City of Palo Alto, California Energy/Compost Feasibility Study

Economic Evaluations & Tipping Fee Projections First Operating Year - - 2015

Scenario 1:

Lower Cost Dry Anaerobic Digestion (AD) Technologies Electricity Production

(Public ownership & financing at below-market interest rates; 15% construction grant; no site rent; CO₂ "carbon adder" costs included; 15% contingency added to export costs)

1. Alternative 1

Case 1a - - Food scraps, yard trimmings and biosolids processed by dry anaerobic digestion (AD) at a facility at the Palo Alto Landfill (PALF) site. Separate AD cells for food scraps/yard trimmings and bisolids All AD gas processed at PALF.

Case 1b - - Food scraps and yard trimmings processed by dry anaerobic digestion, biosolids processed by wet anaerobic digestion; all at a facility at the PALF site. All AD gas processed at PALF.

Case 1c - - Food scraps and yard trimmings processed by dry anaerobic digestion at a facility at the PALF, biosolids processed by wet anaerobic digestion at the Palo Alto wastewater treatment plant (RWQCP). All AD gas processed at PALF. Case 1d - - Food scraps and yard trimmings processed by dry anaerobic digestion at a facility at the PALF. Food scraps and yard trimmings gas only processed at PALF. Biosolids incinerated at RWQCP, with ash transported to/disposed of at Kettleman Hills Landfill. Existing incinerator replaced by new fluidized bed incinerator in 2030.

2. Alternatives 2 and 2a

Case 2 - - Food scraps taken to and processed at new San Jose AD facility (Zanker). Yard trimmings taken to SMaRT, transferred to and processed at Gilroy composing facility (ZBest). All biosolids incincerated at RWQCP. Existing incinerator replaced by fluidized bed incinerator in 2030. Biosolids incinerator ash transported to and disposed of at Kettleman Hills Landfill.

Case 2a - - Same as Case 2, except biosolids processed via wet AD facility at RWQCP.

3. Alternatives 3 and 3a

Case 3 - - Food scraps taken to San Jose transfer facility, transferred to and processed at Gilroy composting facility (ZBest). Yard trimmings taken to SMaRT, transferred to and processed at Gilroy composting facility (ZBest). All biosolids incinerated at RWQCP. Existing incinerator replaced by fluidized bed incinerator in 2030. Biosolids incinerator ash transported to and disposed of at Kettleman Hills Landfill.

Case 3a - - Same as Case 3, except biosolids processed via wet AD facility at RWQCP.

Summary of Projections: Scenario 1 - - Lower Cost Dry AD Options - - Electricity Production - - 2015 First Year of Operation

	Case 1a		Case 1c	Case 1d
Alternative 1 Cases	Food Scraps, Yard Trimmings	Case 1b	Food Scraps, Yard Trimmings	Food Scraps, Yard Trimmings
AD Facility Project Development &	& Biosolids Dry AD	Food Scraps, Yard Trimmings	Dry AD @ PALF	Dry AD @ PALF
Cost & Revenue Factors	(In Separate Cells) @	Dry AD; Biolsolids Wet AD	Biosolids Wet AD @ RWQCP	Biosolids Incinerated @ RWQCP
oost a Nevende Factors	Palo Alto Landfill	All @ PALF	Biosolius Wet AB @ KWQOI	Biosonas momeratea e Rivigor
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AD Project Ownership				
Project Financing & Ownership	Public	Public	Public	Public
1 Toject i mancing & Ownership	rubiic	1 dblic	r ublic	T ublic
AD Facility Capacities (First Year)				
Yard Trimmings (Tons/Year)	21,000	21,000	21,000	21,000
Food Scraps (Tons/Year)	14,000	14,000	14,000	14,000
Biosolids - (Tons/Year @ 26.5% Solids)	27,000	27,000	27,000	27,000
Materials Processed (Tons/Year)	62,000	62,000	62,000	62,000
Materials Processed (Tons/Day@365 Days/Year)	170	170	170	170
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AD Facility Capital Costs				
City Planning, Procurement & Project Oversight	\$750,000	\$750,000	\$750,000	\$750,000
Permitting, Design & Construction	\$39,890,205	\$68,671,945	\$67,692,629	\$26,549,910
Total Debt Incurred	\$44,197,337	\$75,709,990	\$74,641,970	\$29,599,736
Grant Amount	\$6,096,031	\$10,413,292	\$10,266,394	\$4,094,986
Equity Amount	\$0	\$0	\$0	\$0
Total Project Cost	\$50,293,367	\$86,123,282	\$84,908,365	\$33,694,722
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AD Facility Annual Costs				
Year 1 Debt Service	\$3,453,889	\$5,982,791	\$5,898,393	\$2,285,383
Year 1 Operation & Maintenance (Inc. Equity IRR)	\$2,743,042	\$4,288,598	\$4,276,800	\$2,479,980
Total Year 1 Costs	\$6,196,931	\$10,271,389	\$10,175,193	\$4,765,363
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AD Facility Annual Revenues				
Year 1 Revenues (Energy, Materials)	\$1,800,591	\$2,064,555	\$2,064,555	\$1,237,148
Year 1 Other Revenues	\$69,078	\$119,656	\$117,968	\$45,708
Year 1 Tipping Fee Revenue Required	\$4,327,263	\$8,087,178	\$7,992,671	\$3,482,508
Incinerator Costs				
Year 1 Debt Service	\$0	\$0	\$0	\$0
Year 1 Operations & Maintenance	\$0	\$0	\$0	\$2,757,025
Total Year 1 Costs	\$0	\$0	\$0	\$2,757,025
Year 1 Project Costs (\$/Ton)	\$70	\$130	\$129	\$101
Year 20 Project Costs (\$/Ton)	\$34	\$71	\$71	\$441
NPV Project Costs Over Study Period	\$59,861,995	\$112,541,470	\$111,359,855	\$137,096,645

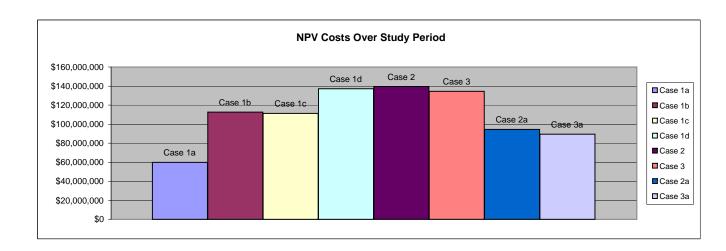
Summary of Projections: Scenario 1 - - Lower Cost Dry AD Options - - Electricity Production - - 2015 First Year of Operation

I	Alternative 2 (Food Scraps to San Jose Facility; Yard Trimmings to Gilroy Facility; Biosolids Incinerated @ RWQCP)
ı	Total Year 1 Cost
I	Year 1 Cost (\$/Ton)
I	Year 20 Cost (\$/Ton)
I	NPV Total Costs Over Study Period
I	Alternative 3 (Food Scraps, Yard Trimmings to Gilroy Facility; Biosolids Incinerated @ RWQCP)
ı	Total Year 1 Cost
I	Year 1 Cost(\$/Ton)
I	Year 20 Cost (\$/Ton)
ı	NPV Total Costs Over Study Period
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\$5,795,634
\$93
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\$486
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\$139,527,960
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\$89
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\$477
\$134,349,833

ternative 2a (Food Scraps to San Jose Facility; Yard Trimmings to Gilroy Facility; Biosolids Processed Wet AD @ RWQCP
Total Year 1 Cost
Year 1 Cost (\$/Ton)
Year 20 Cost (\$/Ton)
NPV Total Costs Over Study Period
ternative 3a (Food Scraps, Yard Trimmings to Gilroy Facility; Biosolids Processed Wet AD @ RWQCP
Total Year 1 Cost
Year 1 Cost (\$/Ton)
Year 20 Cost (\$/Ton)
NPV Total Costs Over Study Period

\$6,369,577
\$103
\$129
\$94,316,201
\$6,079,589
\$98
\$121
\$89,448,650



Palo Alto, California Energy/Compost Feasibility Study Legend and Instructions

1. Alternative 1

Case 1a - - Food scraps, yard trimmings and biosolids processed by dry anaerobic digestion (AD) at a facility at the Palo Alto Landfill (PALF) site. Separate AD cells for food scraps/yard trimmings and bisolids All AD gas processed at PALF.

Case 1b - - Food scraps and yard trimmings processed by dry anaerobic digestion, biosolids processed by wet anaerobic digestion; all at a facility at the PALF site. All AD gas processed at PALF.

Case 1c - - Food scraps and yard trimmings processed by dry anaerobic digestion at a facility at the PALF, biosolids processed by wet anaerobic digestion at the Palo Alto wastewater treatment plant (RWQCP). All AD gas processed at PALF. Case 1d - - Food scraps and yard trimmings processed by dry anaerobic digestion at a facility at the PALF. Food scraps and yard trimmings gas only processed at PALF. Biosolids incinerated at RWQCP, with ash transported to/disposed of at Kettleman Hills Landfill. Existing incinerator replaced by new fluidized bed incinerator in 2030.

2. Alternatives 2 and 2a

Case 2 - - Food scraps taken to and processed at new San Jose AD facility (Zanker). Yard trimmings taken to SMaRT, transferred to and processed at Gilroy composing facility (ZBest). All biosolids incincerated at RWQCP. Existing incinerator replaced by fluidized bed incinerator in 2030. Biosolids incinerator ash transported to and disposed of at Kettleman Hills Landfill.

Case 2a - - Same as Case 2, except biosolids processed via wet AD facility at RWQCP.

3. Alternatives 3 and 3a

Case 3 - - Food scraps taken to San Jose transfer facility, transferred to and processed at Gilroy composting facility (ZBest). Yard trimmings taken to SMaRT, transferred to and processed at Gilroy composting facility (ZBest). All biosolids incinerated at RWQCP. Existing incinerator replaced by fluidized bed incinerator in 2030. Biosolids incinerator ash transported to and disposed of at Kettleman Hills Landfill.

Case 3a - - Same as Case 3, except biosolids processed via wet AD facility at RWQCP.

4. Model Instructions

The Summary page presents the principal conclusions of the analyses. All inputs and assumptions are to be made ONLY on the Inputs page. The proforma pages present 20-year proformas for each of the Cases.

Except where expressly noted, all cost and revenue inputs are in 2010 dollars.

The model allows individual users to perform economic evaluations and tipping fee projections based upon inputs and assumptions other than those applied in the study.

Data is to be inputted ONLY in the rows and cells indicated iBOLD BLUE typeface. All other cells are calculations the should not be changed. Inputs should be made only on the Inputs page.

The model supports the comparative analysis of public vs. private project financing and ownership. The key to private ownership is the impact of the return on private equity (IRR) invested in the project. For modeling purposes, a 25% pre-tax IRR target is assumed.

The proforma pages include calculations only, based on assumptions made on the Inputs page. No inputs are provided for on the proforma pages.

The model assumes revenue-based (i.e. not general obligation-based) financing in all Cases.

