



South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765  
(909) 396-2000  
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**Expedited Evaluation Request Form**  
**Source Test Protocol/ Report/ CEMS/**  
**LAP/ Product Certification**  
**Form 222-XST**

**Section I - Facility Information**

1. Business Name: Chiquita Canyon Landfill, LLC Facility ID: 119219

Equipment/ Device: Hero Thermal Oxidizer (TOx)

2. The requested evaluation is for:

- a. ☒ Source Test Protocol
- b. ☐ Source Test Report
- c. ☐ CEMS Application (New)
- d. ☐ CEMS Application (Modification)
- e. ☐ LAP Approval Evaluation
- f. ☐ Product Certification (i.e., Rules 1111, 1121, 1146.2, and 1174)

Expedited Evaluation will not be performed unless all remaining acknowledgements are checked-off:

- 3. ☒ I hereby request an Expedited Source Evaluation for this document.
- 4. ☒ I understand that this request may incur additional fees after completion of evaluation as allowed by District Reg. III.
- 5. ☒ I understand this request cannot be cancelled once an evaluation has been initiated.
- 6. ☒ I understand this request for expedited review neither guarantees action by any specific date nor does it guarantee approval.

**Section II - Certification**

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS DOCUMENT IS TRUE AND CORRECT.

SIGNATURE OF RESPONSIBLE OFFICER OF FIRM:

TITLE OF RESPONSIBLE OFFICER OF FIRM:

District Manager

TYPE OR PRINT NAME OF RESPONSIBLE OFFICER OF FIRM:

Kevin Green

TELEPHONE NUMBER:

(661) 812-5846

DATE SIGNED:

9/25/2026

**SOURCE TEST PROTOCOL FOR  
2026 CHIQUITA CANYON LANDFILL  
HERO THERMAL OXIDIZER  
SCAQMD FACILITY ID:119219  
SCAQMD A/N:661284**

Prepared For:

**SCS Field Services**

3900 Kilroy Airport Way, Ste. 300  
Long Beach, California 90806

For Submittal To:

**South Coast Air Quality Management District**

21865 Copley Drive  
Diamond Bar, California 91765-4178

Prepared By:

**Onterris Air Quality Services, LLC**

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Pete San Juan

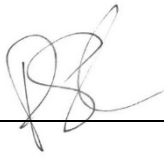
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|---------------------|------------------------------|
| Production Date:    | <b>September 24, 2026</b>    |
| Proposed Test Dates | <b>December 22-23, 2026</b>  |
| Document Number:    | <b>W002AS-100189-PP-1649</b> |

## CONFIDENTIALITY STATEMENT

***Except as otherwise required by law or regulation, this information contained in this communication is intended exclusively for the individual or entity to which it is addressed. This communication may contain information that is proprietary, privileged or confidential or otherwise legally exempt from disclosure. If you are not the named addressee, you are not authorized to read, print, retain, copy, or disseminate this message or any part of it.***

## REVIEW AND CERTIFICATION

I certify that, to the best of my knowledge, the information contained in this document is complete and accurate and conforms to the requirements of the Onterris Quality Management System and ASTM D7036-04.

Signature:  Date: 9/24/2026  
Name: Pete San Juan Title: Client Project Manager

I have reviewed, technically and editorially, details and other appropriate written materials contained herein. I hereby certify that to the best of my knowledge the presented material is authentic and accurate and conforms to the requirements of the Onterris Quality Management System and ASTM D7036-04.

Signature:  Date: 9/24/2026  
Name: John Peterson Title: District Manager

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## 1.0 INTRODUCTION

Onterris Air Quality Services, LLC (Onterris) will conduct source emissions testing and toxic compounds source emissions testing on one (1) landfill/reaction gas fired Thermal Oxidizer (TOx) at the Chiquita Canyon Landfill in Castaic, California. This compliance source test plan has been designed to comply with the testing requirements as delineated by condition 22 of the SCAQMD Stipulated Order for Abatement (SOFA 6177-4).

### **Condition 22:**

*Respondent shall continue to use one or multiple portable thermal oxidizer(s)/flare(s), including as directed by EPA. Any work plans Respondent submits to EPA relating to thermal oxidizers/flare(s) shall be submitted to South Coast AQMD (Baitong Chen, Air Quality Engineer, (bchen@aqmd.gov); Nathaniel Dickel, Senior Air Quality Engineer, (ndickel@aqmd.gov), and Christina Ojeda, Air Quality Inspector, (cojeda@aqmd.gov)) within 24 hours of submittal to EPA. For combustion equipment operating without a permit, including at the direction of EPA, the following shall apply:*

- a. *For equipment which has not undergone an initial source test onsite, Respondent shall conduct an initial source test on the equipment at the maximum flow rates achievable at the time after the equipment is able to achieve a firing period of at least 60 minutes. The initial source test shall be conducted no later than 180 days after initial startup. Thereafter, Respondent shall conduct semi-annual source tests for all primary equipment subject to this condition and for every 4,000 hours of operation, or every 18 months, whichever is sooner, for the backup equipment. Subsequent semi-annual source tests on the primary equipment shall be conducted at least once every six (6) months, and no later than 225 days from the prior source test for primary equipment, and subsequent source tests on the backup equipment shall be conducted at least once every eighteen (18) months, and no later than 590 days from the prior source test unless otherwise approved in writing by South Coast AQMD as indicated below, in as-found condition. Initial and subsequent source testing shall be conducted under the following conditions:*
  - i. *Testing shall be conducted by an approved contractor under the South Coast AQMD Laboratory Approval Program (LAP) and in compliance with South Coast AQMD Rule 304 (No Conflict of Interest).*
  - ii. *The LAP contractor shall not conduct any pre-tests for compliance.*
  - iii. *Sampling facilities shall comply with South Coast AQMD “Guidelines for Construction of Sampling and Testing Facilities” pursuant to Rule 217.*
  - iv. *At least one week prior to the scheduled source test, South Coast AQMD shall be notified of the scheduled source test date. If a scheduled source test is delayed, Respondent shall notify the South Coast AQMD within 24 hours from the time that Respondent knew of the delay. Respondent shall provide at least 7 days prior notice of the rescheduled date of the source test or arrange a rescheduled date with the South Coast AQMD by mutual agreement.*
- b. *A source test protocol shall be submitted to South Coast AQMD no later than 90 days before the proposed test date, unless otherwise approved in writing by South Coast AQMD, and shall be approved in writing by South Coast AQMD before the test commences. A valid protocol, previously approved by South Coast AQMD, may be used for a recurring source test, subject to South Coast AQMD written approval. At a*

*minimum, the source test protocol should include the following, unless otherwise approved in writing by South Coast AQMD:*

- i. The name, address, and contact information of the unit operator and the South Coast AQMD approved source testing contractor that will conduct the test(s).*
  - ii. The application and permit number (if applicable).*
  - iii. A copy of the current valid approved permit (if applicable).*
  - iv. A description of the equipment to be tested. Include a process schematic indicating sampling locations/ports, and sampling duct/stack dimensions along with upstream and downstream flow disturbances (e.g. elbows, tees and fans).*
  - v. A brief process description.*
  - vi. Operating conditions under which the test will be performed, including flow rate, temperature, pressure, number of tests to be conducted, and operation loads.*
  - vii. A description of the sampling and analytical methods for each constituent measured.*
  - viii. Complete calculations for flow rates, concentrations, emission rates, and efficiencies.*
  - ix. A description of the calibration and quality assurance procedures.*
  - x. Sampling facilities shall comply with the South Coast AQMD guidelines for construction of sampling and testing facilities, pursuant to Rule 217.*
  - xi. Copy of LAP approval for methods being used in the source test.*
  - xii. A statement determining that the testing laboratory qualifies as an “independent testing laboratory” under Rule 304 (no conflict of interest), signed by the responsible authority.*
- c. Respondent shall submit the initial source test report to South Coast AQMD no later than 180 days after start-up and each succeeding complete annual source test report no later than 45 days after the subject source test date, unless otherwise approved in writing by South Coast AQMD.*
- d. Source test report(s) shall be submitted to the South Coast AQMD [Baitong Chen, Air Quality Engineer, (bchen@aqmd.gov); Nathaniel Dickel, Senior Air Quality Engineer, (ndickel@aqmd.gov), and Christina Ojeda, Air Quality Inspector, (cojeda@aqmd.gov)] no later than 45 days after completion of the source test, unless otherwise approved in writing by the South Coast AQMD. Combustion equipment testing and source test reports shall include, but not limited to, unless otherwise approved in writing by South Coast AQMD, a test of the inlet to the equipment and the equipment exhaust for:*
- i. Methane (lb/hr) (semi-annually for primary; at every testing for backup).*
  - ii. VOC/Non-Methane Organic Compounds (NMOC) as hexane (lb/hr, lb/MMBtu, ppmvd, ppmvd @ 3% O<sub>2</sub>) (semi-annually for primary; at every testing for backup).*
  - iii. Speciated organics including, but not limited to Rule 1150.1 Table 1 Carcinogenic and Toxic Air Contaminants (ppmv, lb/hr) (semi-annually for primary; at every testing for backup).*
  - iv. Additional Toxic Air Contaminants, including TACs analyzed by EPA Method TO-15 (including acrolein and additionally at least the ten highest concentration compounds tentatively identified from the flux chamber studies conducted pursuant to Condition 12(i)) (semi-annually for primary; at every testing for backup), aldehydes pursuant to CARB Method 430 (annually for primary; at every testing for backup), and simultaneous testing of metals and hexavalent chromium pursuant to CARB Method 436*

*and CARB Method 425 (annually for primary; at every testing for backup), respectively. Respondent shall split samples and provide split samples to South Coast AQMD for speciated organics and TACs under Condition 22(d)(iii and iv) (semi-annually for primary; at every testing for backup).*

- v. NO<sub>x</sub>, as NO<sub>2</sub> (exhaust only, lb/hr, lb/MMBtu) (annually for primary; at every testing for backup).*
- vi. CO (exhaust only, ppmvd with 15 minute average, lb/hr, lb/MMBtu) (annually for primary; at every testing for backup).*
- vii. Total Particulates (PM<sub>10</sub>) (exhaust only, lb/hr, grains/dscf) (annually for primary; at every testing for backup).*
- viii. Oxygen and Carbon Dioxide (percent by volume).*
- ix. Moisture Content (percent by volume).*
- x. Temperature (exhaust only).*
- xi. Flowrate of inlet landfill gas and exhaust gas (scfm).*
- xii. Total Sulfur Compounds as Hydrogen Sulfide and speciated sulfur compounds (inlet only, ppmv) (annually for primary; at every testing for backup).*
- xiii. Btu Value (HHV) (inlet only, Btu/scf).*
- xiv. Nitrogen (exhaust only, percent by volume).*
- xv. Methane and VOC/NMOC destruction efficiency (by weight).*

Bill Haley will coordinate the testing for the facility and can be reached at (661) 964-5821. The MAQS project manager will be Mr. Pete San Juan and can be reached at (714) 279-6777. The project manager will be assisted by additional MAQS personnel as necessary to complete the project. A qualified individual as defined in ASTM D7036-04 will be on-site during all testing activities. MAQS qualifies as an independent testing laboratory under SCAQMD Rule 304 (no conflict of interest) and is certified by the SCAQMD to conduct testing for criteria pollutants according to District Methods.

Measurements of the TOx emissions and operating parameters will be conducted at the TOx exhaust and at the inlet of the control device. The test is tentatively scheduled for December 22-23, 2026, pending the approval of this protocol.

Equipment and facility information is provided in Section 2.0. Source test information is detailed in Section 3.0. Emission point information is provided in Section 4.0. Supplemental information is contained in the Appendices.

