ENGINEERS

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ROUTING & REQUEST

To: [illegible] 1/15

Please review & provide comment to me by 1/25

Tracy - Is this a GP?
Seems complicated

From: Tracy

Post-it® 7684 03M 1995

Date:

)-828-3078 Fax 610-828-7842

ber 11, 2012

DEC 14 2012

WMGM047

OVERNIGHT
Fed Ex. No. 7
Scott E. Walt
Environmenta
Bureau of Waste
Pennsylvania Depa
14th Floor Rachel Carson State Office Building
P.O. Box 8472
Harrisburg, PA 17105-8472

Subject: New General Solid Waste Permit Application
Delta Thermo Energy, A, LLC
112 Union Street
Allentown, Pennsylvania
IES Project No. EV120894.03

Dear Dr. Walters:

On behalf of Delta Thermo Energy, Inc. (DTE), IES Engineers (IES) is pleased to submit an original and two copies of the enclosed General Permit Application for the operation of an Energy Production Facility. DTE is requesting the Department to create a new General Solid Waste Permit specific to its proposed operations in Allentown, Pennsylvania.

The purpose of the Energy Production Facility is to produce commercial quantities of renewable clean fuel and electricity as well as recyclable materials. The facility will be designed to handle 120 tons/day of Municipal Solid Waste and 47 tons/day of the City of Allentown's Wastewater Treatment Plant sludge as feedstock to produce 3 to 4 gross Megawatts (MW) of electricity for internal use and sale. The facility will include a new building structure to house the energy production operations and equipment, an associated driveway, and truck scales. DTE has leased an undeveloped parcel of land located adjacent to the Allentown WWTP at 112 Union Street in Allentown, Pennsylvania, in order to construct and operate this proposed facility. We are enclosing a check in the amount of $1,000 for processing this application.

Please note that the information in this application contains proprietary information; release of this information to a third party could jeopardize DTE's competitive position in the industry. The information provided in this application should be treated as **"Confidential"** under 25 Pa. Code Section 271.5(d), inasmuch as the application contains trade secrets and intellectual property rights, the disclosure of which could potentially adversely impact the competitive position of the applicant. Documents labeled **"Confidential"** should not be disclosed or made publicly available, documents labeled **"Public"** are not subject to confidentiality protections. In addition to the protections accorded by 25 Pa. Code Section 127.12(d), the application should be considered exempt from public disclosure under Section 708(b)(11) of the Pennsylvania Right-

to-Know Law. Under the Right-to-Know Law, the application marked **"Confidential"** should not be considered a public record because it would reveal trade secrets or other confidential proprietary information.

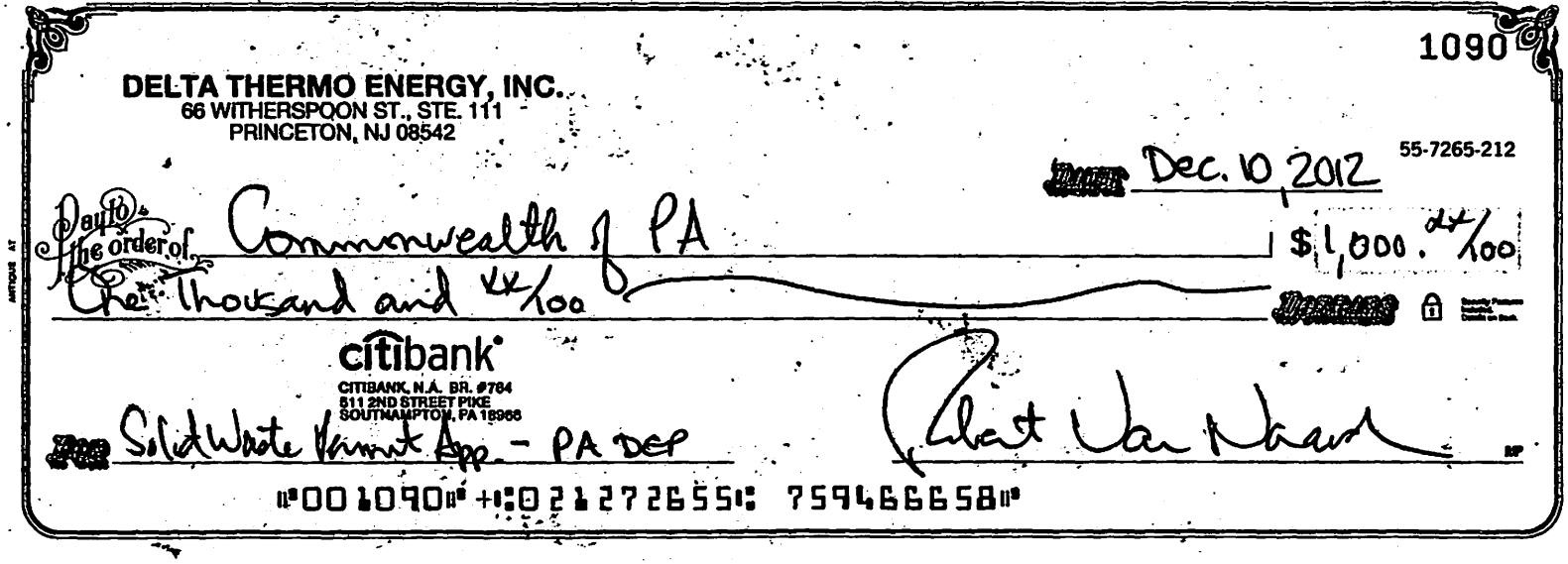
We request the Department to issue this General Solid Waste Permit promptly so that the project can proceed. We appreciate the Department's cooperation in this matter. Should you have any questions, please feel free to contact me.

Very truly yours,

Michael J. Tucci /e/
Michael J. Tucci, P.E.
Project Manager

Enclosures

cc: T. McGurk, PADEP NERO
R. Van Naarden, DTE
M. Bonilla, DTE
J. Bolstein, Fox-Rothschild, LLP
R. Schlosser, IES
A. Soni, IES



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DELTA THERMO ENERGY, INC.
66 WITHERSPOON ST., STE. 111
PRINCETON, NJ 08542

55-7265-212

Date Dec. 10 2012

Pay to the order of Commonwealth of PA

$ 1,000.00/100

One Thousand and 00/100

citibank
CITIBANK, N.A. BR. #784
511 2ND STREET PIKE
SOUTHAMPTON, PA 18966

For Solid Waste Permit App - PA DEP

Robert Van Naard

⑈001090⑈ ⑆021272655⑆ 7594666658⑈

CONFIDENTIAL

NEW GENERAL SOLID WASTE PERMIT APPLICATION

PRODUCTION OF RENEWABLE CLEAN FUEL AND ELECTRICITY FROM MUNICIPAL SOLID WASTE AND SEWAGE SLUDGE AS WELL AS RECYCLABLE MATERIALS

ENERGY PRODUCTION PROCESS

DELTA THERMO ENERGY, A, LLC
PROJECT LOCATION: 112 W. UNION STREET ALLENTOWN, PENNSYLVANIA

SUBMITTED TO:

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
CENTRAL OFFICE
14th FLOOR RACHEL CARSON STATE OFFICE BUILDING
P.O. BOX 8472
HARRISBURG, PENNSYLVANIA 17105-8472

SUBMITTED BY:

IES ENGINEERS
1720 WALTON ROAD
BLUE BELL, PENNSYLVANIA 19422

IES PROJECT NO. EV120894.03
DECEMBER 2012

TABLE OF CONTENTS

1.0 PROJECT BACKGROUND

Delta Thermo Energy, A, LLC (DTE) is proposing to construct a new Energy Production facility in the City of Allentown, Lehigh County, Pennsylvania. It is proposing to utilize municipal solid waste (MSW) and sludge from the City of Allentown's Wastewater Treatment Plant (Allentown WWTP) as feedstock to produce a fuel to generate 3 to 4 gross megawatts (MW) of electricity. DTE has leased an undeveloped parcel of land located at 112 Union Street in Allentown, Pennsylvania, where the facility will be constructed. The facility will encompass a new building structure to house the operation, an associated driveway, and truck scales.