May 31, 2011

	Case 1a		Case 1c	Case 1d
Enter Inputs in BLUE Cells Only	Food Scraps, Yard Trimmings & Biosolids Dry AD (In Separate Cells) @ Palo Alto Landfill	Case 1b Food Scraps, Yard Trimmings Dry AD; Biolsolids Wet AL All @ PALF	Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Wet AD @ RWQCF	Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Incinerated @ RWQCF
General Information				
1 Facility Throughput				
2 Yard Trimmings (Tons/Year) (2015)	21,000	21,000	21,000	
3 Yard Trimmings (Tons/Year) (2035)	21,000	21,000	21,000	,
4 Yard Trimmings Annual Increase	0.00%	0.00%	0.00%	0.00%
5 Food Scraps (Tons/Year) (2015)	14,000	14,000	14,000	14,000
6 Food Scraps (Tons/Year) (2035)	19,000	19,000	19,000	19,000
7 Food Scraps Annual Increase	1.79%	1.79%	1.79%	1.79%
8 Biosolids (Tons/Year) (2015)	27,000	27,000	27,000	
9 Biosolids (Tons/Year) (2035)	34,000	34,000	34,000	*
10 Biosolids Annual Increase	1.30%	1.30%	1.30%	1.30%
11 Facility Throughput (Tons/Year) (2015)	62,000	62,000	62,000	62,000
12 Facility Throughput (Average Tons/Day 365 Days/Year)	170	170	170	170
13 Discount Rate for NPV Analysis (Public Tax-Exempt Cost of Capital)	5.00%	5.00%	5.00%	5.00%
14 Inflation Rate / Construction (ENR Index	3.90%	3.90%	3.90%	3.90%
15 Inflation Rate / General Cost and Revenue Escalation (CPI	2.40%	2.40%	2.40%	2.40%
16 Year That Input Costs Are Determined (Unless Otherwise Noted)	2010	2010	2010	2010
17 Start of Construction	2013	2013	2013	2013
18 Operations Starting Year/Start of Study Period ("Year 1")	2015	2015	2015	
19 Study Period Final Year	2034	2034	2034	2034
20 Study Period for Projections (Years) 21 Project Financing & Ownership (Private, Public	20 Public	20 Public	20 Public	20 Public
Residuals Disposal & Materials Recovered or Produced				
22. Total Tananas Discound (Vaca 4)	ca ana	ca ana	02.000	52,000
22 Total Tonnage Processed (Year 1) 23 Residuals for Disposal (% of Throughput) Yard & Food	62,000 4.54%	62,000 4.54%	62,000 4.54%	62,000 4.54%
24 Residuals for Disposal (% of Throughput) Fard & Poot 24 Residuals for Disposal (tonsyear)	1,589	4.54% 1,589	4.54% 1,589	
25 Residuals for Disposal (6/16/16/16/16/16/16/16/16/16/16/16/16/16	0.00%	0.00%	0.00%	0.00%
26 Residuals for Disposal (tonsyear)	0.00%	0.5070	0.0070	0.00%
27 Ferrous Recovered (% of Throughput)	0.00%	0.00%	0.00%	0.00%
28 Ferrous Recovered (tons/year)	0.0070	0.0070	0.0070	0.0070
29 Aluminum Recovered (% of Throughput)	0.00%	0.00%	0.00%	0.00%
30 Aluminum Recovered (tons/year)	0	0	0	0
31 Glass Recovered (% of Throughput)	0.00%	0.00%	0.00%	0.00%
32 Glass Recovered (tons/year)	0	0	0	0
33 Plastics Recovered (% of Throughput)	0.00%	0.00%	0.00%	0.00%
34 Plastics Recovered (tons/year)	0	0	0	0
35 Compost Produced (% of Throughput) Yard & Fooc	29.98%	29.98%	29.98%	29.98%
36 Compost Produced (tons/year)	10,493	10,493	10,493	10,493
37 Compost Produced (% of Throughput) Biosolids	33.00%	0.00%	0.00%	0.00%
38 Compost Produced (tons/year	8,910	0	0	0

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Enter Inputs in BLUE Cells Only	Case 1a Food Scraps, Yard Trimmings & Biosolids Dry AD (In Separate Cells) @ Palo Alto Landfill	Case 1b Food Scraps, Yard Trimmings Dry AD; Biolsolids Wet AI All @ PALF	Case 1c Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Wet AD @ RWQCF	Case 1d Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Incinerated @ RWQCF
Capital Costs				
39 Dry AD Facility (2010) (1) 40 Permitting, Legal, Admin., Engr. 41 Structures 42 Equipment 43 Environmental Control Systems 44 Utilities 45 Ancillary Systems 46 Site Preparation (Above Ground) 47 Site Preparation (Excavation, Pilings, Caps) 48 Additional Up-Front Landfill Closure 49 Off-Site Environmental Mitigatior 50 Other 51 Contingency (On All Capital Cost Items Above Except 47	1,300,000 4,760,000 13,540,000 580,000 150,000 670,000 2,210,000 2,544,739 400,000 0 1,790,000 30%	1,300,000 4,760,000 8,540,000 580,000 150,000 670,000 2,210,000 2,222,739 400,000 0 1,440,000 15%	1,300,000 4,760,000 8,540,000 580,000 150,000 670,000 2,210,000 2,211,989 400,000 0 1,440,000 15%	1,300,000 4,760,000 7,240,000 580,000 150,000 670,000 2,210,000 2,211,989 400,000 0 1,350,000
52 Total Development/Construction Costs (2010) 53 Total Development/Construction Costs (Construction Year	35,564,739 39,890,205	25,280,239 28,354,880	25,269,489 28,342,823	23,670,989 26,549,910
54 Wet AD Facility & Delivery System (2010)				
55 Direct Costs for Constructior 56 Ancillary System (Biosolids Piping to AD Facility 57 Site Preparation (Excavation, Pilings, Caps) 58 Contingency (30% of Items 55, 56) 59 Permitting, Legal, Engr (15% of Items 55-58) 60 Construction Mgt (10% of Items 55-58) 61 Total Development/Construction Costs (2010) 62 Total Development/Construction Costs (Construction Year	0 0 0 0 0 0	21,589,500 283,000 322,000 6,561,750 4,313,438 2,875,625 35,945,313 40,317,065	21,589,500 0 0 6,476,850 4,209,953 2,806,635 35,082,938 39,349,806	0 0 0 0 0 0
Total AD Project Costs Total Project Construction Costs (Construction Year) City Implementation Costs (Planning, Procurement, Oversight) Total Project Planning, Development and Construction Cos	39,890,205 750,000 40,640,205	68,671,945 750,000 69,421,945	67,692,629 750,000 68,442,629	26,549,910 750,000 27,299,910
66 Multiple Hearth Incinerator Upgrade/Improvements (if Any) 67 Capital Costs (2010) 68 Capital Costs (\$015) 69 Capital Costs (\$1010) 70 Capital Costs (\$1010) 71 Annual Incinerator Throughput (TPY) (2015) 72 Annual Capital-Related Incinerator Costs (2015)	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 27,000 0

⁽¹⁾ Although the cost for Option 1a was affirmed by the Respondent, uncertainty remains regarding the reliability of costs for this Option.

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Enter Inputs in BLUE Cells Only	Case 1a Food Scraps, Yard Trimmings & Biosolids Dry AD (In Separate Cells) @ Palo Alto Landfill	Case 1b Food Scraps, Yard Trimmings Dry AD; Biolsolids Wet AI All @ PALF	Case 1c Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Wet AD @ RWQCF	Case 1d Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Incinerated @ RWQCF
<u>Financing</u>				
73 AD Project Grants and/or Equity 74 Grant Percent (% of Total Cost, Item 65)	15%	15%	15%	15%
75 Grant Value 76 AD Project Cost (Total Cost Less Grant)	6,096,031 34,544,174	10,413,292 59,008,653	10,266,394 58,176,234	4,094,986 23,204,923
77 Equity Percent	0%	0%	0%	0%
78 Equity Value Based on AD Project Cost Less Grant	0	0	0	0
79 Equity Pre-Tax IRR 80 Return of Equity Multiple (If Below "5," Increase IRR,Item 85)	25% 0.00	25% 0.00	25% 0.00	25% 0.00
Neturn of Equity wattiple (if Below 3, Increase INN, Item 63)	0.00	0.00	0.00	0.00
81 AD Project Debt Build-Up				
82 Debt Required for Construction (Facility Cost Less Grant and/or Equity)	34,544,174	59,008,653	58,176,234	23,204,923
83 Financing Soft Costs & Reserve Fund Factor	15%	15%	15%	15%
84 Financing Soft Costs & Reserve Fund (\$)	5,181,626	8,851,298	8,726,435	3,480,738
85 Subtotal: Total Debt Required Before Capitalized Interest	39,725,800	67,859,951	66,902,669	26,685,662
86 Capitalized Interest 87 Total Debt Required	4,471,536 44,197,337	7,850,039 75,709,990	7,739,301 74,641,970	2,914,074 29,599,736
88 Total AD Project Value (Debt + Grant + Equity)	50,293,367	75,709,990 86,123,282	74,641,970 84,908,365	29,599,756 33,694,722
89 Debt Amortization Term (Years)	20	20	20	20
90 Debt Interest Rate (Blended: I-Bank & Tax-Exempt Rates) ⁽²⁾	4.69%	4.82%	4.82%	4.55%
91 Debt Interest Rate Applied	4.69%	4.82%	4.82%	4.55%
92 Total Value (AD + Incinerator Upgrade/Improvements	50,293,367	86,123,282	84,908,365	33,694,722

⁽²⁾ Calculated as follows: 3.5% on California I-Bank loan (maximum lending, \$10 million), 5.0% tax-exempt market rate on balance of debt net of I-Bank loan.

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		Case 1a		Case 1c	Case 1d
	Enter Inputs in BLUE Cells Only	Food Scraps, Yard Trimmings & Biosolids Dry AD (In Separate Cells) @ Palo Alto Landfill	Case 1b Food Scraps, Yard Trimmings Dry AD; Biolsolids Wet AI All @ PALF	Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Wet AD @ RWQCF	Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Incinerated @ RWQCF
	Operation and Maintenance Costs AD Facility				
93	Dry AD Facility Annual O&M (2010)				
94	Labor	221,875	221,875	221,875	221,875
95	Utilities	221,010	221,070	221,070	221,070
96	Purchased Power (kWh/Year)	0	0	0	0
97	Purchased Power Cost (\$/kWh)	0.0000	0.0000	0.0000	0.0000
98	Annual Purchased Power Cost	29,594	29,594	29,594	29,594
99	Purchased Gas (MMBtu/Year)	0	0	0	0
100	Purchased Gas Cost (\$/MMBtu)	0	0	0	0
101	Annual Purchased Gas Cost	0	0	0	0
102	Water (MGY)	0	0	0	0
103	Water Cost (\$/MGY)	0	0	0	0
104	Annual Purchased Water Cost	0	0	0	0
105	Sewer Service (MGY)	0	0	0	0
106	Sewer Service Cost (\$/MGY)	0	0	0	0
107	Annual Sewer Service Cost	0	0	0	0
108 109	Chemicals Maintenance & Repair	346,438	372,346	372,346	291,137
110	Capital Repair & Replacement	296,096	296,096	296,096	291,137
111	On-Going Off-Site Mitigatior	230,030	230,030	230,030	230,030
112	Other (Equip. Leasing, Compost Treatment, Mgt. Fee, Admin., Ins.)	772,962	745,462	745,462	566,237
113	Contingency (On Items 94 - 112)	15%	10%	10%	10%
	Total Dry AD Facility Plant O&M (2010)	1,917,010	1,831,910	1,831,910	1,545,433
	Total Dry AD Facility Plant O&M (Escalated to Year 1	2,158,361	2,062,548	2,062,548	1,740,003
	Uncertainty remains regarding the reliability of costs for Option 1a.				
116	Wet AD Facility Annual O&M (2010)				
117	Labor	0	136,493	136,493	0
118	Utilities				
119	Purchased Power (kWh/Year)	0	0	0	0
120	Purchased Power Cost (\$/kWh)	0.0000	0.0000	0.0000	0.0000
121	Annual Purchased Power Cost	0	243,642	243,642	0
122	Purchased Gas (MMBtu/Year)	0	0	0	0
123	Purchased Gas Cost (\$/MMBtu)	0	0	0	0
124 125	Annual Purchased Gas Cost	0	0	0	0
125	Water (MGY) Water Cost (\$/MGY)		0	0	0
127	Annual Purchased Water Cost		0	0	0
128	Sewer Service (MGY)	0	0	0	0
129	Sewer Service (MGY) Sewer Service Cost (\$/MGY)		0	0	0
130	Annual Sewer Service Cost	0	0	0	0
131	Chemicals	0	0	O O	0
132	Maintenance & Repair	0	0	0	0
133	Capital Repair & Replacement	0	0	0	0
134	Contingency (On Items 117, 121)	10%	10%	10%	10%
	Total Wet AD Annual Facility O&M (2010)	0	418,148	418,148	0
136	Total Wet AD Facility Plant (O&M) (Escalated to Year 1	0	470,793	470,793	0