## 2.0 FACILITY AND SOURCE INFORMATION

The mailing address for the facility and the physical location of the source is as follows:

Chiquita Canyon Landfill  
29201 Henry Mayo Drive  
Castaic, California 91384

The Thermal Oxidizer is described as a Vapor Combustor and is Manufactured by Clean Cap Tech. It has a heat input capacity of 45 MMBtu/hr and a maximum inlet fuel flow rate of 3,300 scfm. The combustor uses approximately 50 standard cubic feet per hour of propane pilot assist gas. The reaction gas going into the unit is not expected to be greater than 22.46% methane. The TOx will be permitted to operate 24 hours per day, 7 days per week, and 52 weeks per year, except during periods of scheduled and unscheduled maintenance.

The proposed vapor combustor will also combust vapor vented from the liquid storage tanks in the LFG condensate and leachate collection/storage system and LFG condensate and leachate treatment system.

The exhaust stack is a rectangular duct approximately 46 feet in height above grade. Stack measurements will be verified on the day of test prior to sampling.

The sample ports to be utilized will be installed prior to testing to meet the minimum requirements of SCAQMD Method 1 of at least 0.5 diameters upstream of and at least 2.0 duct diameters downstream from a disturbance.

The subject TOx will be operated at the normal gas flow rate on the given test date(s). During testing, the following operating parameters will be monitored and recorded at 10- minute intervals:

- Inlet Vapor Gas Flow Rate, dscfm
- TOx Temperature, °F
- Propane assist Gas Flow Rate, dscfm

All operating data will be included in the final report.

### 3.0 TEST INFORMATION

#### 3.1 COMPLIANCE TEST INFORMATION

The procedures that will be used for the inlet and exhaust are summarized in Tables 3-1 through 3-3. Testing will be scheduled pending protocol approval. The test program will be conducted while the TOx is fired on landfill/reaction gas and Propane assist gas during normal operating conditions.

The field sampling procedures to be utilized during the test program are described below. The published reference methods provide greater detailed descriptions than in this section. The purpose of this section is to provide an overview of the sampling methods and any proposed variations. The sampling procedures proposed are based on SCAQMD, EPA, and California Air Resource Board (CARB) Reference Methods.

**TABLE 3-1  
INLET TEST PROCEDURES  
COMPLIANCE TEST PROGRAM OVERVIEW  
WASTE CONNECTIONS – CHIQUITA CANYON LANDFILL  
HERO TOx**

| Parameter                                               | Sample Medium     | Analytical Technique | Reference Method      | Number of Replicates |
|---------------------------------------------------------|-------------------|----------------------|-----------------------|----------------------|
| <b>Flow Rate<sup>(1)</sup></b>                          | Flow Meter        | Flow Meter           | Facility Meter        | 1                    |
| <b>Moisture</b>                                         | Wet Bulb/Dry Bulb | Psychrometric Chart  | SCAQMD 4              | 1                    |
| <b>N<sub>2</sub>, O<sub>2</sub>, and CO<sub>2</sub></b> | Tedlar Bag        | FID/TCA              | ASTM D3588            | 1 in Duplicate       |
| <b>H<sub>2</sub>S and TRS</b>                           | Tedlar Bag        | GC/SCD               | SCAQMD 307-91         | 1 in Duplicate       |
| <b>Methane and Total Gaseous Non-Methane Organics</b>   | Tedlar Bag        | GC/FID/TCA/TCD       | EPA 18                | 1 in Duplicate       |
| <b>Btu/CF and F Factor</b>                              | Tedlar Bag        | GC/FID               | ASTM D-3588           | 1 in Duplicate       |
| <b>Speciated VOC</b>                                    | Summa Canister    | GC/MS                | EPA TO-15 Rule 1150.1 | 3                    |

(1) Facility Fuel Meter calibration certificate will be included in the final report when fuel based emissions are reported. Fuel and TOx temperature readings will be taken every 10 minutes throughout the testing interval.

**TABLE 3-2  
EXHAUST TEST PROCEDURES  
COMPLIANCE TEST PROGRAM OVERVIEW  
WASTE CONNECTIONS – CHIQUITA CANYON LANDFILL  
HERO TOx**

| Parameter                                      | Sample Medium           | Analytical Technique  | Reference Method         | Number of Replicates |
|------------------------------------------------|-------------------------|-----------------------|--------------------------|----------------------|
| Flow Rate                                      | Pitot Tube              | Differential Pressure | SCAQMD 2.1               | 1                    |
| Moisture                                       | Impinger Train          | Gravimetric           | SCAQMD 4.1               | 1                    |
| Methane and Total Gaseous Non-Methane Organics | Summa Canister          | GC/FID/TCA/TCD        | SCAQMD 25.3              | 1 Tray               |
| Particulate Matter (PM)                        | Impinger Train / Filter | Gravimetric           | SCAQMD 5.1               | 1                    |
| NO <sub>x</sub>                                | CEM                     | Chemiluminescence     | SCAQMD 100.1             | 1                    |
| O <sub>2</sub>                                 | CEM                     | Paramagnetic          | SCAQMD 100.1             | 1                    |
| CO <sub>2</sub>                                | CEM                     | NDIR                  | SCAQMD 100.1             | 1                    |
| CO                                             | CEM                     | NDIR/GFC              | SCAQMD 100.1             | 1                    |
| Speciated VOC                                  | Summa Canister          | GC/MS                 | EPA TO-15<br>Rule 1150.1 | 3                    |

### 3.1.1 SCAQMD Method 1.1 – Sampling and Velocity Traverses for Stationary Sources

A preliminary source test site assessment will be performed prior to the source test in order to determine applicable sample point traverse locations. The stack diameter, and the distance from sample ports to disturbances, i.e. bends, flanges, etc., both upstream and downstream, will be measured. This information is utilized to determine the minimum number of sampling points per traverse, and the distance from the inner stack wall to each sample point location. Additionally, this method takes into account cyclonic flow patterns and in-situ stratified pollutant concentrations.

### 3.1.2 SCAQMD Method 2.1 – Velocity and Volumetric Flow Rate

The velocity of the gas stream is determined by using an "S" type or standard pitot tube, a low flow electronic manometer, and type "K" thermocouple with a digital temperature measuring device. The calibrated pitot tube is connected to the electronic Air Data Multimeter (ADM) manometer and leak checked. A temperature and delta P is obtained at each traverse point, and a duct static pressure is measured and recorded. The dry volumetric flow rate is determined from the gas velocity data, stack pressure, stack gas moisture content, stack gas molecular weight, and cross-sectional area of duct. Due to the very low differential pressure readings on the stack (<0.05" H<sub>2</sub>O), exhaust flow rate will also be calculated based on EPA Method 19 equations and inlet fuel analysis. All mass emissions results except particulate will be based on calculated EPA

Method 19 exhaust flow. Calibration certificates for the inlet fuel meter will be located in the appendices of the final report.

### 3.1.3 SCAQMD Method 3.1 – Gas Analysis for Dry Molecular Weight and Excess Air

A gas sample is extracted from the stack using the Onterris AQS continuous emissions monitoring system. The system is operated in accordance with SCAQMD 100.1. Molecular weight of the stack gas is calculated from the percentages of carbon dioxide (CO<sub>2</sub>), oxygen (O<sub>2</sub>) and nitrogen. TOx inlet gas will be analyzed by GC for O<sub>2</sub> and CO<sub>2</sub>.

### 3.1.4 SCAQMD Method 4.1 – Determination of Moisture Content in Stack Gases

Moisture content is determined with the Method 5.1 sampling system. Prior to sampling a leak check of the sampling train is performed to ensure system integrity. Tare weights of the charged individual impingers are recorded prior to the start of the sampling run using a top loading digital balance capable of weighing to the nearest 0.1 gram or less. After sampling, the final weights of each impinger are determined and recorded. Percent moisture content is calculated from the weight of water collected and the dry gas volume sampled. If possible, inlet moisture will be measured using a wet bulb/dry bulb and calculated with a psychrometric chart.

Equations:

$$\text{Moisture (B}_{ws}) = \frac{V_{wstd}}{V_{mstd} + V_{wstd}} \times 100$$

Where:

$$V_{wstd} = \frac{0.0464 \text{ ft}^3}{\text{ml}} * \text{Volume H}_2\text{O Collected (ml)}$$

And:

$$V_{mstd} = Y \text{ Meter} * \frac{520^\circ\text{R}}{29.92 \text{ in Hg}} * \frac{\text{Vol Metered} * \text{Pressure Meter. inches Hg}}{\text{Temp. Meter} - ^\circ\text{R}}$$

### 3.1.5 SCAQMD Method 25.3 – Measurement of Methane and Non-Methane Organic Compounds

SCAQMD Method 25.3 is to measure VOC concentrations as Non-Methane Non-Ethane Organic Compounds (NMNEOC) emissions. Duplicate, simultaneous, samples are collected by drawing flue gas through an in-stack filter, stainless steel probe, short Teflon line, a small water vial immersed in an ice bath where condensable hydrocarbons are collected, and then into a SUMMA canister. The water is analyzed for total organic carbon (TOC) and the canister is analyzed for total gaseous non-methane/non-ethane organics by GC/FID. The results of the two fractions are added together and reported as TNMNEOC in units of ppmv, as Carbon. The average of the duplicate samples is reported as the test result. These reported results will also be reported as ppm @ 3% O<sub>2</sub> as hexane.

### 3.1.6 SCAQMD Method 100.1 – Continuous Gaseous Emissions

A continuous sample is extracted from the stack through a stainless-steel probe, heated Teflon line, filter, sample conditioner (moisture removal system), sample pump and then delivered to the analyzers through an unheated Teflon line, sample manifold and dedicated flow meters.

Prior to beginning the test, a system leak check is performed. The leak check is accomplished by plugging the probe tip and drawing >25" Hg vacuum on the entire sampling system. When all flow meters indicate 0.000 scfh flow, the system is proven to be free of all leaks.

An analyzer calibration error (CE) check is performed at the beginning of each sampling day. The CE is performed as follows: After zeroing all analyzers with nitrogen, EPA Protocol 1 gases are used to calibrate each analyzer within 80-95% full scale of the selected range. Each analyzer, individually, is then spanned within 40-60% of the selected range by introducing a second EPA Protocol I gas.

A system bias check is performed before and after each sampling run by delivering zero and calibration gases to the three-way valve, located between the probe and sample line, and drawing the gases through the sampling system. The bias for each analyzer will not exceed 5% of the high spanned calibration gas value or the sampling run will be repeated. The drift shall not exceed 3% per test run.

All concentrations from the NO<sub>x</sub>, O<sub>2</sub>, CO<sub>2</sub>, and CO analyzers are recorded on a Johnson Yokogawa Model DR240 recorder. The data is continuously recorded by a strip chart and an on-site data acquisition system (DAS). The DAS is reduced by computer in the Onterris AQS Laboratory.

CEMS probe will be traversed across the stack in conjunction with particulate testing. A total of 24 points will be sampled with 12 points per port by utilizing two test ports or 6 points per port by utilizing four test ports for the duration of 3 minutes per point. In the instance, CO concentration is fluctuated and falls outside of the chosen range, CO may be reported from the canister analysis by SCAQMD Method 25.3/10.1 for compliance purposes.

