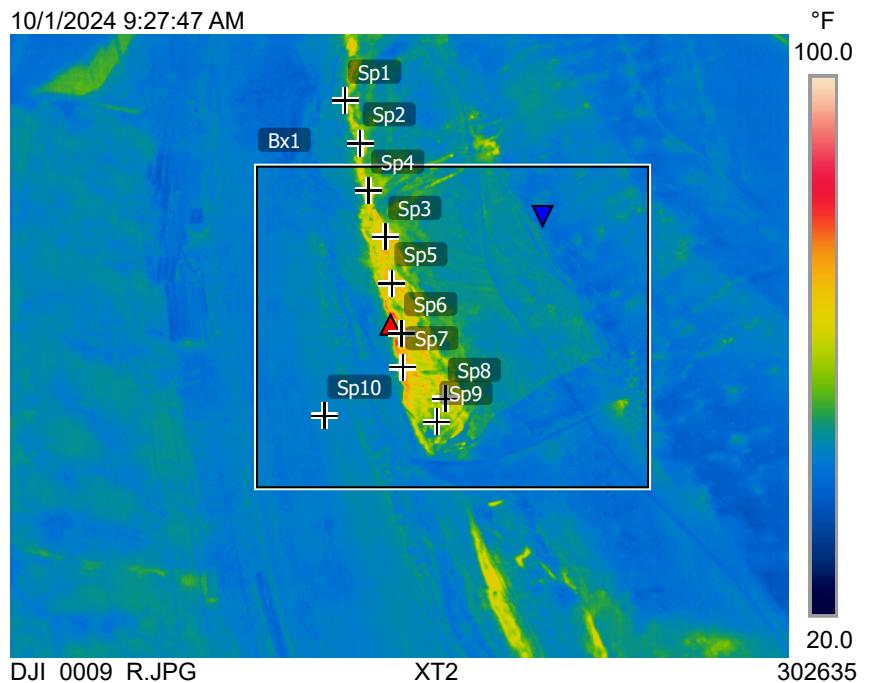
Measurements		
Bx1	Max	83.0 °F
	Min	40.6 °F
	Average	49.8 °F
Sp1		75.8 °F
Sp2		74.9 °F
Sp3		76.6 °F
Sp4		68.6 °F
Sp5		76.5 °F
Sp6		79.6 °F
Sp7		75.6 °F
Sp8		73.4 °F
Sp9		54.4 °F
Sp10		48.2 °F

Parameters	
Emissivity	1
Refl. temp.	68 °F

Geolocation

Location N 34° 25' 59.48", W 118° 39' 6.81"

Reference #: 0009



10/1/2024 9:27:47 AM



Reference #: 0011

Measurements

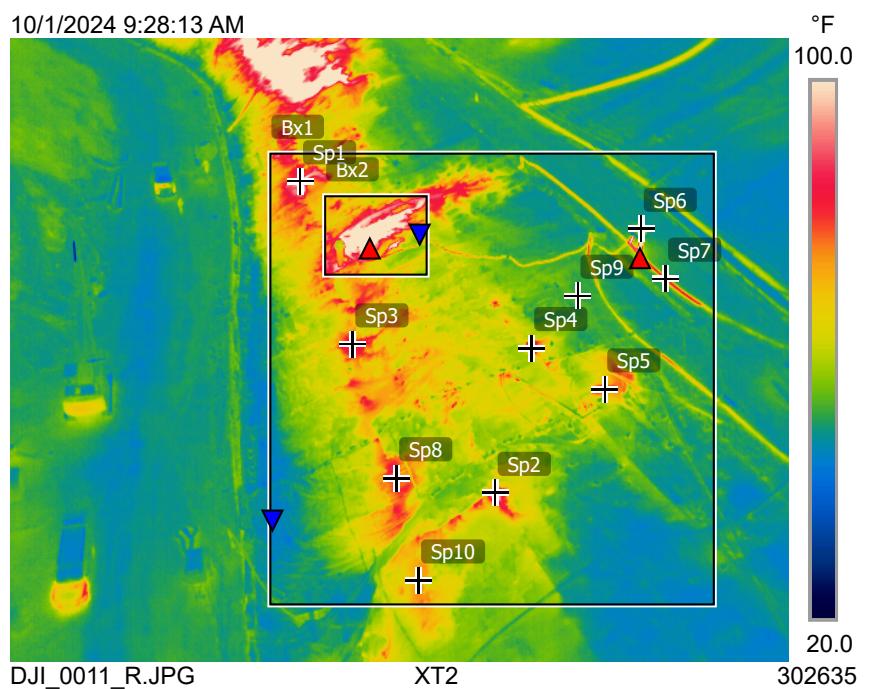
Bx1	Max	137.3 °F
	Min	45.3 °F
	Average	61.8 °F
Bx2	Max	133.5 °F
	Min	57.6 °F
	Average	81.7 °F
Sp1		102.7 °F
Sp2		104.1 °F
Sp3		91.2 °F
Sp4		106.7 °F
Sp5		81.0 °F
Sp6		119.2 °F
Sp7		83.5 °F
Sp8		78.4 °F
Sp9		55.2 °F
Sp10		76.2 °F