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	Case 1a		Case 1c	Case 1d
Enter Inputs in BLUE Cells Only	Food Scraps, Yard Trimmings & Biosolids Dry AD (In Separate Cells) @ Palo Alto Landfill	Case 1b Food Scraps, Yard Trimmings Dry AD; Biolsolids Wet AI All @ PALF	Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Wet AD @ RWQCF	Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Incinerated @ RWQCF
Operation & Maintenance Costs Other				
137 Other O&M Costs				
138 Digestate Hauling (Including 10% O&M Contingency	0	493,636	493,636	0
139 Digestate Disposal (Including 10% O&M Contingency	0	616,712	616,712	0
140 Annual Site Rent (2010)	1	1	1	1
141 Additional Annual Landfill Closure Costs (2010	0	0	0	0
142 Additional Annual Landfill Closure Costs (2015)	0	O	U	0
143 RWQCP Sludge Delivery to PALF Site				
144 Solid Cake Delivery to PALF Site (Ton/Year) (2010	0	0	0	0
145 Solid Cake Delivery Cost (\$/Ton) (2010)	0	0	0	0
146 Annual Cake Delivery Cost (2010)	53,000	0	0	0
147 Annual Cake Delivey Cost (2015) 148 Liquid Delivery to PALF Site (MGY) (2010	59,673	0	0	0
149 Liquid Delivery Cost (\$/MG) (2010)	l o	0	0	0
150 Annual Liquid Delivery Cost (2010)	ŏ	9,770	0	0
151 Annual Liquid Delivery Cost (2015)	0	11,000	0	0
152 Residue Disposal				
153 Kirby Canyon Tipping Fee (\$/ton) (2015)	41.37	41.37	41.37	41.37
154 Kirby Canyon Tipping Fee (\$/ton) (Escalated to Year 1)	41.37	41.37	41.37	41.37
155 Kirby Canyon Tipping Fee Annual Escalation	3.00%	3.00%	3.00%	3.00%
156 Kriby Canyon Landfill Tax (2015)	20.57	20.57	20.57	20.57
157 Residue Transportation (\$/ton) (2010)	10.00	10.00	10.00	10.00
158 Residue Transportation (\$/ton) (Escalated to Year 1)	11.26	11.26	11.26	11.26
159 Multiple Hearth Incinerator Operation & Maintenance				
160 Operation & Maintenance (\$/Ton) (2010)	0	0	0	91
161 Operation & Maintenance (\$/Ton) (2015)	0	0	0	102
162 Annual Incinerator Throughput (TPY) (2015) 163 Annual Incinerator Operation & Maintenance Cost (2015)	0	0	0	27,000 2,757,025
164 <u>CO₂ Adder</u>				
	30	20	20	20
165 CO ₂ Adder Cost/Ton (2007)	20 5 00%	20	20	20 5.00%
166 CO ₂ Adder Cost/Ton Annual Increase	5.00%	5.00%	5.00%	5.00%
167 CO ₂ Adder Cost/Ton (Year 1)	30	30	30	30
168 Net CO ₂ -e Emissions (Tons/Year)	13,831	14,234	14,207	21,106

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Enter Inputs in BLUE Cells Only	Case 1a Food Scraps, Yard Trimmings & Biosolids Dry AD (In Separate Cells) @ Palo Alto Landfill	Case 1b Food Scraps, Yard Trimmings Dry AD; Biolsolids Wet AL All @ PALF	Case 1c Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Wet AD @ RWQCF	Case 1d Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Incinerated @ RWQCF
Energy Products Prices (3) 169 Power Sales Basis (Gross Sold = 1, Net Sold = 2) 170 Gross Power Output (kWh/ton) Dry AD 171 Annual Gross Power Output (kWh/year) Dry AE 172 Net Power Output (kWh/ton) Dry AD 173 Annual Net Power Output (kWh/Year) for Sale Dry AE	1	1	1	1
	164	193	193	177
	10,138,590	11,989,155	11, 989,155	6,188,490
	0	0	0	0
	0	0	0	0
174 Gross Power Output (kWh/ton) Wet AD 175 Annual Gross Power Output (kWh/ton) Wet AD 176 Net Power Output (kWh/ton) Wet AD 177 Annual Net Power Output (kWh/Year) for Sale Wet AD 178 Total Power Sold Annually 179 Enegy Power Price (\$/kWh) (2015)	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	10,138,590	11,989,155	11,989,155	6,188,490
	0.1426	0.1426	0.1426	0.1426
180 Energy Power Price (\$/kWh) Applied to Proformas Levelized 181 Capacity Power Price (2015) (\$/kW-year) 182 Gas Sales Basis (Gross Sold = 1, Net Sold =2) 183 Gross AD Gas Output (MMBtu/ton) Food, Yarc 184 Annual Gross AD Gas Output (MMbtu) Food, Yard	0.1426	0.1426	0.1426	0.1426
	0.00	0.00	0.00	0.00
	0	0	0	0
	0	0	0	0
185 Gas Price (\$/MMbtu) 186 Annual Gross AD Gas Revenue Food, Yard 187 Gross AD Gas Output (MMBtu/ton) Biosolid: 188 Annual Gross AD Gas Output (MMbtu) Biosolids 189 Gas Price (\$/MMbtu) 190 Annual Gross AD Gas Revenue Biosolids	000000000000000000000000000000000000000	0 0 0 0	0 0 0 0	0 0 0 0 0
191 Net AD Gas Output (MMBtu/Ton) Food, Yarc 192 Annual Net AD Gas Output (MMbtu) Food, Yard 193 Gas Price (\$/MMbtu) 194 Annual Net AD Gas Revenue Food, Yard 195 Net AD Gas Output (MMBtu/Ton) Biosolids 196 Annual Net Gas Output (MMBtu/Ton) Biosolids 197 Gas Price (\$/MMbtu) 198 Annual Net AD Gas Revenue Biosolids 199 Annual AD Gas Revenue Food, Yard 200 Annual AD Gas Revenue Biosolids	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0 0 0

⁽³⁾ In this analysis and for this technology configuration, biogas from Wet AD is combined with biogas from Dry AD for power production. Thus, there are no separate calculations for Wet AD power generation.

Alternative Resources, Inc.

Enter Inputs in BLUE Cells Only	Case 1a Food Scraps, Yard Trimmings & Biosolids Dry AD (In Separate Cells) @ Palo Alto Landfill	Case 1b Food Scraps, Yard Trimmings Dry AD; Biolsolids Wet AL All @ PALF	Case 1c Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Wet AD @ RWQCF	Case 1d Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Incinerated @ RWQCF
Materials Products Prices				
201 Ferrous Price (\$/ton) (2010) 202 Ferrous Price (\$/ton) (Escalated to Year 1) 203 Aluminum Price (\$/ton) (2010) 204 Aluminum Price (\$/ton) (Escalated to Year 1) 205 Glass Price (\$/ton) (2010) 206 Glass Price (\$/ton) (Escalated to Year 1) 207 Plastics Price (\$/ton) (2010) 208 Plastics Price (\$/ton) (Escalated to Year 1) 209 Compost Price (\$/ton) (2010) Yard & Fooc 210 Compost Price (\$/ton) (Escalated to Year 1) 211 Compost Price (\$/ton) (2010) Biosolids 212 Compost Price (\$/ton) (Escalated to Year 1	0.00 0.00 0.00 0.00 0.00 0.00 0.00 30.00 33.78 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 30.00 33.78 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 30.00 33.78 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 30.00 33.78 0.00
Other Revenues				
213 Debt Service Reserve Fund Interest Rate 214 Debt Service Reserve Fund Interest Income ⁽⁴⁾	2.00% 69,078	2.00% 119,656	2.00% 117,968	2.00% 45,708

⁽⁴⁾ Debt service reserve fund interest is treated as annual revenue to the project (see individual proforma analyses) and, as a revenue item, is applied against costs. In Year 20, the debt service reserve fund is used to pay debt service.

Alternative Resources, Inc.

Enter Inputs in BLUE Cells Only Alternatives 2, 2a, 3 and 3a Inputs	Food Scraps, Yard Trimmings & Biosolids Dry AD (In Separate Cells) @ Palo Alto Landfill	Case 1b Food Scraps, Yard Trimmings Dry AD; Biolsolids Wet AL All @ PALF	Food Scraps, Yard Trimmings Dry AD @ PALF Biosolids Wet AD @ RWQCF	Food Scraps, Yard Trimmings Dry AD @ PALF
		1.11 5 1 1 1.21	Diodolida Wet AD & NWOF	Biosolids Incinerated @ RWQCF
		Transportation & Disposal Alternatives 2 and 3 & Alternatives 2a and 3a		
Alternative 2 (San Jose & Gilroy Facilities) (Including 15% Contingency)				
Food Scraps Transportation to San Jose AD Facility (\$/ton) (2010		2.99		
Food Scraps Processing at San Jose AD Facility (\$/ton) (2010		97.75		
Yard Trimmings Transportation to SMaRT (\$/ton) (2010)		2.30		
Yard Trimmings Transport to and Processing at Gilroy Composting	Facility (\$/ton) (2010	29.90		
Biosolids Incineration				
Labor		230,841	D	1
 O&M (Utilities, Polymer, Ash Disposal, Etc. Biosolids Incineration/Multiple Hearth Incinerator (Total Annual Cost 	a) (201(2,217,889 2,448,730	Biosolids Cost (\$/Ton): 91	1
Net CO2-e Emissions (Tons/Year)	s) (2010	2,446,730	91	1
5 Alternative 3 (Gilroy Facility) (Including 15% Contingency)		23,329		
Food Scraps Transportation to San Jose Transfer Facility (\$/ton) (20	10	2.99		
Food Scraps Transport to and Processing at Gilroy Composting Fac		80.50		
Yard Trimmings Transportation to SMaRT (\$/ton) (2010)	(Witori) (2010	2.30		
Yard Trimmings Transport to and Processing at Gilroy Composting	Facility (\$/ton) (2010	29.90	Biosolids Cost (\$/Ton):	1
Biosolids Incineration/Multiple Hearth Incinerator (Total Annual Costs) (20		2,448,730	91	1
Net CO2-e Emissions (Tons/Year)		22,716		1
Provided Bed Incineration (FBI) Costs (Alternatives 2 & 3)		· ·		
Construction Cost (2011) (Including 30% Contingency		152,166,300		_
Construction Cost (2030)		314,784,895	Biosolids Cost (\$/Ton)	1
Annual Debt Service		25,259,154	1101	j
FBI Operations and Maintenance Cost (2010) (Including 10% Conting	gency	2,713,700		
FBI Operations and Maintenance Cost (2031)		4,465,406		
Alternatives 2a and 3a (Alternatives 2 & 3 with Wet AD at RWQCP, no Incin	<u>eration</u>)			
Construction Cost (Construction Year		39,349,806		1
Annual Debt Service		3,075,069	Biosolids Cost (\$/Ton)	1
Wet AD Operation & Maintenance (2011)		418,148	129	1
? Total Cost		3,493,217		
Net CO2-e Emissions (Tons/Year) Alternative 2a Net CO2-e Emissions (Tons/Year) Alternative 3a		16,430 15,818		