Equations:

$$\text{NO}_x \text{ ppm} = (\text{NO}_x \text{ Conc} - \text{Average Zero Bias}) \times \frac{\text{NO}_x \text{ Cal Gas Value}}{\text{Average NO}_x \text{ Span Bias} - \text{Average NO}_x \text{ Zero Bias}}$$

$$\text{lb/hr (@ 60°F)} = \text{ppm obs.} \times 1.581 \times 10^{-7} \times \text{DSCFM} \times \text{MW}$$

Molecular Weight (MW)  
NO<sub>2</sub> = 46.01  
CO = 28

O<sub>2</sub>/CO<sub>2</sub> ANALYZER  
PARAMAGNETIC / NDIR TYPE

CALIFORNIA ANALYTICAL INST  
MODEL 600

Response Time

<2 seconds paramagnetic  
<2 seconds to 60 seconds NDIR

Output

0-10 volts / 4-20 mA

|                                                 |                                                                                  |
|-------------------------------------------------|----------------------------------------------------------------------------------|
|                                                 | 0-10 volts / 4-20 mA                                                             |
| Range                                           | 0-10%, 0-25%<br>0-10%, 10-20%                                                    |
| <u>NO<sub>x</sub> CHEMILUMINESCENT ANALYZER</u> | <u>CALIFORNIA ANALYTICAL INSTRUMENTS</u><br>Model: 600                           |
| Detector                                        | Chemiluminescence (CLD) Photodiode<br>(thermally stabilized with Peltier Cooler) |
| Response Time (0-90%)                           | 2 seconds to 60 seconds, Adjustable                                              |
| Noise                                           | Less Than 1% of Full Scale                                                       |
| Zero Drift (24 hrs)                             | Less Than 1% of Full Scale                                                       |
| Detection Limit                                 | 50 PPB                                                                           |
| Span Drift (24 hrs)                             | Less than 1% of Full Scale                                                       |
| Linearity                                       | Better than 0.5% of full scale                                                   |
| Sample Flow Rate                                | 1.5 to 3.0 LPM.                                                                  |
| Output                                          | TCP/IP, RS-232,<br>Four Scalable Analog 0-10V/4-20 mA                            |
| Ranges                                          | 0-1 to 3,000 ppm NO or NO <sub>x</sub><br>(Four user programmable ranges)        |
| <u>CO GAS FILTER CORRELATION</u>                | <u>THERMO ELECTRON MODEL 48i</u><br>Non-Dispersive Infrared                      |
| Response Time (0-95%)                           | 10 seconds                                                                       |
| Span Drift                                      | ± 1% full scale in 24 hours                                                      |
| Zero Drift                                      | ± 0.2 ppm in 24 hours                                                            |
| Linearity                                       | ± 1% full scale, all ranges                                                      |
| Accuracy                                        | ± 0.1 ppm                                                                        |
| Output                                          | 0-10mV, 0-100mV, 0-1V, 0-5V, 0-10V                                               |
| Range                                           | 10, 20, 50, 100, 200, 500, and 1000, ppm                                         |
| <u>STRIP CHART RECORDER</u>                     | <u>YOKOGAWA MODEL DR240</u>                                                      |
| Scan Cycle Time                                 | 1-60 seconds                                                                     |

|                                 |                                                                                           |
|---------------------------------|-------------------------------------------------------------------------------------------|
| Scanning Rate                   | 60ms/Channel                                                                              |
| Input Impedance                 | More than 10 M ohms for 2V or lower ranges, approximately 1 M ohms on 6V or higher ranges |
| Input Bias                      | Less than 10mA                                                                            |
| Temperature Spread on Terminals | 0.3% among input terminals                                                                |
| Temperature Coefficient         | Zero drift 0.01% of range/°C<br>Full span 0.01% of range/°C                               |
| Max. Allowable Input Voltage    | 60 VDC                                                                                    |
| Chart Speed                     | 1-15,000 mm/hr                                                                            |
| Recording Accuracy              | ± 0.1% of effective                                                                       |
| Chart Speed Accuracy            | ± 0.1% for recordings greater than 1m                                                     |
| Data Acquisition System (DAS)   | Onterris DAQView Software                                                                 |

#### MOBILE EMISSIONS LABORATORY

Fully Insulated  
Air Conditioned  
On-Board Computer System (IBM Compatible)

#### **3.1.7 SCAQMD Method 5.1 – Determination of Particulate Matter (PM)**

SCAQMD Method 5.1 is a manual, isokinetic method used to measure PM emissions. A sample of stack gas is withdrawn isokinetically from the source through a sample train consisting of a nozzle, unheated probe, Teflon connecting line, and an impinger train containing an unheated backup filter. The first and second impingers are Greenburg-Smith design with standard tip and contain approximately 100ml of DI H<sub>2</sub>O. The third impinger is an empty modified Greenburg-Smith impinger. The fourth impinger contains silica gel and is a modified Greenburg-Smith impinger. An unheated filter is placed between the empty impinger and the silica gel impinger. Particulate matter is collected in impingers 1, 2, and 3 and the backup filter. The impingers are contained in an ice bath to maintain a sampled gas temperature of less than 15°C (60°F) at the impinger exit.

#### **3.1.8 EPA Method 18 – Measurement of Gaseous Organic Compound Emissions**

EPA Method 18 is used to measure gaseous organic compounds from stationary sources. The major organic components of a gas mixture are separated by gas chromatography (GC) and are individually quantified using a flame ionization detector (FID), photoionization detector (PID), electron capture detector (ECD), or other appropriate detection principles. The retention times of each separated component are compared with those of known compounds under identical conditions. The GC analyst confirms the identity and approximate concentrations of the organic emission components beforehand. With this information, the analyst then prepares or purchases commercially available standard mixtures to calibrate the GC under conditions identical to those of the samples. The analyst also determines the need for sample dilution to avoid detector

saturation, gas stream filtration to eliminate particulate matter, and prevention of moisture condensation.

### 3.1.9 SCAQMD Method 307-91 – Hydrogen Sulfide and Reduced Sulfur Compounds

Samples for determination of hydrogen sulfide and speciated reduced sulfur compounds will be collected in Tedlar bags. The samples will be analyzed by GC/SCD by Quantum Analytical Service, Inc. in Carson, California or another approved laboratory, following SCAQMD Method 307-91 protocol. The Tedlar bag samples will be analyzed within 24 hours of sampling.

### 3.1.10 EPA Method 19 – Calculation of Exhaust Flow Rate from Known F-Factor

Fuel meter readings will be recorded during each test. One inlet landfill gas sample will be collected in a Tedlar bag and analyzed for F-Factor (dscf/MMBtu) and higher heating value (HHV) Btu/scf by D1945/D3588. Lab result values will be used for the calculation of volumetric flow rate. This calculated volumetric flow rate will be used for all mass emission calculations except for particulate matter. Equation 3-1 shows the equation used to calculate volumetric flow rate.

Equation 3-1:

$$Q_{sd} = \left( \frac{F_d \times GCV \times FF}{1 \times 10^6} \right) \left( \frac{20.9 - O_2}{20.9} \right)$$

## 3.2 AIR TOXIC POLLUTANTS TEST INFORMATION

The target compounds to be quantified as part of the air toxics testing, associated sampling methods sampling duration and anticipated detection limits are provided in Table 3-3.

**TABLE 3-3**  
**EXHAUST TEST PROCEDURES**  
**AIR TOXICS TEST PROGRAM OVERVIEW**  
**WASTE CONNECTIONS – CHIQUITA CANYON LANDFILL**  
**HERO TOx**

| Compound                    | Test Method | Analytical Technique | Test Duration | Number of Replicates |
|-----------------------------|-------------|----------------------|---------------|----------------------|
| Speciated VOC/TAC's         | EPA TO-15   | GC-MS                | 60 minutes    | 3                    |
| Total / Hexavalent Chromium | CARB 425    | ICP & IC/PCR         | 240 minutes   | 3                    |
| Aldehydes                   | CARB 430    | HPLC                 | 120 minutes   | 3                    |
| Trace Metals                | CARB 436    | ICPMS & CVAA         | 240 minutes   | 3                    |

All sampling/analytical procedures will adhere to CARB/EPA/SCAQMD test method requirements, where applicable, without modification with the following exceptions:

- The Speciated VOC analyses will be completed using EPA TO-15 GC/MS analyses instead of various GC/detector configurations (CARB Method 422, 410, etc.) with the exception of acrylonitrile which will be analyzed using a nitrogen/phosphorus detector (NPD).

### 3.2.1 CARB Method 425 – Hexavalent and Total Chromium

Triplicate 240-minute samples and a field blank will be collected for total and hexavalent chromium by CARB Method 425.

In this method, flue gas is extracted isokinetically through a quartz probe and Teflon line into a series of impingers consisting of two impingers containing 0.1 N NaOH, a Teflon coated back-up filter, an empty impinger, and an impinger containing silica gel.

After sampling, the following recovery procedures are followed:

- Recover probe with at least 100 ml 0.1 N NaOH. Check that pH is greater than 8.0;
  - Recover first impinger and Teflon line. The method does not require impinger rinses to minimize dilution. Where needed, rinse with 0.1 N NaOH. Check that pH is greater than 8.0;
  - Add the filter to the first impinger rinse;
  - Recover second impinger. Check that pH is greater than 8.0.

As an alternative to sodium hydroxide in the procedure above, the impingers will be charged and recovered with a sodium bicarbonate absorbing solution as described in section 21.2 of the method. The strength of the sodium bicarbonate solution may be increased from 0.1 N to 0.5 N or greater due to the acidic nature of the flue gas.

Three sample fractions are analyzed for hexavalent chromium per train:

- Probe rinse;
  - First impinger liquid and filter;
  - Second impinger liquid.

The samples and a reagent blank are analyzed by ion chromatography for hexavalent chromium. Only results above the detection limit are used in the final calculation if the sample train is recovered in three fractions. Total chromium analysis is determined from digested aliquots of the recovered sample fractions.

The proof rinse procedure in the method will be modified. These rinses will be collected before sampling, but analyzed with the samples for total chromium. Because of the sensitivity of the analytical method, it is not possible to consistently achieve undetectable chromium levels in the proof rinse. Commercially available NaOH contains low but often detectable concentrations of chromium. The rinse will be used to evaluate the results.

It is expected that Onterris Analytical will perform all analyses. Onterris is NELAP accredited but may not be CARB certified.

### 3.2.2 CARB Method 430 – Aldehydes

CARB Method 430 is a non-isokinetic method used to measure aldehyde emissions. Gaseous emissions are drawn through a probe and sample line and two impingers in series, each impinger containing an aqueous acidic solution of 2,4-dinitrophenyl-hydrazine (DNPH). The sampling train includes a probe, a connecting sample line, the two impingers, vacuum pump, control valves and dry gas meter.

At the completion of sampling, the probe is rinsed with 2 ml of impinger solution into the first impinger. Each impinger is recovered separately into a glass sample vial with a gas tight lid and each impinger is rinsed with 2 ml of impinger solution. An aldehyde reacts with DNPH by nucleophilic addition on the carbonyl followed by 1,2-elimination of water and the formation of a 2,4-dinitrophenylhydrazone. Acid is required to promote protonation of the carbonyl because DNPH is a weak nucleophile. After organic solvent extraction, the sample is analyzed using reverse phase HPLC with an ultraviolet (UV) absorption detector operated at 360 nm. Impingers are analyzed separately. Formaldehyde and acetaldehyde in the sample are identified and quantified by comparison for retention times and area counts of sample extracts with those of standards.

Pertinent information regarding the performance of the method is presented below:

- Method Options:
  - The probe is constructed of quartz glass / stainless steel
  - The sample line is constructed of Teflon tubing
- Method Exceptions:
  - None
- Target and/or Minimum Required Sample Duration: 120 minutes
- Target and/or Minimum Required Sample Volume: 30 dsl
- Analytical Laboratory, Quantum Carson, California

### 3.2.3 CARB Method 436 – Trace Metals

Triplicate 240-minute samples will be collected for metals using the procedure in CARB Method 436. These samples will be analyzed for antimony, arsenic, barium, cadmium, copper, manganese, mercury, molybdenum, nickel, and zinc. Chromium will be analyzed as part of the Method 425 analysis.

This procedure isokinetically withdraws flue gas through the sample train described below:

- The probe and nozzle are quartz to prevent metal contamination of the sample.
  - The filter is ultrapure quartz to minimize interferences.
  - The first two impingers contain 5% nitric acid and 10% hydrogen peroxide to collect any volatile metals which pass through the filter.
  - The third impinger is empty to prevent carry over of the  $\text{HNO}_3/\text{H}_2\text{O}_2$  solution into the permanganate solution.
  - The fourth and fifth impingers contain acidified potassium permanganate solution to collect any mercury that is not collected in the  $\text{HNO}_3/\text{H}_2\text{O}_2$  impingers.
  - The sixth impinger contains silica gel.