The purpose of this facility will be to produce commercial quantities of a renewable clean fuel, and electricity through the on-site conversion of MSW and sludge. The facility will use presorting of the MSW to increase the recovery of recyclables and state-of-the-art technology (named the Resource Recycling System, RRS) to convert MSW and sludge to a renewable clean fuel that will be combusted using an improved Stoker type of combustor to generate steam, which in turn will power a turbine to generate a "green," renewable source of electricity. This particular type of technology to produce the renewable clean fuel has not yet been deployed in the United States and hence the Allentown plant will be the first of its kind in the United States. While this plant will be a commercial operation, it will also be used to collect valuable data for research purposes. The research derived from this plant can be used to improve the current design, improve on the overall process, and design the next generation plants. The process will then be marketed by DTE for use in other parts of Pennsylvania and other states and other countries.

The proposed plant will be constructed to include a laboratory and control system to monitor plant parameters that will provide valuable research data for design and development purposes.

This process has several distinct solid waste unit operations all of which work together to supply the Resource Recycling System (RRS) with raw MSW and sludge. The following unit operations are part of the process: the sorting and conversion of the MSW and sludge into a renewable clean fuel product; the storage of the renewable fuel product; the combustion of the fuel product on site; the generation of electricity on site (steam turbine); the removal of recyclable and unsuitable materials from the site; and the resizing (shredding) of MSW items. These unit operations all work together to produce electricity. When the facility is down for maintenance or for any other reason, the on-site materials will be transferred to appropriate sites under the Energy Production Facility's Contingency Plan.

The purpose of this application is to request the Department to create a new General Permit that will allow DTE to operate its facility from the solid waste permitting perspective. DTE has included with this application details on the process, the descriptions of the waste streams, and the materials for potential beneficial use, and the required Department forms.

2.0 PROCESS DESCRIPTION

DTE proposes to utilize 120 tons per day of MSW and 47 tons per day of WWTP sludge to generate between 3 and 4 gross megawatts (MW) of electricity for internal use and sale. The process is described below:

The process flow diagram is provided in Figure 1.

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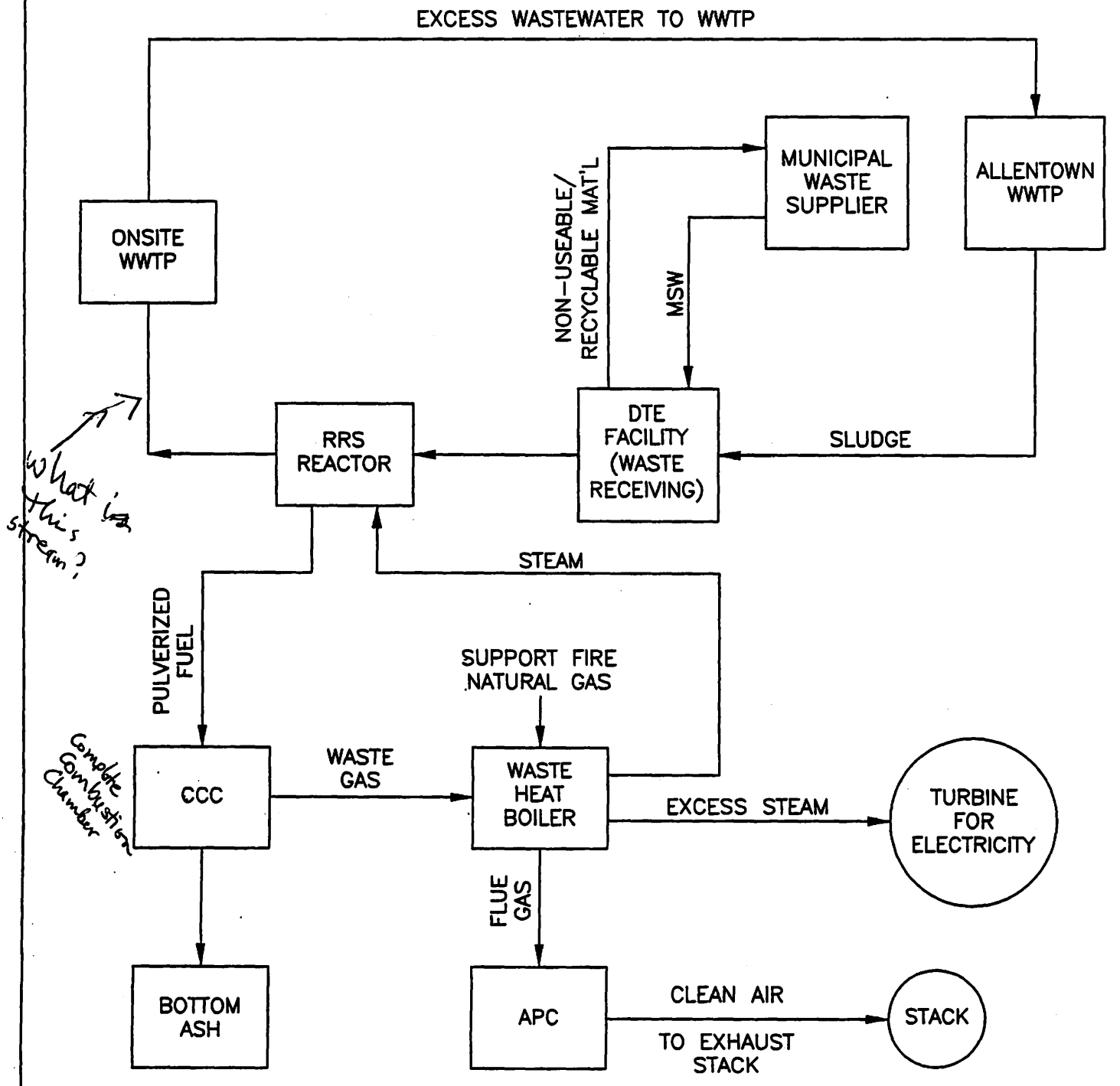


IES ENGINEERS	FIGURE 1
	DELTA THERMO ENERGY, A, LLC. ALLENTOWN, PA
Date 11-15-12 Plan EV120894.03	ENERGY PRODUCTION PROCESS

From a solid waste perspective, there are a number of unit operations that need to be incorporated into the proposed general permit. Each distinct solid waste unit operation is described in detail below:

MSW Delivery

Under normal operating conditions, 120 tons of MSW will be delivered daily to the facility six days per week. The waste will arrive by trucks of various capacities and will end up on the tipping floor located inside of the building. The waste will be accumulated and sorted temporarily for bulk items until it is moved to the sorting, sizing, shredding and transferring operation. DTE estimates that there will be approximately 600 tons (5 days of feedstock) of unprocessed MSW on site at any one time during normal operating conditions.

goes to bonding worksheet calc. Is this the max qnt. they can possibly have on site.

Sorting, Sizing and Transferring

After the MSW is delivered, and the bulk items are separated and removed, it will be manually sorted to remove metals and glass. Bulk deliveries of MSW (such as mattresses, furniture, white goods) will be periodically delivered to the facility. All white good materials (refrigerators, ranges, and other appliances) will be sent offsite for recycling. Any refrigerant-containing equipment, such as refrigerators and window air conditioning units, will have the refrigerant recovered by an EPA-certified technician at the offsite recycling facility. Oversized waste, such as mattresses, furniture and other non-recyclable bulk items, will be resized by the primary shredder and disposed of. After all of the MSW is sorted, it will be shredded by the secondary shredder at the end of the sorting line.

Sludge Delivery

Sludge will be delivered to the plant by truck from the City of Allentown's wastewater treatment plant; which is adjacent to DTE's proposed facility. Approximately 47 tons per day will be delivered to the plant via truck. Sludge will be mixed with the sorted and resized MSW at this point. DTE estimates that there will be 50 tons (about 1 day of feedstock) of unmixed sludge on site at any one time during normal operations that will be accumulated in the facility's receiving bunker.

Storage of unprocessed MSW and Sludge will be kept to a minimum since it is the objective of the plant to process incoming waste the same day or within a 24-hour period.

Sludge and MSW Mixing

Shredded, resized, and sorted MSW and sludge will be mixed together during the loading process of the RRS as the feedstock is moved by crane (two loads of MSW for each of sludge) to the next step, which converts this mixture into the renewable fuel.