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Case 1a Proforma Analysis

									u., 0.0											
Study Period Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Calendar Year	<u>2015</u>	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<u>Proforma</u>																				
Throughput and Residuals (Tons/Year)																				
Throughput and Nesiduals (1013/1ear)																				
Yard Trimmings	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000
Food Scraps	14,000	14,250	14,504	14,763	15,027	15,295	15,569	15,847	16,130	16,418	16,711	17,009	17,313	17,622	17,937	18,257	18,583	18,915	19,253	19,596
Yard Timmings & Food Scraps Annual Increase	0	0.7%	0.7%	0.7%	0.7%	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.9%
Biosolids	27,000	27,350	27,705	28,064	28,427	28,796	29,169	29,547	29,930	30,318	30,711	31,109	31,513	31,921	32,335	32,754	33,179	33,609	34,045	34,486 1.30%
Biosolids Annual Increase Total Tons to Facility Per Year	62,000	1.30% 62,600	1.30% 63,209	1.30% 63,827	1.30% 64,455	1.30% 65,091	1.30% 65,738	1.30% 66,394	1.30% 67,060	1.30% 67,736	1.30% 68,422	1.30% 69,119	1.30% 69,826	1.30% 70,543	1.30% 71,272	1.30% 72,011	1.30% 72,762	1.30% 73,524	1.30% 74,297	75,082
Food Scraps & Yard Trimmings Residuals	1,589	1,600	1,612	1,624	1,636	1.648	1,660	1,673	1,686	1.699	1,712	1,726	1,739	1,753	1,768	1,782	1,797	1.812	1,827	1.843
Biosolids Residuals (For Cost Projections)	1,509	1,000	1,012	1,024	1,000	0,040	1,000	1,073	1,000	1,033	1,712	1,720	1,739	1,733	1,700	1,702	1,737	1,012	1,027	0
Total Residuals for Disposal	1,589	1,600	1,612	1,624	1,636	1,648	1,660	1,673	1,686	1,699	1,712	1,726	1,739	1,753	1,768	1,782	1,797	1,812	1,827	1,843
·																				
Incinerator Throughput	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AD Costs																				
AD Debt Service																				_
Total Annual Debt Service	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	0
AD Operating Costs																				
Dry AD O&M	2,158,361	2,210,162	2,263,206	2,317,523	2.373.143	2.430.099	2.488.421	2,548,143	2.609.298	2.671.922	2.736.048	2.801.713	2.868.954	2.937.809	3.008.316	3.080.516	3.154.448	3.230.155	3.307.679	3,387,063
Wet AD O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual Site Rent	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Additional Annual Landfill Closure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residuals Disposal																				
Kirby Canyon Tipping Fee	41	43	44	45	47	48	49	51	52	54	56	57	59	61	63	64	66	68	70	73
Kirby Canyon Tipping Cost	65,737	68,193	70,745	73,399	76,159	79,028	82,011	85,114	88,340	91,696	95,187	98,819	102,597	106,527	110,617	114,873	119,302	123,911	128,708	133,702
Kirby Canyon Landfill Tax	32,686	32,919 12	33,157	33,399	33,645 12	33,896 13	34,151 13	34,410 13	34,674	34,943	35,217	35,496 15	35,780 15	36,068 15	36,362 16	36,661 16	36,966 16	37,276	37,591 17	37,912 18
Transportation to Kirby Canyon (\$/ton) Transportation to Kirby Canyon (\$/year)	11 17.891	18.451	12 19.030	12 19.629	20.248	20.889	21.551	22.236	14 22.944	14 23.677	14 24.435	25,220	26.032	26.871	27.741	28.640	29.571	17 30.534	31.532	32.564
Biosolids Delivery to PALF Site (Solid Cake)	59,673	61,105	62,571	64,073	65,611	67,185	68,798	70,449	72,140	73,871	75,644	77,460	79,319	81,222	83,172	85,168	87,212	89,305	91,448	93,643
Biosolids Delivery to PALF Site (Liquid)	00,070	01,100	02,571	0-7,070	00,011	07,100	00,730	0,440	0	0,071	70,044	0	75,515	01,222	00,172	00,100	07,212	00,000	0 1,440	0
Pre-Tax IRR Cash Flow Required	0	0	0	0	0	ő	0	0	0	0	0	0	0	0	0	0	0	ő	0	0
CO ₂ Adder	408,694	429,128	450,585	473,114	496,770	521,608	547,689	575,073	603,827	634,018	665,719	699,005	733,955	770,653	809,186	849,645	892,127	936,734	983,570	1,032,749
Total Operating Costs	2,743,042	2,819,959	2,899,295	2,981,138	3,065,576	3,152,705	3,242,621	3,335,426	3,431,225	3,530,129	3,632,252	3,737,713	3,846,637	3,959,152	4,075,394	4,195,504	4,319,626	4,447,915	4,580,529	4,717,634
Total AD Project Costs	6,196,878	6,273,794	6,353,129	6.434.970	6,519,407	6,606,534	6,696,448	6,789,251	6,885,048	6.983.950	7,086,071	7,191,530	7,300,452	7,412,965	7,529,205	7,649,312	7,773,433	7.901.719	8.034.331	4,717,544
•	5,125,512	-,,	2,000,120	2,121,212	-,,	-,,	-,,	-,,	2,222,212	2,222,222	1,000,01	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.,,	.,,	1,000,000	.,,	.,,	.,,.	-,,	.,,
AD Revenues																				
Energy Sale (Gross Production = 1, Net Production = 2)	1																			
Annual Power Output (kWh/Year) for Sale	10,138,590	10,236,705	10,336,293	10,437,375	10,539,974	10,644,115	10,749,820	10,857,114	10,966,022	11,076,567	11,188,776	11,302,675	11,418,289	11,535,644	11,654,768	11,775,688	11,898,432	12,023,029	12,149,505	12,277,892
Power Revenue (Energy)	1,446,168	1,460,164 0	1,474,369	1,488,787	1,503,422	1,518,277	1,533,354	1,548,659	1,564,193	1,579,962	1,595,967 0	1,612,214	1,628,705 0	1,645,444 0	1,662,436	1,679,684	1,697,192	1,714,965	1,733,005	1,751,319 0
Power Revenue (Capacity) Dry AD Power Revenue (Capacity) Wet AD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Revenue (Landfill)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Revenue (Food Scraps & Yard Trimmings)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Revenue (Biosolids)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ferrous Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aluminum Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glass Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plastics Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Compost Revenue Food Scraps & Yard Trimmings Compost Revenue Biosolids	354,422 0	365,521 0	368,159 0	370,845 0	373,579 0	376,361 0	379,193 0	382,076 0	385,010 0	387,997 0	391,037 0	394,131 0	397,281 0	400,487 0	403,750 0	407,071 0	410,452 0	413,893 0	417,395 0	420,960 0
·																				
Other Revenues	60.070	60.070	60.070	60.070	60.070	60.070	60.070	60.070	60.070	60.070	60.070	60.070	60.070	60.070	60.070	60.070	60.070	60.070	60.070	0
Debt Service Reserve Fund Interest	69,078	69,078	69,078	69,078	69,078	69,078	69,078	69,078	69,078	69,078	69,078	69,078	69,078	69,078	69,078	69,078	69,078	69,078	69,078	U
Total AD Annual Revenues	1,869,668	1,894,762	1,911,606	1,928,710	1,946,078	1,963,715	1,981,625	1,999,813	2,018,282	2,037,036	2,056,082	2,075,423	2,095,063	2,115,009	2,135,264	2,155,833	2,176,722	2,197,935	2,219,478	2,172,279
			==-:																	<i></i>
Net AD Annual Costs	(4,327,263)	(4,379,086)	(4,441,579)	(4,506,317)	(4,573,387)	(4,642,879)	(4,714,885)	(4,789,502)	(4,866,833)	(4,946,982)	(5,030,059)	(5,116,179)	(5,205,462)	(5,298,033)	(5,394,020)	(5,493,560)	(5,596,794)	(5,703,869)	(5,814,940)	(2,545,355)
NPV Net Annual Cost	(59,861,995)																			

Case 1a Proforma Analysis

								Proforma An	nalysis											
Study Period Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Calendar Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	2019	2020	<u>2021</u>	<u>2022</u>	2023	<u>2024</u>	<u>2025</u>	<u>2026</u>	2027	2028	2029	2030	<u>2031</u>	2032	2033	2034
Incinerator Costs																				
Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O&M Costs (Utilities, Polymer, Ash Disposal, etc.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Incincerator Annual Operating Costs Incinerator Operating Costs (\$/ton)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0
momerator Operating Costs (4/ton)	0	U	U	Ü	U	U	U	U	U	U	U	U	U	U	U	U	0	0	U	0
Total Incinerator Costs NPV Total Incinerator Costs	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Cost/Ton AD + Incineration	\$70	\$70	\$70	\$71	\$71	\$71	\$72	\$72	\$73	\$73	\$74	\$74	\$75	\$75	\$76	\$76	\$77	\$78	\$78	\$34
	Ų. U	V. 0	4.0	V	V. . [V	V. -	¥:- <u> </u>	Ų. U	4.0	4. . [* ···	4.0	Ų. U	\$.5	<u> </u>	<u> </u>	4.0	Ų. U	
Debt Service Schedule																				
AD Debt Service Schedule																				
Study Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	2027	2028	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>
Beginning Balance	44,197,337	42,816,302	41,370,498	39,856,885	38,272,284	36,613,365	34,876,642	33,058,468	31,155,020	29,162,302	27,076,125	24,892,106	22,605,656	20,211,972	17,706,025	15,082,548	12,336,030	9,460,701	6,450,519	3,299,159
Interest	2,072,855	2,008,085	1,940,276	1,869,288	1,794,970	1,717,167	1,635,715	1,550,442	1,461,170	1,367,712	1,269,870	1,167,440	1,060,205	947,941	830,413	707,371	578,560	443,707	302,529	154,731
Principal	1,381,034	1,445,805	1,513,613	1,584,601	1,658,919	1,736,722	1,818,175	1,903,447	1,992,719	2,086,177	2,184,019	2,286,449	2,393,684	2,505,948	2,623,477	2,746,518	2,875,329	3,010,182	3,151,360	
Annual Debt Service	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	3,453,889	0.450.000
Use of Debt Service Reserve Fund Ending Balance	42,816,302	41.370.498	0 39,856,885	38,272,284	36,613,365	0 34.876.642	33.058.468	31.155.020	29.162.302	27,076,125	24.892.106	22.605.656	0 20.211.972	17.706.025	15,082,548	12,336,030	9,460,701	0 6,450,519	3,299,159	3,453,889 0
	42,610,302	41,370,490	39,000,000	30,272,204	30,013,303	34,070,042	33,030,400	31,133,020	29,102,302	27,070,123	24,092,100	22,000,000	20,211,972	17,700,025	15,062,546	12,330,030	9,400,701	0,430,319	3,299,139	0
Landfill Gas and Wet AD Gas-to-Power Calculations																				
The following data is applied, when appropriate, to other proformas. Individ	dual per-case calc	ulations are not	performed on inc	dividual proforma	s.															
Landfill Gas-to-Power Build-Up Sensitivity Analysis Only																				
	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020	2021	<u>2022</u>	<u>2023</u>	2024	<u>2025</u>	<u>2026</u>	2027	2028	2029	<u>2030</u>	<u>2031</u>	2032	2033	<u>2034</u>
Landfill Gas Recovery (scfm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Landfill Gas (Btu/hr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Landfill Gas (kWh)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual Power Generation (kWh) for Sale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wet AD Gas-to-Power Build-Up																				
Annual Production Increase	0	0.97%	0.97%	0.97%	0.97%	0.97%	0.81%	0.81%	0.81%	0.81%	0.81%	1.11%	1.11%	1.11%	1.11%	1.11%	0.74%	0.74%	0.74%	0.74%
Digester Gas Production Parameters	165					173					180					190				
Digester Gas Production (scfm)	165	167	168	170	171	173	175	176	177	179	180	182	184	186	188	191	192	193	195	196
Digester Gas (Btu/hr)	6,435,000	6,497,400	6,560,405	6,624,021	6,688,254	6,753,110	6,807,759	6,862,851	6,918,389	6,974,375	7,030,816	7,108,936	7,187,924	7,267,790	7,348,543	7,430,193	7,484,942	7,540,094	7,595,653	7,651,621
Digester Gas (kWh)	604	609	615	621	627	633	638	644	649	654	659	667	674	682	689	697	702	707	712	718
Annual Power Generation (kWh) for Sale	4,229,447	4,270,460	4,311,870	4,353,683	4,395,900	4,438,527	4,474,446	4,510,655	4,547,157	4,583,955	4,621,051	4,672,396	4,724,311	4,776,804	4,829,879	4,883,545	4,919,529	4,955,778	4,992,294	5,029,079

