Transfer/Processing Report

Transfer/Processing Report and
Report of Compost Site Information
Dry Fermentation Anaerobic Digestion Facility

for

Napa Renewable Resource Project
American Canyon, California

Submitted to:

Napa County Environmental Health Division
1195 3rd St, Napa, CA 94559

Prepared for:

City of Napa and Napa Recycling
and Waste Services

Prepared by:

1822 21st Street
Sacramento, CA 95811

November 5, 2014

Engineer's Certification

The material and data in this report were prepared under the supervision and direction of the undersigned.

Edgar & Associates, Inc.

Evan W.R. Edgar
Registered Civil Engineer 42053

PREFACE AND REGULATORY REQUIREMENTS

This section of the Transfer/Processing Report (TPR) is the operations plan and permitting document to obtain a Solid Waste Facilities Permit (SWFP) Revision for the Napa Renewable Resource Project (NRRP) by adding the regulatory information for a new Anaerobic Digestion (AD) operation. A TPR is required by the California Code of Regulations (CCR), Title 14, Section 18221.6 relating to transfer processing operations (TPR) and Section 17845 relates to composting operations and requires a Report of Composting Site Information (RCSI). This section is a hybrid of the TPR and the RCSI information to accommodate the new dry fermentation Anaerobic Facility following state regulatory guidance.

The TPR identifies design features and operation plans that mitigate or control potentially adverse environmental impacts and provide information demonstrating how the Facility complies with state minimum standards. The proposed AD operation will utilize pre-consumer and post-consumer food waste, and green waste. It will produce biogas suitable for utility pipeline injection, generating electrical and heat-energy from a bio-gas fueled boiler or generator system, and provide biogenic transportation fuel following biogas treatment. This report provides details about the AD operations, the NRRP Biogenic CNG Facility, co-located at the NRRP. The NRRP is permitted as a Large Volume Transfer/Processing and Composting Facility. This TPR focuses on the addition of the AD Facility to produce biomethane, a biogas purification system, and a vehicle fueling facility to dispense compressed natural gas (CNG) for use as a transportation fuel.

Approximately 25,000 tons of feedstock per year, or an average of 96 tons per day (TPD) averaged over 260 collection days (Monday through Friday) will be delivered to the AD Facility by solid waste collection trucks.

The California Department of Resources Recycling and Recovery (CalRecycle) certified the *Program Environmental Impact Report (EIR) for Anaerobic Digestion Facilities* on June 22, 2011. This Program EIR assesses the environmental effects that may result from the development of AD facilities in California. The analysis in the Program EIR is to inform future policy considerations related to AD facilities and provide background information on technologies, potential impacts, and mitigation measures. The Program EIR provided the following guidance on permitting AD facilities:

> *"The proposed AD facilities shall be regulated under CalRecycle's existing composting or transfer/processing regulations, as contained in the CCR, Title 14, Chapter 3, which sets minimum standards for solid waste handling and disposal. The determination of facility type under the existing regulations would be based on the nature of the feedstock and the temperature of onsite processes. If the feedstock reaches a temperature of at least 50 degrees Celsius/122 degrees Fahrenheit (50C/122F) on site, then the facility shall be regulated as a compostable material handling facility under the Title 14 composting requirements (sections 17850-17870).*

If the feedstock does not reach the temperature of 50C/122F on site, then the facility shall be regulated as a transfer/processing facility. Transfer and processing operations and facilities are regulated under Chapter 3, Article 6.0 of Title 14 (sections 17400-17405.0). Both sets of regulations include exemptions and exclusions. This permitting discussion does not address potential on-site disposal of solid byproducts from AD facilities".

The receiving and digestate management activities portion of this operation will be mesophillic, where the transfer/processing regulations apply. The dry fermentation AD process and IVC will be thermophillic, where the compost regulations apply. Since the Facility is a hybrid of the two operations, this report will consolidate the requirements of the TPR and the RCSI, following the format of the TPR. Not all sections of the TPR and RCSI requirements apply to the other, so some of the information is related to only one of the reports. The TPR indicates which section it addresses.

The matrix in Table 1, Summary of TPR and RCSI Requirements, shows the sections of the regulations for each report, identifies the issue area, and identifies the page number on which the discussion starts.

Table 1: Summary of TPR and RCSI Requirements

Issue	Transfer Processing Report	Report of Composting Site Information	Page Number
Operator	Section 18221.6 (a) Name(s) of the operator, owner, and the company they represent, if applicable.	Not explicitly listed for a RCSI.	1
Site Location	Section 18221.6 (b) land uses and distances to residences or structures that are nearby and are within 1000 feet of the facility property line;	Not explicitly listed for a RCSI.	1
Site Plan Description	Section 18221.6 (c) Schematic drawing of the building and other structures showing layout and general dimensions of the operations area, including, but not limited to, unloading, storage, loading, and parking areas.	Section 18227 (c) A schematic drawing of the facility showing layout and general dimensions of all processes utilized in the production of compost including, but not limited to, unloading, storage, processing, parking, and loading areas.	2
Site Operations	Section 18221.6. (d) Descriptive statement of the manner in which activities are to be conducted at the facility;	Section 18227. (b) A descriptive statement of the operations conducted at the facility.	4
Hours of Operation	Section 18221.6 (e) Days and hours the facility is to operate. If the hours of waste receipt differ from the hours of	Not explicitly listed for a RCSI.	9

Issue	Transfer Processing Report	Report of Composting Site Information	Page Number
	material processing, each set of hours may be stated. For facilities with continuous operations, indicate the start of the operating day for purpose of calculating amount of waste received per operating day. The operator may also indicate whether or not, and when, other activities, such as routine maintenance will take place, if those activities will occur at times other than those indicated above;		
Site Acreage	Section 18221.6 (f) Total acreage contained within the operating area;	Not explicitly listed for a RCSI.	10
Facility Design Capacity	Section 18221.6 (g) Facility design capacity including the assumptions, methods, and calculations performed to determine the total capacity;	Section 18227 (h) Anticipated annual operation capacity for the facility in cubic-yards.	10
Solid Waste Types and Quantities	Section 18221.6 (h) Information showing the types and the daily quantities of solid waste to be received. If tonnage was figured from records of cubic yards, include the conversion factor used;	Section 18227 (a) A description of the processes to be used, including estimated quantities of feedstocks, additives, and amendments.	14
Methods to Comply with State Minimum Standards	Section 18221.6 (i) Description of the methods used by the facility to comply with each state minimum standard contained in sections 17406.1 through 17419.2;	Section 18227 (d) A description of the proposed methods used to control leachate, litter, odors, dust, rodents, and insects.	14
	Section 17406.1 Siting on Landfills	Not explicitly listed for a RCSI.	*15*
	Section 17406.2 General Design Requirements		*15*
	Section 17407.1 Burning Wastes and Open Burning		*16*
	Section 17407.2 Cleaning	Not explicitly listed for a RCSI.	*17*
	Section 17407.3 Drainage Control	*Leachate*	*17*
	Section 17407.4 Dust Control	*Dust*	*20*
	Section 17407.5 Hazardous, Liquid, and Special Wastes	Not explicitly listed for a RCSI.	*20*
	Section 17408.1 Litter Control	*Litter*	*22*

Issue	Transfer Processing Report	Report of Composting Site Information	Page Number
	Section 17408.6 Maintenance Program		*22*
	Section 17408.2 Medical Waste	Not explicitly listed for a RCSI.	*23*
	Section 17408.3 Noise Control		*23*
	Section 17408.4 Non-Salvageable Items		*24*
	Section 17408.5 Nuisance Control		*24*
	Section 18227: Odor Control		*25*
	Section 17408.7 Personnel Health and Safety		*26*
	Section 17408.8 Protection of Users		*27*
	Section 17409.1 Roads		*27*
	Section 17409.2 Sanitary Facilities		*27*
	Section 17409.3 Scavenging and Salvaging		*27*
	Section 17409.4 Signs		*28*
	Section 17409.5 Loadchecking		*29*
	Section 17409.6 Parking		*30*
	Section 17410.1 Solid Waste Removal		*30*
	Section 17410.2 Supervision and Personnel		*30*
	Section 17410.3 Training		*31*
	Section 17410.4 Vector, Bird and Animal Control		*34*
	Section 17414 Record Keeping	Not explicitly listed for a RCSI.	*32*
	Special Occurences		*33*
	Complaints		*34*
	Training		*34*
	Inspections of Records		*34*
	Section 17414.1 Documentation of Enforcement Agency Approvals, Determinations, and Requirements	Not explicitly listed for a RCSI. Not explicitly listed for a RCSI.	*34*
	Section 17415.1 Communications Equipment		*35*
	Section 17415.2 Fire Fighting Equipment		*35*
	Section 17416.1 Housekeeping		*35*
	Section 17416.2 Lighting		*35*
	Section 17416.3 Equipment		*36*
	Section 17418.1 Site Security		*36*

Issue	Transfer Processing Report	Report of Composting Site Information	Page Number
	Section 17418.2 Site Attendant		*36*
	Section 17418.3 Traffic Control		*37*
Process Water	*Section 17419.1 Visual Screening*		*37*
	Section 17419.2 Water Supply	Not explicitly listed for a RCSI. Section 18227 (k) A description of the water supplies for process water required.	*37*
	Section 18221.6 (j) Anticipated volume of quench or process water, and the planned method of treatment, and disposal of any wastewater;		38
Peak loading	Section 18221.6 (k) Description of provisions to handle unusual peak loading;	Section 18227 (i) A description of provisions to handle unusual peak loadings.	38
Equipment	Section 18221.6 (l) Description of transfer, recovery and processing equipment, including classification, capacity and the number of units;	Section 18227 (g) A description of compostable materials handling equipment used at the facility including type, capacity, and number of units.	39
Final Disposal of Solid Waste	Section 18221.6 (m) Planned method for final disposal of the solid waste;	Section 18227 (j) A description of the proposed method for storage and final disposal of nonrecoverable or nonmarketable residues.	40
Storage of Recyclable Material	Section 18221.6 (n) Planned method for the storage and removal of salvaged material;	Section 18227 (f) A description of the storage capacity and anticipated maximum and average length of time compostable materials will be stored at the facility.	40
Management	Section 18221.6 (o) Resume of management organization which will operate the facility.	Section 18227 (l) Identification of personnel responsible for oversight of facility operations.	41
Permits and Approvals	18221.6 (p) List of permits already obtained and the date obtained or last revised.	Not explicitly listed for a RCSI.	41
Emergencies	Not explicitly listed for a TPR.	Section 18227 € A description of the proposed emergency provisions for equipment breakdown or power failure.	42
Site Restoration	Not explicitly listed for a TPR.	Section 18227 (m) A description of the proposed site restoration	42

Issue	Transfer Processing Report	Report of Composting Site Information	Page Number
		activities, in accordance with Section 17870.	
Odor Impact Minimization Plan	Not explicitly listed for a TPR.	Section 18227 (n) An Odor Impact Minimization Plan pursuant to Section 17863.4.	42

TABLE OF CONTENTS

List of Tables

List of Attachments/Appendices

Site Maps are located at back of binder before the shared "Appendices"

A. Operator

TPR: 18221.6(a) name(s) of the operator, owner, and the company they represent, if applicable

The AD Facility is owned and operated by Napa Recycling and Waste Services, Inc. and is part of the NRRP. Table 2, Personnel Responsibilities, lists the key personnel in the operation.

Table 2: Personnel Responsibilities

Operator	Phone	Email
Greg Kelley, Managing Partner	(707) 603-1181	Greg@NapaRecycling.com
Will Cook Site Foreman	(707) 603-1181	WillC@NapaRecycling.com

B. Site Location

TPR: 18221.6(b) facility specifications or plans, to include: a site location map, a site map, and identification of adjacent land uses and distances to residences or structures that are nearby and are within 1000 feet of the facility property line

The AD Facility is located on an approximately 1 acre part of an overall 18.6-acre site located at 820 Levitin Way, American Canyon, about 6 miles south of downtown Napa. The site location map and site plan map are shown in the "Site Maps" section at the end of the binder (Sheets 1 and 2.) The site plan shows the site as it now configured and shows the proposed AD facility.

Surrounding land uses include industrial uses to the north, south and east, and the Napa County Airport to the west.

Site access is by Tower Road, an existing two-lane street. Freeway access is from State Highway 29, which is connected to Interstate 80 by State Highway 12 (see site location map, Sheet 1).

Land uses within 1,000 feet surrounding the site are identified in Table 3, Land Use and General Plan Designation, as follows:

Table 3: Land Use and General Plan Designation

Location	Existing Land Use	General Plan Designation
North	A slough, and light industry (truck storage)	Industrial Reserve (Napa County)
South	Open space, solid waste facility	Industrial Reserve (Napa County) and Industrial (City of American Canyon)
East	Industrial Facility (concrete pipe manufacturing)	Industrial Reserve (Napa County)
West	Napa County Airport, train tracks	Public-Institutional (Napa County)

C. Site Plan Description

TPR: 18221.6(c) schematic drawing of the building and other structures showing layout and general dimensions of the operations area, including, but not limited to, unloading, storage, loading, and parking areas.