Conversion of MSW and Sludge into Renewable Clean Fuel

Inside the RRS, the MSW and sludge will be thermally treated by injecting hot pressurized steam into the RRS to create Pulverized Fuel (PF). Excess wastewater extracted from the MSW and sludge RRS in the treatment process will be treated and returned to the Allentown WWTP. Prior to release to the Allentown WWTP, all process wastewater generated from the RRS and other operations will be treated to meet the applicable standards (BOD, COD, TSS and TKN) as required by the City of Allentown. Current engineering estimates indicate that the facility will generate approximately 20,000 gallons of wastewater per day.

Storage and Sale of Fuel Product — they will need to just do storage

DTE expects to convert MSW and sludge batches 24 hours per day, 7 days per week. The capacity of the RRS unit will allow DTE to convert more PF than is required to generate the specified quantity of electricity at the plant. The excess PF will be baled and stored in vacuum sealed bags and stacked within the building processing area during Sundays when no feedstock is received. DTE may also use this excess supply to fuel the Complete Combustion Chamber (CCC) during scheduled maintenance activity on the RRS, as necessary or during times of reduced incoming waste streams, which is potentially possible on a seasonal basis.

Not the intention.

Combustion of Renewable Clean Fuel

The PF will feed into the CCC. The CCC is an innovative variation of the Stoker-fired boiler design. However, it is neither a moving nor a vibrating grate combustor. DTE's system instead uses a combination of feed speed and air injection systems (over- and under-fire air) for combustion. The CCC is specially designed to provide improved combustion efficiency and lower emissions.

The CCC will be constructed of steel, lined with refractory, and heated directly by a fuel gas burner system. The natural gas burner system will only be used during startup. Natural gas will be used to bring the CCC up to the required operating temperature, which will take approximately 8 hours and will occur at the initial startup and after maintenance activities. The PF will be burned above approximately 1,652 °F (900 °C). The resulting ash will be discharged by a conveyor system, while the resulting off-gas will be transferred to the post-combustion chamber. In the post-combustion chamber, the residence time of the off-gas will be $\geq$ 2 seconds. The chamber is safe to operate above 1,652 °F (900 °C). The fuel gas burner will be designed to meet regulations regarding ignition and monitoring devices, automatic firing devices, UV flame monitoring devices, etc. Both the CCC and post-combustion chamber will be equipped with local process measuring, control equipment, and combustion air fans. The outlet of the post-combustion chamber connects to the inlet for the boiler.

The PF is combusted in the Complete Combustion Chamber (CCC). The heat generated from this process is used to generate steam in the boiler.

Generation of Electricity

The flue gas from the CCC will be supplied to the water-tube boiler for the purpose of steam generation. The boiler will be sized to supply enough steam to power a turbine to generate 3 to 4 megawatts of electricity, and it will be insulated with mineral wool matting and covered with galvanized steel.

The water-steam circuit and associated systems, which consist of the steam system, steam turbo set, condensation and feed water system, and cooling system, will be used to generate power for the power supply network needs. The steam generation rates from the boiler to the turbine will be 36,300 lb/hr (16,465 kg/hr), and from the boiler to the RRS will be 8,530 lb/hr (3,870 kg/hr). The steam will also be used to drive the thermal process in the RSS system.

The superheated steam generated as a result of the combustion process will be used to power a turbine generator set that generates electricity. This process will generate a net positive quantity of energy. Excess electricity will be sold to the electrical grid and is a source of renewable energy.

Bottom Ash Residue

Upon the startup of this facility, DTE will analyze the bottom ash residue for heavy metals and other constituents for three to six months. During this time the bottom ash will be disposed of at approved facilities. If the chemical analyses of the bottom ash indicate that it can be used for beneficial purposes such as in construction materials and highway roadways, then DTE will request the Department to amend the General Permit to incorporate the use of bottom ash for beneficial use.

Wastewater Treatment System/Sludge Disposal

The wastewater generated from the RRS and other operations will be treated in the on-site wastewater treatment plant before discharging it to Allentown's Wastewater Treatment Plant. The purpose of this treatment will be to comply with Allentown's effluent limits, including BOB, COD, and TKN.

Upon startup of the facility, DTE will analyze the wastewater to determine whether it can be used as a liquid fertilizer for non-food agricultural purposes. If it can, the DTE will request the Department to amend the General Permit to incorporate the use of the wastewater for beneficial use.

Air Pollution Control System

DTE is proposing to install a dry scrubber system using hydrated lime for the removal of acid gases, including sulfur dioxide (SO_2), hydrochloric acid (HCl), and hydrofluoric acid (HF), and granulated activated carbon (GAC) for the removal of mercury (Hg) and dioxins/furans. The dry

scrubbing system will consist of a contactor vessel and a baghouse system. The waste material collected from the baghouse will be disposed of offsite at approved facilities.

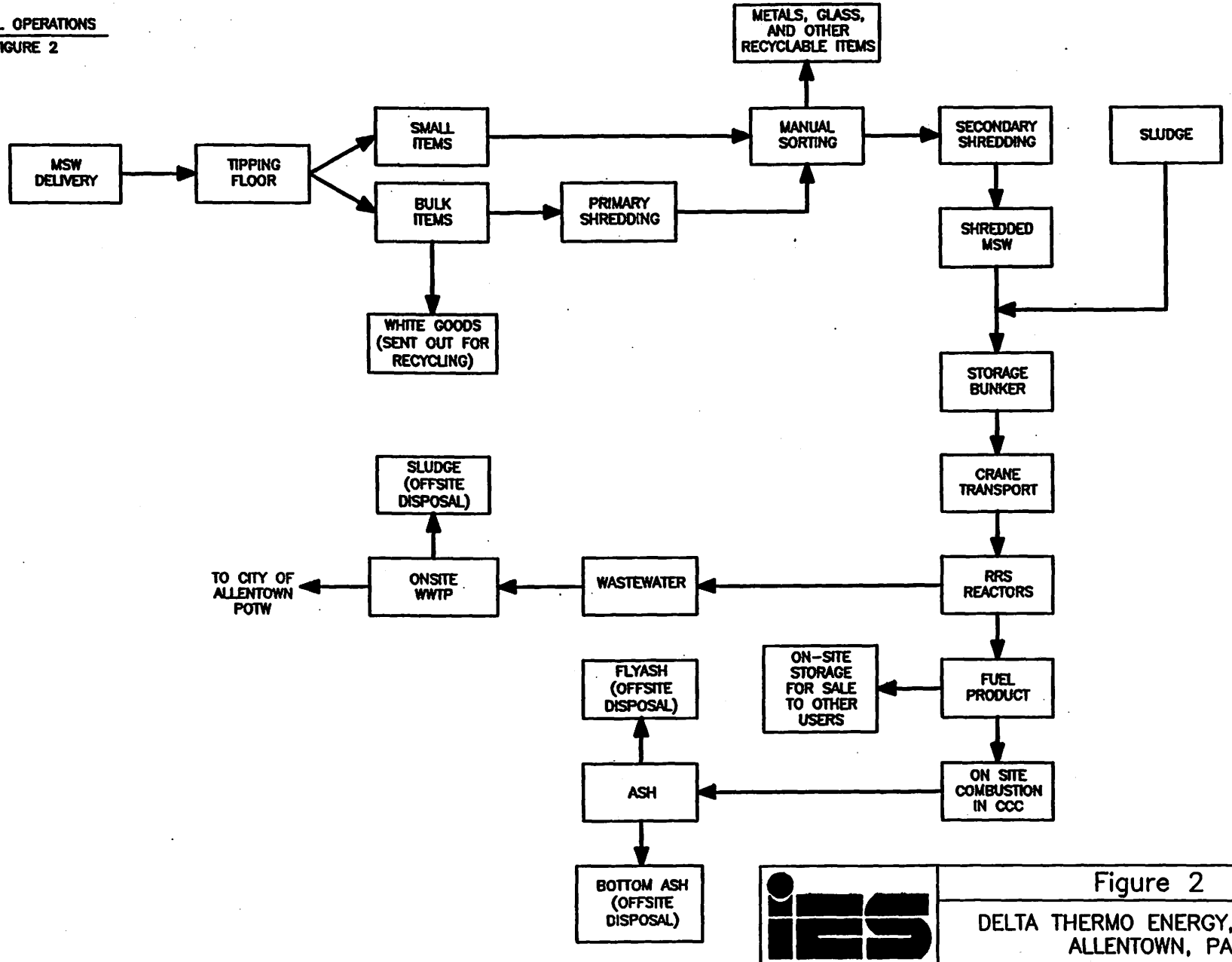
Shut-Down or Maintenance Activities

During shut-down or maintenance conditions, the on-site materials will be transferred to appropriate sites under the facility's Contingency Plan; however, the plant may operate up to the fuel production step if the downtime will not be long.