Parameters

Emissivity	1
Refl. temp.	68 °F

Geolocation

Location N 34° 26' 2.77", W 118° 39' 5.3"



10/1/2024 9:28:13 AM



Measurements

Bx1	Max	117.6 °F
	Min	39.2 °F
	Average	54.8 °F
Sp1		91.7 °F
Sp2		90.5 °F
Sp3		91.3 °F
Sp4		96.6 °F
Sp5		96.0 °F
Sp6		47.5 °F
Sp7		56.0 °F
Sp8		83.4 °F
Sp9		75.0 °F
Sp10		81.4 °F
Sp11		72.8 °F
Sp12		51.8 °F
Sp13		48.2 °F
Sp14		95.7 °F
Sp15		90.3 °F
Sp16		96.9 °F

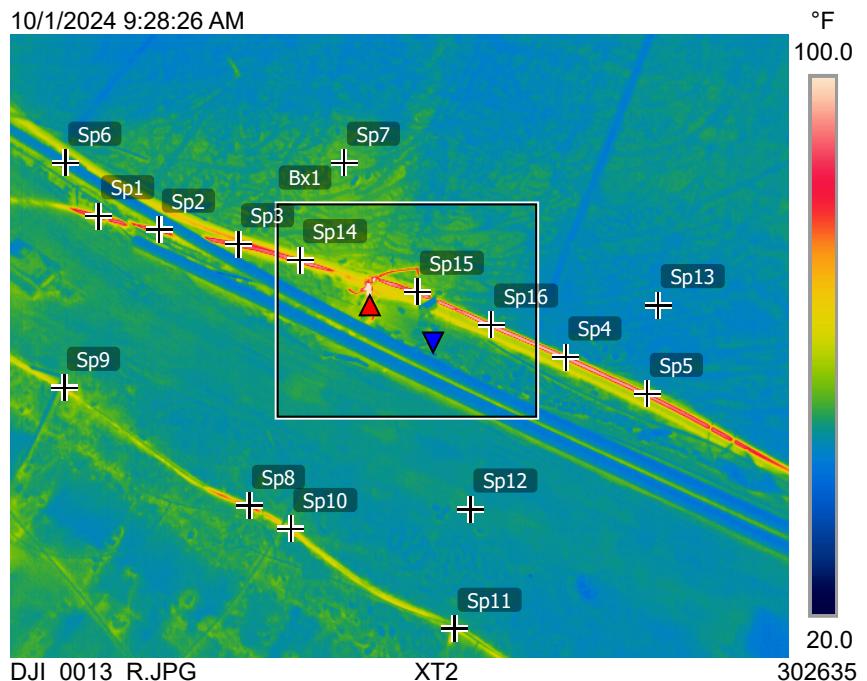
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Refl. temp.	68 °F