RCSI: 18227(c) A schematic drawing of the facility showing layout and general dimensions of all processes utilized in the production of compost including, but not limited to, unloading, storage, processing, parking, and loading areas.

Facility Operations Areas

The AD Facility may be built in two phases of 12,500 TPY each to total 25,000 TPY (Option A), or in one phase of 25,000 TPY (Option B). Upon selection of the final design, the applicant will submit a TPR Amendment to the LEA for approval to review the operations and the Site Plan.

Facility operations (see Figure 1, Operational Process) can be categorized as follows.

- Feedstock reception – Two Aeration Bays with biofiltration
- Anaerobic digesters – sixteen separate units with biofiltration for Option A or 5 large bays for Option B.
- Four In-vessel composting units with biofiltration (Optional for A or B.)
- Biogas treatment and power generation
- CNG vehicle filling station

Building and Site Specifications

The entire site is relatively flat with about 50% paved with asphalt and the remainder is compacted gravel or storm water management facilities.

The existing facility includes a number of structures that will remain unchanged as a result of this project. The Facility will include the following structures, as shown on Sheet 1 in "Site Plans."

- Two Aeration Bays -- 45 feet by 25 feet and 30 feet high.
- Anaerobic Digesters – sixteen separate pre-fabricated digesters each 45 feet long by 12 feet wide and 12 feet high for Option A, or 5 cast-in place-concrete bays each 105 feet by 18 feet wide and 12 feet high
- The IVC -- four chambers, each 45 feet by 12 feet and 12 feet high.
- Biofilter for the Aeration Bays and IVC off gas.
- Biogas treatment system; biomethane compression and storage system; power generation system.
- Backup flare.
- CNG vehicle fueling station.

Outdoor Storage Areas

Material will be transferred by loading equipment under the canopy structure to move material from the Aeration Bays to the AD units and from the digesters to the IVC chambers. Digestate will be removed from the IVC chambers and cured on-site.

Parking Areas

Existing parking is sufficient for employees, visitors, and collection and transfer trucks.

Utilities

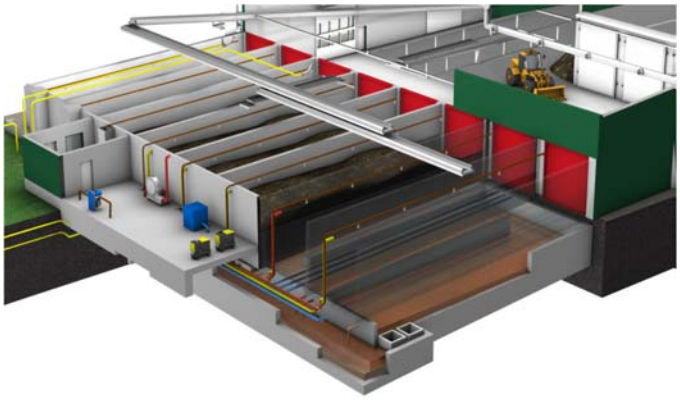
Utilities required for the operation of the Facility include water, electricity, sanitary sewer, and telephone service. These utilities are currently in service at the NRRP; however, additional electricity capacity will be added in conjunction with the local electrical utility (Pacific Gas & Electric Company).

D. Site Operations

TPR: 18221.6(d) descriptive statement of the manner in which activities are to be conducted at the facility.

RCSI: 18227(c) A descriptive statement of the operations conducted at the facility.

SMARTFERM is a state-of-the-art dry fermentation AD system for all types of organic wastes that will contribute to the NRRP's ability to compete in the California marketplace. Like other dry fermentation, it is well suited for the production of biogas from stacked solid organic waste in a non-continuous batch process. Unlike other dry fermentation technologies, SMARTFERM offers a sub-grade percolate tank, which significantly reduces percolate and biogas process piping runs as well as the size of motors and fans to move them, as shown in the cutaway view of the dry digesters and percolate basement in the graphic. The sub-grade percolate tank also greatly enhances the overall thermal efficiency of the process. The SMARTFERM design allows for a thermophilic mode of operation and is offered on two options: a shop fabricated steel digester system that can be built in phases of 12,500 TPY each (Option A), or as a cast-in-place concrete digester system of 25,000 TPY facility (Option B.) The cast-in-place concrete SMARTFERM digester system combines the SMARTFERM's modular mechanical and electrical systems design with on-site construction of concrete digesters and advances the biofuels production technology. This approach allows for larger scale digesters and systems with better unit pricing, while achieving the same benefits of shop fabrication for all of the critical piping, mechanical, electrical, and control systems. The modular concept also permits flexibility if demand increases, waste composition changes or economic parameters change. ZWE's patented SMARTFERM dry AD technology contains unique features that make it the most cost-effective and productive AD system available for organics processing.



- Moisture addition and removal not required, thus saving water and reducing wastewater treatment costs. Dry solids can be in excess of 50% of the organic waste input.
- The 21-day batch average cycle time is up to 25% more productive than other dry systems.
- Digesters are biologically self-heated through the air system and re-circulation of the liquid percolate through the material, effectively minimizing energy usage.
- The liquid percolate contains the necessary biological constituents and proper pH balance to negate the use of previously digested material (re-circulation) needed to start subsequent batches.
- Plants require a smaller footprint than traditional systems, creating opportunities for urban applications and co-locating at existing facilities and lowering infrastructure and operating costs.
- Thermophilic mode of operation improves biogas production and downstream renewable energy applications.
- Odor is controlled through the injection of oxygen into the digester at the end of the process. This strips odors (primarily hydrogen sulfide) and yields a superior

product. Exhaust air produced from the shutdown process is oxidized in a biofilter for further odor mitigation.
- In the thermophilic mode of operation, the resulting digestate is free of pathogens (e.g., salmonella) and considered a compost product per the US EPA's Process to Further Reduce Pathogen's (PFRP) sanitation requirements.

The Facility will process approximately 25,000 TPY in 2 phases of 12,500 TPY each. The Facility includes an Aeration Bay, eight AD units, and two possible IVC chambers. The SmartFerm dry AD technology was developed by a German company, Eggersmann Anlagenbau Concept GmbH (Eggersmann) and is licensed exclusively in the US to Zero Waste Energy, LLC (ZWE), and a San Jose-based developer of organic waste treatment projects utilizing dry AD technology.

The compostable feedstocks are delivered to the site by NRWS collection vehicles, as well as several other local haulers, during operating hours into the Aeration Bays, which are capable of storing 1,200 cubic yards of material. NRRP works with the commercial generators to limit contamination to ensure that the source-separated organic feedstock does not contain household hazardous waste, glass, metals, or other contamination. With mandatory commercial collection underway and upcoming programs on mandatory commercial organics collection, NRRP will continually provide training, awareness, and feedback to their customers on the need to source-separate their organic materials.

With a typical throughput of 96 TPD arriving in 12 to 14 collection vehicles per day, about 160 cubic yards per day will be placed in the Aeration Bay. The Aeration Bay could theoretically store up to 6 days of material in case of contingency, but will store feedstocks for up to 48 hours. The feedstock is mixed within the Aeration Bay with a front-end loader to achieve various seasonal blends based upon daily accounts and market fluctuations. The optimum blend for gas production is approximately 67% food waste and 33% green waste and manures. After a cursory load check for unacceptable levels of contamination, no further processing or grinding is needed. The dry fermentation process requires that there is structure and porosity in the mixed feedstock to allow percolate to seep through the mass. The Aeration Bay has a rolling door that closes when no being loaded and is on negative air for odor control with off-gas passed through an acid scrubber for ammonia removal and biofilter before discharge. The blended feedstock is then transferred by a bucket loader to one of the sixteen AD units for a period of 21 days. In general, it will take one day to fill an AD unit.

The AD units are a dry fermentation technology that is proprietary and has been commercially demonstrated in Germany. While there are a number of dry fermentation facilities being commercially operated in Germany, the selected technology represents a significant improvement in cost efficiency, reliability, adaptability and compatibility with other organic waste diversion programs in North America. The major technological components that ensure a safe and reliable operation to be in compliance with state minimum standards include the following:

1. Equipment: The technology is designed to allow for the use of front-end loaders for material handling, including loading, unloading, mixing, and transporting. Front-end loaders are the most efficient and economical machine for composting and waste processing facilities and will be used to handle all the feedstock. Reliable readily available equipment ensures consistent and uninterrupted operations.

2. Processing: The selected dry fermentation technology does not require upfront grinding, sorting, and screening systems. Reduced processing minimizes odors and emissions. Prior to arriving at the facility, the feedstock material will already be source-separated food wastes. A significant portion of the fixed and operational costs for wet fermentation systems is in the preparation of the material for digestion. The selected technology only requires minimal preparation, if any, for the incoming feedstock.

3. Mass Reduction: The selected technology will accomplish approximately 30% mass and volume reduction during the digestion and aerobic composting processing time. The mass reduction is accomplished by converting it into methane, carbon dioxide (not counted as greenhouse gas emissions because the carbon originates from renewable sources), and water. The remaining material is a composted digestate product that will be cured on site for sale as a soil amendment.

4. Ease of Maintenance: The design of the technology minimizes moving parts, which reduces the cost of operation and maintenance significantly and decreases the amount of time a particular portion of the facility may be down for maintenance.

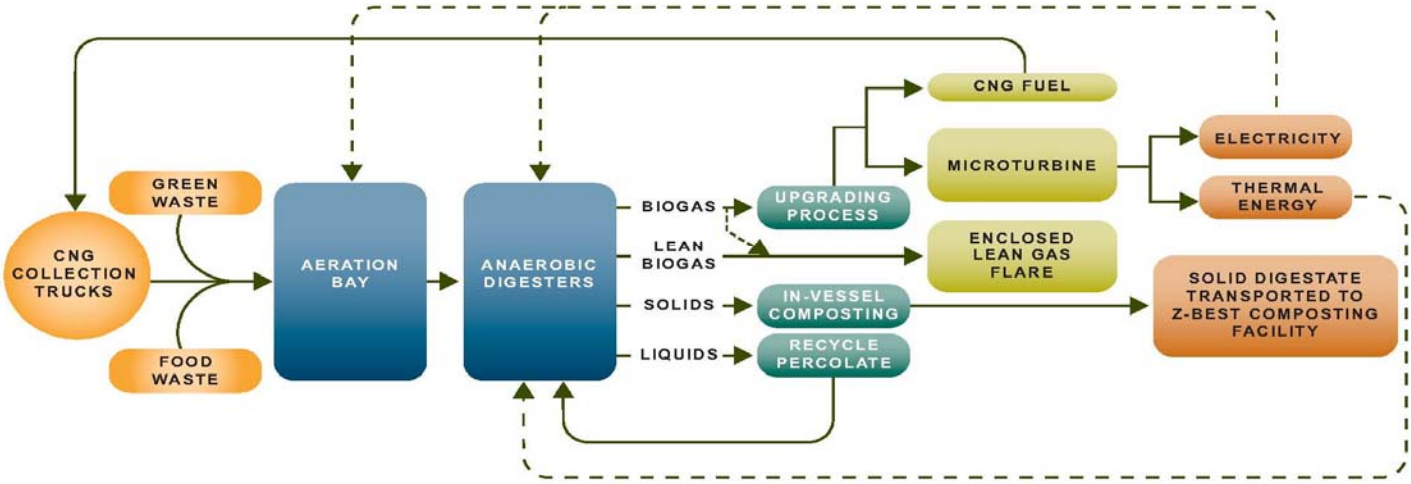
5. Energy Yield: The feedstock blend was selected to maximize the energy derived from the digestion of the material.

6. Emissions Reduction: This technology is designed to maximize the production of methane from decomposing organic materials and capture the biogas produced. This project supports local and global climate change initiatives; the capture of methane from the organic materials reduces release into the atmosphere and avoids the propagation of greenhouse gases created by landfilling.

7. Water Input and Output: The amount of water needed for optimizing the production of biogas is minimal and the wastewater output is low in comparison to other digestion technologies.

The overview of system operations is as follows and shown Figure 1, Operational Process Summary. (Source: ESA 2012):

Figure 1. Operational Process Summary



The overview of system operations is summarized below:

- The SmartFerm dry fermentation process in which feedstock is inoculated with percolate for the digestion process.
- The biogas generated is purified to pipeline quality CNG using a BioCNG system provided by Cornerstone Engineering.
- A biofilter is used to clean the exhaust gases.
- The compression and fueling system is designed to integrate with the BioCNG system and provide the transportation fuel.
- Electrical power would be supplied by the grid (PG&E) and may be supplemented with electricity generated from biogas.