Waste flow diagrams are presented below in Figures 2 and 3.

NORMAL OPERATIONS

FIGURE 2



ENGINEERS

Date: 11-15-12 File: EV120894.03

Figure 2

DELTA THERMO ENERGY, A, LLC.
ALLENTOWN, PA

SOLID WASTE UNIT
PROCESSES SHT. 1 OF 2

SHUT DOWN	MAINTENANCE ACTIVITIES

FIGURE 3

IES ENGINEERS	Figure 3
	DELTA THERMO ENERGY, A, LLC. ALLENTOWN, PA
Date: 11-15-12 File: EV120894.03	SOLID WASTE UNIT PROCESSES SHT. 2 OF 2

Process Contingencies

The plant will be equipped with a number of features that provide redundancy. Some of these process contingencies are as follows:

- Dual Complete Combustor Chambers (CCC): DTE will install two CCCs so that the plant can continue to generate electricity in the event that one is offline for maintenance activities.
- Dual Resource Recycling Systems (RRS): Five RRSs will be installed. This will allow operations to process the MSW and sludge.
- DTE has signed a waste management contract with waste haulers to dispose of the waste at appropriate facilities if the plant will be offline for an extended period of time.

Ultimate Waste Disposal Plan

Waste in this process is defined as materials that are sent out for recycling (glass and metals) that have additional value for use off site. Under normal plant operations all of the wastes will be recycled (as a result of the initial hand sorting activities).

The wastewater generated from the RRSs from WWTP sludge, MSW, and other operations will be treated and filtered using DTE's Water Treatment System (WTS). The majority of this wastewater will be sent back to the City of Allentown's Wastewater Treatment Plant located next door to the DTE plant.

Most of the recyclable materials contained in the MSW will continue to be sorted and recycled by the City of Allentown Recycling Plant. However, there will be a certain quantity of recyclable materials from the collection of garbage canisters located around the City that will produce some recyclables. DTE will sort these and sell them in the market place to an industrial recycling center for further processing. DTE will advise the City of Allentown about these quantities so that they may be incorporated into their recycling efforts and reports.

3.0 DESCRIPTION OF WASTE, FUEL PRODUCTS, AND MATERIAL TO BE BENEFICIALLY USED

Municipal Solid Waste Data

The United States Environmental Protection Agency (EPA) uses two methods to characterize the composition of MSW. The first method is by material classification (paper and paperboard, yard trimmings, food scraps, plastics, metals, glass, wood, rubber, leather and textiles, and other). The second is by segregating it into major product categories. The product-based categories are containers and packaging; nondurable goods (e.g., newspapers); durable goods (e.g., appliances); food scraps; and other materials.

DTE's analysis suggests that the City of Allentown's MSW does not differ substantially from the typical breakdown of the MSW materials generated across the United States. The Allentown MSW composition (by weight) will likely look as follows:

- Paper and paperboard make up the largest component: ~32.7%
- Yard trimmings are the second-largest: ~12.8%
- Food scraps are third: ~12.5%
- Glass, metals, plastics, and wood each make up about ~5% to ~12% of the total.
- Rubber, leather, and textiles combined make up ~7.6%
- Miscellaneous waste represents ~3% of the total.

National average composition data is useful as a comparison to the City of Allentown's MSW. While there are regional variations, DTE does not expect these variations to be drastic, but DTE understands the main reasons for these to occur, including:

- Variations in climate and local waste management practices, which can influence generation of yard trimmings.
- The per capita variance in generation of some products, such as newspapers and telephone directories, depending upon the average size of the publications.
- Level of commercial activity in a community.
- Changes in economic activity, which can affect waste generation in the residential and commercial sectors of Allentown.
- Local and state regulations and practices, etc.

Table 1										
Materials Generated[1] in the Municipal Waste Stream, 1960 to 2010										
EPA Office of Resource Conservation and Recovery[2]										
	Percent of Total Generation									
Materials	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2007**	**2008**	**2009**	**2010**
Paper and Paperboard	34.0	36.6	36.4	34.9	36.2	33.6	32.2	30.8	28.1	28.5
Glass	7.6	10.5	10.0	6.3	5.3	5.0	4.9	4.8	4.8	4.6
Metals										
Ferrous	11.7	10.2	8.3	6.1	5.8	6.0	6.2	6.3	6.5	6.8
Aluminum	0.4	0.7	1.1	1.3	1.3	1.3	1.3	1.4	1.4	1.4
Other Nonferrous	0.2	0.6	0.8	0.5	0.7	0.7	0.7	0.8	0.8	0.8
Total Metals	*12.3*	*11.4*	*10.2*	*7.9*	*7.8*	*8.1*	*8.3*	*8.5*	*8.8*	*9.0*
Plastics	0.4	2.4	4.5	8.2	10.5	11.6	12.0	12.0	12.2	12.4
Rubber and Leather	2.1	2.5	2.8	2.8	2.8	2.9	2.9	3.0	3.1	3.1
Textiles	2.0	1.7	1.7	2.8	2.8	2.9	2.9	3.0	3.1	3.1
Wood	3.4	3.1	4.6	5.9	5.6	5.9	5.9	6.1	6.4	6.4
Other[3]	0.1	0.6	1.7	1.5	1.6	1.7	1.8	1.9	1.9	1.9
Total Materials in Products	62.0	68.8	71.8	70.3	73.7	73.2	73.0	72.1	70.7	71.2
Other Wastes										
Food Scraps	13.8	10.6	8.6	11.5	12.3	12.7	12.8	13.3	14.1	13.9
Yard Trimmings	22.7	19.2	18.1	16.8	12.6	12.7	12.8	13.1	13.6	13.4
Miscellaneous Inorganic Wastes	1.5	1.5	1.5	1.4	1.4	1.5	1.5	1.5	1.6	1.5
Total Other Wastes	38.0	31.2	28.2	29.7	26.3	26.8	27.0	27.9	29.3	28.8
Total MSW Generated - %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes:

[1] Generation before materials recovery or combustion. Does not include construction & demolition debris, industrial process wastes, or certain other wastes

[2] Source: Franklin Associates, A Division of ERG. Obtained from USEPA Municipal Solid Waste Generation, Recycling, and Disposal in the United States Tables and Figures for 2010. December 2011

[3] Includes electrolytes in batteries, fluff pulp, feces, and urine in disposable diapers

The disposed MSW composition in Pennsylvania on a statewide basis is presented below. This data only includes trends observed in 2001 and is close to the same distribution contained in EPA's data.

Table 2
Pennsylvania State-Wide Aggregate Disposed MSW Composition[1]

Material	Percent Disposed
Paper	33.3
Glass	3
Metals	5.4
Plastics	11.3
Organics	34.2
Inorganics	12.7

Notes:
[1] From Pennsylvania Department of Environmental Protection State-wide MSW Characterization Study, by R.W. Beck, 2001.

Overall, the waste will not vary considerably over time whether viewed from a national basis or a state-wide basis. DTE has the ability in its process to sort the waste stream prior to conversion to fuel product. DTE will remove metals, glass, and other materials that are undesirable for use in the fuel production process.

Records of analytical evaluations conducted on waste pursuant to the residual waste regulations and this permit will be kept by DTE at DTE's place of business and will be available to the Department for inspection. At a minimum, these records will include information on the dates of testing, each parameter tested, the results, the laboratory, sampling procedures, analytical methodologies, and the person collecting the sample. The waste analysis information will be retained by DTE for a minimum of 5 years after the analyses are performed.