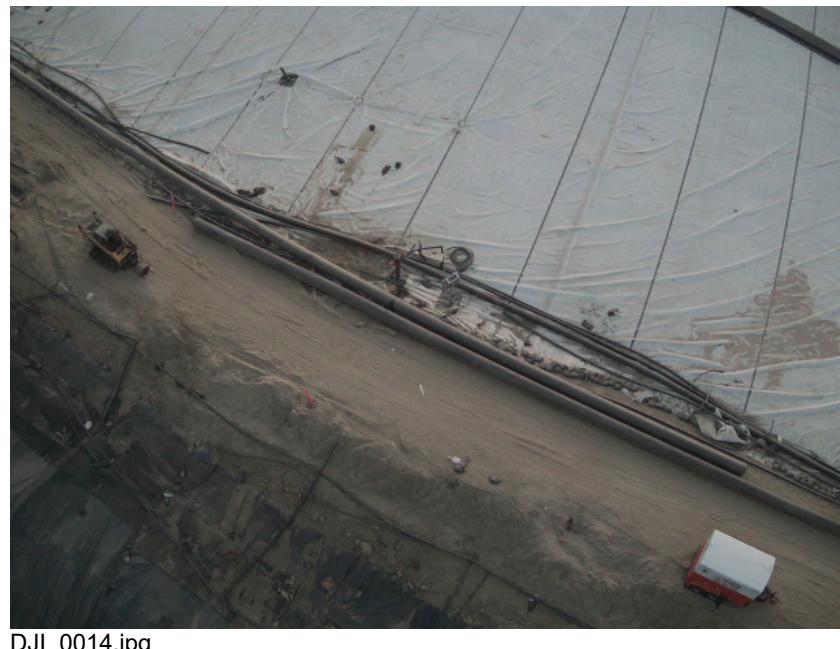
Geolocation

Location N 34° 26' 1.3", W 118° 39' 4.67"

Reference #: 0013



10/1/2024 9:28:26 AM



Reference #: 0015

Measurements

Bx1	Max	171.5 °F
	Min	43.2 °F
	Average	54.5 °F
Sp1		94.0 °F
Sp2		91.1 °F
Sp3		76.8 °F
Sp4		80.2 °F
Sp5		116.2 °F
Sp6		111.5 °F
Sp7		49.7 °F
Sp8		46.2 °F

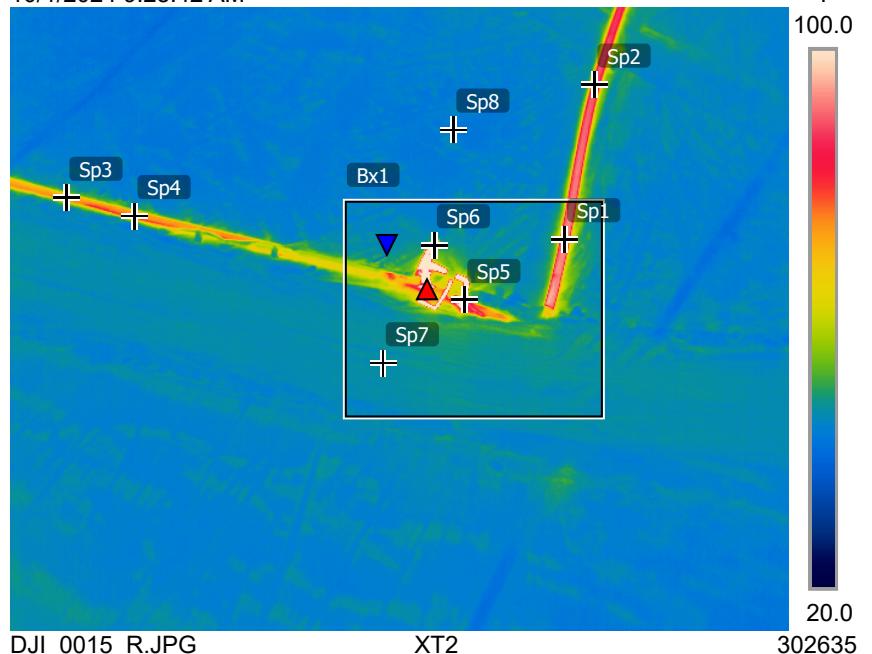
Parameters

Emissivity	1
Refl. temp.	68 °F

Geolocation

Location N 34° 26' 1.12", W 118° 39' 2.68"