 Gross kWh/ton

Net kWh/ton

 Case 1b Proforma Analysis

								FIOIOIIIIa Aliai	ysis											
Study Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Year	<u>2015</u>	<u>2016</u>	2017	2018	<u>2019</u>	2020	2021	2022	2023	2024	<u>2025</u>	<u>2026</u>	2027	2028	2029	<u>2030</u>	<u>2031</u>	2032	2033	<u>2034</u>
<u>Proforma</u>																				
Throughput (Tons/Year)																				
Vard Trimmings	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000
Yard Trimmings Food Scraps	14,000	14,250	14,504	14,763	15,027	15,295	15,569	15,847	16,130	16.418	16.711	17,000	17,313	17,622	17,937	18,257	18.583	18,915	19,253	19,596
Yard Timmings & Food Scraps Annual Increase	0.0%	0.7%	0.7%	0.7%	0.7%	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.9%
Biosolids	27,000	27,350	27,705	28,064	28,427	28,796	29,169	29,547	29,930	30,318	30,711	31,109	31,513	31,921	32,335	32,754	33,179	33,609	34,045	34,486
Biosolids - Annual Increase	0	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
Total Tons to Facility Per Year	62,000	62,600	63,209	63,827	64,455	65,091	65,738	66,394	67,060	67,736	68,422	69,119	69,826	70,543	71,272	72,011	72,762	73,524	74,297	75,082
Food Scraps & Yard Trimmings Residuals Biosolids Residuals (For Cost Projections)	1,589 0	1,600 0	1,612 0	1,624 0	1,636 0	1,648 0	1,660 0	1,673 0	1,686 0	1,699 0	1,712 0	1,726 0	1,739 0	1,753 0	1,768 0	1,782 0	1,797 0	1,812 0	1,827 0	1,843 0
Total Residuals for Disposal	1,589	1,600	1,612	1,624	1,636	1,648	1,660	1,673	1,686	1,699	1,712	1,726	1,739	1,753	1,768	1,782	1,797	1,812	1,827	1,843
Incinerator Throughput	0	0	0	.,02.	0	.,0.0	0	0	0	0	0	0	0	0	0	0,702	.,	0	0	0
AD Costs	Ü	· ·	Ü	Ü	o o	o o	· ·	O O	o o	Ü	o o	o o	Ü	o o	o o	· ·	· ·	Ü	Ü	Ü
AD Debt Service																				
Total Annual Debt Service	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	5,982,791	0
AD Operating Costs																				
Dry AD O&M	2,062,548	2,112,049	2,162,738	2,214,644	2,267,795	2,322,222	2,377,956	2,435,026	2,493,467	2,553,310	2,614,590	2,677,340	2,741,596	2,807,394	2,874,772	2,943,766	3,014,417	3,086,763	3,160,845	3,236,705
Wet AD O&M	1,678,134	1,738,645	1,801,363	1,866,368	1,933,744	2,003,580	2,075,965	2,150,993	2,228,761	2,309,370	2,392,924	2,479,532	2,569,306	2,662,363	2,758,824	2,858,813	2,962,461	3,069,903	3,181,278	3,296,731
Annual Site Rent Additional Annual Landfill Closure	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Residuals for Disposal	U	U	U	U	U	U	U	U	U	0	U	U	U	U	U	0	0	U	U	U
Kirby Canyon Tipping Fee	41	43	44	45	47	48	49	51	52	54	56	57	59	61	63	64	66	68	70	73
Kirby Canyon Tipping Cost	65,737	68,193	70,745	73,399	76,159	79,028	82,011	85,114	88,340	91,696	95,187	98,819	102,597	106,527	110,617	114,873	119,302	123,911	128,708	133,702
Kirby Canyon Landfill Tax	32,686	32,919	33,157	33,399	33,645	33,896	34,151	34,410	34,674	34,943	35,217	35,496	35,780	36,068	36,362	36,661	36,966	37,276	37,591	37,912
Transportation to Kirby Canyon (\$/ton) Transportation to Kirby Canyon (\$/year)	11 17,891	12 18,451	12 19,030	12 19,629	12 20,248	13 20,889	13 21,551	13 22,236	14 22,944	14 23,677	14 24,435	15 25,220	15 26,032	15 26,871	16 27,741	16 28,640	16 29,571	17 30,534	17 31,532	18 32,564
Biosolids Delivery to PALF Site (Solid Cake)	0	0	0	19,029	20,240	20,009	21,551	0	0	25,077	24,433	25,220	20,032	20,071	0	20,040	29,571	0	0	0
Biosolids Delivery to PALF Site (Liquid)	11,000	11,264	11,534	11,811	12,095	12,385	12,682	12,987	13,298	13,617	13,944	14,279	14,622	14,972	15,332	15,700	16,077	16,462	16,858	17,262
Pre-Tax IRR Cash Flow Required	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CO ₂ Adder	420,602	441,632	463,714	486,899	511,244	536,807	563,647	591,829	621,421	652,492	685,116	719,372	755,341	793,108	832,763	874,401	918,121	964,028	1,012,229	1,062,840
Total Operating Costs	4,288,598	4,423,154	4,562,282	4,706,150	4,854,931	5,008,807	5,167,963	5,332,596	5,502,907	5,679,107	5,861,415	6,050,058	6,245,273	6,447,306	6,656,411	6,872,856	7,096,915	7,328,877	7,569,041	7,817,718
Total Project Costs	10,271,336	10,405,890	10,545,017	10,688,884	10,837,663	10,991,537	11,150,692	11,315,322	11,485,632	11,661,830	11,844,136	12,032,777	12,227,990	12,430,021	12,639,124	12,855,566	13,079,623	13,311,583	13,551,745	7,817,628
AD Revenues Energy Sale (Gross Production = 1, Net Production = 2)	4																			
Annual Power Output (kWh/Year) for Sale	11,989,155	12,105,179	12,222,944	12,342,476	12,463,803	12,586,952	12,711,951	12.838.829	12.967.615	13.098.338	13,231,029	13,365,717	13.502.433	13,641,209	13,782,076	13,925,068	14,070,216	14,217,554	14,367,116	14,518,937
Power Revenue (Energy)	1,710,133	1,726,683	1,743,481	1,760,531	1,777,837	1,795,403	1,813,233	1,831,331	1,849,701	1,868,347	1,887,274	1,906,486	1,925,987	1,945,782	1,965,875	1,986,272	2,006,976	2,027,992	2,049,325	2,070,981
Power Revenue (Capacity) Dry AD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Revenue (Capacity) Wet AD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Revenue (Landfill) Gas Revenue (Food Scraps & Yard Trimmings)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Revenue (Biosolids)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ferrous Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aluminum Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glass Revenue Plastics Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Compost Revenue Food Scraps & Yard Trimmings	354,422	365,521	368,159	370,845	373,579	376,361	379,193	382,076	385,010	387.997	391.037	394.131	397,281	400,487	403,750	407.071	410,452	413,893	417,395	420,960
Compost Revenues Biosolids	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AD Other Revenues Debt Service Reserve Fund Interest	119,656	119,656	119,656	119,656	119,656	119,656	119,656	119,656	119,656	119,656	119,656	119,656	119,656	119,656	119,656	119,656	119,656	119,656	119,656	0
Total AD Annual Revenues	2,184,211	2,211,859	2,231,296	2,251,031	2,271,071	2.291.420	2,312,082	2.333.063	2.354.367	2.376.000	2.397.967	2,420,273	2,442,924	2.465.925	2.489.281	2.512.999	2.537.083	2.561.540	2.586.376	2,491,941
Net Annual Cost	(8,087,178)	(8,194,086)	(8,313,777)	(8,437,909)	(8,566,651)	(8,700,178)	(8,838,672)	(8,982,324)	(9,131,331)	(9,285,898)	(9,446,239)	(9,612,576)	(9,785,141)	,,-	(10,149,921)	, , , , , , , , , , , , , , , , , , , ,	, ,	(10,750,128)	(10,965,456)	(5,325,777)
NPV Net Annual Cost NPV Net Annual Cost	(112,541,470)	(0, 134,000)	(0,313,111)	(6,457,509)	(0,000,001)	(0,700,170)	(0,030,072)	(0,302,324)	(3,131,331)	(3,203,030)	(3,440,239)	(3,012,370)	(3,703,141)	(3,304,172)	(10,145,521)	(10,342,040)	(10,042,023)	(10,730,120)	(10,300,400)	(0,323,111)

Case 1b
Proforma Analysis

								Proforma Analy	/sis											
Study Year Year	1 <u>2015</u>	2 <u>2016</u>	3 <u>2017</u>	4 <u>2018</u>	5 <u>2019</u>	6 <u>2020</u>	7 <u>2021</u>	8 <u>2022</u>	9 <u>2023</u>	10 <u>2024</u>	11 <u>2025</u>	12 <u>2026</u>	13 <u>2027</u>	14 2028	15 2029	16 <u>2030</u>	17 <u>2031</u>	18 <u>2032</u>	19 <u>2033</u>	20 2034
Incinerator Costs																				
Labor O&M Costs (Utilities, Polymer, Ash Disposal, etc.) Total Incincerator Annual Operating Costs Incinerator Operating Costs (\$/ton)	0 0 0	0 0 0	0 0 0	0 0 0																
Total Incinerator Costs NPV Total Incinerator Costs	0 <i>0</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Cost/Ton AD + Incineration	\$130	\$131	\$132	\$132	\$133	\$134	\$134	\$135	\$136	\$137	\$138	\$139	\$140	\$141	\$142	\$144	\$145	\$146	\$148	\$71
Debt Service Schedule AD Debt Service Schedule																				
Study Year Year	1 <u>2015</u>	2 2016	3 <u>2017</u>	4 2018	5 <u>2019</u>	6 <u>2020</u>	7 <u>2021</u>	8 <u>2022</u>	9 <u>2023</u>	10 <u>2024</u>	11 <u>2025</u>	12 <u>2026</u>	13 2027	14 2028	15 2029	16 <u>2030</u>	17 <u>2031</u>	18 <u>2032</u>	19 <u>2033</u>	20 2034
Beginning Balance Interest Principal Annual Debt Service Use of Debt Service Reserve Fund Ending Balance	75,709,990 3,649,222 2,333,569 5,982,791 0 73,376,421	73,376,421 3,536,743 2,446,047 5,982,791 0 70,930,374	70,930,374 3,418,844 2,563,947 5,982,791 0 68,366,427	68,366,427 3,295,262 2,687,529 5,982,791 0 65,678,898	65,678,898 3,165,723 2,817,068 5,982,791 0 62,861,829	62,861,829 3,029,940 2,952,851 5,982,791 0 59,908,979	59,908,979 2,887,613 3,095,178 5,982,791 0 56,813,801	56,813,801 2,738,425 3,244,366 5,982,791 0 53,569,435	53,569,435 2,582,047 3,400,744 5,982,791 0 50,168,691	50,168,691 2,418,131 3,564,660 5,982,791 0 46,604,031	46,604,031 2,246,314 3,736,477 5,982,791 0 42,867,554	42,867,554 2,066,216 3,916,575 5,982,791 0 38,950,979	38,950,979 1,877,437 4,105,354 5,982,791 0 34,845,625	34,845,625 1,679,559 4,303,232 5,982,791 0 30,542,394	30,542,394 1,472,143 4,510,648 5,982,791 0 26,031,746	26,031,746 1,254,730 4,728,061 5,982,791 0 21,303,685	21,303,685 1,026,838 4,955,953 5,982,791 0 16,347,732	16,347,732 787,961 5,194,830 5,982,791 0 11,152,902	11,152,902 537,570 5,445,221 5,982,791 0 5,707,681	5,707,681 275,110 0 0 5,982,791
Wet AD O&M																				
Study Year Year	1 <u>2015</u>	2 2016	3 <u>2017</u>	4 2018	5 <u>2019</u>	6 2020	7 <u>2021</u>	8 <u>2022</u>	9 <u>2023</u>	10 2024	11 <u>2025</u>	12 <u>2026</u>	13 <u>2027</u>	14 2028	15 <u>2029</u>	16 2030	17 <u>2031</u>	18 <u>2032</u>	19 <u>2033</u>	20 <u>2034</u>
Biosolids Annual Increase Labor Power Total Wet AD O&M	0.0% 153,677 <u>274,316</u> 427,993	1.3% 157,366 <u>284,541</u> 441,907	1.3% 161,142 <u>295,147</u> 456,289	1.3% 165,010 <u>306,148</u> 471,158	1.3% 168,970 <u>317,560</u> 486,530	1.3% 173,025 <u>329,396</u> 502,422	1.3% 177,178 <u>341,674</u> 518,852	1.3% 181,430 <u>354,410</u> 535,840	1.3% 185,785 <u>367,620</u> 553,405	1.3% 190,243 <u>381,323</u> 571,566	1.3% 194,809 <u>395,536</u> 590,346	1.3% 199,485 <u>410,280</u> 609,764	1.3% 204,272 <u>425,572</u> 629,845	1.3% 209,175 <u>441,435</u> 650,610	1.3% 214,195 <u>457,889</u> 672,084	1.3% 219,336 <u>474,957</u> 694,293	1.3% 224,600 <u>492,660</u> 717,260	1.3% 229,990 <u>511,024</u> 741,014	1.3% 235,510 <u>530,072</u> 765,582	1.3% 241,162 <u>549,830</u> 790,992
Digestate Hauling & Disposal																				
Study Year Year	1 <u>2015</u>	2 <u>2016</u>	3 <u>2017</u>	4 2018	5 <u>2019</u>	6 <u>2020</u>	7 <u>2021</u>	8 <u>2022</u>	9 <u>2023</u>	10 <u>2024</u>	11 <u>2025</u>	12 <u>2026</u>	13 <u>2027</u>	14 2028	15 2029	16 <u>2030</u>	17 <u>2031</u>	18 <u>2032</u>	19 <u>2033</u>	20 <u>2034</u>
Biosolids Annual Increase Digestate Hauling Digestate Disposal Total Digestate Costs	0.0% 555,785 <u>694,356</u> 1,250,141	1.3% 576,501 <u>720,238</u> 1,296,738	1.3% 597,989 <u>747,084</u> 1,345,073	1.3% 620,279 <u>774,931</u> 1,395,210	1.3% 643,399 <u>803,815</u> 1,447,215	1.3% 667,381 <u>833,777</u> 1,501,158	1.3% 692,257 <u>864,855</u> 1,557,113	1.3% 718,061 <u>897,092</u> 1,615,152	1.3% 744,826 <u>930,530</u> 1,675,356	1.3% 772,588 <u>965,215</u> 1,737,803	1.3% 801,386 <u>1,001,192</u> 1,802,578	1.3% 831,257 <u>1,038,511</u> 1,869,768	1.3% 862,241 <u>1,077,220</u> 1,939,461	1.3% 894,380 <u>1,117,373</u> 2,011,753	1.3% 927,718 <u>1,159,022</u> 2,086,739	1.3% 962,297 <u>1,202,223</u> 2,164,521	1.3% 998,166 <u>1,247,035</u> 2,245,201	1.3% 1,035,372 <u>1,293,517</u> 2,328,889	1.3% 1,073,964 <u>1,341,732</u> 2,415,696	1.3% 1,113,995 <u>1,391,743</u> 2,505,739