DTE has performed a laboratory analysis of the Allentown MSW and sludge mixture to determine the heating value. The analysis resulted in a lower heating value (LHV) of 9,308 Btu/lb. DTE has decided to use a heating value of 8,200 Btu/lb for design purposes.

The study also concludes there are two clear trends for the future:

1. The Btu content per ton of MSW is steadily increasing over time.

2. The percentage of MSW's total energy content that comes from biogenic resources is decreasing, while the percentage of energy content from non-biogenic resources is increasing.

DTE assumes these trends will continue throughout the duration of the project (and expects the chemical analyses to confirm the caloric values of the Allentown MSW to be higher than those indicated above when they are calculated during the Basic Engineering Phase of the project. Of course, these values will be used as input for the calculations to be performed during the Detailed Engineering Phase of the project.

Any chemical analysis required will be performed by a laboratory that is in compliance with the Pennsylvania Environmental Laboratory Accreditation Act of 2002, No. 90, 27 PA C.S. §4141 *et. seq.*

The waste stream for this process will be composed of MSW from the City of Allentown and sludge from the City of Allentown WWTP. Hazardous waste is not expected from this waste stream. In the event that hazardous waste is discovered in any of the waste streams, appropriate action will be taken. DTE will have plant protocols in place to manage this situation, if it arises.

DTE will complete additional chemical analysis during the basic engineering design phase of the project. Additionally, during operations, samples will be taken periodically to analyze the composition of the MSW.

- The chemical composition of municipal solid waste in the City of Allentown has not been analyzed to date.
- Based on physical observations, the composition appears to be typical to the MSW found in other cities around the country.

Although significant variability in the MSW stream is not expected, DTE's unique process of converting MSW and sludge into a clean pulverized fuel (PF) is robust enough to operate under various waste stream conditions. The fuel conversion process operates under high pressure and high temperature. Known as hydrothermal decomposition process, it essentially chemically "cracks" the chemical bonds and reduces the MSW into its elemental components. In simple terms, the fuel will be consistent, with the exception of BTU content, regardless of the composition of the MSW feedstock – once the MSW is cracked, the process is essentially utilizing the carbon and hydrogen fractions. In other words, carbon is carbon, and hydrogen is hydrogen, no matter what source or fraction it arrives in.

Sludge Data

DTE will obtain sludge from the City of Allentown's WWTP. Currently, the City of Allentown contracts with a private company who land applies its sludge for disposal. DTE will mix the sludge with MSW and produce PF.

DTE will complete additional chemical analysis during the basic engineering design phase of the project.

- DTE has completed three analyses of the composition of the sewage sludge provided by the City of Allentown.

  a. The first was analyzed in the USA at a laboratory in Texas.

  b. The second was analyzed in Japan at a laboratory in Tokyo, Japan.

  c. The third was analyzed in Germany at the Petro Lab, GmbH in Speyer, Germany. The results are included in this application.

- Essentially the three tests provided identical results.

Sludge:

The chemical analysis results are summarized in the table below:

Analysis; in accordance to the regulations for sewage sludge				
Parameter (english)		**Method**	**Dimension**	**Result**
Dry residue (105°C)		DIN EN 12880	Weight %	25.30
pH-value (at 21,0°C)		DIN EN 12176		7.80
alkaline active components	CaO	AbfKlärV Anh. 1*	Weight %, dry	5.19
organic matter (ignition loss of dry residue at 550°C)		DIN EN 12879	Weight %, dry	70.20
Nitrogen sum	N (sum)	DIN ISO 11261	Weight %, dry	4.60
Potassium oxid	K_2O	DIN 38406/13	Weight %, dry	0.10
Calcium oxid	CaO	DIN EN ISO 7980	Weight %, dry	6.35
Magnesium oxid	MgO	DIN EN ISO 7980	Weight %, dry	0.38
Phosphorus pentoxide	P_2O_5	DIN 38414/12	Weight %, dry	4.60
Ammonium-Nitrogen	NH_4*N	DIN 38406/5	Weight %, dry	0.70
Adsorbable organic halogens (AOX)	Cl	DIN 38414/18	mg/kg, dry	525.00

The analysis of additional parameters, including low heating value (LHV) (dried sludge) and content of hydrogen, are shown in the table below:

Analysis; additional parameters				
Parameter (english)		Method	Dimension	Result
Ash (650°C)		DIN 51719	Weight %	26.60
Low heating value (free of water)	Hu (wf)	DIN 51900-1,3	MJ/kg	15.66
Content of hydrogen (only for calculation)	H	DIN 51721	Weight %	5.69

Table 3 provides data on the heating value of the Allentown MSW and sludge mixture. This analysis was performed by a German lab at STW University. The laboratory specializes in determining heat content and is a premier lab used by all the coal fired power plants in Germany and other European countries.

Table 3
Allentown MSW and Sludge Mix Laboratory German Laboratory Results

Parameter (English)		Method used?	Dimension	Result		
Moisture (at delivery)			Weight %	15.41		
pH-value (at 70°F)				ND		
Dry residue (220°F)		drying 24 hours at temperature	Weight %	88.10	dry	
organic matter (ignition loss of dry residue at 1,020°F)			Weight %	76.70	dry	
Ash (at 1,560°F)			Weight %	11.90	dry	
Low heating value (water free)		LHV (water free)		9038 BTU/lb	21.02	MJ/kg, dry

Elemental Analysis:			water free			
Carbon	C		Weight %	51.60		
Oxygen	O		Weight %	27.57		
content of hydrogen (only for calculation)	H		Weight %	7.48		
Nitrogen	N		Weight %	1.29		
Sulphur	S		Weight %	0.246		
Chlorine (organic and anorganic)	Cl		Weight %	0.180		

Ash slumping temperature		range	1150 to 1200 °C			

Analysis; specified parameter in accordance to the list						
Parameter (English)		Method used?	Dimension	Result (mg/kg)		
Nitrogen organic	N organic		g/kg, dry	12000.00		
Sodium	Na		g/kg, dry	800.00		
Ferreous	Fe		g/kg, dry	2300.00		
Aluminum	Al		g/kg, dry	1890.00		
Manganese	Mn		g/kg, dry	83.90		
Arsenic	As		g/kg, dry	0.700		
Molybdenum	Mb		g/kg, dry	<1		
Selenium	Se		g/kg, dry	<1		

TABLE 3 (Continued)						
Chemical Analysis:						
Parameter (English)		**Method used?**	**Dimension**	**Result (mg/kg)**	**Limit Min**	**Limit Max**
alkaline active components	CaO		Weight %, dry	26.30		
Nitrogen sum	N (sum)		Weight %, dry	N/A		
Potassium oxide	K_2O		Weight %, dry	1.08		
Calcium oxide	CaO		Weight %, dry	26.30		
Magnesium oxide	MgO		Weight %, dry	3.74		
Phosphorus pentoxide	P_2O_5		Weight %, dry	11.00		
Ammonium-Nitrogen	NH_4 *N		Weight %, dry	N/A		
Adsorbable organic halogens (AOX)	Cl^-		mg/kg, dry	N/A		
Aqua regia dissolution		**Method used?**		**Result**		
Lead	Pb		mg/kg, dry	15.50		
Cadmium	Cd		mg/kg, dry	<0,5		
Chrome sum	Cr		mg/kg, dry	15.30		
Copper	Cu		mg/kg, dry	268.00		
Nickel	Ni		mg/kg, dry	8.92		
Mercuric	Hg		mg/kg, dry	0.20		
Zinc	Zn		mg/kg, dry	304.00		

Pulverized Fuel Composition Data

DTE has conducted several laboratory analyses of the MSW and sludge after they were converted into the PF product. This information was obtained while DTE operated a pilot scale RRS reactor at the Atlantic County Utilities Authority for a 180-day period in the first half of 2012. In this pilot scale program, DTE utilized MSW and sludge from the City of Allentown and created PF product on a small scale. Samples of the PF fuel were analyzed in laboratories to determine chemical composition, heat content and ash percentage, *et cetera*. In addition to the City of Allentown, DTE also collect samples of MSW and sludge from several other municipalities. In total, DTE conducted 16 tests over a 180-day period. The laboratory results indicated that a fairly consistent product was produced over the entire test period.