The source-separated organic waste will be delivered to a negative air pressure aeration bay. The food and green waste will be blended together (average of 67 to 33 ratio) in the aeration bay. The AD Facility may receive waste 24-hours per day, seven days per week, but will primarily receive waste between 6:00 am to 4:30 pm, typically Monday through Friday,

A wheel loader will transport the waste from the aeration bay into one of sixteen (16) digesters to begin the three-part AD process. In the start-up phase, the digesters are sealed and the waste is initially treated aerobically using an in-floor aeration system, which is activated immediately after the digester door is sealed. The aeration system pumps air into the organic waste material which creates aerobic digestion conditions to self-heat the material up to process temperatures. Temperature is measured with thermocouple devices located in each digester. During this phase, no biogas is produced and exhaust air is treated in an acid scrubber and then biofilter, which is equipped with a humidifier that maintains the moisture of the wood chip media in the biofilter. The air is first treated by the acid scrubber, removing ammonia, followed by the humidifier, then finally the biofilter which removes the particulate material, volatile organic compound (VOCs) and odor-causing compounds. When thermophilic temperature is reached

(approximately 120 to 130 degrees Fahrenheit [°F]), aeration ceases and anaerobic conditions are created as the aerobic microbes consume the available oxygen in the digester. This initial startup phase of the process lasts for approximately 12 hours; the fermentation phase begins once the start-up phase is complete.

Following the initial aeration of the organic material, thermophilic anaerobic conditions are established and percolation begins; this is known as the fermentation phase. Under anaerobic conditions, the organic waste is finely sprayed with conditioned process water containing the thermophilic micro-organisms ("percolate") that decompose the waste and produce biogas. This percolate is pumped in a closed loop between the digesters and the heated and insulated percolate tank located beneath the dry digester area. Percolate is sprinkled on the material on a daily basis for approximately 20 days causing the production of biogas. Percolate is collected in a drainage system, screened for solids in a specially designed weir called a "sandtrap" and gravity flows to the percolate tank where it is recharged with the thermophilic organisms required for digestion. In addition, high quantities of organic acids, which arise during the beginning of the process, are stored and degraded in the percolate tank to ensure proper pH balance.

The required thermophilic process temperature in the digesters is maintained through accurate process control of temperature and flow of percolate in the percolate tank. For this function the percolate tank is externally heated by the burner/boiler system and insulated. The production of biogas begins quickly after percolation begins. Biogas is primarily composed of approximately 45 to 65 percent methane and 35 to 55 percent carbon dioxide (CO2), in addition to small quantities of hydrogen sulfide, oxygen and nitrogen. The biogas is collected in an exhaust port on the back wall of each digester and stored in an external double-membrane biogas storage bladder located on the roof of the AD system. Stored biogas is available for later use in the CNG fuel production process. The shut-down or "termination phase" of a digester generally commences six (6) hours or less before the digester hatch is opened. The process is as follows:

1. Termination of percolation.
2. Introduction of fresh air through the in-floor aeration system to terminate anaerobic digestion process and preserve carbon for composting.
3. Purged air and biogas mixture are removed via a dedicated fan located in the mechanical room.

Exhausted purge biogas is collected in the biogas collection system until methane content reaches 22 percent at which point the purged biogas is combined with some of the stored biogas and sent to the burner/boiler system. When the methane content of the digester purge air decreases to 1 percent, the burner/boiler operation is terminated and the air is flushed to the acid scrubber, humidifier, and then to the biofilter. The stored biogas will be routed to a BioCNG biogas conditioning system. The BioCNG unit economically produces biomethane-based fuel to power CNG vehicles. The BioCNG unit(s) will process up to 200 standard cubic feet per minute (scfm) of biogas to produce up to 1,000 gasoline gallon equivalents (GGE) of BioCNG per day. Following the termination phase of the process the digestate is removed from the anaerobic digesters and placed in an in-

vessel compost (IVC) system for four (4) to five (5) days for aerobic decomposition. Ammonia and odor will be controlled by an acid scrubber, humidifier, and biofilter. The digestate will then be cured on-site for sale as a soil amendment.

The thermophilic AD process creates an environment that maximizes methane production. Thus, following the AD process, when the digestate is sent to one of two IVC tunnels, ammonia and VOC emissions from the digestate are greatly reduced due to the methanogenic degradation process. In the IVC tunnels, the digestate may be combined with compost recirculation materials ("overs") to improve air flow through the material, if needed. The combined waste is heavily aerated to remove the remaining ammonia, which is then sent through the acid scrubber, humidifier and biofilter. After a maximum of 5 days in the IVC tunnels, the waste is transported by wheel loader to the-on-site permitted compost facility for curing.

The following descriptive statement describes the mass flow of materials of AD Facility operations for the 25,000 TPY AD Facility, or about 96 TPD (Monday-Friday):

- An average of of96 TPD will arrive in 12 to 14 vehicles per day.
    - The Aeration Bays could theoretically store up to 4 days of material in case of contingency, but will store feedstocks for up to 48 hours.
    - Source-separated commercial food waste and co-collected residential green waste with food waste from collection vehicles at the NRRP, grape pomace, and manure will be delivered to the AD Facility and placed in the Aeration Bays.
    - Processed food waste slurry from product depackaging which would be the form of a sludge will be delivered to the AD Facility and placed in the Aeration Bays.

- The food waste and green waste and manures would be blended together in a maximum 2:1 ratio, with various blends based upon seasons and deliveries (approximately 67/33 food/green) with a front-end loader (no grinding is needed) within the Aeration Bay and may be aerated up to 48 hours. The Aeration Bays have roll-up doors that will be closed after the delivery and mixing of materials. The Aeration Bay is under negative air pressure and exhaust air is passed through the biofilter to minimize odors and emissions.
    - An average of 13,000 TPY of food waste and pomace, and an average of 12,000 TPY of green waste and manures will be received.
    - Bulk density of 36 pounds per cubic foot, or 972 pounds per cubic yard, is used.
    - Storage will not exceed 48 hours.
    - Up to 1,100 cubic yards of material may be stored in the Aeration Bays.

- The aerated mixed organic feedstock is loaded into the AD units by front-end loader during off-peak hours for a 21-day dry fermentation process, during which time biogas is generated. It may take an average of two days to fill an AD unit. The

organic material is within the seal AD unto where there is no processing or mixing of materials, other than biological decomposition.

- After the 21-day process, the material is considered a digestate and is loaded into the In-Vessel Composting (IVC) units by front-end loaders under the canopy system during off-peak hours, or be delivered to the covered aerated static pile (CASP) system (See Section 2 – the RCSI for the CASP system for operations). A thermophillic composting process occurs within the IVC units for 4 to 5 days with ammonia removal and odor control. The digestate is within the sealed IVC units where there is no processing or handling of materials, other than further biological decomposition.
    - Air would be drawn through the material to strip ammonia, which could be an odor issue at the Facility or at the composting facility receiving the digestate. This off-gas would be passed through an acid scrubber to remove ammonia and then passed through a biofilter to oxidize emissions and minimize odors, trace ammonia, and volatile organic compounds (VOCs).
    - AD will accomplish approximately 30% mass and volume reduction during the digestion and aerobic composting processing time. The mass reduction is accomplished by converting it into methane, carbon dioxide (not counted as greenhouse gas emissions because the carbon originates from renewable sources), and water.
    - The annual volume of 25,000 TPY is reduced down to 10,223 TPY.

- The composted digestate would be cured on-site to complete the composting process with maturation, blending, and screening. The contaminants that were introduced into the system will be screened off at the compost facility.
    - The 10,223 TPY translates to about 40 tons per day transferred, Monday through Friday.

- Biogas would be recovered and collected. Biogas would be upgraded to fuel quality (SAE Jl616 Standards).
    - Biogas would be recovered and sent to a BioCNG system where it would be upgraded to fuel quality (about 95 to 99% methane) with a byproduct excess gas that is about 40% methane.

- The upgraded biogas would be compressed and stored as CNG fuel on site.

- The CNG fuel would be used in the Napa Recycling and Waste Services CNG collection vehicles, which are currently fueled off site.

E. Hours of Operations

TPR: 18221.6(e) Days and hours the facility is to operate. If the hours of waste receipt differ from the hours of material processing, each set of hours may be stated. For facilities with continuous operations, indicate the start of the operating day for purpose of calculating amount of waste received per operating day. The operator may also indicate whether or not, and when, other

activities, such as routine maintenance will take place, if those activities will occur at times other than those indicated above

Operations on the project site include receiving, storing, processing, recycling, and composting waste materials from the residential, commercial, and industrial sectors. The AD Facility would operate from 5 a.m. to 9 p.m., Monday through Thursday, and 5 a.m. to 4:30 p.m. Friday through Sunday. However, the anaerobic digestion and biogas processing equipment would operate 24 hours per day, seven days per week, as well as routine maintenance and equipment repairs.

F. Site Acreage

TPR: 18221.6(f) total acreage contained within the operating area

The AD Facility will occupy an area of approximately 1.0 acre within the existing overall permitted facility area of 18.6 acres.

G. Facility Design Capacity

TPR: Section 18221.6(g) facility design capacity including the assumptions, methods, and calculations performed to determine the total capacity.

RCSI: Section 18227.(h) Anticipated annual operation capacity for the facility in cubic-yards.

Design Calculations

The NRRP may receive up to 760 TPD and 386 vehicles per day. The AD Facility tonnages are included in the permitted 760 TPD. The AD Facility vehicles trips are included in the 386 trips per day. There is no increase in tonnages or vehicles for the NRRP.

The AD Facility will receive an average of 96 TPD, delivered five days per week, for 25,000 TPY of material with either Option 1 built in 2 phases or Option B built in one phase. Peak loading may be as 115 TPD on Mondays and after long holiday weekends, equating to as much as fifteen vehicles per day. The storage capacity of organic waste at the AD Facility is less than 5,500 CYDs on-site at any one time.

The typical time to unload a collection vehicle is 15 minutes, and to load a transfer trailer with solid digestate for transport to the curing area is about 20 minutes. Therefore, the AD Facility can easily handle the number of vehicles anticipated. The calculations showing the adequacy of the AD Facility to accept and process the material expected are shown below in discussions for the Aeration Bays the sixteen AD units, and the IVC operation.

The calculation of material flows is based on nominal amounts of waste. The incoming material can arrive at differing densities and moisture content so the actual tonnage

handled will vary with the characteristics of the waste as received. We have shown that the Facility has the capacity to handle the nominal amount of waste expected.

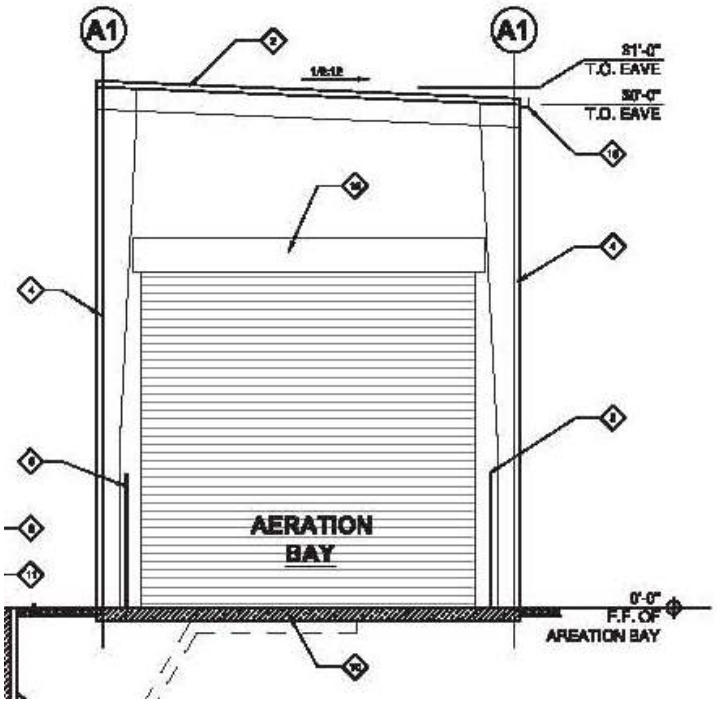
The storage capacity of the AD Facility is less than 5,500 cubic yards (CYD) for Option A:

- Aeration Bays (2) 1,250 CYDs
- (16) AD Units 2,720 CYDs.
- (4)IVC Chambers 1,280 CYDs

Storage Capacity 5,250 CYDs

Aeration Bay – 625 CYDs

The waste handling capacity of the Aeration Bay is calculated as follows shown on the cross-section below:

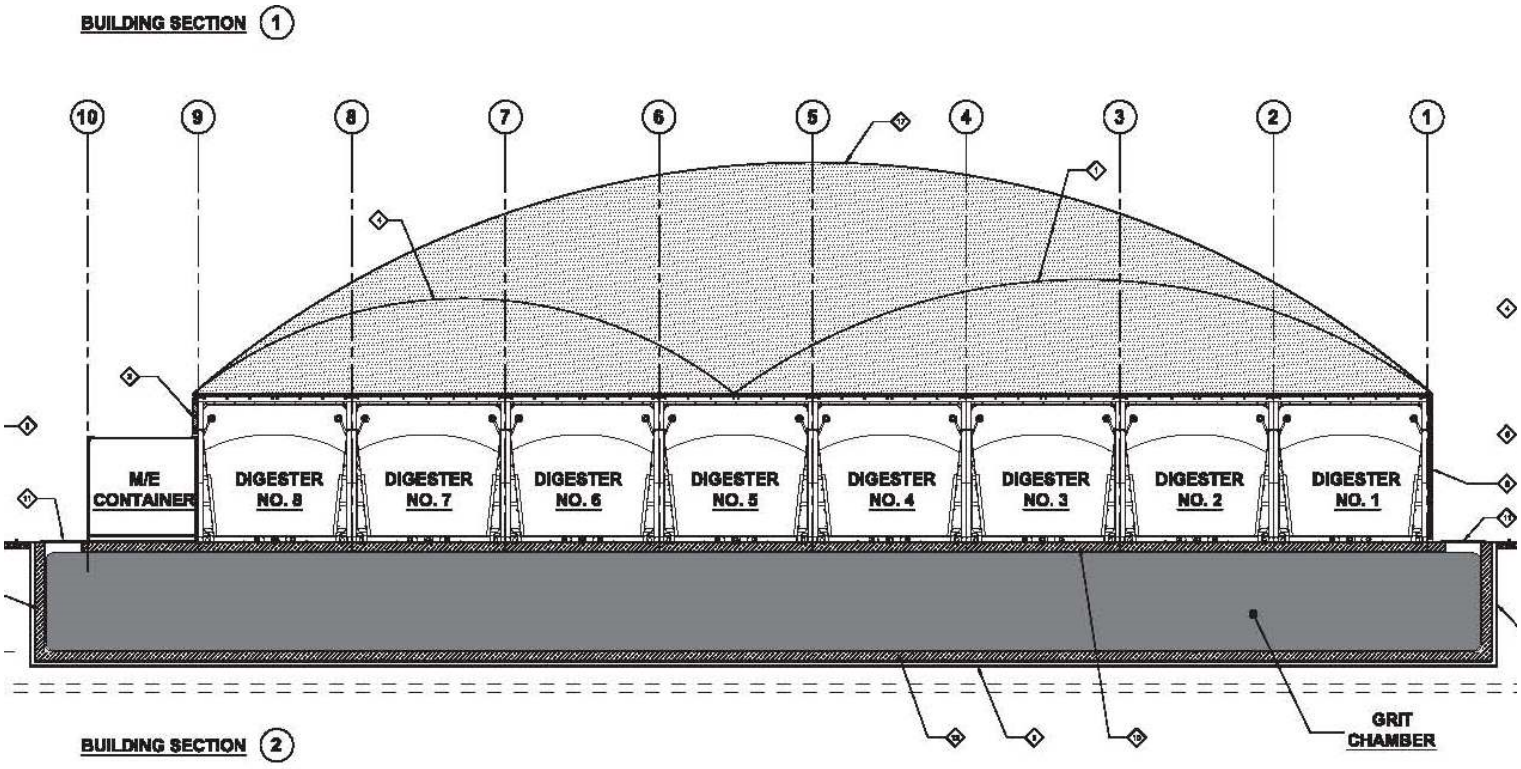


- The Aeration Bay length is 45 feet.
- The Aeration Bay width is 25 feet.
- The Aeration Bay height is 30 feet, with an effective pile height of 15 feet.
- The Aeration Bay storage volume is 16,875 cubic feet, or 625 cubic yards.
- The feedstock has a bulk density of 36 pounds per cubic foot or 972 pounds per cubic yard or 0.49 tons per cubic yard.
- An Aeration Bay can accommodate 306 tons.
- The 612-ton capacity of two aeration bays is six times the average daily loading of 100 TPD and almost five times the peak loading of 130 TPD.
- Whereas organic waste will be received, mixed and stored for up to 48 hours, there is contingency capacity of up to six days.

AD Units - 2,720 CYDs

The digestion capacity of the AD Facility is sufficient for the expected volume of material as shown by the following calculations shown on the cross-section below for Option A:

- The design capacity is 25,000 TPY.
- There are sixteen digestion chambers.
- The AD unit length is 45 feet.
- The AD unit width is 12 feet.
- The AD unit effective height for loading organics is 10 feet, just 83% full.
- The effective digestion chamber volume of one of the sixteen units is 5,400 cubic feet, or 200 cubic yards. Sixteen digesters add up to 3,200 CYDs.
- The bulk density of the material in the AD units is 36 pounds per cubic foot, which equals 972 pounds per cubic yard or 0.49 tons per cubic yard.
- The effective digestion chamber capacity of one AD unit is 98 tons.
- The digesters have a 21-day cycle, so they can complete 17 cycles per year.
- The annual capacity on one AD unit is 1,666tons.
- The annual capacity of sixteen AD units is 26,656 tons with 83% loading, sufficient to handle the design of 25,000 tons.



IVC Chambers – 320 CYDs

The digestion capacity of the IVC is sufficient for the expected volume of material as shown by the following calculations shown on the cross-section below:

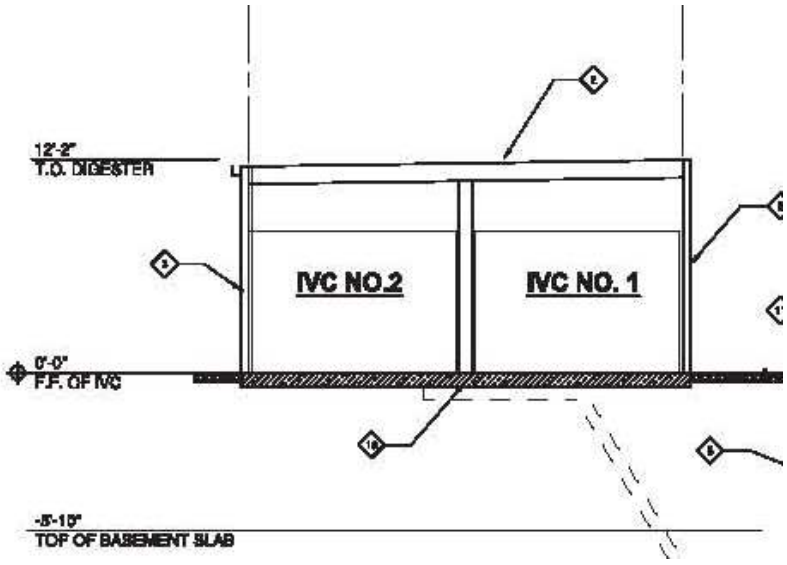
- There are four IVC chambers.
- The IVC chamber length is 40 feet.
- The IVC chamber width is 12 feet.
- The IVC chamber effective height for loading organics is 9 feet, just 75% full.
- The volume of the four IVC units is 17,280 cubic feet, or 640 cubic yards.
- The material spends up to five days in the IVC units.
- The IVC units operate continuously, 365 days per year.
- The IVC units complete 73 cycles per year.
- There is a reduction in mass by about 30% from 20,000 TPY to 13,000 TPY
- The total annual capacity of the IVC units is 46,720 cubic yards.

- The bulk density of the material in the IVC chambers is 52 pounds per cubic foot, which equals 1,404 pounds per cubic yard or 0.70 tons per cubic yard.

- The IVC capacity of the four units is 32,704 TPY.

- The IVC units receive 17,300 TPY.

Therefore, the AD system is sufficiently designed to accommodate 20,000 TPY of incoming feedstock.



For Option B, the 16 pre-fabricated chambers will be replaced with 5 cast-in-place concrete chamber each 105 feet in length by 18 feet wide and 12 feet high. The Site Plan layout for Option B is shown on Sheet 7. The capacity of these digesters loaded at 10 feet high is 3,500 cubic feet, greater than the 2,270 CYD capacity of Option A digesters.

H. Solid Waste Types and Quantities

TPR: Section 18221.6(h) Information showing the types and the daily quantities of solid waste to be received. If tonnage was figured from records of cubic yards, include the conversion factor used.

RCSI: Section 18227 (a) A description of the processes to be used, including estimated quantities of feedstocks, additives, and amendments.

The NRRP services the Cities of Napa, Sonoma City, Santa Rosa, Petaluma, Rohnert Park and the unincorporated Counties of Napa and Sonoma. Vehicles are anticipated to enter the NRRP and get weighed. The vehicles are then directed to the AD Facility. The NRRP is adequately served by highways or streets of sufficient width and improvements necessary to carry the kind and quantity of traffic such use would generate.

- For an incoming tonnage of 25,000 TPY collected over 260 days, and assuming a collection vehicle capacity of 8 tons per load, an average of 96 TPD from 112 to 14 collection vehicles daily.

The AD Facility will accept 25,000 TPY of material, in blends with up to 67% food waste and grape pomace and 33% green waste and manures. Source-separated commercial food waste and co-collected residential green waste with food waste from Napa Recycling and Waste Service's collection vehicles will be accepted. Processed food waste, which would be in the form of a sludge or slurry, will be delivered to the AD Facility from the on-site product depackaging operations or off-site sources.

Food waste will consist of source separated:

- Pre-consumer food wastes
- Post-consumer food wastes
- Food processing wastes
- Processed food waste
- Processed food depackaging slurry
- Pomace

Green waste will consist of:

- Co-collected residential and commercial green waste, which can include approximately 10% food waste, or
- Source separated residential and commercial green waste.
- Manures

If food and green waste are co-collected, the amount of food waste present in the green waste will be considered in producing a 67/33 blend of food and green waste.

I. Methods to Comply with State Minimum Standards

TPR: Section 18221.6(i) description of the methods used by the facility to comply with each state minimum standard contained in sections 17406.1 through 17419.2

RCSI: Section 18227 (d) A description of the proposed methods used to control leachate, litter, odors, dust, rodents, and insects.

The AD Facility will comply with state minimum standards, and all other state and local laws. This section discusses how the facility will comply with each of the state minimum standards required by the TPR and the RCSI. Each of the TPR standards is shown below with the description of the methods to be used to comply with the standard. The RCSI standards deal with leachate, litter, odors, dust rodents, and insects. Those areas are addressed by the standards required by the TPR.

Siting on Landfills

TPR: Section 17406.1 (State Minimum Standards)

(a) Operations and facilities or portions thereof, located atop fully or partially closed solid waste landfills shall meet postclosure land use requirements pursuant to Title 27, California Code of Regulations, section 21190.

(b) Operations and facilities or portions thereof, located on intermediate cover on a solid waste landfill shall locate operations areas on foundation substrate that is stabilized, either by natural or mechanical compaction, to minimize differential settlement, ponding, soil liquefaction, or failure of pads or structural foundations.

(c) Operations and facilities or portions thereof, located on intermediate cover on a solid waste landfill shall be operated in a manner not to interfere with the operations of the landfill or with the closure or postclosure maintenance of the landfill.

The Facility is not located on top of a landfill, partially closed landfill, or the intermediate cover of a landfill.

General Design Requirements

TPR: Section 17406.2 (State Minimum Standards)

(a) The design of a new operation or facility shall utilize expert advice, as appropriate, from persons competent in engineering, architecture, landscape design, traffic engineering, air quality control, and design of structures.

(b) The design shall be based on appropriate data regarding the expected service area, anticipated nature and quantity of wastes to be received, climatological factors, physical settings, adjacent land use (existing and planned), types and number of vehicles anticipated to enter the operation or facility, adequate off-street parking facilities for transfer vehicles, drainage control, the hours of operation and other pertinent information. If the operation or facility is to be used by the general public, the design shall take account of safety features that may be needed to accommodate such public use.

(c) The operation or facility shall be designed in such a manner as to restrict the unloading area to as small an area as practicable, provide adequate control of windblown material, minimize the propagation or attraction of flies, rodents or other vectors and the creation of nuisances by reason of solid wastes being handled at the operation. Other factors which shall be taken into consideration are: dust control, noise control, public safety, and other pertinent matters related to the protection of public health at the operation or facility.

(d) In reviewing the design of a proposed operation or facility, the EA may require the applicant to describe how he or she has complied with applicable local and state requirements regarding odor control measures, personnel health and safety, and sanitary facilities.

(e) Solid waste storage containers shall be durable, easily cleanable, designed for safe handling, and constructed to prevent loss of wastes from the container during storage. If such a container is used to store garbage, other wet or liquid producing wastes, or wastes composed of fine particles, such container shall in all cases be non-absorbent and leak-resistant. Unloading areas shall be easily cleanable, designed for safe handling, and constructed to prevent loss of wastes.