Case 1c Proforma Analysis

								FIOIOIIIIa AII	aiysis											
Study Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Year	<u>2015</u>	<u>2016</u>	2017	<u>2018</u>	<u>2019</u>	2020	2021	2022	2023	2024	<u>2025</u>	<u>2026</u>	<u>2027</u>	2028	2029	2030	<u>2031</u>	2032	2033	<u>2034</u>
<u>Proforma</u>																				
Throughput (Tons/Year)																				
Yard Trimmings	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000
Food Scraps	14,000	14,250	14,504	14,763	15,027	15,295	15,569	15,847	16,130	16,418	16,711	17,009	17,313	17,622	17,937	18,257	18,583	18,915	19,253	19,596
Yard Timmings & Food Scraps Annual Increase	0.0%	0.7%	0.7%	0.7%	0.7%	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.9%
Biosolids	27,000	27,350	27,705	28,064	28,427	28,796	29,169	29,547	29,930	30,318	30,711	31,109	31,513	31,921	32,335	32,754	33,179	33,609	34,045	34,486
Biosolids - Annual Increase	0	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
Total Tons to Facility Per Year	62,000 1,589	62,600 1,600	63,209 1,612	63,827 1,624	64,455	65,091 1,648	65,738 1,660	66,394 1,673	67,060	67,736 1,699	68,422 1,712	69,119 1,726	69,826 1,739	70,543 1,753	71,272 1,768	72,011 1,782	72,762 1,797	73,524 1,812	74,297 1,827	75,082 1,843
Food Scraps & Yard Trimmings Residuals Biosolids Residuals (For Cost Projections)	1,569	1,600	1,612	1,624	1,636 0	1,040	1,000	1,673	1,686 0	0	1,712	1,726	1,739	1,753	1,768	1,762	1,797	1,012	1,027	1,043
Total Residuals for Disposal	1,589	1,600	1,612	1,624	1,636	1,648	1,660	1,673	1,686	1,699	1,712	1,726	1,739	1,753	1,768	1,782	1,797	1,812	1,827	1,843
Incinerator Throughput	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AD Costs	•	•			•	-	_		•		•			•	-			-		•
AD Debt Service																				
Total Annual Debt Service	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	5,898,393	0
AD Operating Costs																				
Dry AD O&M	2,062,548	2,112,049	2,162,738	2,214,644	2,267,795	2,322,222	2,377,956	2,435,026	2,493,467	2,553,310	2,614,590	2,677,340	2,741,596	2,807,394	2,874,772	2,943,766	3,014,417	3,086,763	3,160,845	3,236,705
Wet AD O&M Annual Site Rent	1,678,134	1,738,645	1,801,363	1,866,368	1,933,744	2,003,580	2,075,965	2,150,993	2,228,761	2,309,370	2,392,924	2,479,532	2,569,306	2,662,363	2,758,824	2,858,813	2,962,461	3,069,903	3,181,278	3,296,731
Additional Annual Landfill Closure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residuals for Disposal	0	Ü	0	0	0	0	O	O	Ü	Ü	U	0	Ü	0	O	O	O .	0	O	0
Kirby Canyon Tipping Fee	41	43	44	45	47	48	49	51	52	54	56	57	59	61	63	64	66	68	70	73
Kirby Canyon Tipping Cost	65,737	68,193	70,745	73,399	76,159	79,028	82,011	85,114	88,340	91,696	95,187	98,819	102,597	106,527	110,617	114,873	119,302	123,911	128,708	133,702
Kirby Canyon Landfill Tax	32,686	32,919	33,157	33,399	33,645	33,896	34,151	34,410	34,674	34,943	35,217	35,496	35,780	36,068	36,362	36,661	36,966	37,276	37,591	37,912
Transportation to Kirby Canyon (\$/ton)	11	12	12 19,030	12 19,629	12	13	13	13 22,236	14	14 23,677	14	15	15	15	16 27,741	16	16	17 30,534	17 31,532	18 32,564
Transportation to Kirby Canyon (\$/year) Biosolids Delivery to PALF Site (Solid Cake)	17,891 0	18,451 0	19,030	19,629	20,248	20,889	21,551 0	22,236	22,944	23,677	24,435	25,220	26,032	26,871	27,741	28,640	29,571 0	30,534 0	31,532	32,564
Biosolids Delivery to PALF Site (Solid Cake)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-Tax IRR Cash Flow Required	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CO ₂ Adder	419,804	440,794	462,834	485,976	510,275	535,788	562,578	590,707	620,242	651,254	683,817	718,008	753,908	791,603	831,184	872,743	916,380	962,199	1,010,309	1,060,824
Total Operating Costs	4,276,800	4,411,052	4,549,868	4,693,415	4,841,867	4,995,403	5,154,212	5,318,486	5,488,430	5,664,252	5,846,171	6,034,415	6,229,219	6,430,829	6,639,500	6,855,497	7,079,097	7,310,586	7,550,264	7,798,440
Total Project Costs	10,175,193	10,309,445	10,448,261	10,591,809	10,740,260	10,893,797	11,052,605	11,216,880	11,386,823	11,562,645	11,744,565	11,932,808	12,127,612	12,329,222	12,537,893	12,753,891	12,977,490	13,208,980	13,448,657	7,798,440
AD Revenues																				
Energy Sale (Gross Production = 1, Net Production = 2)	1	10 105 170	40.000.044	10010170	10 100 000	40 500 050	10 711 051	40.000.000	10 007 015	40 000 000	40 004 000	10 005 717	40 500 400	40.044.000	10 700 070	10.005.000	44.070.040	44047.554	44.007.440	44.540.007
Annual Power Output (kWh/Year) for Sale Power Revenue (Energy)	11,989,155 1,710,133	12,105,179 1,726,683	12,222,944 1,743,481	12,342,476 1,760,531	12,463,803 1,777,837	12,586,952 1,795,403	12,711,951 1,813,233	12,838,829 1,831,331	12,967,615 1,849,701	13,098,338 1,868,347	13,231,029 1,887,274	13,365,717 1,906,486	13,502,433 1,925,987	13,641,209 1,945,782	13,782,076 1,965,875	13,925,068 1,986,272	14,070,216 2,006,976	14,217,554 2,027,992	14,367,116 2,049,325	14,518,937 2,070,981
Power Revenue (Capacity) Dry AD	1,710,133	1,720,003	0	0	0	0	1,013,233	1,031,331	0	0	0	1,900,400	1,325,367	0	0	1,300,272	2,000,970	2,027,332	2,049,323	2,070,301
Powe Revenue (Capacity) Wet AD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Revenue (Landfill)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Revenue (Food Scraps & Yard Trimmings)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Revenue (Biosolids) Ferrous Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aluminum Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glass Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plastics Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Compost Revenue Food Scraps & Yard Trimmings Compost Revenue Biosolids	354,422 0	365,521 0	368,159 0	370,845 0	373,579 0	376,361 0	379,193 0	382,076 0	385,010 0	387,997 0	391,037 0	394,131 0	397,281 0	400,487 0	403,750 0	407,071 0	410,452 0	413,893 0	417,395 0	420,960 0
Other Revenues Debt Service Reserve Fund Interest	117,968	117,968	117,968	117,968	117,968	117,968	117,968	117,968	117,968	117,968	117,968	117,968	117,968	117,968	117,968	117,968	117,968	117,968	117,968	0
																				-
Total AD Annual Revenues	2,182,523	2,210,171	2,229,608	2,249,344	2,269,383	2,289,732	2,310,394	2,331,375	2,352,679	2,374,312	2,396,279	2,418,585	2,441,236	2,464,237	2,487,593	2,511,311	2,535,395	2,559,852	2,584,688	2,491,941
Net Annual Cost NPV Net Annual Cost	(7,992,671) (111,359,855)	(8,099,274)	(8,218,654)	(8,342,465)	(8,470,877)	(8,604,065)	(8,742,211)	(8,885,505)	(9,034,144)	(9,188,333)	(9,348,286)	(9,514,223)	(9,686,377)	(9,864,986)	(10,050,300)	(10,242,580)	(10,442,095)	(10,649,127)	(10,863,969)	(5,306,498)

Case 1c Proforma Analysis

Study Year Year	1 <u>2015</u>	2 2016	3 <u>2017</u>	4 <u>2018</u>	5 <u>2019</u>	6 <u>2020</u>	7 <u>2021</u>	8 <u>2022</u>	9 <u>2023</u>	10 <u>2024</u>	11 <u>2025</u>	12 <u>2026</u>	13 <u>2027</u>	14 <u>2028</u>	15 <u>2029</u>	16 <u>2030</u>	17 <u>2031</u>	18 <u>2032</u>	19 <u>2033</u>	20 2034
Incinerator Costs																				
Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O&M Costs (Utilities, Polymer, Ash Disposal, etc.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Incincerator Annual Operating Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Incinerator Operating Costs (\$/ton)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Incinerator Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NPV Total Incinerator Costs	o																			
Total Project Cost/Ton AD + Incineration	\$129	\$129	\$130	\$131	\$131	\$132	\$133	\$134	\$135	\$136	\$137	\$138	\$139	\$140	\$141	\$142	\$144	\$145	\$146	\$71