Table 4
Allentown Mix Laboratory Analysis

Fuel Analysis				
Delta Thermo Energy				
Client Sample ID:	**UNITS**	**ALLENTOWN MIX**	**ALLENTOWN MIX**	**ALLENTOWN MIX**
Lab Sample ID:		**L-4278514-1**	**L-4073723-1**	**L-4073753-1**
Date Sampled:		**8/3/2012**	**2/29/2012**	**3/1/2012**
Matrix:		**Solid**	**Solid**	**Solid**
Metals Analysis				
Aluminum	mg/kg	1890	764	5200
Antimony	mg/kg	---	10.3	2.17
Arsenic	mg/kg	ND	10	4.14
Beryllium	mg/kg	---	ND	0.225
Calcium	mg/kg	24600	16200	19000
Cadmium	mg/kg	0.304	ND	3.67
Chromium	mg/kg	15.3	64.9	13.9
Copper	mg/kg	268	141	591
Iron	mg/kg	2280	---	---
Potassium	mg/kg	938	2790	1970
Magnesium	mg/kg	1030	2630	3950
Manganese	mg/kg	83.9	221	120
Molybdenum	mg/kg	---	9.52	6.54
Sodium	mg/kg	638	638	785
Selenium	mg/kg	---	ND	2.57
Thallium	mg/kg	---	21.2	ND
Nickel	mg/kg	8.92	97.2	13.2
Lead	mg/kg	15.5	ND	32.4
Zinc	mg/kg	304	420	884
Mercury	mg/kg	0.196	---	0.705

Table 4 (continued)

Client Sample ID:	UNITS	ALLENTOWN MIX	ALLENTOWN MIX	ALLENTOWN MIX
Lab Sample ID:		L-4278514-1	L-4073723-1	L-4073753-1
Date Sampled:		8/3/2012	2/29/2012	3/1/2012
Matrix:		Solid	Solid	Solid
Gas Chromatography				
Aroclor-1016	ug/kg	ND	—	—
Aroclor-1221	ug/kg	ND	—	—
Aroclor-1232	ug/kg	ND	—	—
Aroclor-1242	ug/kg	ND	—	—
Aroclor-1248	ug/kg	ND	—	—
Aroclor-1254	ug/kg	ND	—	—
Aroclor-1260	ug/kg	ND	—	—
General Chemistry				
Nitrate	mg/kg	ND	—	11.5
Ash	mg/kg	173000	—	—
Alkalinity	mg/kg	7388	—	—
BTU/lb	btu/lb	4720	—	6880
Tot Ext Organic Halides	mg/kg	ND	—	—
Kjeldahl Nitrogen	mg/kg	21900	—	22700
Moisture %	%	15.41	—	—
Organic Nitrogen	mg/jg	21600	—	—
Total Nitrogen	kg/kg	21900	—	—
Ammonia Nitrogen as N	mg/kg	281	—	2660
Phosphorus, Total	mg/kg	10200	—	22100
pH, Lab	std units	7.26	—	—
Total Solids %	%	84.59	—	68.41
Total Volatile Solids %	%	69.95	—	—

Table 5

Fuel Analysis Results							
Delta Thermo Energy							
		PULVERIZED MATERIAL		SOLIDS	SOLIDS	SOLIDS	SOLID
Lab Sample ID:		JA97407-1	JA97601-2	JA99469-2	JA99469-2R	JA99950-2	JB208-2
Date Sampled:		1/18/2012	1/20/2012	2/15/2012	2/15/2012	2/22/2012	2/24/2012
Matrix:		Solid	Solid	Solid	Solid	Solid	Solid
General Chemistry							
Heat Content, BTU	BTU/lb	9920	8750	2240	12200	7460	24100
Solids, Percent	%	33.5	27.7	38.4	-	28.3	36.5
Average BTU/lb =	10,529*						

* Includes German laboratory analysis results of 9,038 btu/lb

Supporting laboratory reports are included in Attachment 17.

Bottom Ash Data

Generally, the chemical and physical characterization of ash will depend on the compositions of the raw MSW, the operational conditions, the type of combustion chamber, and the air pollution control system design. The following parameters will be monitored on a periodic basis to determine the quality of the ash and to assist in determining its beneficial use in other applications off site, in the future.

Physical properties

- Particle size distribution
- Moisture content
- Bulk density
- Compressive strength
- Permeability
- Porosity

Chemical properties

- Chemical composition
- Loss on ignition
- Heavy metals and leachability
- Organic constituents
- Chloride content

Table 6

Proposed Bottom Ash Limits

Constituent	Total (mg/kg)[1,2]	Leachable (mg/L)[1,2,3]
Aluminum	---	5.0
Arsenic	41	1.25
Cadmium	39	0.25
Chromium (total)	1,000	1.25
Copper	1,500	32.5
Iron	---	7.5
Lead	200	1.25
Manganese	---	15
Nickel	420	2.5
Selenium	6	1.0
Zinc	2,800	125

Notes:

[1] On a dry weight basis

2 These determinations may be based upon the 90 percent upper confidence level using *"Test Methods* for Evaluating Solid Waste, Physical/Chemical Methods" (EPA SW-846) as guidance for statistical treatment of data.

[3] The toxicity characteristic leaching procedure (EPA Method 1311) of the synthetic precipitation leaching procedure (EPA Method 1312) or other leaching procedure approved by the Department shall be used for all leaching analyses.

Upon facility startup, DTE will analyze the bottom ash residue for heavy metals and other constituents for three to six months to determine if the material meets the limits presented above. During this time the bottom ash will be disposed of at approved facilities. If the chemical analyses of the bottom ash indicate that it can be used for beneficial purposes such as in construction materials and highway roadways, then DTE will do so.

Site Wastewater Treatment Plant Effluent Data

DTE's proposed plant will generate approximately 20,000 gallons per day of process wastewater. The wastewater will be discharged to the City of Allentown's WWTP after treatment at the DTE facility. The City of Allentown limits the discharge to the following concentrations or less:

Table 7

Pollutant	Concentration (mg/L)
BOD	3,000
COD	3,000
TKN	3,000

The process wastewater stream is expected to have high nitrogen concentrations. After the startup of facility operations and the collection of sufficient data, DTE will determine whether its wastewater can be used for beneficial use as fertilizer for non-food agricultural products. If it can, DTE will do so.

In anticipation of the potential beneficial use of its wastewater, DTE collected wastewater samples during its pilot-scale test. The results of this analysis are summarized in Table 6 below:

Table 8

Wastewater Laboratory Analysis Results										
Delta Thermo Energy										
		Before Treatment						After Treatment		
Client Sample ID:	UNITS	ACUA	ACUA-WATER	WATER	WATER	WATER	WATER SAMPLE	POST TREATMENT	WATER CLEANED	CLEANED WATER 3
Lab Sample ID:		JA97601-1	JA99181-2	JA99469-1	JA99950-1	JB208-1	JA97404-1	JB287-1	JB375-1	JB483-1
Date Sampled:		1/20/2012	2/10/2012	2/15/2012	2/22/2012	2/24/2012	1/18/2012	2/27/2012	2/28/2012	2/29/2012
Matrix:		Water	Water	Water	Water	Water	Water	Water	Water	Water
Metals Analysis										
Cadmium	ug/l	<30 [a]	<15	<15	<30	<30 [a]	-	<3.0	<3.0	<3.0
Copper	ug/l	230 [a]	264	<50	<100	<100 [a]	-	15.8	19.2	20.4
Lead	ug/l	50.0 [a]	52	<15	<30	<30 [a]	-	<3.0	<3.0	<3.0
Mercury	ug/l	<1.6 [a]	<1.6 [a]	<1.6 [a]	<1.6 [a]	<0.80 [a]	-	<0.80 [a]	<0.20	<0.20
Nickel	ug/l	339 [a]	343	118	222	<100 [a]	-	46	54.3	53.9
General Chemistry										
BOD, 5 Day	mg/l	12400	16100	7080	7680	4530	12400	<200	<330	<330
Chemical Oxygen Demand	mg/l	35400	35500	13100	18300	14200	34800	212	165	200
Nitrogen, Total Kjeldahl	mg/l	-	-	638	752	-	-	-	-	-
Solids, Total Suspended	mg/l	2740	157	140	1320	445	1080	20	14	56.7

Table 9
QC Laboratories Results

Wastewater Analysis		
Delta Thermo Energy		
Client Sample ID:	**UNITS**	**WWTP-WASTEWATER**
Lab Sample ID:		**L-4062775-1**
Date Sampled:		**2/29/2012**
Matrix:		**Water**
Metals Analysis		
Aluminum	mg/L	ND
Antimony	mg/L	ND
Arsenic	mg/L	0.0037
Beryllium	mg/L	0.000248
Cadmium	mg/L	ND
Chromium	mg/L	0.0025
Copper	mg/L	0.022
Magnesium	mg/L	8.06
Manganese	mg/L	0.0992
Thallium	mg/L	ND
Nickel	mg/L	0.051
Lead	mg/L	ND
Zinc	mg/L	0.0406
Mercury	mg/L	ND

Supporting laboratory reports are included in Attachment 17.