Sampling reagents and media are all trace metals quality with lot analyses of specific heavy metals available. The sampling train is pre-cleaned with DI water, and nitric acid before testing and sealed with parafilm.

A field blank and reagent blank will be collected and analyzed for this sampling program.

Sample recovery consists of recovering the following sample fractions:

- Probe, nozzle and front filter holder rinse - 0.1N  $\text{HNO}_3$  and brushing.
  - Filter - returned to pre-numbered petri dish and sealed.
  - Nitric acid/peroxide impinger, back half of filter holder and sample line - 0.1N  $\text{HNO}_3$  acid rinse.
  - Empty impinger 0 0.1N  $\text{HNO}_3$  rinse.
  - Permanganate impingers - 4%  $\text{KMnO}_4$ /10%  $\text{H}_2\text{SO}_4$  rinse followed by DI water rinse.
  - 8N hydrochloric acid rinse of permanganate impingers to remove residual manganese dioxide adhering to the impinger walls.

All sample fractions are stored in acid washed sample bottles.

Analysis for these metals except mercury will be performed by ICP-OES. Mercury will be analyzed by cold vapor atomic absorption. Decomposition of each sample fraction will be as per the CARB method. For these samples, the decomposed filter/probe wash portions will be combined proportionally with the decomposed impinger portion for analysis to obtain lower detection limits expected to be needed for these samples. Four mercury analyses will be performed per sample train: the combined filter/probe wash/nitric acid impinger catch, the empty impinger rinse, the potassium permanganate impinger catch, and the hydrochloric acid rinse of the permanganate impingers.

Table 3-4 summarizes the analytical methods that will be used for these trace metals tests. The reagent blank, the field blank and a laboratory preparation blank will be analyzed for all trace metals. One duplicate analysis will be performed for each metal on each sample fraction. Spike recoveries and duplicate analyses are reported with the sample results in the laboratory report. It is expected that Onterris Analytical will perform all analyses. Onterris is NELAP accredited but may not be CARB certified.

**TABLE 3-4  
TRACE METALS ANALYSIS FROM MULTIMETALS TRAIN  
WASTE CONNECTIONS – CHIQUITA CANYON LANDFILL  
HERO TOx**

| <b>Metal</b>      | <b>Analytical Method</b> | <b>Measurement Principle</b> |
|-------------------|--------------------------|------------------------------|
| <b>Antimony</b>   | EPA SW846 6010B          | ICP-OES                      |
| <b>Arsenic</b>    | EPA SW846 6010B          | ICP-OES                      |
| <b>Barium</b>     | EPA SW846 6010B          | ICP-OES                      |
| <b>Cadmium</b>    | EPA SW846 6010B          | ICP-OES                      |
| <b>Copper</b>     | EPA SW846 6010B          | ICP-OES                      |
| <b>Manganese</b>  | EPA SW846 6010B          | ICP-OES                      |
| <b>Mercury</b>    | EPA SW846 7470A          | Cold Vapor A.A.              |
| <b>Nickel</b>     | EPA SW846 6010B          | ICP-OES                      |
| <b>Molybdenum</b> | EPA SW846 6010B          | ICP-OES                      |
| <b>Zinc</b>       | EPA SW846 6010B          | ICP-OES                      |

### **3.2.4 EPA TO-15 – Speciated Volatile Organic Compounds (VOC)**

Triplicate summa canisters will be collected at the outlet. The samples will be analyzed by EPA TO-15 for volatile organics listed in Rule 1150.1 Table 1 list.

Sampling Procedure:

Three summa cans will be filled with sample gas using an evacuated cylinder. The sampling probe will be connected to the can with Teflon tubing. The samples will be drawn over approximately 60-minute periods.

The sample will be collected at a fixed point halfway into the sampling duct where possible. Samples will be analyzed by Onterris Analytical in Orange, California or another approved laboratory.

Equations:

$$\text{lb/hr} = \text{Cppbv} * \text{DSCFM} * \text{M.W.} * \text{CF}$$

Where:

Cppbv = Concentrations of trace organics in Parts per Billion (Volume)

DSCFM = Dry Standard Cubic Feet Per Minute

M.W. = Molecular Weight (lb/lb mole)

C.F. = Conversion Factor =  $1.581 \times 10^{-10}$  @ 60°F Std.

#### 4.0 EMISSION POINT INFORMATION

The emission point information is summarized in Table 4-1. It is anticipated that the TOx exhausts will be approximately 1,400-1,600°F.

**TABLE 4-1**  
**ESTIMATED EMISSION POINT INFORMATION**  
**WASTE CONNECTIONS – CHIQUITA CANYON LANDFILL**  
**HERO TOx**

| Source Location | Internal Diameter | Downstream Distance | Upstream Distance | Temperature (°F) |
|-----------------|-------------------|---------------------|-------------------|------------------|
| HERO TOx Stack  | ~10 ft.           | 60 inches           | 258 inches        | >1,400           |

## **5.0 PROCESS EQUIPMENT INFORMATION**

The facility operates 24 hours per day. The process data to be monitored will include landfill gas throughput, flare exhaust temperature and set temperature.

The TOx is designed to burn landfill/reaction gas and is rated at 45.54 MMBtu/hr.

## **APPENDIX A**

# **GENERAL EMISSIONS CALCULATIONS**

## GENERAL EMISSIONS CALCULATIONS

### I. Stack Gas Velocity

A. Stack gas molecular weight, lb/lb-mole

$$MW_{dry} = 0.44 * \% CO_2 + 0.32 * \% O_2 + 0.28 * \% N_2$$

$$MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$$

B. Absolute stack pressure, iwg

$$P_s = P_{bar} + \frac{P_{sg}}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_s = 2.9 * C_p * \sqrt{\Delta P} * \sqrt{T_s} * \sqrt{\frac{29.92 * 28.95}{P_s * MW_{wet}}}$$

### II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * \left( P_{bar} + \frac{\Delta H}{13.6} \right) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{ic} * \frac{T_{ref}}{528^\circ R}$$

C. Moisture content, dimensionless

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

### III. Stack Gas Volumetric Flow Rate

A. Actual stack gas volumetric flow rate, wacfm

$$Q = V_s * A_s * 60$$

B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

IV. Gaseous Mass Emission Rates, lb/hr

$$M = \frac{\text{ppm} * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Emission Rates, lb/MMBtu

$$\frac{\text{lb}}{\text{MMBtu}} = \frac{\text{ppm} * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \% O_2}$$

VI. Percent Isokinetic

$$I = \frac{17.32 * T_s (V_{mstd})}{(1 - B_{wo}) * V_s * P_s * Dn^2} * \frac{528^\circ R}{T_{ref}}$$

VII. Particulate Emissions

(a) Grain loading, gr/dscf  
 $C = 0.01543 (M_n/V_{mstd})$

(b) Grain loading at 12% CO<sub>2</sub>, gr/dscf  
 $C_{12\% CO_2} = C (12/\% CO_2)$

(c) Mass emissions, lb/hr  
 $M = C * Q_{sd} * (60 \text{ min/hr}) / (7000 \text{ gr/lb})$

(d) Particulate emission factor

$$\text{lb}/10^6 \text{ Btu} = Cx \frac{1 \text{ lb}}{7000 \text{ gr}} * F * \frac{20.9}{20.9 - \% O_2}$$

Nomenclature:

|                |   |                                                                                        |
|----------------|---|----------------------------------------------------------------------------------------|
| $A_s$          | = | stack area, ft <sup>2</sup>                                                            |
| $B_{wo}$       | = | flue gas moisture content, dimensionless                                               |
| $C_{12\%CO_2}$ | = | particulate grain loading, gr/dscf corrected to 12% CO <sub>2</sub>                    |
| $C$            | = | particulate grain loading, gr/dscf                                                     |
| $C_p$          | = | pitot calibration factor, dimensionless                                                |
| $D_n$          | = | nozzle diameter, inches                                                                |
| $F$            | = | fuel F-Factor, dscf/MMBtu @ 0% O <sub>2</sub>                                          |
| $H$            | = | orifice differential pressure, iwg                                                     |
| $I$            | = | % isokinetics                                                                          |
| $M_n$          | = | mass of collected particulate, mg                                                      |
| $M_i$          | = | mass emission rate of specie i, lb/hr                                                  |
| $MW$           | = | molecular weight of flue gas, lb/lb-mole                                               |
| $M_{wi}$       | = | molecular weight of specie i:                                                          |
|                |   | SO <sub>2</sub> : 64                                                                   |
|                |   | NO <sub>x</sub> : 46                                                                   |
|                |   | CO: 28                                                                                 |
|                |   | HC: 16                                                                                 |
| $t$            | = | sample time, minutes                                                                   |
| $\Delta P$     | = | average velocity head, iwg = $(\sqrt{\Delta P})^2$                                     |
| $P_{bar}$      | = | barometric pressure, inches Hg                                                         |
| $P_s$          | = | stack absolute pressure, inches Hg                                                     |
| $P_{sg}$       | = | stack static pressure, iwbg                                                            |
| $Q$            | = | wet stack flow rate at actual conditions, wacfm                                        |
| $Q_{sd}$       | = | dry standard stack flow rate, dscfm                                                    |
| $SV$           | = | specific molar volume of an ideal gas at standard conditions, ft <sup>3</sup> /lb-mole |
| $T_m$          | = | meter temperature, °R                                                                  |
| $T_{ref}$      | = | reference temperature, °R                                                              |
| $T_s$          | = | stack temperature, °R                                                                  |
| $V_s$          | = | stack gas velocity, ft/sec                                                             |
| $V_{lc}$       | = | volume of liquid collected in impingers, ml                                            |
| $V_m$          | = | uncorrected dry meter volume, dcf                                                      |
| $V_{mstd}$     | = | dry meter volume at standard conditions, dscf                                          |
| $V_{wstd}$     | = | volume of water vapor at standard conditions, scf                                      |
| $Y_d$          | = | meter calibration coefficient                                                          |

## **APPENDIX B**

# **QUALITY ASSURANCE**

## **Appendix B.1**

### **Quality Assurance Program Summary**

## QUALITY ASSURANCE PROGRAM SUMMARY

As part of Onterris Air Quality Services, LLC (Onterris) ASTM D7036-04 certification, Onterris is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. Onterris quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

Assignment of an Internal QA Officer: Onterris has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: Onterris has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of Onterris's QA efforts. The manual is revised upon periodic review and as Onterris adds capabilities. The QA manual provides details on the items provided in this summary.

Personnel Testing and Training: Personnel testing and training is essential to the production of high quality test results. Onterris training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the Onterris QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

Equipment Maintenance and Calibration: All laboratory and field equipment used as a part of Onterris's emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: Onterris maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: Onterris maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to Onterris source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to Onterris office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

QA Reviews: Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

## **ASTM D7036-04 Required Information**

### Uncertainty Statement

Onterris is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Onterris participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Onterris is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

### Performance Data

Performance data are available for review.

### Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, is present on each test event.

### Plant Entry and Safety Requirements

#### **Plant Entry**

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.

## **Safety Requirements**

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)
- Flame Resistant Clothing (if required)

The following safety measures are followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.