The AD Facility is a new technology to the United States, which will employ a pre-fabricated, or cast-in-place concrete, small-scale, dry anaerobic digestion system called SmartFerm. The Facility will process approximately 25,000 TPY with less than 5,500 cubic yards of material on-site at any one time within the AD Facility. The Facility includes two Aeration Bays, sixteen AD units for Option A, or 5 AD units for Option B, and four IVC chambers. SmartFerm was developed by a German company, Eggersmann Anlagenbau Concept GmbH (Eggersmann). The SmartFerm dry AD technology is licensed exclusively in the US to Zero Waste Energy, LLC (ZWE), and a San Jose-based developer of organic waste treatment projects utilizing dry AD technology. This is the third AD Facility in California, following the 4,000 TPY system in Marina, and the 90,000 TPY Facility in San Jose, that was has a Full Solid Waste Facility Permit, and is operational.

The design of the AD Facility utilized expert advice by ZWE and JR Miller & Associates, as appropriate, from persons competent in engineering, architecture, landscape design, traffic engineering, air quality control, and design of structures.

The TPR/RCSI was prepared under direction of Evan W.R. Edgar, Registered Civil Engineer 42053 in the State of California. Evan W.R. Edgar is the Principal Civil Engineer for Edgar & Associates, Inc. and has over 30 years of professional solid waste experience. Mark White, Chief Engineer with Edgar & Associates, assisted with preparation of the document.

The AD Facility design was based on appropriate data regarding the anticipated nature and quantity of wastes to be received, climatological factors, physical setting, adjacent land use (existing and planned), types and number of vehicles anticipated to enter the Facility, drainage control, the hours of operation, safety of workers and the public and other pertinent information.

The AD Facility was designed to minimize the propagation or attraction of flies, rodents or other vectors and the creation of nuisances due to the solid wastes being handled at the operation. The operational controls and design for each of the issues listed above is provided in detail in the specific sections of the TPR.

There is sufficient space at the Facility to handle the expected volume of traffic.

Burning Waste and Open Burning

TPR: Section 17407.1 (State Minimum Standards)

(a) If burning wastes are received at an operation or facility, they shall be separated from other wastes and deposited in a safe area, spread, and extinguished. A safe area is defined as being away from unloading, transfer, or processing areas, structures on adjacent properties and other fire hazard areas.

(b) Open burning of solid waste, except for the infrequent burning of agricultural wastes, silvicultural wastes, landclearing debris, diseased trees, or debris from emergency clean-up operations, or any other wastes as approved by local regulatory agencies, approved by the EA, local air district, and local fire department, is prohibited at all operations and facilities.

Open burning of solid waste in any manner is not proposed at the AD Facility.

Cleaning

TPR: Section 17404.2 (State Minimum Standards)

(a) Operations, facilities, and their equipment, boxes, bins, pits and other types of containers shall be cleaned using the following schedule, or at a lesser frequency approved by the EA, in order to prevent the propagation or attraction of flies, rodents, or other vectors:

(1) all operations and facilities shall be cleaned each operating day of all loose materials and litter;

(2) all operations or facilities that operate 24 hours per day must clean the operations or facilities at least once every 24 hours.

(b) The entrance and exit shall be cleaned at a frequency which prevents the tracking or off-site migration of waste materials.

RCSI: Section 18227 (d)

A description of the proposed methods used to control litter

Washing of any equipment, vehicles and/or containers is done in the designated wash rack area or the rinsing area co-located with the AD Facility. Wash water from cleaning the AD equipment will drain into the percolate tank and be used for process water.

Each operating day, site personnel will remove loose material and litter from corners, underneath equipment and other out-of-the-way locations.

Drainage Control

TPR: Section 17407.3 (State Minimum Standards)

(a) Drainage at all operations and facilities shall be controlled to:

(1) minimize the creation of contact water;

(2) prevent to the greatest extent possible given existing weather conditions, the uncontrolled off-site migration of contact water;

(3) protect the integrity of roads and structures;

(4) protect the public health; and

(5) prevent safety hazards and interference with operation.

General spill control programs and curbing will be in place. The material handling areas are covered by a canopy and protected from storm water. The Aeration Bays, AD units and IVC chambers are all enclosed and protected from storm water.

The loader access area under the canopy to move material from the Aeration Bays to the AD units to the IVC units will be paved and sloped towards a perimeter grated trench drain to capture liquids that may drip from the digestate or material that may spill on the pavement from loading and unloading. The grated trench drain will be drained to an on-site sump, used for AD percolate water and hauled to a permitted treatment facility as needed (the East Bay Municipal Utility District facility currently accepts liquid from the NRRP.)

The project site is a regulated industrial facility and must meet the storm water pollution prevention requirements of the Federal Clean Water Act. The site operator has submitted a Notice of Intent (NOI) that is covered under the Statewide General Permit No. CAS00001 and has prepared a Storm water Pollution Prevention Plan (SWPPP) that is filed on-site. The WDID Identification Number is *2 28I020443* (copy in Attachment F).

Drainage from outdoor working surfaces within the composting facility (approximately 12 acres, including the northeast portion of the site) would be collected via the existing site grading and catch basins, and transferred to an expanded treatment system in the northwestern portion of the MDF property. The northeastern portion of the site will be controlled through a series of bioswales around the perimeter of the new concrete pad that ultimately discharge to the existing storm system in that area. Storm water from this area currently discharges into the existing pond, and will continue to do so.

The expanded system would make use of the existing concrete-lined basin, but would also require a new geomembrane-lined storm water treatment basin. Both basins are required to provide enough detention for the run-off resulting from a 25-year, 24-hour storm event. Potential odors from the detention pond during the summer would be managed by aerating the water in the pond using one or more aerators, potentially using solar power. There are several options for solar-powered aerators; however the most likely option would require the system to operate using a battery with the solar panels providing recharge. The system could also be hard-wired as a redundant measure should the solar panels not provide enough recharge capability during periods of inclement weather or fog. Solar-powered systems continue to provide recharge during periods of

inclement weather or fog, but at a reduced efficiency. The battery pack can be designed such that there is adequate capacity even during periods of reduced recharge efficiency. However, it may be more beneficial to provide backup power during the winter months. An additional option would be to provide a backup system of one or more inexpensive paddle aerators using 5-horsepower electric motors during those periods. However, this should be determined during detailed design of the system based on associated costs for the different options.

A new solids separator would also be retrofit into the eastern end of the existing concrete-lined retention pond. This separator would consist of a series of baffles containing weirs that would allow for rapid settlement and easy removal of larger particulate matter. Additionally, the outlet structure from the solids separator would be designed as a simplified oil/water separator, allowing for entrapment of oil and floating debris, which could either be periodically removed via oil containment booms or a portable skimmer.

A Preliminary Storm water Management Plan was prepared by Riechers Spence and Associates for Napa Recycling and Waste Services. This plan presented an enhanced storm water treatment infrastructure designed not only to manage the 25-year, 24-hour storm, but also to meet the EPA Benchmark Values and Napa River Basin Plan storm water discharge standards. They plan to follow these recommendations moving forward.

The following is a list of Best Management Practices to be implemented at the site:

- Perimeter controls consisting of concrete curbing around the processing areas, along with new driveway approaches.

- Collection system utilizing the existing system with minor modifications to direct storm water to the proposed solid separator.

- Pre-treatment using a 4-chamber solid separator constructed within the existing concrete basin.

- Primary treatment through construction of a new two-stage treatment pond separated by a floating baffle and incorporating fine bubble diffusers into the first stage.

- Secondary treatment addressed in the second stage through seeding with Lemna Minor L. or similar vegetation.

- Filtration through a bioswale, which would replace the existing bioswale and flow to the tertiary treatment area.

- Tertiary treatment through a sand filter that would collect treated storm water in a subdrain where it would then drain off-site.

- Sweeping parking and processing areas regularly to remove fine particles of material and dust.

- Storing hazardous materials from the load checking program in an approved hazardous materials storage compartment and in accordance with federal, state and local requirements.

- Conducting all vehicle maintenance within the Service Building.

- Washing all vehicles and containers in the designated wash rack area or the rinsing area.

- Inspecting the truck parking areas for fluid leaks, and following a procedure to report them, clean them up using dry methods, and repair the leaking vehicle.

- Spill prevention, control and cleanup program.

- Perimeter trench will be installed around the loading area to capture spillage, and water from this area will be treated collected in an on-site sump and used for AD percolate. If necessary, liquid from the sump is transported to a permitted water treatment facility.

- Training employees in implementation of BMPs.

Dust Control

TPR: Section 17407.4 (State Minimum Standards)

(a) The operator shall take adequate measures to minimize the creation, emission, or accumulation of excessive dust and particulates, and prevent other safety hazards to the public caused by obscured visibility. The operator shall minimize the unnecessary handling of wastes during processing to prevent the creation of excessive dust. Measures to control dust include, but are not limited to: reduced processing, periodic sweeping and cleaning, misting systems or ventilation control. One or more of the following may be an indication that dust is excessive:

(1) safety hazards due to obscured visibility; or

(2) irritation of the eyes; or

(3) hampered breathing;

(4) migration of dust off-site.

The moist nature of the feedstocks and digestate generally precludes dust generation. The storage of the organic materials will be within enclosed structures on negative air to future reduce dust. Organic materials will not be placed outdoors until the composted digestate leaves the IVC units for curing.

Hazardous Liquid and Special Wastes

TPR: Section 17407.5 (State Minimum Standards)

(a) An operation or facility shall not intentionally accept or store hazardous wastes, including batteries, oil, paint, and special wastes, unless it has been approved to handle the particular waste by the appropriate regulatory agencies. Such approvals shall be placed in the operating record.

(b) At operations and facilities where unauthorized hazardous wastes are discovered, control measures as are necessary to protect public health, safety and the environment, such as elimination or control of dusts, fumes, mists, vapors or gases shall be taken prior to isolation or removal from the operation or facility,

(c) Liquid wastes and sludges shall not be accepted or stored at an operation or facility unless the operator has written approval to accept such wastes from the appropriate agencies and the EA. The EA shall authorize acceptance of these wastes only if the operation, facility, and the transfer vehicles are properly equipped to handle such wastes in a manner to protect public health, safety, and the environment.

The compostable feedstocks are delivered to the site by Napa Recycling and Waste Services collection vehicles during operating hours into the Aeration Bays. Napa Recycling and Waste Services works with the commercial generators to limit contamination to ensure that the source-separated organic feedstock does not contain household hazardous waste, glass, metals, or other contamination. With mandatory commercial collection underway and upcoming programs on mandatory commercial organics collection, Napa Recycling and Waste Services will continually add training, awareness, and feedback to their customers on the need to source-separate their organic materials. Processed food waste will be accepted, which would be in the form of sludge, and may be mistaken for an industrial sludge. This processed food waste material would have been load checked and processed within the NRRP and is not considered a hazardous waste.

Hazardous waste will not be accepted, and is strictly prohibited at the AD Facility. Napa Recycling and Waste Services will work with generators to properly manage these hazardous waste items at the point of generation by referring the generator to a registered hazardous waste hauler should a request be made. Where the collector suspects that hazardous waste may be commingled with AD feedstock at the point of generation, the collector will load check the bins prior to collection, and will not collect the loads where the visual inspection indicates that hazardous waste is present.

Typical unacceptable materials in organics may include household hazardous wastes, aerosol cans, batteries, and sharps, which are expressly prohibited. The greatest likelihood of unacceptable waste being hidden in the waste stream occurs in the commercial stream. The commercial loads are dumped in the Aeration Bays and will receive a cursory visual load check. Many commercial accounts would have been thoroughly trained to source-separate food waste, but certain accounts may be targeted should that account have a history of placing contaminants or disposing of unacceptable waste.

Employees screen the loads for unacceptable materials. If unacceptable materials are identified, they are extracted from the waste, transferred daily and temporarily stored in

the northwest area of the MRF, prior to being transferred weekly to the County household hazardous waste facility.

The storage of biogas by-product of digestion may be combusted and considered hazardous under highly controlled conditions. Under normal operations, the majority of the biogas produced in the digesters is converted to vehicle fuel, and some is waste gas from the biogas treatment process is used in an boiler to produce heat or in a generator system to generate electricity. The biogas is stored in a bladder making it possible to hold produced biogas for limited periods of time. In rare instances when biogas cannot be processed through the BioCNG system to produce transportation fuel or the waste gas cannot be combusted by the boiler or generator system and the biogas storage bladder capacity is exceeded, then an alternative method of combustion must be available. In this rare event, the biogas will be automatically combusted by the onsite emergency flare.

Towards the termination of the anaerobic digestion process cycle when the majority of the biogas generation has been completed, lean biogas (methane content below 20% and higher than 1%) is generated. The flare would also be used to combust the lean gas that is unsuitable for treatment and use. The lean biogas would be combusted three to four hours per digester termination, which would occur every 2.5 to three days.