The water discharged to the WTS will be bacteria free, since all bacteria will be killed inside the RRS. However, the RRS hydrothermal treatment system produces highly concentrated organic wastewater, much of which is already contained inside the sewage sludge water cells. The WTS's technology is covered under several international and U.S. patents. The technology has already been applied to more than 20 water treatment sites.

Traditional biological wastewater treatment technology can treat the wastewater, but it may require more than 10 days of hydraulic residence time (HRT) due to the high organic

concentration. The construction cost and required area for the plant would need to be drastically increased. Instead, DTE will use an innovative compact system that offers very stable treatment efficiencies.

The WTS contains a set of tanks and reactors that will treat the water before it is discharged to the City of Allentown's Wastewater Treatment Plant (WWTP) meeting the City's ordinance and other applicable norms.

The main components of this system include the following:

- Centrifugal Dehydrator
- Flow Level Tank and Reactor
- Biological Treatment Tank
- Flocculation Tank
- Final Discharge Tank
- Defoamer Tank, etc.

The key functions of the above components are:

- Flow control and water quality equalization
- Flocculation reaction
- Separation of solids and liquid
- Concentration and reduction of the high concentrations of dissolved pollutants (BOD, COD, etc.)
- Storage of treated water
- Adjustment of pH
- Foam removal, etc.

References

1. "Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy," Energy Information Administration; Office of Coal, Nuclear, Electric and Alternate Fuels; U.S. Department of Energy, Washington, DC 20585, May 2007.

2. Municipal Solid Waste Generation, Recycling, and Disposal in the United States Tables and Figures for 2010. U.S. Environmental Protection Agency Office of Resource Conservation and Recovery. December 2011. Available: http://www.epa.gov/osw/nonhaz/municipal/pubs/2010_MSW_Tables_and_Figures_508.pdf

3. Pennsylvania Department of Environmental Protection State-wide Municipal Solid Waste Characterization Study. R.W. Beck. 2001. Available: http://www.dep.state.pa.us/dep/deputate/airwaste/wm/recycle/waste_comp/Exec_Sum.pdf

4.0 DEPARTMENT REQUIRED FORMS AND DOCUMENTS

The following forms and related attachments are included for the Department's review.

- Checklist
- Attachment 1: General Information Form for a Residual or Municipal Waste General Permit: 2540-PM-BWM0515
- Attachment 2: Form B – Professional Certification: 2540-PM-BWM0358
- Attachment 3: Form E-GP Contractual Consent of Landowner: 2540-PM-BWM0217
- Attachment 4: Form HW-C – Compliance History: 2540-FM-BWM0058
- Attachment 5: Form 20 – Application for a Municipal or Residual Waste General Permit: 2540-PM-BWM0397
- Attachment 6: Cultural Resource Notification
- Attachment 7 – Delta Thermo Energy, A, LLC, Limited Liability Company Certificate of Formation

Section E:

- Attachment 8 – PNDI Environmental Review Receipt
- Attachment 9 – Facility Map
- Attachment 10 – Location Map – USGS 7.5 Minute Quadrangle
- Attachment 11 – Proof of Contact with Host Municipality and County
- Attachment 12 – Contingency Plan
- Attachment 13 – Air Permit Exemption – RFD Approval
- Attachment 14 – Traffic Impact Analysis

Form X – Radiation Protection Plan: 2540-FM-BWM0430

- Attachment 15 – Form X & Radiation Action Plan
- Attachment 16 – Bonding Worksheets – Processing Facility

2540-PM-BWM0515c 3/2006
Checklist

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

GENERAL INFORMATION FORM -- AUTHORIZATION APPLICATION FOR A RESIDUAL OR MUNICIPAL WASTE GENERAL PERMIT APPLICATION APPLICANT'S CHECKLIST

This final checklist is to assist the applicant in assuring that all requests for responses, contacts, additional documentation, etc. have been addressed. Please check the following list to make sure that you have included all the required information. Failure to provide all of the requested information will delay the processing of the application and may result in the application being placed on hold with no action, or will be considered withdrawn and the application file closed. This applicant's checklist need not be returned to DEP with your completed application.

REQUIREMENTS

☒ **1. ATTACHMENTS.** The completion of the GIF may require the submission of some or all of the following. Where appropriate, include the appropriate attachment(s) with the completed GIF.

- ☒ **a) Site Information, Written Directions to Site** - Attach additional sheets as necessary.
- ☒ **b) Facility Information, Latitude/Longitude** – Attach additional sheets as necessary.
- ☒ **c) Project Information, Project Description** – Attach additional sheets as necessary.
- ☒ **d) Project Information, Time Schedules** – Attach additional sheets as necessary.
- ☒ **e) Coordination Information** - If land is disturbed, it may be the applicant's responsibility to also notify the PA Historical and Museum Commission, Bureau of Historic Preservation, 400 North Street, Floor 2, Harrisburg, PA 17120-0093, (717) 787-3362.

  PHMC notification is required for:

  1) purposes of construction activities for Individual NPDES permits disturbing 10 or more acres; and
  2) Erosion & Sediment Control permits.

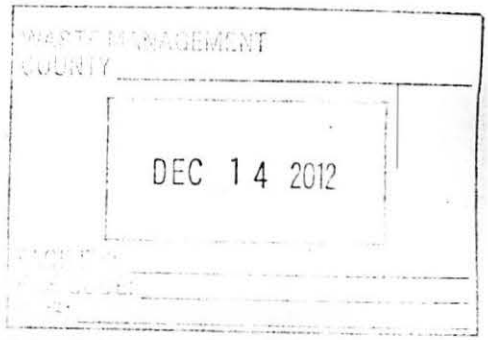
  General NPDES permits disturbing 10 or more acres are exempt from PHMC notification. For additional information, see Cultural Resource Notice instructions to determine whether submission of information to PHMC is required for this permit application.
- ☒ **f) Coordination Information, Question 15.0.2** – Attach copy - Public Water Supplier's Agreement Letter to Serve the Project.

☒ **2. CONTACTS MADE.** According to information provided in the Coordination Information section, the appropriate DEP office may need to be contacted; as well as some agencies outside DEP. See the Instructions document for appropriate contact per coordination question.

In addition to contacts referenced above, prior to proceeding with any project, DEP encourages applicants to be in touch with municipal and county governments to get information on and secure, if possible, any local permits or approvals that might be required for the project. By doing so, potential conflicts at the local level can be resolved prior to application submission to DEP.

☒ **3. BEFORE YOU DIG -- CONTACT.** Pennsylvania One Call System at 1-800-242-1776.

☒ **4. APPLICATION SUBMITTED.** Application has been completed and properly signed according to instructions and type codes; and will be submitted to the appropriate DEP office.



ATTACHMENT 1

GENERAL INFORMATION FORM

2540-PM-BWM0515b 3/2006
Form

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

GENERAL INFORMATION FORM -- AUTHORIZATION APPLICATION FOR A RESIDUAL OR MUNICIPAL WASTE GENERAL PERMIT APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any municipal or residual general permit application being submitted to the Department.