10/1/2024 9:28:42 AM



10/1/2024 9:28:42 AM



Reference #: 0019

Measurements

Bx1	Max	159.1 °F
	Min	42.6 °F
	Average	59.8 °F
Sp1		139.0 °F
Sp2		120.1 °F
Sp3		112.1 °F
Sp4		114.0 °F
Sp5		50.9 °F
Sp6		117.4 °F

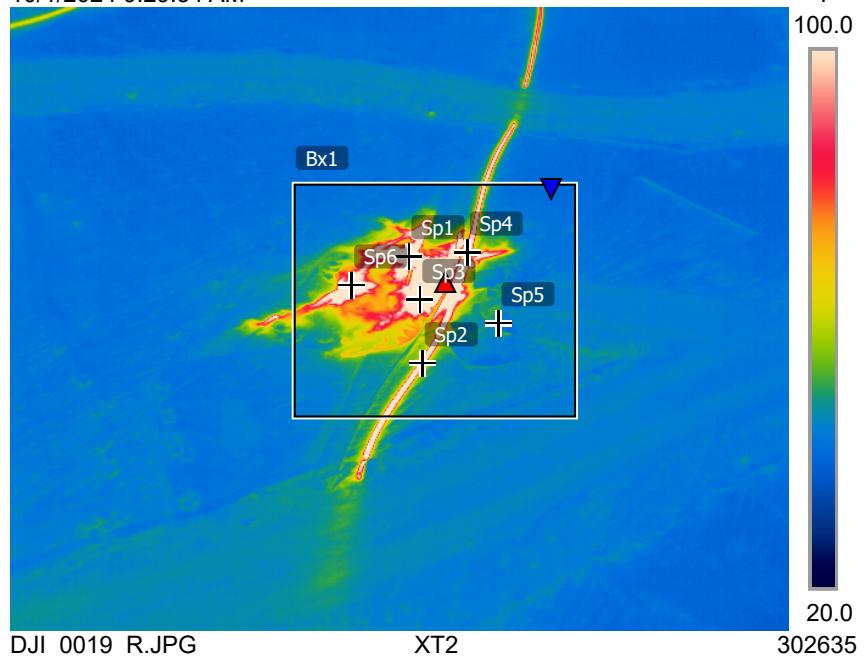
Parameters

Emissivity	1
Refl. temp.	68 °F

Geolocation

Location N 34° 26' 5.98", W 118° 38' 57.37"

10/1/2024 9:29:54 AM



10/1/2024 9:29:54 AM



Measurements

Bx1	Max	161.1 °F
	Min	41.0 °F
	Average	61.8 °F
Sp1		111.4 °F
Sp2		130.9 °F
Sp3		128.5 °F
Sp4		114.6 °F
Sp5		113.5 °F
Sp6		112.3 °F
Sp7		48.0 °F
Sp8		43.0 °F