Litter Control

TPR: Section 17608.1 (State Minimum Standards)

Litter at operations and facilities shall be controlled, and routinely collected to prevent safety hazards, nuisances or similar problems and off-site migration to the greatest extent possible given existing weather conditions.

RCSI: Section 18227 (d)

A description of the proposed methods used to control litter

Facility personnel will control litter to prevent safety hazards, nuisances or similar problems and off-site migration. Due to the nature of the feedstock and the manner in which it is received, minimal litter is expected to be generated.

Facility personnel will conduct a daily inspection to identify and clean areas around the building that have accumulated litter. The site is fenced to maintain the litter on-site until facility personnel can collect it. The operator checks daily for illegal dumping along the access road and maintains the road free of litter and illegally dumped materials.

The operator will enforce a mandatory tarping policy for non-enclosed vehicles, such as transfer trucks.

Maintenance Program

TPR: Section 17408.6 (State Minimum Standards)

All aspects of the operation or facility shall be maintained in a state of good repair. The operator shall implement a preventative maintenance program to monitor and promptly repair or correct deteriorated or defective conditions.

The design of the technology minimizes moving parts, which reduces the cost of operation and maintenance significantly and decreases the amount of time a particular portion of the facility may be down for maintenance. The amount of water needed for optimizing the production of biogas is minimal and the wastewater output is low in comparison to other digestion technologies.

The technology is designed to allow for the use of front-end loaders for material handling, including loading, unloading, mixing, and transporting. Front-end loaders are the most efficient and economical machine for composting and waste processing facilities and will be used to handle all the feedstock. Reliable readily available equipment ensures consistent and uninterrupted operations.

The selected dry fermentation technology does not require upfront grinding, sorting, and screening systems. There is no processing equipment to maintain. Reduced processing minimizes odors and emissions. Prior to arriving at the facility, the feedstock material will already be source-separated food wastes. A significant portion of the fixed and operational costs for wet fermentation systems is in the preparation of the material for digestion. The selected technology only requires minimal preparation, if any, for the incoming feedstock.

The equipment maintenance program focuses on identifying and correcting equipment problems before breakage or failure occurs. This program allows equipment maintenance to be scheduled during the graveyard shift to minimize disruptions to the waste processing operations. The inspection, maintenance, and repair program has been implemented in accordance with the equipment manufacturers' recommendations. Repair parts are also stocked in the maintenance facility, as recommended by the equipment manufacturers. All routine vehicle maintenance activities for the loaders are conducted within the Maintenance Building.

Medical Wastes

TPR: Section 17408.2 (State Minimum Standards)

Medical waste, unless treated and deemed to be solid waste, which is regulated pursuant to the Medical Waste Management Act (commencing with section 117600 of the Health and Safety Code), shall not be accepted at an operation or facility, unless approved by the appropriate regulatory agency.

Medical waste will not be accepted, and is strictly prohibited at the AD Facility. If medical waste is identified at the AD Facility, the LEA will be notified immediately.

Noise Control

TPR: Section 17408.3 (State Minimum Standards)

Noise shall be controlled to prevent health hazards and to prevent nuisance to nearby residents. Measures to control noise include but are not limited to: posting of warning signs that recommend or require hearing protection; separation by barriers that limit access to authorized personnel only; or, enclosures to reduce noise transmission. Compliance with specific provisions regarding noise control in a local land use approval, such as a conditional use permit or CEQA mitigation measures, shall be considered compliance with this standard.

Mobile equipment will have mufflers to minimize noise. Equipment to be used at the Facility will meet OSHA standards for noise and safety. All employees will wear ear protection devices if they be subject to excessive noise levels at the Facility.

Land uses surrounding the AD Facility site consist of the Napa County Airport, industrial facilities, and open space. The NRRP is located adjacent to the Napa County Airport, which considers noise as a land use compatibility issue. The level of noise is within the normally acceptable range for industrial and manufacturing uses according to the Land Use Compatibility for Community Noise Environments of the City's General Plan, and will have no impact on the Napa County Airport.

The primary sources of noise during operations would be collection trucks, a front-end loader and the boiler. However, trucks already operate on the project area and the addition of the Facility would not result in a noticeable change in the noise environment.

Non-Salvageable Items

TPR: Section 17408.4 (State Minimum Standards)

Drugs, cosmetics, foods, beverages, hazardous wastes, poisons, medical wastes, syringes, needles, pesticides and other materials capable of causing public health or safety problems shall not be salvaged at operations or facilities unless approved by the local health agency and the EA.

Drugs, cosmetics, foods, beverages, hazardous wastes, poisons, medical wastes, syringes, needles, pesticides and other materials capable of causing public health or safety problems shall not be salvaged.

Hazardous waste, salvageable or non-salvageable, will not be accepted, and is strictly prohibited at the AD Facility. Napa Recycling and Waste Services will work with generators to properly manage these hazardous waste items at the point of generation by referring the generator to a registered hazardous waste hauler should a request be made. Where the collector suspects that hazardous waste may be commingled with AD feedstock at the point of generation, the collector will load check the bins prior to collection, and will not collect the loads where the visual inspection indicates that hazardous waste is present.

Nuisance Control

TPR: Section 17408.5 (State Minimum Standards)

Each operation and facility shall be conducted and maintained to prevent the creation of a nuisance. Compliance with specific provisions regarding nuisance control in a local land use approval, such as a conditional use permit or CEQA mitigation measures, shall be considered compliance with this standard.

Nuisances at the Facility could involve dust, vectors and odors. The methods to control nuisances are summarized below.

The moist nature of the feedstocks and digestate generally precludes dust generation as the material is delivered and handled.

The operator will take adequate steps to control or prevent the propagation, harborage and attraction of flies, rodents, or other vectors and to minimize bird attraction. All feedstock will be in an enclosed structure to minimize dust, odors, and vector attraction.

Odor Control

RCSI: Section 18227 (d)

A description of the proposed methods used to control odors.

Composting facilities regulated by CalRecycle are required to have an Odor Impact Minimization Plan (OIMP). The OIMP for this Facility is Attached to this document as Attachment 1. It includes a Complaint Response Protocol and an Odor Complaint Reporting Format. The Complaint Response Protocol describes the procedures to follow upon receiving a complaint. The protocol includes measures to identify the odor and requires appropriate adjustments to storage process controls and facility improvements to reduce odors.

Green and food waste arriving at the facility will be placed directly into the Aeration Bays and placed on negative air, and there is no outdoor storage. To control odors, the air is captured and treated with a biofilter before discharge.

The AD units are enclosed and all start-up gas and lean gas from digestion termination are flared, while the remaining biogas is captured for treatment and use as vehicle or turbine fuel. Digestate would be removed from the AD units and placed in the IVC system for four to five days for ammonia removal and odor control. Air would be drawn through the material to strip ammonia, which could be an odor issue at the facility or at the composting facility receiving the digestate. This off-gas would be passed through an acid scrubber to remove ammonia, and then passed through a biofilter to oxidize emissions and minimize odors, trace ammonia and VOCs.

The BAAQMD has several rules regarding odors, Regulation 1-301 (Public Nuisance) and Regulation 7 (Odorous Substances), that the project must meet. As part of the Authority to Construct application, the operator will implement preconditioning odor control measures throughout the facility, including:

- Dedicated source separated organic waste aeration bays for short-term storage of received feedstocks.
- The AD thermophilic process that optimizes methane production, reducing VOCs in the residual digestate material.
- Hydrogen sulfide (H2S) removal system post AD and prior to BioCNG production.
- Siloxane/VOCs removal system and CO2 removal system prior to BioCNG fueling skid.
- Specially designed burner/boiler system to combust biogas with low methane content and recover heat for AD process heating requirements.
- Enclosed IVC tunnels to actively strip ammonia from the digestate following anaerobic digestion but prior to shipment offsite.
- An acid scrubber to remove ammonia emissions from AD start-up and shut-down phases and IVC tunnels.
- Use of a biofilter for additional control of VOCs and ammonia before exhausting to the air.

Personnel Health and Safety

TPR: Section 17408.7 (State Minimum Standards)

All aspects of the operation or facility shall be maintained in a state of good repair. The operator shall implement a preventative maintenance program to monitor and promptly repair or correct deteriorated or defective conditions.

The Injury, Illness, and Prevention Program (IIPP) is available in the NRRP's administrative offices for review by the LEA and other local and state inspectors during normal business hours.

Risks to the public are mitigated by the operator following the operations plan and providing adequate training of site personnel. Risks are further minimized or obviated by compliance with solid waste facility permit conditions, approved land use conditions, and the permit conditions and regulations of other responsible agencies. The operator conducts regular training and auditing of the safety program to assure compliance with applicable regulations and a safe work environment.

Safety equipment is available and accessible to all site personnel. Eye washes and first-aid kits are located at the NRP facility for quick treatment. Workers are equipped with appropriate safety clothing, including high-visibility vests, gloves, hard hats, ear protection, and goggles, where appropriate.

Employees are trained by staff skilled in various aspects of the work and the proper use of facility equipment for which they may be responsible. Potential hazards and safety features are stressed. No employee is permitted to operate equipment until the employee has demonstrated proficiency in its use. Annual review and refresher training ensures continued safe operations of the facility and compliance with regulations.

The AD Facility will not collect or transfer hazardous materials as part of its business

operation. Collection drivers, managers, supervisors, and all employees who the handle the incoming material will receive load check training. The NRRP has a Hazardous Materials Business Plan. The Plan identifies depicts the types, quantities and locations of hazardous materials used in the operation, such as lubricants, solvents. The Plan will also include provisions for managing any incidental hazardous materials that may be brought to the AD Facility and kept there pending removal by a licensed hazardous waste hauler. The Plan includes requirements for storage/containment, notification, and contingency measures in the event of a spill, fire, or other incident.

Protection of Users

TPR: Section 17408.8 (State Minimum Standards)

An operation or facility shall be designed, constructed, operated, and maintained so that contact between the public and solid wastes is minimized. This may be accomplished through the use of railings, curbs, grates, fences, and/or spotters.

The AD Facility has been designed so it can be constructed, operated, and maintained to minimize contact between the operators and the solid wastes. The general public is not allowed to use the AD Facility. All AD feedstocks will be delivered by Napa Recycling and Waste Services collection vehicles with drivers who are familiar with the NRRP and the AD Facility and its operations plan, not by the general public.

Roads

TPR: Section 17409.1 (State Minimum Standards)

All on-site roads and driveways shall be designed and maintained to minimize the generation of dust and tracking of soil onto adjacent public roads. Such roads shall be kept in safe condition and maintained to allow vehicles utilizing the operation or facility to have reasonable all-weather access to the site.

All on-site roads and driveways are paved and swept routinely. They are designed and maintained to minimize the generation of dust and tracking of soil onto adjacent public roads. The roads shall be kept in safe condition and maintained to allow vehicles utilizing the AD Facility to have reasonable all-weather access to the site.

Sanitary Facilities

TPR: Section 17409.2 (State Minimum Standards)

The operator shall maintain all sanitary and hand-washing facilities which may be required, by applicable state or local requirements, in a reasonably clean and adequately supplied condition.

NRRP maintains all sanitary and hand-washing facilities in a reasonably clean and adequately supplied condition. Employee restrooms, shower facilities and hand washing facilities are available in the MRF/TS building.

Scavenging and Salvaging

TPR: Section 17409.3 (State Minimum Standards)

Each operation or facility shall meet the following requirements:

(a) scavenging shall be prohibited;

(b) salvaging of materials, such as metal, paper, glass and cardboard is permitted as an integral part of the operation, subject to conditions established by the EA, the local land use authority, or other approving agencies.

(c) salvaging activities shall be conducted in a planned and controlled manner and not interfere with other aspects of site operation. Activities shall be conducted so as not to interfere with expeditious entry and exit of vehicles delivering waste to the transfer or processing operation or facility. Salvaging activities conducted at a transfer/processing operation or facility shall be confined to specified, clearly identified areas of the operation or facility, and controlled to prevent health, safety or nuisance problems;

(d) storage of materials salvaged from solid wastes shall be ancillary to the activities of the operation or facility unless such storage is planned as an integral part of the operation. Materials salvaged on-site shall be stored away from other activity areas in specified, clearly identifiable areas as noted in the Facility Plan or Transfer/Processing Report. They shall be arranged to minimize risk of fire, health and safety hazard, vector harborage, or other hazard or nuisance, and limited to a specified volume and/or duration as described in the Enforcement Agency Notification, Facility Plan, or Transfer/Processing Report.

Scavenging by employees or others is expressly prohibited. The Operations Manager will ensure that scavenging does not occur.

Salvaging of materials will not occur at the Facility. There is no outdoor storage of recovered material or organic materials.

Signs

TPR: Section 17409.4 (State Minimum Standards)

(a) For operations or facilities not open to the public, each point of access from a public road shall be posted with an easily visible sign indicating the operation or facility name and location of nearest public operation or facility.