Related ID#s (If Known)		DEP USE ONLY
Client ID#	APS ID#	Date Received & General Notes
Site ID#	Auth ID#	
Facility ID#		

CLIENT INFORMATION

DEP Client ID#	Client Type / Code
	NPACO

Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#
Delta Thermo Energy,A, LLC	80-0494550	

Individual Last Name	First Name	MI	Suffix	SSN
Van Naarden	Robert			
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**

Mailing Address Line 1	Mailing Address Line 2
One Northbook Dr., 1210 Northbrook Corp. Center, Ste 100	

Address Last Line – City	State	ZIP+4	Country
Trevose	PA	19053	USA

Client Contact Last Name	First Name	MI	Suffix
Van Naarden	Robert		

Client Contact Title	Phone	Ext
CEO, Delta Thermo Energy, A, LLC	215 205-0700	

Email Address	FAX
rvannaarden@deltathermo.com	

SITE INFORMATION

DEP Site ID#	Site Name
	Delta Thermo Energy, A, LLC - Allentown Energy Production Facility

EPA ID#	Estimated Number of Employees to be Present at Site	21

Description of Site
To produce commercial quantities of renewable clean fuel and electricity as well as recyclable materials.

County Name	Municipality	City	Boro	Twp	State
Lehigh	Allentown	☒	☐	☐	
County Name	**Municipality**	**City**	**Boro**	**Twp**	**State**
		☐	☐	☐	

Site Location Line 1	Site Location Line 2
112 West Union Street	

Site Location Last Line – City	State	ZIP+4
Allentown	PA	18102

Detailed Written Directions to Site
From Rt 22, take exit for Mac Arthur Road South (Rt 145). Rt 145 will turn into 7th street. Travel approximately 2 miles and make a left on West Union Street. Travel approximately 0.8 miles, site will be on your right.

Site Contact Last Name	First Name	MI	Suffix
Van Naarden	Robert		

Site Contact Title	Site Contact Firm
CEO	Delta Thermo Energy, A, LLC

Mailing Address Line 1	Mailing Address Line 2
One Northbook Dr., 1210 Northbrook Corp. Center, Ste 100	

Mailing Address Last Line – City	State	ZIP+4
Trevose	PA	19053

Phone	Ext	FAX	Email Address
215 205-0700			rvannaarden@deltathermo.com

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) **6-Digit Code** (Optional)
562213

WASTE MANAGEMENT
COUNTY
DEC 14 2012

Client to Site Relationship
LESOP

FACILITY INFORMATION

Modification of Existing Facility

		Yes	No
1.	**Will this project modify an existing facility, system, or activity?**	☐	☒
2.	**Will this project involve an addition to an existing facility, system, or activity?**	☐	☒

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

	Facility Type	DEP Fac ID#		Facility Type	DEP Fac ID#
☒	Air Emission Plant		☐	Land Recycling Cleanup Location	
☐	Beneficial Use (water)		☐	MineDrainageTrmt/LandRecyProjLocation	
☐	Captive Hazardous Waste Operation		☒	Municipal Waste Operation	
☐	Coal Ash Beneficial Use Operation		☐	Public Water Supply System	
☐	Coal Mining Operation		☐	Radiation Facility	
☐	Commercial Hazardous Waste Operation		☐	Residual Waste Operation	
☐	Encroachment Location (water, wetland)		☐	Storage Tank Location	
☐	Erosion & Sediment Control Facility		☐	Water Pollution Control Facility	
☐	Industrial Minerals Mining Operation		☐	Other:	

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
CNTR	40	36	17	75	27	26

PROJECT INFORMATION

Project Name
Allentown Energy Production Facility

Project Description
To obtain a new general solid waste permit for the energy production facility.

Project Consultant Last Name	First Name	MI	Suffix
Tucci	Michael	J	

Project Consultant Title	Consulting Firm
Project Manager	IES Engineers, Inc

Mailing Address Line 1	Mailing Address Line 2
1720 Walton Road	

Address Last Line – City	State	ZIP+4
Blue Bell	PA	19422-2305

Phone	Ext	FAX	Email Address
610-828-3078	238	610-828-7842	MTuccir@iesengineers.com

1. **Is this application for an authorization type on the list of authorizations affected by the land use policy?** ☐ Yes ☒ No
   Note: If "Yes", you must complete the General Information Form (8000-PM-IT0001) instead of this form.

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form, if applicable.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 and 2.0 below.

If the activity will not be a mining project, skip questions 1.0 and 2.0 and begin with question 3.0.

1.0	**Is this a coal mining project?** If "Yes", complete GIF (8000-PM-IT0001) instead of this form.	☐	Yes	☒	No
2.0	**Is this a non-coal (industrial minerals) mining project?** If "Yes", complete GIF (8000-PM-IT0001) instead of this form.	☐	Yes	☒	No
3.0	**Will your project, activity, or authorization have anything to do with a well related to oil or gas production, site development for such activity, or the waste from such a well?** If "Yes", compete GIF (8000-PM-IT0001) instead of this form.	☐	Yes	☒	No
4.0	**Will the project involve a construction activity that results in earth disturbance?** If "Yes", specify the total disturbed acreage. (DEP Use/4x66) **4.0.1 Total Disturbed Acreage** approximately 5 acres	☒	Yes	☐	No
5.0	**Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?** (DEP Use/4x66)	☐	Yes	☒	No

6.0	**Will the project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?** If "Yes", discuss in *Project Description*. (DEP Use/4x62)	☐	Yes	☒	No
7.0	**Will the project involve the construction and operation of industrial waste treatment facilities?** (DEP Use/4x62)	☒	Yes	☐	No
8.0	**Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations?** If "Yes", complete GIF (8000-PM-IT0001) instead of this form.	☐	Yes	☒	No
9.0	**Is this project for the beneficial use of biosolids for land application within Pennsylvania?** If "Yes" indicate how much (i.e. gallons or dry tons per year). (DEP Use/4X62) **9.0.1 Gallons Per Year (residential septage)** _____ **9.0.2 Dry Tons Per Year (biosolids)**	☐	Yes	☒	No
10.0	**Does the project involve construction, modification or removal of a dam?** If "Yes", complete GIF (8000-PM-IT0001) instead of this form.	☐	Yes	☒	No
11.0	**Will the project interfere with the flow from, or otherwise impact, a dam?** If "Yes", complete GIF (8000-PM-IT0001) instead of this form.	☐	Yes	☒	No
12.0	**Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)?** If "Yes", identify each type of emission followed by the amount of that emission. (DEP Use/4x70) **12.0.1 Enter all types & amounts of emissions; separate each set with semicolons.** See Attachment 13	☒	Yes	☐	No
13.0	**Is an on-site drinking water supply (well), other than individual house wells, proposed for your project?** If "Yes", complete GIF (8000-PM-IT0001) instead of this form.	☐	Yes	☒	No
14.0	**Will your project involve purchasing water in bulk, excluding during the construction period?** If "Yes, name the provider. Also, indicate the daily number of employees or guests served. (DEP Use/4x81) **14.0.1 Provider's Name** _____ **14.0.2 Number of Employees/Guests**	☐	Yes	☒	No
15.0	**Is your project to be served by public water supply?** If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project. (DEP Use/4x81) **15.0.1 Supplier's Name** City of Allentown **15.0.2 Letter of Approval from Supplier is Attached**	☒ ☐	Yes Yes	☐ ☒	No No
16.0	**Will this project involve a new or increased drinking water withdrawal from a stream or other water body?** If "Yes", provide name of stream. (DEP Use/4x81) **16.0.1 Stream Name**	☐	Yes	☒	No
17.0	**Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste?** If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed. (DEP/Use4x32) **17.0.1 Type & Amount** Municipal - 120 tpd; WWTP sludge - 47 tpd	☒	Yes	☐	No
18.0	**Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?** (DEP Use/48y1)	☐	Yes	☒	No
19.0	**Does your project involve installation of a field constructed underground storage tank?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. (DEP Use/2570) **19.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
20.0	**Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. (DEP Use/2570) **20.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No

21.0	**Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. (DEP Use/2570) **21.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
22.0	**Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. (DEP Use/2570) **22.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Michael J. Tucci

Signature	Title	Date
	PROJECT MANAGER	12/10/2012