**TABLE 1**  
**EQUIPMENT MAINTENANCE SCHEDULE**

| Equipment                  | Acceptance Limits                                                                | Frequency of Service           | Methods of Service                                                                             |
|----------------------------|----------------------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------|
| Pumps                      | 1. Absence of leaks<br>2. Ability to draw manufacturers required vacuum and flow | As recommended by manufacturer | 1. Visual inspection<br>2. Clean<br>3. Replace parts<br>4. Leak check                          |
| Flow Meters                | 1. Free mechanical movement                                                      | As recommended by manufacturer | 1. Visual inspection<br>2. Clean<br>3. Calibrate                                               |
| Sampling Instruments       | 1. Absence of malfunction<br>2. Proper response to zero span gas                 | As recommended by manufacturer | As recommended by manufacturer                                                                 |
| Integrated Sampling Tanks  | 1. Absence of leaks                                                              | Depends on nature of use       | 1. Steam clean<br>2. Leak check                                                                |
| Mobile Van Sampling System | 1. Absence of leaks                                                              | Depends on nature of use       | 1. Change filters<br>2. Change gas dryer<br>3. Leak check<br>4. Check for system contamination |
| Sampling Lines             | 1. Sample degradation less than 2%                                               | After each test series         | 1. Blow dry, inert gas through line until dry                                                  |

**TABLE 2**  
**MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS**

| Sampling Equipment                                   | Calibration Frequency          | Calibration Procedure                                             | Acceptable Calibration Criteria              |
|------------------------------------------------------|--------------------------------|-------------------------------------------------------------------|----------------------------------------------|
| Continuous Analyzers                                 | Before and After Each Test Day | 3-point calibration error test                                    | < 2% of analyzer range                       |
| Continuous Analyzers                                 | Before and After Each Test Run | 2-point sample system bias check                                  | < 5% of analyzer range                       |
| Continuous Analyzers                                 | After Each Test Run            | 2-point analyzer drift determination                              | < 3% of analyzer range                       |
| CEMS System                                          | Beginning of Each Day          | leak check                                                        | < 1 in. Hg decrease in 5 min. at > 20 in. Hg |
| Continuous Analyzers                                 | Semi-Annually                  | 3-point linearity                                                 | < 1% of analyzer range                       |
| NO <sub>x</sub> Analyzer                             | Daily                          | NO <sub>2</sub> → NO converter efficiency                         | > 90%                                        |
| Differential Pressure Gauges (except for manometers) | Semi-Annually                  | Correction factor based on 5-point comparison to standard         | ± 5%                                         |
| Differential Pressure Gauges (except for manometers) | Bi-Monthly                     | 3-point comparison to standard, no correction factor              | ± 5%                                         |
| Barometer                                            | Semi-Annually                  | Adjusted to mercury-in-glass or National Weather Service Station  | ± 0.1 inches Hg                              |
| Dry Gas Meter                                        | Semi-Annually                  | Calibration check at 4 flow rates using a NIST traceable standard | ± 2%                                         |
| Dry Gas Meter                                        | Bi-Monthly                     | Calibration check at 2 flow rates using a NIST traceable standard | ± 2% of semi-annual factor                   |
| Dry Gas Meter Orifice                                | Annually                       | 4-point calibration for ΔH@                                       | --                                           |
| Temperature Sensors                                  | Semi-Annually                  | 3-point calibration vs. NIST traceable standard                   | ± 1.5%                                       |

Note: Calibration requirements that meet applicable regulatory agency requirements are used.

## **Appendix B.2**

### **SCAQMD, CARB, and STAC Certifications**



September 16, 2026

Mr. John Peterson  
Onterris Air Quality Services, LLC (previously Montrose Air Quality Services, LLC)  
1631 E. Saint Andrew Place  
Santa Ana, CA 92705

Subject: LAP Approval Notice  
Reference # 96LA1220

Dear Mr. Peterson:

We have completed our review of Onterris Air Quality Services' renewal application under the South Coast AQMD Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2026, and ending September 30, 2027, for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

South Coast AQMD Methods 1-4  
South Coast AQMD Methods 10.1 and 100.1  
South Coast AQMD Methods 5.1, 5.2, 5.3, 6.1 (Sampling and Analysis)  
South Coast AQMD Methods 25.1 and 25.3 (Sampling)  
Rule 1121/ 1146.2 Protocol  
Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling  
USEPA CTM-030 and ASTM D6522-00

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/ 1146.2 Protocols includes satellite facilities located at:

|                                                                                                  |                                                                                       |                                                                  |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------|
| McKenna Boiler<br>1510 North Spring Street<br>Los Angeles, CA 90012                              | Noritz America Corp.<br>11160 Grace Avenue<br>Fountain Valley, CA 92708               | Ajax Boiler, Inc.<br>2701 S. Harbor Blvd.<br>Santa Ana, CA 92704 |
| VA Laundry Bldg., Greater LA Healthcare Sys.<br>508 Constitution Avenue<br>Los Angeles, CA 90049 | So Cal Gas – Engr Analysis Ctr, Bldg H<br>8101 Rosemead Blvd<br>Pico Rivera, CA 90660 |                                                                  |

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to me by telephone at (909) 396-2476, or via e-mail at [ceckerle@aqmd.gov](mailto:ceckerle@aqmd.gov).

Sincerely,

Colin Eckerle  
Program Supervisor  
Source Test Engineering

CE:KY  
Attachment

260916 LapRenewal.doc



Gavin Newsom, Governor  
Yana Garcia, CalEPA Secretary  
Lauren Sanchez, Chair

June 17<sup>th</sup>, 2026

John Peterson  
Onterris Air Quality Services, LLC  
1631 East Saint Andrew Place  
Santa Ana, California 92705  
[jpeterson@onterris.com](mailto:jpeterson@onterris.com)

Dear John Peterson:

I am pleased to inform you that the California Air Resources Board (CARB) has approved Onterris Air Quality Services, LLC as an Independent Contractor, by means of the enclosed Executive Order I-26-004. This approval is for Onterris Air Quality Services, LLC to perform CARB Test Methods 1, 2, 3, 4, 5, 6, 8, 17, 20, and 100 (CO, CO<sub>2</sub>, NO<sub>x</sub>, O<sub>2</sub>, SO<sub>2</sub>, THC), Visible Emission Evaluation (VEE), and U.S. Environmental Protection Agency (U.S. EPA) Test Methods 201A, 202, and 205. The approval is valid through June 30, 2028, during which time additional audits of Onterris Air Quality Services, LLC's testing ability may be performed.

If you have questions or need further assistance, please contact the *Independent Contractor Program*.

Sincerely,

A handwritten signature in blue ink, appearing to read "W. Ham", is positioned above the printed name and title.

Walter Ham (Jun 17, 2026 13:27:08 PDT)

Walter Ham, Ph.D., Chief, Monitoring and Laboratory Division

Enclosure



American Association for Laboratory Accreditation

## *Accredited Air Emission Testing Body*

A2LA has accredited

### ONTERRIS AIR QUALITY SERVICES, LLC

In recognition of the successful completion of the joint A2LA and Source Evaluation Society (SES) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 23<sup>rd</sup> day of January 2026.



Mr. Trace McInturf, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 3925.01  
Valid to February 29, 2028  
Revised April 27, 2026

*This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.*

## **Appendix B.3**

### **Statement of No Conflict of Interest**

## Statement of No Conflict of Interest

*(To be completed by authorized source testing firm representative and included in source test report)*

The following facility and equipment were tested by my source testing firm and are the subjects of this statement:

|                      |                           |
|----------------------|---------------------------|
| Facility ID:         | 119219                    |
| Date(s) Tested:      | Test Plan                 |
| Facility Name:       | Chiquita Canyon Landfill  |
| Equipment Address:   | 29201 Henry Mayo Drive    |
|                      | Castaic, California 91384 |
| Equipment Tested:    | Hero Thermal Oxidizer     |
| Device ID, A/N, P/N: | A/N: 661284               |

I state, as its legally authorized representative, that the source testing firm of:

|                   |                                    |
|-------------------|------------------------------------|
| Source Test Firm: | Onterris Air Quality Services, LLC |
| Business Address: | 1631 E. St. Andrew Pl.             |
|                   | Santa Ana, California 92705        |

is an "Independent Testing Laboratory" as defined in **District Rule 304(k)**:

*For the purposes of this Rule, when an independent testing laboratory is used for the purposes of establishing compliance with District rules or to obtain a District permit to operate, it must meet all of the following criteria:*

- (1) The testing laboratory shall have no financial interest in the company or facility being tested, or in the parent company, or any subsidiary thereof -*
- (2) The company or facility being tested, or parent company or any subsidiary thereof, shall have no financial interest in the testing laboratory;*
- (3) Any company or facility responsible for the emission of significant quantities of pollutants to the atmosphere, or parent company or any subsidiary thereof shall have no financial interest in the testing laboratory; and*
- (4) The testing laboratory shall not be in partnership with, own or be owned by, in part or in full, the contractor who has provided or installed equipment (basic or control), or monitoring systems, or is providing maintenance for installed equipment or monitoring systems, for the company being tested.*

Furthermore, I state that any contracts or agreements entered into by my source testing firm and the facility referenced above, or its designated contractor(s), either verbal or written, are not contingent upon the outcome of the source testing, or the source testing information provided to the SCAQMD.

|              |                                                                                     |                |           |
|--------------|-------------------------------------------------------------------------------------|----------------|-----------|
| Signature:   |  | Date:          | 9/24/2026 |
| Pete SanJuan | Client Project Manager                                                              | (714) 279-6777 | 9/24/2026 |
| (Name)       | (Title)                                                                             | (Phone)        | (Date)    |

## **APPENDIX C SITE SAFETY PLAN**



## **SITE SAFETY PLAN BOOKLET**

**Project:** OPP-2026-09-24-100189

**Customer:** Waste Connections

**Location:** Chiquita Landfill

**Units:** Hero Thermal Oxidizer

**Client Project Manager:** Pete San Juan

## Site Safety Plan and JHA Purpose and Instructions

### Purpose

Employee safety is the top priority of Montrose Environmental Group. All employees must be trained to assess and mitigate hazards. The District Manager and Project Manager are responsible to ensure all hazards have been properly identified and managed. All employees have Stop Work Authority in all situations where an employee feels they or their co-worker cannot perform a job safely or if there is a task for which they have not been adequately trained.

The Site Safety Plan (SSP) has been developed to help assist Montrose test crews with identifying physical and health hazards and determining how the hazards will be managed. Additionally, the SSP will help each crew manage the safety of the employees by providing emergency procedures and information. The booklet contains a several safety forms that may be required in the field.

### Instructions

The SSP consists of the following:

1. A Pre-Mobilization Test Plan – To be completed in it's entirety by the client project Manager prior to the test.
2. A Job Hazard Analysis is a standardized, two-page, fillable form that is used to evaluated the task/site's particular hazards and controls. The form also includes a daily toolbox topic and daily hazard review with sign off by the team. The client Project Manager is responsible to complete the JHA form through section 8. Upon arrival at the test site, the team will review the form for accuracy, making any corrections required and complete the remainder of the JHA. Section 9 will require at least three tasks, hazards and controls be identified for the project. Each team member has the option to discuss making changes or adding to the JHA and must sign on the Job Hazard Analysis form in agreement and sign in Section 10. The JHA is to be modified when conditions change. A toolbox meeting with a daily topic in addition to a review of the hazard analysis is required daily for the duration of the test. An additional sheet of paper with the toolbox topic and signatures can be added to the SSP packet.
3. Hazard Control Matrix - contains useful information on both engineering and administrative controls that a crew can use to reduce or eliminate the hazards they have observed plus applicable PPE that may be required.
4. Emergency Action Plan - The Job Supervisor/ Client Project Manager (CPM) will complete the Emergency Action Plan form and ensure that all employees are familiar with the facility emergency and evacuation procedures, assembly/ rally points, alert systems, and signals prior to work commencing. In the event of an emergency situation/ evacuation, the Job Supervisor/ CPM will maintain a roster and be responsible for accounting for all employees. The Job Supervisor/ CPM will ensure that this Emergency Action Plan Form is completed, communicated to all employees, signed, and posted.
5. Additional Forms, as applicable
  - a. MEWP Lift Inspection Form
  - b. Heat Stress Prevention Form Based on Heat Index
  - c. Extended Hours Form

## Site Safety Plan and JHA Purpose and Instructions

The SSP is a living document. The Project Manager should continually update their SSPs as new information and conditions change or if new hazards are presented.