(b) If the operation or facility is open to the public, there shall be an easily visible sign at all public entrances indicating the name of the operator, the operator's telephone number, schedule of charges, hours of operation, and a listing of the general types of materials which either (1) WILL be accepted, or (2) WILL NOT be accepted.

The NRRP is open to the general public, but the AD Facility is not. The two facilities share an entrance area. An easily visible sign is posted at the entrance that indicates:

- Operator Name
- Telephone Number
- Schedule of Charges
- Hours of Operation
- Prohibited Materials

There is no need for the general public to visit the AD Facility and they will be directed to the appropriate operations area of the MRF/TS and Compost Facility.

Loadchecking

TPR: Section 17409.5 (State Minimum Standards)

(a) The operator of an attended operation or facility shall implement a loadchecking program to prevent the acceptance of waste which is prohibited by this Article. This program must include at a minimum:

(1) the number of random loadchecks to be performed;

(2) a location for the storage of prohibited wastes removed during the loadchecking process that is separately secured or isolated;

(3) records of loadchecks and the training of personnel in the recognition, proper handling, and disposition of prohibited waste. A copy of the loadchecking program and copies of the loadchecking records for the last year shall be maintained in the operating record and be available for review by the appropriate regulatory agencies.

The compostable feedstocks are delivered to the site by Napa Recycling and Waste Services' collection vehicles during operating hours into the Aeration Bays. Napa Recycling and Waste Services works with the commercial generators to limit contamination to ensure that the source-separated organic feedstock does not contain household hazardous waste, glass, metals, or other contamination. With mandatory commercial collection underway and upcoming programs on mandatory commercial organics collection, Napa Recycling and Waste Services will continually add training, awareness, and feedback to their customers on the need to source-separate their organic materials. Processed food waste will be accepted, which would be in the form of sludge, and may be mistaken for an industrial sludge. This processed food waste material would have been load checked and processed within the NRRP and is not considered a hazardous waste.

Hazardous waste will not be accepted, and is strictly prohibited at the AD Facility. Napa Recycling and Waste Services will work with generators to properly manage these

hazardous waste items at the point of generation by referring the generator to a registered hazardous waste hauler should a request be made. Where the collector suspects that hazardous waste may be commingled with AD feedstock at the point of generation, the collector will load check the bins prior to collection, and will not collect the loads where the visual inspection indicates that hazardous waste is present. Should the generator not fully cooperate at the point of generation, load checking will occur at the AD Facility.

The AD Facility load checking program consists of the following components:

- Inspection of all incoming loads,
- Regular visual inspections during sorting and processing of material at the Facility,
- Training of the Facility personnel in prohibited, hazardous, and PCB waste recognition and handling procedures,
- Reporting incidents of unlawful disposal to specific agencies, and
- Installation of signs at the NRRP entry indicating no hazardous wastes are accepted.

All personnel are trained to identify prohibited wastes and properly handle unacceptable wastes. This training program is conducted for all new employees and also conducted on an as needed basis. Any updated regulations for prohibited, hazardous, or PCB wastes will be disseminated to the employees.

Waste screening is a continuous function of personnel during operating hours. All incoming loads are visually observed by operations personnel and suspect waste is removed and properly identified. Waste identified as prohibited or hazardous is returned to the generator or temporarily stored in secured covered bins in the truck wash rack of the NRRP until collected by a private hazardous material handling company.

All individuals involved in the actual load checking will exercise caution to protect themselves and other employees from hazardous and PCB wastes materials. This includes, at a minimum, the wearing of gloves, boots and other protective clothing and not handling hazardous wastes if encountered.

Parking

TPR: Section 17409.6 (State Minimum Standards)

Adequate off-street parking area(s) shall be provided, if necessary, for transfer vehicles. Compliance with specific provisions regarding adequacy of off-street parking in a local land use approval, such as a conditional use permit or CEQA mitigation measures, shall be considered compliance with this standard.

Adequate space is available with the existing parking for the anticipated collection vehicles and transfer trucks.

Solid Waste Removal

TPR: Section 17410.1 (State Minimum Standards)

(a) All solid wastes shall be removed at the following frequencies or at an alternate frequency approved by the EA, in order to prevent the propagation or attraction of flies, rodents or other vectors:

(1) operations shall remove solid wastes accepted at the site within 7 days from the date of receipt;

(2) facilities shall remove solid waste accepted at the site within 48 hours from the time of receipt.

There is no solid waste removal from the AD Facility, however all food waste and green waste will be processed within 48 hours of receipt. Residual material from load checking will be taken to the MRF/TS for removal within 48 hours of receipt.

Solid digestate is considered compost after leaving the IVC. The compost will be removed from the IVC and further cured on site for sale as a soil amendment.

Supervision and Personnel

TPR: Section 17410.2 (State Minimum Standards)

The operator shall provide adequate supervision and a sufficient number of qualified personnel to ensure proper operation of the site in compliance with all applicable laws, regulations, permit conditions and other requirements. The operator shall notify the EA in writing of the name, address and telephone number of the operator or other person responsible for the operation. A copy of the written notification shall be placed in the operating record.

NRRP provides adequate supervision and a sufficient number of qualified personnel to ensure proper operation of the AD Facility in compliance with all applicable laws, regulations, permit conditions and other requirements. NRRP will notify the LEA in writing of any changes to the name, address and telephone number of the operator or other person responsible for the operation. A copy of the written notification shall be placed in the operating record.

The types of supervisory personnel provided include:

Operations Manager: This person is responsible for overall site operations.

Supervisors: The supervisor is regularly on-site during operating hours to oversee material transfer and maintenance operations. There will be at least one qualified supervisor on site when materials are being received or removed from the AD Facility (i.e. 5 a.m. to 9 p.m.). Personnel will be on site outside of these hours as needed for repairs or maintenance

The Facility is owned and operated by Napa Recycling and Waste Services. The following personnel are involved with the facility ownership and operations:

- Greg Kelley, Managing Partner/Operations Manager
- Will Cook, Site Foreman/Supervisor

The Facility will not be open to the general public. During operational hours, either the Site Foreman or a supervisor will be available.

Training

TPR: Section 17410.3 (State Minimum Standards)

Personnel assigned to the operation or facility shall be adequately trained in subjects pertinent to site solid waste operations and maintenance, hazardous materials recognition and screening, use of mechanized equipment, environmental controls, emergency procedures and the requirements of this Article. A record of such training history shall be maintained and made available for inspection.

Personnel assigned to the operation of the AD Facility will be adequately trained in subjects pertinent to site solid waste operations and maintenance, hazardous materials recognition and screening, use of mechanized equipment, environmental controls, emergency procedures and the CalRecycle requirements. A record of training history will be maintained and made available for inspection.

Regular tailgate meetings, and monthly safety meetings, will be listed in the record.

Personnel will be trained in the proper use of AD Facility equipment. Potential hazards and safety features will be stressed. No employee will be permitted to operate equipment until the employee has demonstrated that he or she is competent to operate that equipment. Annual review and training ensure continued safe operations of the Facility and that compliance with regulations will occur.

Vector, Bird and Animal Control

TPR: Section 17410.4 (State Minimum Standards)

The operator shall take adequate steps to control or prevent the propagation, harborage and attraction of flies, rodents, or other vectors, and animals, and to minimize bird attraction.

RCSI: Section 18227 (d)

A description of the proposed methods used to control rodents and insects

NRRP will take adequate steps to control or prevent the propagation, harborage and attraction of flies, rodents, or other vectors, and animals, and to minimize bird attraction. All feedstock will be in an enclosed structure to minimize dust, odors, and vector attraction.

A vector is an animal capable of carrying pathogenic microorganisms (disease) from one host to another. Pathogenic microorganisms can originate from a number of sources in municipal solid waste, such as animal feces, human feces in diapers, sewage sludge, and even from contaminated materials such as glass, metal, plastic, paper, and yard wastes. The vectors of greatest concern are flies and rats because of their ability to

reproduce rapidly and disperse from the site. Other vectors of concern include birds and other insects.

The AD Facility and surrounding areas are kept clean to minimize creation of a food source for vectors. Waste processing and storage of potential food sources is done indoors. If a vector problem develops on site, control measures approved by the LEA will be implemented. The operator will devise the control measures at that time according to the scope of the problem. It is anticipated that these control measures may be limited to trapping and removal or other approved vector control method.

Record Keeping

TPR: Section 17414 (State Minimum Standards)

Each operator shall meet the following requirements:

(a) each operator shall maintain records of incoming weights or volumes and outgoing salvage or residual weights or volumes in a form and manner approved by the EA. Such records shall be: submitted to the EA or CIWMB upon request; be adequate for overall planning and control purposes; and, be as current and accurate as practicable;

(b) all records required by this Article shall be kept by the operator in one location and accessible for three (3) years and shall be available for inspection by the EA and other duly authorized regulatory agencies during normal working hours.;

(c) the operator shall submit copies of specified records to the EA upon request or at a frequency approved by the EA;

(d) the operator shall maintain a daily log book or file of special occurrences encountered during operations and methods used to resolve problems arising from these events, including details of all incidents that required implementing emergency procedures. Special occurrences shall include but are not limited to: fires, injury and property damage, accidents, explosions, receipt or rejection of prohibited wastes, lack of sufficient number of personnel pursuant to section 17410.2, flooding, earthquake damage and other unusual occurrences. In addition, the operator shall notify the EA by telephone within 24 hours of all incidents requiring the implementation of emergency procedures, unless the EA determines that a less immediate form of notification will be sufficient to protect public health and safety and the environment;

(e) the operator shall record any written public complaints received by the operator, including:

(1) the nature of the complaint,

(2) the date the complaint was received,

(3) if available, the name, address, and telephone number of the person or persons making the complaint, and

(4) any actions taken to respond to the complaint;

(f) the operator shall maintain a copy of the written notification to the EA and local health agency of the name, address and telephone number of the operator or other person(s) responsible for the operations as required by section 17410.2;

(g) the operator shall maintain records of employee training as required by section 17410.3;

(h) all transfer/processing operations and facilities shall maintain records as required by section 18809 et seq.

NRRP personnel weigh all loaded vehicles arriving and exiting. If the vehicle does not have a tare weight on file, it is also weighed empty. Data collected and recorded includes (1) type of vehicle, (2) type of material, (3) date, and (4) time. From this database, NRRP personnel provide a monthly report to the LEA summarizing the quantity of materials received and leaving the facility. The raw data is collected by the scale computer equipment.

Special Occurrences

Records of special occurrences are to be maintained at the AD Facility. This information is kept on file in the administrative office under the supervision of the Site Foreman. The daily log will detail the special occurrences and methods used to resolve problems, including details of all incidents that required implementing emergency procedures. Special occurrences will include but are not limited to: fires, injury and property damage, accidents, explosions, receipt or rejection of prohibited wastes, lack of sufficient number of personnel, flooding, earthquake damage and other unusual occurrences. In addition, NRRP will notify the LEA by telephone within 24 hours of all incidents requiring the implementation of emergency procedures, unless the LEA determines that a less immediate form of notification will be sufficient to protect public health and safety and the environment.

Complaints

NRRP will record any written public complaints received by the operator, including:

(1) The nature of the complaint,

(2) The date the complaint was received,

(3) If available, the name, address, and telephone number of the person or persons making the complaint, and

(4) Any actions taken to respond to the complaint;

Training

Napa Recycling and Waste Services will maintain records of employee training as required in an operations log kept in the NRRP administrative offices.

Inspection of Records

Records of the quantities of material received, processed and disposed of are kept at the administrative office, and will be accessible for three (3) years and will be available for inspection by the LEA and other duly authorized regulatory agencies during normal working hours.

Equipment maintenance records are kept in the maintenance room office. Employee training records, safety records, material safety data sheets, and incident records are maintained on file in the Facility administration office.

Napa Recycling and Waste Services will submit copies of specified records to the LEA upon request or at a frequency approved by the LEA.

Documentation of Enforcement Agency Approvals, Determinations, and Requirements.

TPR: Section 17414.1 (State Minimum Standards)

Approvals, determinations, and other requirements the EA is authorized to make under this Subchapter shall be provided in writing to the operator and placed in the operating record by the operator.

A copy of the documentation approving the operation of the Facility will be maintained with the other permits and approvals.

Communications Equipment

TPR: Section 17415.1 (State Minimum Standards)

Each facility shall have adequate communication equipment available to site personnel to allow quick response to emergencies.

The operator will have adequate communication equipment available to the AD Facility personnel to allow quick response to emergencies. The AD Facility supervisors will all have cellular telephones and access to radio communications.

Fire Fighting Equipment

TPR: Section 17415.2 (State Minimum Standards)

Each Facility shall have fire suppression equipment continuously available, properly maintained and located as required by the local fire authority.

Onsite fire protection systems were installed during development of the NRRP to meet the Fire Department requirements and as specified in the local building code. Fire hydrants are located on site and capable of delivering fire flows as required by the City.