Debt Service Schedule

hΑ	I)ebt	Service	Schedule

Study Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Year	<u>2015</u>	2016	<u>2017</u>	2018	<u>2019</u>	<u>2020</u>	2021	2022	<u>2023</u>	2024	2025	2026	2027	2028	<u>2029</u>	2030	2031	<u>2032</u>	2033	2034
Beginning Balance	74,641,970	72,341,320	69,929,778	67,402,000	64,752,383	61,975,055	59,063,859	56,012,344	52,813,745	49,460,975	45,946,600	42,262,833	38,401,508	34,354,068	30,111,540	25,664,523	21,003,160	16,117,119	10,995,571	5,627,164
Interest	3,597,743	3,486,852	3,370,615	3,248,776	3,121,065	2,987,198	2,846,878	2,699,795	2,545,623	2,384,019	2,214,626	2,037,069	1,850,953	1,655,866	1,451,376	1,237,030	1,012,352	776,845	529,987	271,229
Principal	2,300,650	2,411,542	2.527,778	2,649,617	2,777,328	2,911,196	3.051,515	3,198,598	3,352,771	3,514,374	3,683,767	3.861,325	4,047,441	4,242,527	4.447,017	4,661,363	4,886,041	5.121.548	5,368,407	0
Annual Debt Service Use of Debt Service Reserve Fund Ending Balance	5,898,393 0 72,341,320	5,898,393 0 69,929,778	5,898,393 0 67,402,000	5,898,393 0 64,752,383	5,898,393 0 61,975,055	5,898,393 0 59,063,859	5,898,393 0 56,012,344	5,898,393 0 52,813,745	5,898,393 0 49,460,975	5,898,393 0 45,946,600	5,898,393 0 42,262,833	5,898,393 0 38,401,508	5,898,393 0 34,354,068	5,898,393 0 30,111,540	5,898,393 0 25,664,523	5,898,393 0 21,003,160	5,898,393 0 16,117,119	5,898,393 0 10,995,571	5,898,393 0 5,627,164	5,898,393 0

Case 1d Proforma Analysis

								Proforma Anal	ysis											
Study Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Year	<u>2015</u>	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<u>Proforma</u>																				
Throughput (Tons/Year)																				
Yard Trimmings	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000
Food Scraps	14,000	14,250	14,504	14,763	15,027	15,295	15,569	15,847	16,130	16,418	16,711	17,009	17,313	17,622	17,937	18,257	18,583	18,915	19,253	19,596
Yard Timmings & Food Scraps Annual Increase	0.0%	0.7%	0.7%	0.7%	0.7%	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.9%
Biosolids Biosolids - Annual Increase	27,000	27,350 1.3%	27,705 1.3%	28,064 1.3%	28,427 1.3%	28,796 1.3%	29,169 1.3%	29,547 1.3%	29,930 1.3%	30,318 1.3%	30,711 1.3%	31,109 1.3%	31,513 1.3%	31,921 1.3%	32,335 1.3%	32,754 1.3%	33,179 1.3%	33,609 1.3%	34,045 1.3%	34,486 1.3%
Total Tons to Facility Per Year	62,000	62,600	63,209	63,827	64,455	65,091	65,738	66,394	67,060	67,736	68,422	69,119	69,826	70,543	71,272	72,011	72,762	73,524	74,297	75,082
Food Scraps & Yard Trimmings Residuals	1,589	1,600	1,612	1,624	1,636	1,648	1,660	1,673	1,686	1,699	1,712	1,726	1,739	1,753	1,768	1,782	1,797	1,812	1,827	1,843
Biosolids Residuals (For Cost Projections)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Residuals for Disposal	1,589	1,600	1,612	1,624	1,636	1,648	1,660	1,673	1,686	1,699	1,712	1,726	1,739	1,753	1,768	1,782	1,797	1,812	1,827	1,843
Incinerator Throughpu	27,000	27,350	27,705	28,064	28,427	28,796	29,169	29,547	29,930	30,318	30,711	31,109	31,513	31,921	32,335	32,754	33,179	33,609	34,045	34,486
AD Costs																				
AD Debt Service																				
Total Annual Debt Service	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	2,285,383	0
AD Operating Costs																				
Dry AD O&M	1,740,003	1,781,763	1,824,525	1,868,314	1,913,153	1,959,069	2,006,087	2,054,233	2,103,534	2,154,019	2,205,716	2,258,653	2,312,860	2,368,369	2,425,210	2,483,415	2,543,017	2,604,049	2,666,546	2,730,544
Wet AD O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 1
Annual Site Rent Additional Annual Landfill Closure	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Residuals Disposal	0	O	U	Ü	U	U	U	U	O	U	U	U	Ü	U	Ü	U	U	U	U	Ü
Kirby Canyon Tipping Fee	41	43	44	45	47	48	49	51	52	54	56	57	59	61	63	64	66	68	70	73
Kirby Canyon Tipping Cost	65,737	68,193	70,745	73,399	76,159	79,028	82,011	85,114	88,340	91,696	95,187	98,819	102,597	106,527	110,617	114,873	119,302	123,911	128,708	133,702
Kirby Canyon Landfill Tax	32,686	32,919 12	33,157	33,399	33,645	33,896 13	34,151	34,410	34,674 14	34,943 14	35,217 14	35,496 15	35,780	36,068	36,362	36,661	36,966 16	37,276	37,591	37,912
Transportation to Kirby Canyon (\$/ton) Transportation to Kirby Canyon (\$/year)	11 17,891	12 18,451	12 19,030	12 19,629	12 20,248	20,889	13 21,551	13 22,236	14 22,944	14 23,677	14 24,435	15 25,220	15 26,032	15 26,871	16 27,741	16 28,640	29,571	17 30,534	17 31,532	18 32,564
Biosolids Delivery to PALF Site (Solid Cake)	0	10,431	19,030	19,029	20,240	20,009	21,551	22,230	22,344	23,077	24,433	25,220	20,032	20,071	27,741	20,040	29,571	0,554	01,552	0
Biosolids Delivery to PALF Site (Liquid)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-Tax IRR Cash Flow Required	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CO ₂ Adder	623,663	654,847	687,589	721,968	758,067	795,970	835,769	877,557	921,435	967,507	1,015,882	1,066,676	1,120,010	1,176,011	1,234,811	1,296,552	1,361,379	1,429,448	1,500,921	1,575,967
Total Operating Costs	2,479,980	2,556,173	2,635,047	2,716,710	2,801,273	2,888,852	2,979,569	3,073,551	3,170,929	3,271,844	3,376,439	3,484,864	3,597,279	3,713,848	3,834,742	3,960,142	4,090,235	4,225,219	4,365,299	4,510,689
Total Project Costs	4,765,363	4,841,556	4,920,430	5,002,093	5,086,656	5,174,235	5,264,952	5,358,934	5,456,312	5,557,227	5,661,822	5,770,248	5,882,662	5,999,231	6,120,125	6,245,525	6,375,618	6,510,602	6,650,682	4,510,689
AD Revenues																				
Energy Sale (Gross Production = 1, Net Production = 2)	1																			
Annual Power Output (kWh/Year) for Sale	6,188,490	6,248,379	6,309,166	6,370,865	6,433,491	6,497,057	6,561,578	6,627,070	6,693,546	6,761,022	6,829,513	6,899,035	6,969,605	7,041,237	7,113,949	7,187,758	7,262,680	7,338,732	7,415,932	7,494,298
Power Revenue (Energy)	882,726	891,269	899,939	908,740	917,673	926,740	935,944	945,285	954,767	964,392	974,162	984,078	994,144	1,004,362	1,014,734	1,025,262	1,035,949	1,046,797	1,057,809	1,068,987
Power Revenue (Capacity) Dry AD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Revenue (Capacity) Wet AD Power Revenue (Landfill)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Revenue (Food Scraps & Yard Trimmings)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Revenue (Biosolids)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ferrous Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aluminum Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glass Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plastics Revenue Compost Revenue Food Scraps & Yard Trimmings	354,422	365,521	368,159	0 370,845	373,579	376,361	379.193	382.076	0 385,010	387.997	391.037	394.131	397,281	0 400,487	0 403,750	0 407.071	0 410,452	0 413,893	0 417,395	0 420,960
Compost Revenue Biosolids	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Revenues	15 706	45 700	45.700	45 700	45.700	45 700	45 700	45 700	45 700	45 700	45 700	45.700	45 700	45 706	45 700	45 700	45 706	45 700	45 706	2
Debt Service Reserve Fund Interest	45,708	45,708	45,708	45,708	45,708	45,708	45,708	45,708	45,708	45,708	45,708	45,708	45,708	45,708	45,708	45,708	45,708	45,708	45,708	0
Total AD Annual Revenues	1,282,856	1,302,497	1,313,806	1,325,293	1,336,959	1,348,809	1,360,845	1,373,069	1,385,485	1,398,097	1,410,906	1,423,917	1,437,133	1,450,556	1,464,191	1,478,040	1,492,108	1,506,397	1,520,911	1,489,947
Net Annual Cost NPV Net Annual Cost	(3,482,508) (50,472,249)	(3,539,059)	(3,606,624)	(3,676,800)	(3,749,697)	(3,825,426)	(3,904,107)	(3,985,865)	(4,070,827)	(4,159,130)	(4,250,915)	(4,346,330)	(4,445,529)	(4,548,674)	(4,655,934)	(4,767,484)	(4,883,510)	(5,004,205)	(5,129,771)	(3,020,743)

Case 1d Proforma Analysis

Study Year Year	1 <u>2015</u>	2 2016	3 <u>2017</u>	4 2018	5 <u>2019</u>	6 <u>2020</u>	7 <u>2021</u>	8 <u>2022</u>	9 <u>2023</u>	10 2024	11 <u>2025</u>	12 <u>2026</u>	13 <u>2027</u>	14 2028	15 <u>2029</u>	16 <u>2030</u>	17 <u>2031</u>	18 <u>2032</u>	19 <u>2033</u>	20 2034
Incinerator Costs																				
Labor O&M Costs (Utilities, Polymer, Ash Disposal, etc.) New FBI Debt Service New FBI O&M Total Incincerator Annual Operating Costs	259,903 2,497,121 0 0 2,757,025	266,141 2,590,199 0 0 2,856,340	272,529 2,686,746 0 0 2,959,275	279,069 2,786,892 0 0 3,065,962	285,767 2,890,771 0 0 3,176,538	292,625 2,998,522 0 0 3,291,147	299,648 3,110,289 0 0 3,409,938	306,840 3,226,222 0 0 3,533,062	314,204 3,346,477 0 0 3,660,681	321,745 3,471,214 0 0 3,792,959	329,467 3,600,600 0 0 3,930,067	337,374 3,734,809 0 0 4,072,183	345,471 3,874,021 0 0 4,219,491	353,762 4,018,421 0 0 4,372,183	362,253 4,168,204 0 0 4,530,457	370,947 4,323,570 0 0 4,694,517	0 0 25,259,154 4,465,406 29,724,560	0 0 25,259,154 4,572,575 29,831,730	0 0 25,259,154 4,682,317 29,941,472	0 0 25,259,154 4,794,693 30,053,847
Incinerator Operating Costs (\$/ton)	102	104	107	109	112	114	117	120	122	125	128	131	134	137	140	143	896	888	879	871
Total Incinerator Costs NPV Total Incinerator Costs	(2,757,025) (86,624,396)	(2,856,340)	(2,959,275)	(3,065,962)	(3,176,538)	(3,291,147)	(3,409,938)	(3,533,062)	(3,660,681)	(3,792,959)	(3,930,067)	(4,072,183)	(4,219,491)	(4,372,183)	(4,530,457)	(4,694,517)	(29,724,560)	(29,831,730)	(29,941,472)	(30,053,847)
Total Project Cost/Ton AD + Incineration	101	102	104	106	107	109	111	113	115	117	120	122	124	126	129	131	476	474	472	441
Total Project Cost/Ton AD + Incineration Debt Service Schedule AD Debt Service Schedule	101	102	104	106	107	109	111	113	115	117	120	122	124	126	129	131	476	474	472	441
Debt Service Schedule	101 1 2015	102 2 2016	3 2017	4 2018	5 2019	6 2020	7 2021	8 2022	9 2023	10 2024	120 11 2025	122 12 2026	13 2027	126 14 2028	129 15 2029	131 16 2030	476 17 2031	18 2032	19 2033	20 2034

Alternative 2 Food Scraps to San Jose Facility, Yard Trimmings to Gilroy Facility Proforma Analysis