Each completed SSP should be maintained with the Test Plan in the office for a period of 3 years. There will be an audit process developed for the Site Safety Plans.

## PRE-MOBILIZATION TEST INFORMATION

|                                                            |                                         |
|------------------------------------------------------------|-----------------------------------------|
| PROJECT NAME/LOCATION: <u>Chiquita Landfill</u>            | PROJECT #: <u>OPP-2026-09-24-100189</u> |
| TEST DATE: <u>12/22-23/2026</u>                            | PROJECT MANAGER: <u>Pete San Juan</u>   |
| TEST SCOPE: <u>Compliance</u>                              |                                         |
| SITE CONTACT: Name: <u>Bill Haley</u> Contact Phone: _____ |                                         |

**Source Type:** New Source: X Revisit: \_\_\_\_\_ Prj#/Date/Tech: OPP-2026-09-24-100189

Coal Fired Electric Utility: \_\_\_\_\_ Ethanol Plant: \_\_\_\_\_ Chemical Mfg. of \_\_\_\_\_

Cement/Lime Kiln Plant: \_\_\_\_\_ Specialty Mfg. of: \_\_\_\_\_ Other: Landfill

**Anticipated Effluent Composition** – check all that apply and fill in expected concentration in ppm/%



CO



NO<sub>x</sub>



SO<sub>2</sub>



VOC



other

If other, explain: \_\_\_\_\_

**Flammable:** \_\_\_\_\_ **Toxic:** \_\_\_\_\_ **Corrosive:** \_\_\_\_\_ **Dust:** \_\_\_\_\_

Engineering Controls to be Implemented:

### Additional Safety Equipment Required:

Personal gas monitors: \_\_\_\_\_

Respiratory Protection:

Half Face \_\_\_\_\_ Full Face \_\_\_\_\_ HEPA Filters \_\_\_\_\_ Supplied Air: \_\_\_\_\_ (Safety Dept. Approval)

### Approximate Flue Gas Temperatures, (F)



below 210



210 to 450



450 to 950



above 950



other

If other, explain: \_\_\_\_\_

### Approximate Duct Pressure, (iwg):



below -3



-3 to +3



+3 to +7



above +7



other

If other, explain: \_\_\_\_\_

## PRE-MOBILIZATION TEST INFORMATION

Sampling Location: Stack Port ☒

Duct Port ☒

Approximate Sampling Platform Height, (ft)

☐

below 6

☒

6 to 50

☐

50 to 100

☐

above 100

☐

other

If other, explain:

### Access and Protection:

Elevators: Ladders: MEWP Lift: ☒ Scaffold: Equipment Hoist:

Guardrails: Toe plate: Engineered Tie Off Points: Heat Shield:

Other:

### Describe how equipment will be mobilized to the sampling location:

Mobile laboratory

### Additional Information:

| Effluent Chemical Regulatory Limits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |                                 |                                  |                                  |                        |                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------|----------------------------------|----------------------------------|------------------------|-------------------------|
| Gas Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Chemical Formula | Cal OSHA PEL <sup>1</sup> (ppm) | Cal OSHA STEL <sup>2</sup> (ppm) | NIOSH REL TWA <sup>3</sup> (ppm) | Cal OSHA Ceiling (ppm) | IDLH <sup>4</sup> (ppm) |
| Carbon Monoxide                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CO               | 25                              | 200                              | 35                               | 200                    | 1,200                   |
| Nitric Oxide                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NO <sub>x</sub>  | 25                              | ND <sup>5</sup>                  | 25                               | ND                     | 100                     |
| Sulfur Dioxide                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SO <sub>2</sub>  | 2                               | 5                                | 2                                | ND                     | 100                     |
| Hydrogen Chloride                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | HCl              | 0.3                             | 2                                | ND                               | 2                      | 50                      |
| Hydrogen Sulfide                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | H <sub>2</sub> S | 10                              | 15                               | 10 (10 min.) <sup>C</sup>        | 50                     | 100                     |
| <p>California Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) based on an 8-hour shift;<br/> 2: Cal OSHA Short-term Exposure Limit (STEL) based on a 15-minute period;<br/> 3: National Institute for Occupational Safety and Health (NIOSH) Recommended Exposure Limit (REL) Time-weighted Average (TWA) based on an 8-hour shift;<br/> 4: Immediately Dangerous to Life or Health (IDLH);<br/> 5: Not Defined (ND);<br/> C: Ceiling Limit - Maximum allowable human exposure limit for an airborne or gaseous substance, which is not to be exceeded, even momentarily.</p> |                  |                                 |                                  |                                  |                        |                         |