Parameters

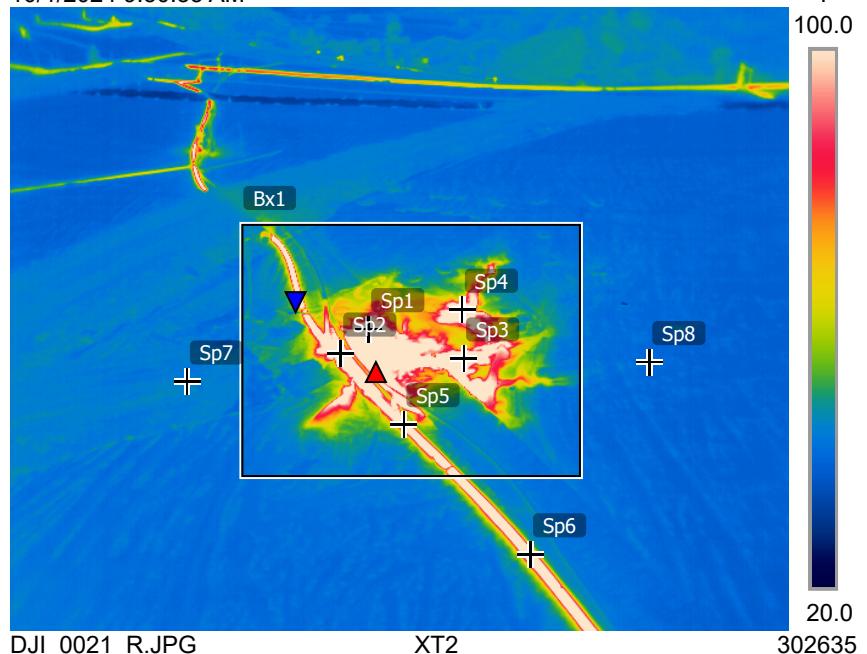
Emissivity	1
Refl. temp.	68 °F

Geolocation

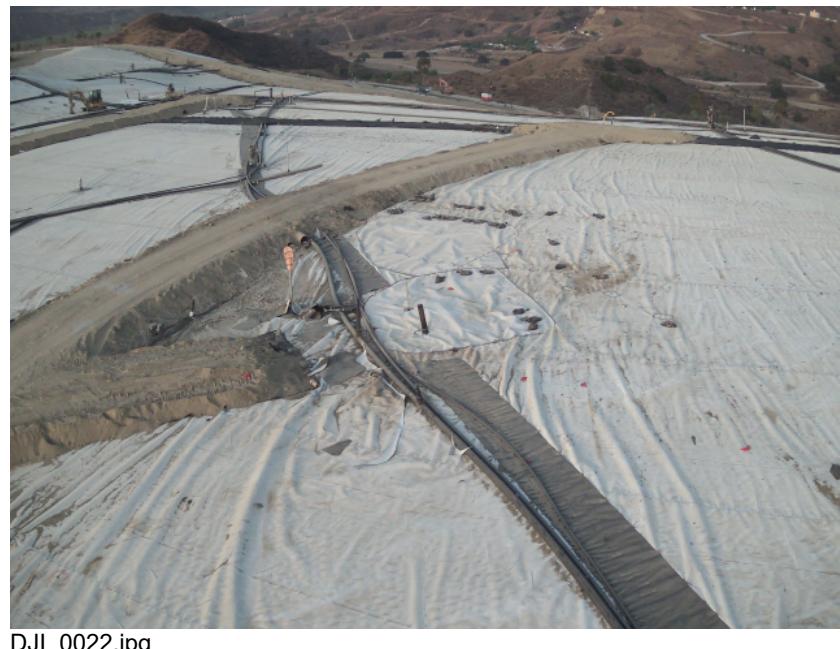
Location N 34° 26' 6.05", W 118° 38' 57.31"

Reference #: 0021

10/1/2024 9:30:33 AM



10/1/2024 9:30:33 AM



Measurements

Bx1	Max	152.6 °F
	Min	41.0 °F
	Average	49.5 °F
Sp1		77.2 °F
Sp2		81.6 °F
Sp3		80.6 °F
Sp4		100.6 °F
Sp5		97.6 °F
Sp6		105.5 °F
Sp7		111.5 °F
Sp8		46.5 °F
Sp9		76.0 °F
Sp10		83.4 °F
Sp11		63.8 °F
Sp12		59.9 °F