Fire extinguishers will be located at the Facility where specified by the City Fire Department. Napa Recycling and Waste Services will have fire suppression equipment

continuously available, properly maintained, inspected monthly by the Safety Manager and inspected annually by a third party vendor.

Housekeeping

TPR: Section 17415.2 (State Minimum Standards)

The operator shall provide adequate housekeeping for the maintenance of facility equipment and shall minimize accumulations of fuel drums, inoperable equipment, parts, tires, scrap, and similar items.

The operator provides adequate housekeeping daily for the maintenance of facility equipment. The AD Facility personnel will ensure that supplies, parts, containers and equipment are properly stored so that they do not present a hazard or nuisance.

Lighting

TPR: Section 17416.2 (State Minimum Standards)

The facility and/or equipment shall be equipped with adequate lighting, either through natural or artificial means, to ensure the ability to monitor incoming loads, effectiveness of operations, and public health, safety and the environment.

The AD Facility will be equipped with adequate lighting, to ensure the ability to monitor incoming loads, effectiveness of operations, and health, safety and the environment.

The NRRP has night lighting consisting of downward directed lights mounted on building exteriors or poles located in the adjacent parking areas.

The AD Facility will have lighting installed for 24 hours per day monitoring.

Mobile equipment, such as loaders and trucks, are all equipped with lights.

Equipment

TPR: Section 17416.3 (State Minimum Standards)

Equipment shall be adequate in type, capacity and number, and sufficiently maintained to allow the facility to meet all requirements of Articles 6.3 and 6.35 of these standards.

Napa Recycling and Waste Services has adequate equipment in type, capacity and number, and sufficiently maintained to operate the AD Facility.

The equipment used at the AD Facility is shown in Table 2, Facility Equipment (see page - 42 -).

Site Security

TPR: Section 17418.1 (State Minimum Standards)

The facility shall be designed to discourage unauthorized access by persons and vehicles through the use of either a perimeter barrier or topographic constraints.

The NRRP is entirely fenced with a minimum 8-foot high cyclone fence with wooden lathe and topped with barbed wire.

The facility is equipped with night lighting consisting of downward directed lights mounted on building exteriors or poles located in the parking areas.

The night lighting is for nighttime operations and site security. All buildings have interior lighting that is on as needed.

Site Attendant

TPR: Section 17418.2 (State Minimum Standards)

A facility open to the public shall have an attendant present during public operating hours or the facility shall be inspected by the operator on a regularly scheduled basis as approved by the EA to ensure that it meets all of the requirements of Articles 6.2, 6.3 and 6.35.

A site attendant is present during operating hours. The Facility will not be open to the general public.

Traffic Control

TPR: Section 17418.3 (State Minimum Standards)

a) Traffic flow through the facility shall be controlled to prevent the following:

(1) interference with or creation of a safety hazard on adjacent public streets or roads,

(2) on-site safety hazards, and

(3) interference with operations

The traffic flow analysis and map are in Appendix E, which illustrates the traffic circulation for vehicles on site. Zones are designated for public access to the MRF/TS and compost sales area to direct the public to those operations and away from the AD Facility.

Delivering AD feedstock to the AD Facility will require an average of 10 waste collection vehicles. There will be no increase in vehicle traffic, simply a re-routing of some vehicles within the overall NRRP to the AD Facility.

The entire site is flat and paved with asphalt or compacted gravel.

Visual Screening

TPR: Section 17419.1 (State Minimum Standards)

The facility shall have appropriate treatment of areas open to public view to create and maintain an aesthetically acceptable appearance as approved by the local land use authority, or if none exist, in consultation with the EA. Compliance with specific provisions regarding visual screening in a local land use approval, such as a conditional use permit, or CEQA mitigation measures shall be considered compliance with this standard.

The AD Facility has been designed to be aesthetically pleasing, and has appropriate treatment of areas open to public view to create and maintain an aesthetically acceptable appearance. The overall NRRP is enclosed by a cyclone fence with wooden lathe for visual screening of the facility. The AD Facility would be generally located in the center of the existing facility, and as such the visual character of the immediate site is that of an active workplace with a moderate level of visual quality. The placement of the AD Facility among existing buildings of similar scale limits its visibility from many public perspectives.

Water Supply

TPR: Section 17419.2 (State Minimum Standards)

A safe and adequate water supply for drinking and emergency use (i.e.: first aid) shall be available.

The City of American Canyon provides service and indicates that sufficient supply exists for site needs.

J. Process Water

TPR: 18221.6(j) anticipated volume of quench or process water, and the planned method of treatment, and disposal of any wastewater

RCSI: Section 18227 (k) A description of the water supplies for process water required.

One of the advantages of dry AD technologies is the limited requirement for process water. Water is constantly introduced into the dry AD system via the organic waste itself. However, throughout the course of year there may be periods when the incoming organic waste material is dryer (summer) or wetter (winter) than the annual average. Depending on the moisture content of the organic waste, there may be periods when additional percolate water makeup is required (in the case of lower moisture content feedstocks), or when excess percolate is generated (in the case of higher moisture content feedstocks).

In either case, the project design reduces, if not eliminates, the need for additional water and discharges of excess process water to the waste water system and thus establishes a closed-loop system.

During periods of excess percolate resulting from higher moisture feedstocks, the percolate (which is sanitized in the digestion process by the thermophilic temperatures) would be removed and applied to composting operations to maintain proper moisture levels. Alternatively, sanitized percolate can also be marketed to local agriculture or landscapers as compost tea, a high value liquid soil amendment. In either case, there would be no need for discharges to the waste water system.

With respect to operational periods when percolate makeup is required, potable water can be used, but the preference would be the application of rinsate or reclaimed water, provided these alternatives contain no constituents which could potentially harm the percolate biology.

K. Peak Loading

TPR: 18221.6(k) description of provisions to handle unusual peak loading

RCSI: 18227 (i) A description of provisions to handle unusual peak loadings.

The NRRP may receive up to 760 TPD and 386 vehicles per day. The AD Facility tonnages are included in the permitted 760 TPD. The AD Facility vehicles trips are included in the 386 trips per day. There is no increase in tonnages or vehicles for the NRRP.

The AD Facility will receive an average of 96 TPD, delivered five days per week. Peak loading may be as 115 TPD on Mondays and after long holiday weekends, equating to as much as fifteen vehicles per day.

The calculations showing the adequacy of the AD Facility to accept and process the material expected are shown below in discussions for the Aeration Bay the eight AD units, and the IVC operation.

Aeration Bay

The waste handling capacity of the Aeration Bays is calculated to be 612 tons where that is six times the average daily loading of 96 TPD and almost five times the peak loading of 115 TPD.

AD Units

The digestion capacity of the AD Facility is sufficient for the expected volume of material. The annual capacity of sixteen AD units is 26,656 tons with 83% loading, sufficient to handle the design of 25,000 tons.

IVC Chambers

The digestion capacity of the IVC is sufficient for the expected volume of material. The IVC capacity of the four units is 32,704 TPY. The IVC units may receive 20,447 TPY. Therefore, the AD system is sufficiently designed to accommodate a 25,000 TPY of incoming feedstock.

L. Equipment

TPR: 18221.6(l) description of transfer, recovery and processing equipment, including classification, capacity and the number of units

RCSI: 18227 (g) A description of compostable materials handling equipment used at the facility including type, capacity, and number of units.

RCSI: 18227(e) A description of the proposed emergency provisions for equipment breakdown or power failure.

NRWS has adequate equipment in type, capacity and number, and is sufficiently maintained to operate the Facility.

The equipment used at the Facility is shown in Table 4, Facility Equipment, below.

Table 4: Facility Equipment

Description	Quantity	Key Functions
Front-end loader	1	Loading of organic feedstock and composted digestate
Boiler or Electric Generation	1	Thermal and possibly electrical energy production
BioCNG biogas treatment	1	Purification of biogas to fuel quality natural gas
Vehicle fueling facility	1	Providing CNG fuel to waste collection vehicles

In the case of power failure, biogas can be routed to a combustion device, such as a flare or microturbine, discontinuing the use of the BioCNG equipment. In any case, an emergency backup flare will be available for methane destruction. The boiler can generate sufficient heat to maintain the temperature of the percolate, and a backup generator will be available to provide power to continue operating the aeration chamber, AD chambers and the IVC. However, the BioCNG biogas treatment would be taken off-line.

In the event that the all or some of the anaerobic digesters are unable to be used for any reason, the organic material would be placed in the aerated static pile system, where it would be in a concrete bunker with a forced aeration system and leachate collection system This solution would also be implemented in the event that the anaerobic digestion system biogas recovery system were to fail to operate. In the event that there is a general power failure, it is possible to use a backup generator.

M. Final Disposal of Solid Waste

TPR: 18221.6(m) planned method for final disposal of the solid waste

RCSI: 18227 (j) A description of the proposed method for storage and final disposal of nonrecoverable or nonmarketable residues.

Solid waste will not be generated at the AD Facility. In the rare cases where there may be bulky waste in organic waste, a front-end loader will remove the bulky waste and deliver it to the MRF/TS.

N. Storage of Recycled Material

TPR: 18221.6(n) planned method for the storage and removal of salvaged material

RCSI: 18227 (f) A description of the storage capacity and anticipated maximum and average length of time compostable materials will be stored at the facility.

Recyclable material will not be accepted at the Facility, as the only types of loads to be accepted are organic waste to be utilized as AD feedstock. Organic material will be stored up to 48 hours within an enclosed facility prior to being placed in the AD digesters. Any incidental recyclables from the pre-processing of the organic feedstocks will be containerized and transferred internally to the MRF/TS for recycling.

Digestate, as a compostable material, will be placed in the IVC chambers and then transferred to an on-site curing area using trucks and/or loaders.

O. Management

TPR: 18221.6 (o) Resume of management organization which will operate the facility

RCSI: 18227 (l) Identification of person responsible for oversight of facility operations.

Resumes are provided in Appendix F with emergencies contacts in Table 5.

Table 5: Emergency Contact List

Napa Recycling and Waste Services – general contact number	820 Levitin Way, American Canyon, CA 94503 Telephone: (707) 256-3500 or (707) 255-5200
Greg Kelley, Managing Partner	(707) 603-1181
Will Cook, Site Foreman	(707) 603-1181

P. Permits and Approvals

TPR: 18221.6(p) list of permits already obtained, and the date obtained or last revised

The project is regulated by the City of Napa, and is subject to land use conformance with a Conditional Use Permit No. 12-0022, adopted by the City of Napa Planning Commission on October 31, 2013. The Local Enforcement Agency (LEA) in San Mateo County will revise Solid Waste Facilities Permit 28-AA-0030, under CCR Title 14 requirements, to update the NRRP operations and add the AD Facility. The operator will file for an Authority to Construct/Permit To Operate with the Bay Area Air Quality Management District to add the AD operations, CNG Fuel Production Facility, Waste Gas Burner/Boiler System, emergency enclosed flare, acid scrubber, and the biofilter.

Table 6, Regulatory Approvals, lists the regulatory approvals that have been issued or requested for the Facility. Copies of permits are found in Appendix C.

Table 6: Regulatory Approvals

Issuing Agency	Name of Permit
City of Napa	Conditional Use Permit approved by the City of South San Francisco Planning Commission on October 31, 2013; CEQA Mitigated Negative Declaration SCH # 2013092036
Planning, Building & Environmental Services Environmental Health Division 1195 3rd St Napa, CA 94559	Full Solid Waste Facility Permit (to be issued)
Bay Area Air Quality Management District	Authority to Construct (to be issued), Permit to Operate (to be issued)
State Water Resources Control Board	NPDES Storm Water Discharge Permit, WDID # 2 28I020443

Emergencies (RCSI only)

RCSI: Section 18227 (c) A description of the proposed emergency provisions for equipment breakdown or power failure.

If equipment breaks down, replacements will be obtained from other NRRP operational areas or from local rental agencies.

In the case of power failure, biogas can be routed to a combustion device, such as a flare or microturbine, discontinuing the use of the BioCNG equipment. In any case, an emergency backup flare will be available for methane destruction. The boiler can generate sufficient heat to maintain the temperature of the percolate, and a backup generator will be available to provide power to continue operating the aeration chamber, AD chambers and the IVC. However, the BioCNG biogas treatment would be taken off-line.

Site Restoration (RCSI only)

RCSI: 18227 (m) A description of the proposed site restoration activities in accordance with Section 17870.

No site restoration activities are necessary over the next five years. The AD Facility lifecycle is at least 20 years with routine part replacement. Upon decommissioning of the AD Facility, the area occupied by the AD Facility will revert to uses by the NRRP.

Odor Impact Minimization Plan (RCSI only)

RCSI: 18227 (n) An Odor Impact Minimization Plan pursuant to Section 17863.4.

The OIMP is in Attachment 1.

Attachment 1

Odor Impact Minimization Plan