Prepared by: Pete San Juan

Date: 9/23/2026

Reviewed by: Pete San Juan

Date: 9/23/2026

|                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                               |              |      |  |          |            |    |  |            |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------|--|----------|------------|----|--|------------|--|--|--|--|
| 1.                                                                                                                                                                                                            | <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;">Client</td> <td style="width:30%;">Contact Name</td> <td style="width:20%;">Date</td> <td style="width:20%;"></td> </tr> <tr> <td>Facility</td> <td>SSP Writer</td> <td>PM</td> <td></td> </tr> <tr> <td>Client Rep</td> <td colspan="3"></td> </tr> </table> | Client                                                                                                                                                        | Contact Name | Date |  | Facility | SSP Writer | PM |  | Client Rep |  |  |  |  |
| Client                                                                                                                                                                                                        | Contact Name                                                                                                                                                                                                                                                                                                                                                | Date                                                                                                                                                          |              |      |  |          |            |    |  |            |  |  |  |  |
| Facility                                                                                                                                                                                                      | SSP Writer                                                                                                                                                                                                                                                                                                                                                  | PM                                                                                                                                                            |              |      |  |          |            |    |  |            |  |  |  |  |
| Client Rep                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                               |              |      |  |          |            |    |  |            |  |  |  |  |
| <b>Job Preparation</b><br><input type="checkbox"/> Job Site Walk Through Completed <input type="checkbox"/> Site Specific Training Complete<br><input type="checkbox"/> Safe Work Permit Received from Client |                                                                                                                                                                                                                                                                                                                                                             | All hazards and mitigation steps must be documented.<br>If this JHA does not cover all the hazards identified,<br>use Section 9 to document that information. |              |      |  |          |            |    |  |            |  |  |  |  |
| If the heat index is expected to be above 91°, fill out the Heat Stress Prevention Form.                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                               |              |      |  |          |            |    |  |            |  |  |  |  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Facility Information/Emergency Preparedness</b><br><div style="color: red; font-weight: bold;">If non-emergency medical attention is needed, call: AXIOM #: 877-502-9466.</div> <div style="display: flex; justify-content: space-between;"> <div>Plant Emergency # _____</div> <div>Certified First Aid Person: _____</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div>EMS Location _____</div> <div>Evacuation Routes _____</div> <div>Rally Point _____</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div>Severe Weather Shelter Location _____</div> <div>Eye Wash &amp; Safety Shower Location _____</div> </div> <div style="text-align: right; margin-top: 20px;">           Operational: <input type="checkbox"/> Yes <input type="checkbox"/> No         </div> |
| <b>Source Information: (list type):</b> _____<br><div style="display: flex; justify-content: space-between;"> <div>Stack Gas Temp. (°F) _____</div> <div>Stack Gas Press. ("H<sub>2</sub>O) _____</div> <div>Stack Gas Components: _____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Stack Gas Inhalation Potential? <input type="checkbox"/> Yes <input type="checkbox"/> No</div> <div>If yes, see List of Hazard Chemicals.</div> </div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3. | <b>Error Risk</b><br><div style="display: flex; flex-wrap: wrap;"> <div style="width: 25%;"><input type="checkbox"/> Time Pressure</div> <div style="width: 25%;"><input type="checkbox"/> Remote Work Location</div> <div style="width: 25%;"><input type="checkbox"/> &gt; 12 hr shift</div> <div style="width: 25%;"><input type="checkbox"/> Working &gt; 8 consecutive days</div> <div style="width: 25%;"><input type="checkbox"/> Lack of procedures</div> <div style="width: 25%;"><input type="checkbox"/> Extreme temps, wind &gt;30mph</div> <div style="width: 25%;"><input type="checkbox"/> Personal illness/fatigue</div> <div style="width: 25%;"><input type="checkbox"/> Vague work guidance</div> <div style="width: 25%;"><input type="checkbox"/> Monotonous Activity</div> <div style="width: 25%;"><input type="checkbox"/> First day back after time off</div> <div style="width: 25%;"><input type="checkbox"/> Multiple job locations</div> <div style="width: 25%;"><input type="checkbox"/> Other: _____</div> </div> |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <table style="width:100%;"> <tr> <th style="width:20%;">Physical Hazards</th> <th style="width:80%;">Hazard Controls</th> </tr> <tr> <td>Dust Hazards</td> <td><input type="checkbox"/> Dust Mask    <input type="checkbox"/> Goggles    <input type="checkbox"/> Other: _____</td> </tr> <tr> <td>Thermal Burn</td> <td><input type="checkbox"/> Hot Gloves    <input type="checkbox"/> Heat Shields    <input type="checkbox"/> Other Protective Clothing: _____</td> </tr> <tr> <td>Electrical Hazards</td> <td><input type="checkbox"/> Connections Protected from Elements    <input type="checkbox"/> External GFCI    <input type="checkbox"/> Other: _____<br/> <input type="checkbox"/> XP Rating Requirement    <input type="checkbox"/> Intrinsically Safe Requirement</td> </tr> <tr> <td>Inadequate Lighting</td> <td><input type="checkbox"/> Install Temporary Lighting    <input type="checkbox"/> Headlamps</td> </tr> <tr> <td>Slip and Trip</td> <td><input type="checkbox"/> Housekeeping    <input type="checkbox"/> Barricade Area    <input type="checkbox"/> Other: _____</td> </tr> <tr> <td>Hand Protection</td> <td><input type="checkbox"/> Cut Resistant Gloves    <input type="checkbox"/> Pinch Pts.    <input type="checkbox"/> General    <input type="checkbox"/> Electrical    <input type="checkbox"/> Impact Resistant<br/> <input type="checkbox"/> Other: _____</td> </tr> </table> | Physical Hazards  | Hazard Controls                                                                                               | Dust Hazards                                    | <input type="checkbox"/> Dust Mask <input type="checkbox"/> Goggles <input type="checkbox"/> Other: _____                                                                                                                                                                                                                   | Thermal Burn | <input type="checkbox"/> Hot Gloves <input type="checkbox"/> Heat Shields <input type="checkbox"/> Other Protective Clothing: _____    | Electrical Hazards | <input type="checkbox"/> Connections Protected from Elements <input type="checkbox"/> External GFCI <input type="checkbox"/> Other: _____<br><input type="checkbox"/> XP Rating Requirement <input type="checkbox"/> Intrinsically Safe Requirement | Inadequate Lighting                    | <input type="checkbox"/> Install Temporary Lighting <input type="checkbox"/> Headlamps                                                                                                                                                                                             | Slip and Trip | <input type="checkbox"/> Housekeeping <input type="checkbox"/> Barricade Area <input type="checkbox"/> Other: _____ | Hand Protection | <input type="checkbox"/> Cut Resistant Gloves <input type="checkbox"/> Pinch Pts. <input type="checkbox"/> General <input type="checkbox"/> Electrical <input type="checkbox"/> Impact Resistant<br><input type="checkbox"/> Other: _____ |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Physical Hazards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Hazard Controls                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |                                                                                                               |                                                 |                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                        |                    |                                                                                                                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                    |               |                                                                                                                     |                 |                                                                                                                                                                                                                                           |
| Dust Hazards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <input type="checkbox"/> Dust Mask <input type="checkbox"/> Goggles <input type="checkbox"/> Other: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                                                                                                               |                                                 |                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                        |                    |                                                                                                                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                    |               |                                                                                                                     |                 |                                                                                                                                                                                                                                           |
| Thermal Burn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <input type="checkbox"/> Hot Gloves <input type="checkbox"/> Heat Shields <input type="checkbox"/> Other Protective Clothing: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                                                                                                               |                                                 |                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                        |                    |                                                                                                                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                    |               |                                                                                                                     |                 |                                                                                                                                                                                                                                           |
| Electrical Hazards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Connections Protected from Elements <input type="checkbox"/> External GFCI <input type="checkbox"/> Other: _____<br><input type="checkbox"/> XP Rating Requirement <input type="checkbox"/> Intrinsically Safe Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                                                                                                               |                                                 |                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                        |                    |                                                                                                                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                    |               |                                                                                                                     |                 |                                                                                                                                                                                                                                           |
| Inadequate Lighting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <input type="checkbox"/> Install Temporary Lighting <input type="checkbox"/> Headlamps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |                                                                                                               |                                                 |                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                        |                    |                                                                                                                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                    |               |                                                                                                                     |                 |                                                                                                                                                                                                                                           |
| Slip and Trip                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Housekeeping <input type="checkbox"/> Barricade Area <input type="checkbox"/> Other: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                                                                                                               |                                                 |                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                        |                    |                                                                                                                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                    |               |                                                                                                                     |                 |                                                                                                                                                                                                                                           |
| Hand Protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> Cut Resistant Gloves <input type="checkbox"/> Pinch Pts. <input type="checkbox"/> General <input type="checkbox"/> Electrical <input type="checkbox"/> Impact Resistant<br><input type="checkbox"/> Other: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                                                                                                               |                                                 |                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                        |                    |                                                                                                                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                    |               |                                                                                                                     |                 |                                                                                                                                                                                                                                           |
| <b>Potential Hazards for Consideration</b><br><table style="width:100%;"> <tr> <td style="width:20%;">Secondary Permits</td> <td><input type="checkbox"/> Hot Work    <input type="checkbox"/> Confined Space    <input type="checkbox"/> Excavation</td> </tr> <tr> <td>Working from Heights<br/><i>See also Sect. 7</i></td> <td><input type="checkbox"/> Falling objects    <input type="checkbox"/> Fall protection    <input type="checkbox"/> Drop zone protection    <input type="checkbox"/> Platform load ratings<br/> <input type="checkbox"/> Scaffold inspection    <input type="checkbox"/> Ladder inspection    <input type="checkbox"/> Barricades for equipment</td> </tr> <tr> <td>Electrical</td> <td><input type="checkbox"/> Exposed wire/connector    <input type="checkbox"/> Verify equipment grounding    <input type="checkbox"/> Arc Flash</td> </tr> <tr> <td>Lifting</td> <td><input type="checkbox"/> Crane lift plan    <input type="checkbox"/> Rigging inspection    <input type="checkbox"/> Tag lines used    <input type="checkbox"/> Hoists in place</td> </tr> <tr> <td>Respiratory<br/><i>See also Sect. 8</i></td> <td><input type="checkbox"/> Unexpected exposure    <input type="checkbox"/> Chemical    <input type="checkbox"/> Dust (combustible)    <input type="checkbox"/> PEL provided<br/> <input type="checkbox"/> Cartridges or supplied air available    <input type="checkbox"/> Gas detection equipment</td> </tr> </table> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Secondary Permits | <input type="checkbox"/> Hot Work <input type="checkbox"/> Confined Space <input type="checkbox"/> Excavation | Working from Heights<br><i>See also Sect. 7</i> | <input type="checkbox"/> Falling objects <input type="checkbox"/> Fall protection <input type="checkbox"/> Drop zone protection <input type="checkbox"/> Platform load ratings<br><input type="checkbox"/> Scaffold inspection <input type="checkbox"/> Ladder inspection <input type="checkbox"/> Barricades for equipment | Electrical   | <input type="checkbox"/> Exposed wire/connector <input type="checkbox"/> Verify equipment grounding <input type="checkbox"/> Arc Flash | Lifting            | <input type="checkbox"/> Crane lift plan <input type="checkbox"/> Rigging inspection <input type="checkbox"/> Tag lines used <input type="checkbox"/> Hoists in place                                                                               | Respiratory<br><i>See also Sect. 8</i> | <input type="checkbox"/> Unexpected exposure <input type="checkbox"/> Chemical <input type="checkbox"/> Dust (combustible) <input type="checkbox"/> PEL provided<br><input type="checkbox"/> Cartridges or supplied air available <input type="checkbox"/> Gas detection equipment |               |                                                                                                                     |                 |                                                                                                                                                                                                                                           |
| Secondary Permits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <input type="checkbox"/> Hot Work <input type="checkbox"/> Confined Space <input type="checkbox"/> Excavation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |                                                                                                               |                                                 |                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                        |                    |                                                                                                                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                    |               |                                                                                                                     |                 |                                                                                                                                                                                                                                           |
| Working from Heights<br><i>See also Sect. 7</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> Falling objects <input type="checkbox"/> Fall protection <input type="checkbox"/> Drop zone protection <input type="checkbox"/> Platform load ratings<br><input type="checkbox"/> Scaffold inspection <input type="checkbox"/> Ladder inspection <input type="checkbox"/> Barricades for equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                                                                                                               |                                                 |                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                        |                    |                                                                                                                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                    |               |                                                                                                                     |                 |                                                                                                                                                                                                                                           |
| Electrical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input type="checkbox"/> Exposed wire/connector <input type="checkbox"/> Verify equipment grounding <input type="checkbox"/> Arc Flash                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |                                                                                                               |                                                 |                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                        |                    |                                                                                                                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                    |               |                                                                                                                     |                 |                                                                                                                                                                                                                                           |
| Lifting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <input type="checkbox"/> Crane lift plan <input type="checkbox"/> Rigging inspection <input type="checkbox"/> Tag lines used <input type="checkbox"/> Hoists in place                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |                                                                                                               |                                                 |                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                        |                    |                                                                                                                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                    |               |                                                                                                                     |                 |                                                                                                                                                                                                                                           |
| Respiratory<br><i>See also Sect. 8</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <input type="checkbox"/> Unexpected exposure <input type="checkbox"/> Chemical <input type="checkbox"/> Dust (combustible) <input type="checkbox"/> PEL provided<br><input type="checkbox"/> Cartridges or supplied air available <input type="checkbox"/> Gas detection equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                   |                                                                                                               |                                                 |                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                        |                    |                                                                                                                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                    |               |                                                                                                                     |                 |                                                                                                                                                                                                                                           |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5. | <b>Required PPE</b> <input type="checkbox"/> Hard Hats <input type="checkbox"/> Safety Glasses <input type="checkbox"/> Safety Toe Shoe/Boot <input type="checkbox"/> Hearing Protection <input type="checkbox"/> Safety Spotter<br><input type="checkbox"/> Hi-Vis Vests <input type="checkbox"/> Harness/Lanyard* <input type="checkbox"/> Goggles <input type="checkbox"/> Personal Monitor Type: _____<br><input type="checkbox"/> Metatarsal Guards <input type="checkbox"/> Hot Gloves <input type="checkbox"/> Face Shield <input type="checkbox"/> Respirator Type: _____<br><input type="checkbox"/> Nomex/FRC <input type="checkbox"/> Other PPE: _____ |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Additional Work Place Hazards

6. **Critical Procedures** – check all that apply – \*indicates additional form must be completed or collected from client

☐ Heat Stress Prevention\*    ☐ Confined Space\*    ☐ MEWP\*    ☐ Roof Work    ☐ Scaffold  
☐ Cold Weather Work    ☐ Hazardous Energy Control\*    ☐ Exposure Monitoring    ☐ Other: \_\_\_\_\_

7. **Working From Heights**

Fall Protection    ☐ Fixed Guardrails/Toe boards    ☐ Fall Prevention PPE    Warning Line System  
 Falling Objects Protection    ☐ Barricading    ☐ Netting    ☐ House Keeping    ☐ Tethered Tools    ☐ Catch Blanket or Tarp  
 Fall Hazard Communication    ☐ Adjacent/Overhead Workers    ☐ Contractor Contact    ☐ Client Contact

8. **Other Considerations**

**Environmental Hazards - Weather Forecast**

☐ Heat/Cold    ☐ Lightning    ☐ Rain    ☐ Snow    ☐ Ice    ☐ Tornado    ☐ Wind Speed  
 Steps for Mitigation: \_\_\_\_\_

**Electrical Safety Planning**

Plant Hook up: ☐ 110V    ☐ 220/240V    ☐ 480V    ☐ Generator    ☐ Hard wired into panel  
 Electrical Classified Area: ☐ Yes    ☐ No    Trailer Grounded: ☐ Yes    ☐ No    Plug Type \_\_\_\_\_  
 Electrical Hook Up Responsibility: \_\_\_\_\_

**List of Hazardous Chemicals**

☐ Acetone    ☐ Nitric Acid    ☐ Hydrogen Peroxide    ☐ Compressed Gases  
☐ Hexane    ☐ Sulfuric Acid    ☐ Isopropyl Alcohol    ☐ Flammable Gas  
☐ Toluene    ☐ Hydrochloric Acid    ☐ Liquid Nitrogen    ☐ Non-Flammable Gas  
☐ H2S    ☐ Carbon Monoxide  
 Steps for Mitigation: \_\_\_\_\_

**Other Chemicals:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Wildlife/Fauna in Area**

☐ Poison Ivy    ☐ Poison Oak    ☐ Insects: \_\_\_\_\_    ☐ Wildlife: \_\_\_\_\_  
 Personnel w/ known allergies to bees stings or other allergens? ☐ Yes \_\_\_\_\_ ☐ No

9. **Observed Hazards and Mitigation Steps**

| Task | Potential Hazard(s) | Steps for Mitigation |
|------|---------------------|----------------------|
| •    | 1                   | 1                    |
|      | 2                   | 2                    |
|      | 3                   | 3                    |
| •    | 1                   | 1                    |
|      | 2                   | 2                    |
|      | 3                   | 3                    |
| •    | 1                   | 1                    |
|      | 2                   | 2                    |
|      | 3                   | 3                    |
| •    | 1                   | 1                    |
|      | 2                   | 2                    |
|      | 3                   | 3                    |

10. JHA REVIEW: Crew Names & Signatures

| Printed Name | Signature | Date | Printed Name | Signature | Date |
|--------------|-----------|------|--------------|-----------|------|
|              |           |      |              |           |      |
|              |           |      |              |           |      |
|              |           |      |              |           |      |
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|              |           |      |              |           |      |

11. Daily JHA Meeting & Review

Items to review:

- Change in conditions
- Extended work hours
- Daily Safety Topic
- New workers or contractors
- Occurrence of near misses or injuries

Initialing demonstrates that site conditions and hazards have not changed from the original SSP. If changes did occur, make the necessary updates to this JHA and add notes as applicable in Section 9.

| Day | Discussion Topic | Initials |
|-----|------------------|----------|
| 2   |                  |          |
| 3   |                  |          |
| 4   |                  |          |
| 5   |                  |          |
| 6   |                  |          |
| 7   |                  |          |
| 8   |                  |          |
| 9   |                  |          |
| 10  |                  |          |
| 11  |                  |          |

## EMERGENCY ACTION PLAN FORM

The Job Supervisor/ Client Project Manager (CPM) will ensure that all employees are familiar with the facility emergency and evacuation procedures, assembly/ rally points, alert systems, and signals prior to work commencing. In the event of an emergency situation/ evacuation, the Job Supervisor/ CPM will maintain a roster and be responsible for accounting for all employees. The Job Supervisor/ CPM will ensure that this Emergency Action Plan Form is completed, communicated to all employees, and posted.

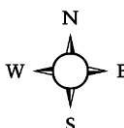
•You must follow the client's emergency action plan first, and notify your Supervisor immediately.