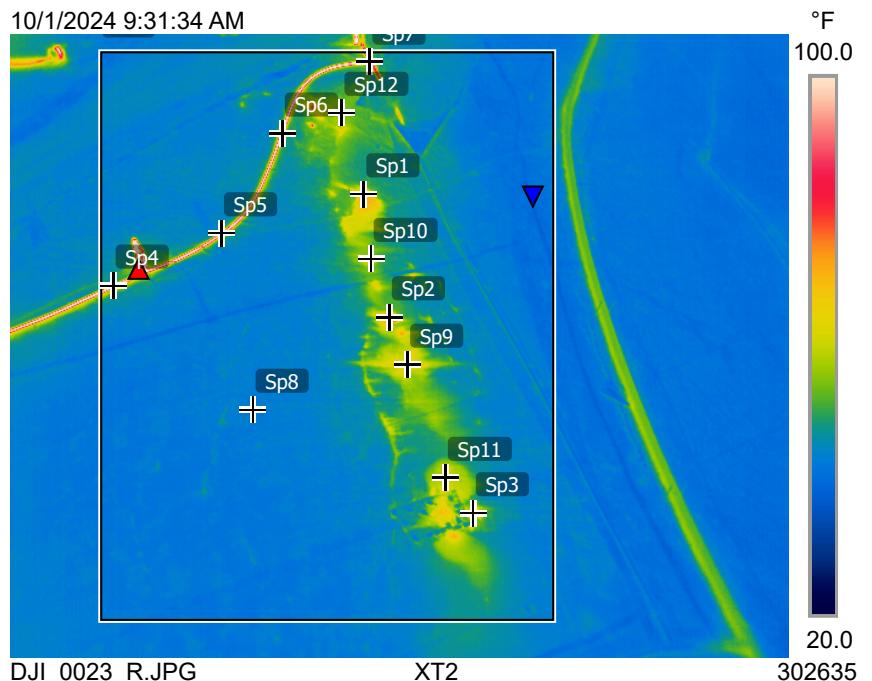
Parameters

Emissivity	1
Refl. temp.	68 °F

Geolocation

Location N 34° 26' 10.96", W 118° 38' 55.62"

Reference #: 0023



10/1/2024 9:31:34 AM



Measurements

Bx1	Max	154.7 °F
	Min	40.7 °F
	Average	49.4 °F
Sp1		132.6 °F
Sp2		107.8 °F
Sp3		72.1 °F
Sp4		81.8 °F
Sp5		76.1 °F
Sp6		74.7 °F
Sp7		72.8 °F
Sp8		46.4 °F
Sp9		56.9 °F
Sp10		105.9 °F
Sp11		108.6 °F

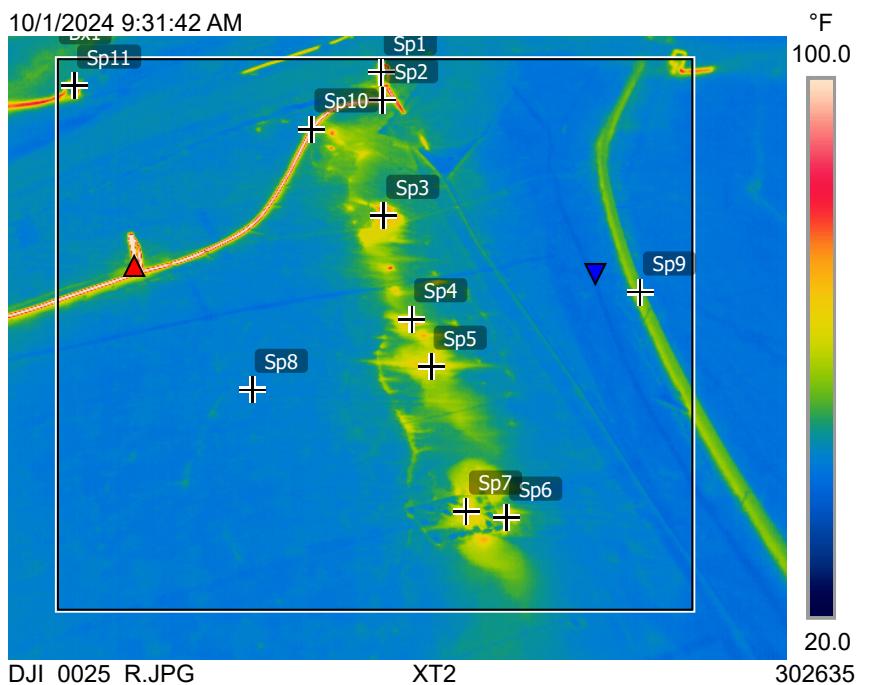
Parameters

Emissivity	1
Refl. temp.	68 °F

Geolocation

Location N 34° 26' 10.95", W 118° 38' 56.02"

Reference #: 0025



10/1/2024 9:31:42 AM