•If incident is life threatening, **CALL 911 IMMEDIATELY**

•If non-emergency medical attention is needed, call AXIOM Medical number: 877-502-9466.

|           |                                                      |  |
|-----------|------------------------------------------------------|--|
| <b>1</b>  | <b>MEG Job Supervisor/ CPM's Name:</b>               |  |
| <b>2</b>  | <b>MEG Job Supervisor/ CPM's Telephone Number:</b>   |  |
| <b>3</b>  | <b>MEG Job Safety Supervisor (if applicable):</b>    |  |
| <b>4</b>  | <b>MEG Job Safety Supervisor's Telephone Number:</b> |  |
| <b>5</b>  | <b>Plant's Emergency Telephone Number:</b>           |  |
| <b>6</b>  | <b>Local Hospital/ Clinic Telephone Number:</b>      |  |
| <b>7</b>  | <b>Emergency Ops Radio Channel:</b>                  |  |
| <b>8</b>  | <b>Plant's #1 Contact Person's Name:</b>             |  |
| <b>9</b>  | <b>Plant's #1 Contact Person's Telephone Number:</b> |  |
| <b>10</b> | <b>Plant's #2 Contact Person's Name:</b>             |  |
| <b>11</b> | <b>Plant's #2 Contact Person's Telephone Number:</b> |  |
| <b>12</b> | <b>Designated Assembly Point Location:</b>           |  |
| <b>13</b> | <b>Evacuation Routes:</b>                            |  |
| <b>14</b> | <b>Severe Weather Shelter Location:</b>              |  |
| <b>15</b> | <b>Eye Wash and Safety Shower Location:</b>          |  |
| <b>16</b> | <b>The First Aid Kit is Located:</b>                 |  |
| <b>17</b> | <b>The Fire Extinguisher is Located:</b>             |  |

## EMERGENCY EVACUATION AND ASSEMBLY MAP

|                                                                                                 |                                           |                                                                                                        |                      |                   |              |
|-------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------|-------------------|--------------|
| <b>1</b>                                                                                        | Facility Name:                            |                                                                                                        |                      |                   |              |
| <b>2</b>                                                                                        | Facility Alarm (Circle):                  | YES or NO                                                                                              |                      |                   |              |
| <b>3</b>                                                                                        | Alarm Tones:                              | FIRE: _____;<br>CHEMICAL/ GAS: _____;<br>SHELTER-IN-PLACE: _____;<br>EVACUATE: _____;<br>OTHER: _____; |                      |                   |              |
| <b>4</b>                                                                                        | Designated Shelter(s) Description:        |                                                                                                        |                      |                   |              |
| <b>5</b>                                                                                        | Designated Assembly Point(s) Description: |                                                                                                        |                      |                   |              |
|             |                                           |                                                                                                        |                      |                   |              |
| <u>Draw the evacuation and assembly map here.</u>                                               |                                           |                                                                                                        |                      |                   |              |
| <b>EMERGENCY ACTION PLAN FORM AND EVACUATION ASSEMBLY MAP REVIEW: Crew Names and Signatures</b> |                                           |                                                                                                        |                      |                   |              |
| <i>Printed Name:</i>                                                                            | <i>Signature:</i>                         | <i>Date:</i>                                                                                           | <i>Printed Name:</i> | <i>Signature:</i> | <i>Date:</i> |
|                                                                                                 |                                           |                                                                                                        |                      |                   |              |
|                                                                                                 |                                           |                                                                                                        |                      |                   |              |
|                                                                                                 |                                           |                                                                                                        |                      |                   |              |
|                                                                                                 |                                           |                                                                                                        |                      |                   |              |
|                                                                                                 |                                           |                                                                                                        |                      |                   |              |
|                                                                                                 |                                           |                                                                                                        |                      |                   |              |

## Daily MEWP Lift Inspection Form

All checks must be completed prior to each work shift, before operation of the MEWP lift. This checklist must be used at the beginning of each shift or following 6 to 8 hours of use.

|                           |                         |
|---------------------------|-------------------------|
| <b>MEWP Lift Model #:</b> | <b>Serial Number:</b>   |
| <b>Make:</b>              | <b>Rented or Owned:</b> |

- Check "Yes" if an item is adequate, operational, and safe.
- Check "No" to indicate that a repair or other corrective action is required prior to use.
- Check "N/A" to indicate "Not Applicable."

| Items to be Inspected                                                                                                                                                                                         | Yes                      | No                       | N/A                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|
| 1. All MEWP lift components are in working condition (i.e. no loose or missing parts, torn or loose hoses, etc.) – if something can be easily loosened by hand then it is not sufficient.                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Hydraulic fluid level is sufficient, with the platform fully lowered                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Hydraulic system pressure (see manufacturer specs) is acceptable.<br>If the pressure is low, determine cause and repair in accordance with accepted procedures as outlined in service manual.              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Tires and wheel lug nuts (for tightness)                                                                                                                                                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Hoses and cables (i.e. worn areas or chafing)                                                                                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Platform rails and safety gate (no damage present)                                                                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Pivot pins secure                                                                                                                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Welds are not cracked and structural members are not bent or broken                                                                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Warning and instructional labels are legible and secure, and load capacity is clearly marked.                                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Manufacturer's Instruction Manual is present inside the bucket                                                                                                                                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Base controls (switches and push buttons) can be properly operated                                                                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Platform conditions are safe (i.e. not slippery)                                                                                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Fire extinguisher is present, mounted and fully charged, located inside the bucket                                                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Headlights, safety strobe light and back-up alarm are functional                                                                                                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Workplace is free of hazards (overhead powerlines, obstructions, level surface, high winds, etc.) <b>*Do not operate if winds are 20 mph, unless otherwise specified by manufacturer recommendations.</b> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|                           |          |      |
|---------------------------|----------|------|
| Operator Name & Signature | Location | Date |
|---------------------------|----------|------|

|                                 |          |      |
|---------------------------------|----------|------|
| Ground Control Name & Signature | Location | Date |
|---------------------------------|----------|------|

### Harness Inspections:

|              |           |      |
|--------------|-----------|------|
| Printed Name | Signature | Date |
|--------------|-----------|------|

|              |           |      |
|--------------|-----------|------|
| Printed Name | Signature | Date |
|--------------|-----------|------|

|              |           |      |
|--------------|-----------|------|
| Printed Name | Signature | Date |
|--------------|-----------|------|

## Extended Hours Safety Audit

Project Number: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

When a project is expected to extend past a 14-hour work day, this form must be completed to evaluate the condition of the crew, and the safety of the work environment.

Permission to proceed into extended work hours must come from a District Manager (DM) or Regional Vice President (RVP). Technical RVPs can authorize moving forward, if they are in the field or if they are managing the project.

### 1. Hold test crew meeting    Test crew initials: \_\_\_\_\_

The test leader should look for signs of the following in their crews:

- |                                                                                                                                  |                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Irritability</li> <li>Lack of motivation</li> <li>Headaches</li> <li>Giddiness</li> </ul> | <ul style="list-style-type: none"> <li>Fatigue</li> <li>Depression</li> <li>Reduced alertness, lack of concentration and memory</li> </ul> |
|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|

The test leader should assess the environmental and hazardous concerns:

- |                                                                                                                           |                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Temperature and weather</li> <li>Lighting</li> <li>Working from Heights</li> </ul> | <ul style="list-style-type: none"> <li>Hoisting</li> <li>PPE (i.e. respirators, etc.)</li> <li>Pollutant concentration in ambient air (SO<sub>2</sub>, H<sub>2</sub>S, ect.)</li> </ul> |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 2. Notify DM or RVP

The PM must contact either the DM or RVP to discuss the safety issues that may arise due to the extended work period. If the DM is the acting PM on the job site, they must contact the RVP. During this time, they can come to an agreement on how to proceed. Items to discuss include:

- |                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Reason for extended hours</li> <li>Reason for delay</li> <li>Production limitations</li> <li>Impending Weather</li> </ul> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 3. Contact the client

The PM, DM or RVP must discuss with client any identified safety concerns, the client's needs and mutually agree on how to proceed. Discussion should also include the appropriate rest period needed before the next day's work shift can begin. The DM and/or a RVP must be informed on the final decision.

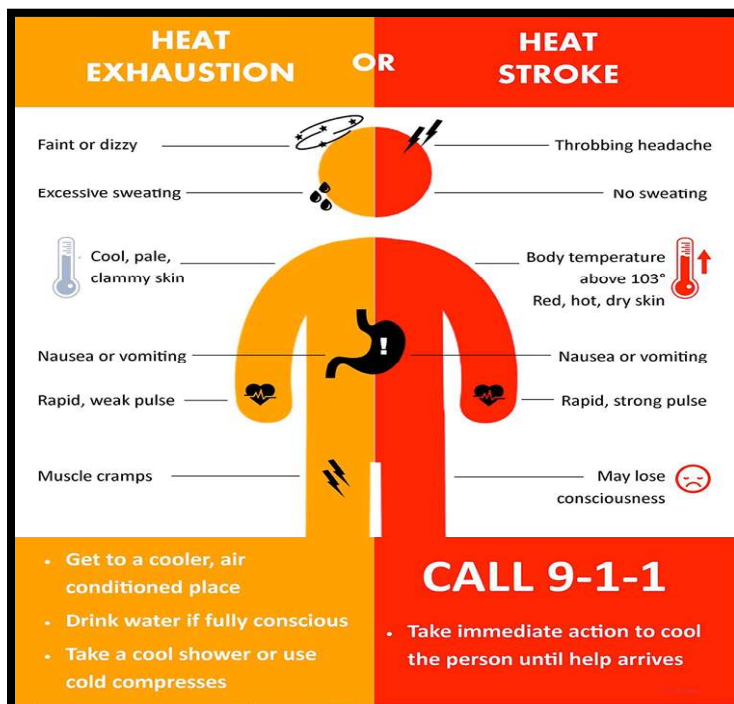
|                       |  |
|-----------------------|--|
| <b>Final Outcome:</b> |  |
| <b>Approver:</b>      |  |

## Heat Stress Prevention Form

This form is to be used when the Expected Heat Index is above 91° F, and is to be kept with project documentation.

|                              |                             |
|------------------------------|-----------------------------|
| <b>Project Manager (PM):</b> | <b>Expected High Temp:</b>  |
| <b>Date(s):</b>              | <b>Expected Heat Index:</b> |

1. Review the signs of Heat Exhaustion and Heat Stroke
2. If Heat Index is above 91° F:
  - Provide cold water and/or sports drinks to all field staff (avoid caffeinated drinks and energy drinks which can increase core temperature).
    - Bring no less than one gallon of water per employee
  - If employee(s) are dehydrated, on blood pressure medication or not acclimated to heat, ensure they are aware of the heightened risk for heat illness
  - Provide cool head bands/vests/etc.
  - Have ice available to employees
  - Implement work shift rotations and breaks, particularly for employees working in direct sunlight.
  - Provide as much shade at the jobsite as possible, including tarps, tents or other acceptable temporary structures.
  - PM should interview each field staff periodically to evaluate for signs of heat illness
3. If Heat Index is above 103° F:
  - Employees must stop for drinks and breaks every hour (about 4 cups/hour)
  - Employees are not permitted to work alone for more than one hour at a time without a break offering shade and drinks
  - Employees should wear cool bands and vests if working outside more than one hour at a time
  - PM should interview each field staff every 2 hours to evaluate for signs of heat illness



## **THIS IS THE LAST PAGE OF THIS DOCUMENT**

If you have any questions, please contact one of the following individuals by email or phone.

Name: Mr. Pete San Juan  
Title: Client Project Manager  
Region: West  
Email: [PSanjuan@Onterris-env.com](mailto:PSanjuan@Onterris-env.com)  
Phone: (714) 279-6777

Name: Mr. Matt McCune  
Title: Principal  
Region: West  
Email: [MMccune@Onterris-env.com](mailto:MMccune@Onterris-env.com)  
Phone: (714) 279-6777