1. Inputs

Food Scraps Transportation Cost (\$/Ton)		2.99 <u>97.75</u> 100.74																		
Yard Trimmings Transportation Cost (\$/T		2.30 29.90 32.20																		
Biosolids Tons/Year Biosolids Incineration (Total Annual C Biosolids Total Cost (\$/Ton) (2010)	Costs) (2010)	27,000 2,448,730 90.69																		
Inflation Rate Cost Estimating Year NPV Discount Rate		2.40% 2010 5.00%																		
2. Food Scraps Cost Projection																				
Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020	<u>2021</u>	2022	2023	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	2028	2029	2030	<u>2031</u>	2032	2033	<u>2034</u>
Total Tons/Year Cost/Ton (\$) Total Annual Cost (\$)	14,000 113 1,587,924	14,250 116 1,655,071	14,504 119 1,725,057	14,763 122 1,798,002	15,027 125 1,874,032	15,295 128 1,953,276	15,569 131 2,035,872	15,847 134 2,121,960	16,130 137 2,211,689	16,418 140 2,305,212	16,711 144 2,402,689	17,009 147 2,504,289	17,313 151 2,610,184	17,622 154 2,720,558	17,937 158 2,835,599	18,257 162 2,955,504	18,583 166 3,080,480	18,915 170 3,210,740	19,253 174 3,346,508	19,596 178 3,488,018
3. Yard Trimmings Cost Projection																				
Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020	<u>2021</u>	2022	2023	2024	<u>2025</u>	<u>2026</u>	<u>2027</u>	2028	2029	2030	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>
Total Tons/Year Cost/Ton (\$) Total Annual Cost (\$)	21,000 36 761,334	21,000 37 779,606	21,000 38 798,316	21,000 39 817,476	21,000 40 837,095	21,000 41 857,185	21,000 42 877,758	21,000 43 898,824	21,000 44 920,396	21,000 45 942,485	21,000 46 965,105	21,000 47 988,267	21,000 48 1,011,986	21,000 49 1,036,273	21,000 51 1,061,144	21,000 52 1,086,612	21,000 53 1,112,690	21,000 54 1,139,395	21,000 56 1,166,740	21,000 57 1,194,742
4. Biosolids Cost Projection																				
Year	<u>2015</u>	<u>2016</u>	2017	2018	2019	2020	<u>2021</u>	2022	2023	2024	<u>2025</u>	2026	2027	2028	2029	2030	2031	2032	2033	<u>2034</u>
Total Tons/Year Cost/Ton (\$) Total Annual Cost (\$)	27,000 102 2,757,025	27,350 104 2,856,340	27,705 107 2,959,275	28,064 109 3,065,962	28,427 112 3,176,538	28,796 114 3,291,147	29,169 117 3,409,938	29,547 120 3,533,062	29,930 122 3,660,681	30,318 125 3,792,959	30,711 128 3,930,067	31,109 131 4,072,183	31,513 134 4,219,491	31,921 137 4,372,183	32,335 140 4,530,457	32,754 143 4,694,517	33,179 896 29,724,560	33,609 888 29,831,730	34,045 879 29,941,472	34,486 871 30,053,847
5. CO ₂ Adder																				
Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	2022	2023	2024	<u>2025</u>	2026	<u>2027</u>	2028	2029	2030	<u>2031</u>	2032	2033	<u>2034</u>
Total Annual Cost (\$) Cost/Ton (\$)	689,351 11	723,819 12	760,010 12	798,010 13	837,911 13	879,806 14	923,796 14	969,986 15	1,018,486 15	1,069,410 16	1,122,880 16	1,179,024 17	1,237,976 18	1,299,874 18	1,364,868 19	1,433,112 20	1,504,767 21	1,580,005 21	1,659,006 22	1,741,956 23
6. Total Cost - Alternative 2																				
Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020	<u>2021</u>	2022	<u>2023</u>	<u>2024</u>	<u>2025</u>	2026	2027	2028	2029	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>
Cost/Ton (\$)	93	96	99	102	104	107	110	113	116	120	123	127	130	134	137	141	487	486	486	486
Total Annual Cost (\$)	5,795,634	6,014,835	6,242,657	6,479,449	6,725,575	6,981,415	7,247,364	7,523,833	7,811,251	8,110,066	8,420,741	8,743,764	9,079,637	9,428,889	9,792,067	10,169,744	35,422,497	35,761,870	36,113,726	36,478,563

Total Cost 268,343,578 NPV Total Cost 139,527,960

Alternative 3 Food Scraps and Yard Trimmings to Gilroy Facility Proforma Analysis

1. Inputs

Food Scraps Transportation Cost (\$/Ton)		2.99 <u>80.50</u> 83.49																		
Yard Trimmings Transportation Cost (\$/T		2.30 29.90 32.20																		
Biosolids Tons/Year Biosolids Incineration (Total Annual C Biosolids Total Cost (\$/Ton) (2010)	Costs) (2010)	27,000 2,448,730 91																		
Inflation Rate Cost Estimating Year NPV Discount Rate		2.40% 2010 5.00%																		
2. Food Scraps Cost Projection																				
Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020	<u>2021</u>	<u>2022</u>	2023	2024	<u>2025</u>	<u>2026</u>	<u>2027</u>	2028	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>
Total Tons/Year Cost/Ton (\$) Total Annual Cost (\$)	14,000 94 1,316,019	14,250 96 1,371,668	14,504 99 1,429,670	14,763 101 1,490,125	15,027 103 1,553,136	15,295 106 1,618,811	15,569 108 1,687,264	15,847 111 1,758,611	16,130 114 1,832,975	16,418 116 1,910,484	16,711 119 1,991,270	17,009 122 2,075,472	17,313 125 2,163,235	17,622 128 2,254,709	17,937 131 2,350,051	18,257 134 2,449,425	18,583 137 2,553,000	18,915 141 2,660,956	19,253 144 2,773,476	19,596 148 2,890,754
3. Yard Trimmings Cost Projection																				
Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020	<u>2021</u>	2022	2023	<u>2024</u>	<u>2025</u>	<u>2026</u>	2027	2028	2029	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>
Total Tons/Year Cost/Ton (\$) Total Annual Cost (\$)	21,000 36 761,334	21,000 37 779,606	21,000 38 798,316	21,000 39 817,476	21,000 40 837,095	21,000 41 857,185	21,000 42 877,758	21,000 43 898,824	21,000 44 920,396	21,000 45 942,485	21,000 46 965,105	21,000 47 988,267	21,000 48 1,011,986	21,000 49 1,036,273	21,000 51 1,061,144	21,000 52 1,086,612	21,000 53 1,112,690	21,000 54 1,139,395	21,000 56 1,166,740	21,000 57 1,194,742
4. Biosolids Cost Projection																				
Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020	<u>2021</u>	<u>2022</u>	2023	2024	<u>2025</u>	<u>2026</u>	<u>2027</u>	2028	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>
Total Tons/Year Cost/Ton (\$) Total Annual Cost (\$)	27,000 102 2,757,025	27,350 104 2,856,340	27,705 107 2,959,275	28,064 109 3,065,962	28,427 112 3,176,538	28,796 114 3,291,147	29,169 117 3,409,938	29,547 120 3,533,062	29,930 122 3,660,681	30,318 125 3,792,959	30,711 128 3,930,067	31,109 131 4,072,183	31,513 134 4,219,491	31,921 137 4,372,183	32,335 140 4,530,457	32,754 143 4,694,517	33,179 896 29,724,560	33,609 888 29,831,730	34,045 879 29,941,472	34,486 871 30,053,847
5. CO ₂ Adder																				
<u>Year</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020	<u>2021</u>	2022	2023	2024	<u>2025</u>	<u>2026</u>	<u>2027</u>	2028	<u>2029</u>	2030	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>
Total Annual Cost (\$) Cost/Ton (\$)	671,238 11	704,799 11	740,039 12	777,041 12	815,893 13	856,688 13	899,523 14	944,499 14	991,724 15	1,041,310 15	1,093,375 16	1,148,044 17	1,205,446 17	1,265,719 18	1,329,004 19	1,395,455 19	1,465,227 20	1,538,489 21	1,615,413 22	1,696,184 23
6. Total Cost - Alternative 3																				
Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>
Cost/Ton (\$) Total Annual Cost (\$)	5,505,615	91 5,712,413	94 5,927,301	96 6,150,603	99 6,382,662	102 6,623,832	105 6,874,482	107 7,134,996	7,405,775	7,687,237	7,979,817	120 8,283,967	123 8,600,159	127 8,928,884	9,270,656	9,626,007	479 34,855,478	478 35,170,569	478 35,497,101	477 35,835,528

Total Cost 259,453,082 NPV Total Costs 134,349,833

Alternatives 2 & 3 Fluidized Bed Incinerator Cost Projections

Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>
Total Tons/Year	27,000	27,350	27,705	28,064	28,427	28,796	29,169	29,547	29,930	30,318	30,711	31,109	31,513	31,921	32,335	32,754	33,179	33,609	34,045	34,486
Debt Service	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25,259,154	25,259,154	25,259,154	25,259,154
O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,465,406	4,572,575	4,682,317	4,794,693
Total Annual Cost (\$)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29,724,560	29,831,730	29,941,472	30,053,847
Cost/Ton (\$)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	896	888	879	871

Alternative 2a

Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>
Food Scraps Cost (\$) Yard Trimmings Cost (\$) Wet AD Cost (\$) CO ₂ Adder (\$) Total Annual Cost (\$) Cost/Ton (\$)	1,587,924 761,334 3,534,828 485,492 6,369,577 103	1,655,071 779,606 3,545,862 509,766 6,490,305 104	1,725,057 798,316 3,557,161 535,255 6,615,788 105	1,798,002 817,476 3,568,731 562,018 6,746,226 106	1,874,032 837,095 3,580,579 590,118 6,881,824 107	1,953,276 857,185 3,592,711 619,624 7,022,797 108	2,035,872 877,758 3,605,135 650,606 7,169,370 109	2,121,960 898,824 3,617,856 683,136 7,321,777 110	2,211,689 920,396 3,630,883 717,293 7,480,261 112	2,305,212 942,485 3,644,223 753,157 7,645,077 113	2,402,689 965,105 3,657,883 790,815 7,816,492 114	2,504,289 988,267 3,671,870 830,356 7,994,782 116	2,610,184 1,011,986 3,686,193 871,874 8,180,237 117	2,720,558 1,036,273 3,700,860 915,467 8,373,159 119	2,835,599 1,061,144 3,715,879 961,241 8,573,863 120	2,955,504 1,086,612 3,731,259 1,009,303 8,782,677 122	3,080,480 1,112,690 3,747,007 1,059,768 8,999,945 124	3,210,740 1,139,395 3,763,134 1,112,756 9,226,025 125	3,346,508 1,166,740 3,779,647 1,168,394 9,461,290 127	3,488,018 1,194,742 3,796,557 1,226,814 9,706,131 129
Total Costs NPV Total Costs	156,857,602 94,316,201																			
Alternative 3a																				
Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	2020	<u>2021</u>	2022	2023	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	2032	<u>2033</u>	<u>2034</u>
Food Scraps Cost (\$) Yard Trimmings Cost (\$) Wet AD Cost (\$) CO ₂ Adder (\$) Total Annual Cost (\$) Cost/Ton (\$)	1,316,019 761,334 3,534,828 467,408 6,079,589 98	1,371,668 779,606 3,545,862 490,778 6,187,914 99	1,429,670 798,316 3,557,161 515,317 6,320,402 100	1,490,125 817,476 3,568,731 541,083 6,438,349 101	1,553,136 837,095 3,580,579 568,137 6,560,928 102	1,618,811 857,185 3,592,711 596,544 6,688,332 103	1,687,264 877,758 3,605,135 626,371 6,820,762 104	1,758,611 898,824 3,617,856 657,690 6,958,427 105	1,832,975 920,396 3,630,883 690,574 7,101,547 106	1,910,484 942,485 3,644,223 725,103 7,250,349 107	1,991,270 965,105 3,657,883 761,358 7,405,072 108	2,075,472 988,267 3,671,870 799,426 7,565,965 109	2,163,235 1,011,986 3,686,193 839,397 7,733,288 111	2,254,709 1,036,273 3,700,860 881,367 7,907,310 112	2,350,051 1,061,144 3,715,879 925,435 8,088,315 113	2,449,425 1,086,612 3,731,259 971,707 8,276,597 115	2,553,000 1,112,690 3,747,007 1,020,293 8,472,465 116	2,660,956 1,139,395 3,763,134 1,071,307 8,676,240 118	2,773,476 1,166,740 3,779,647 1,124,873 8,888,258 120	2,890,754 1,194,742 3,796,557 1,181,116 9,108,867 121
Total Costs NPV Total Costs	148,528,978 89,448,650																			
Wet AD Facility Cost Build-Up (Alt	ternatives 2a &	3a Only)																		
Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	2022	<u>2023</u>	<u>2024</u>	<u>2025</u>	2026	<u>2027</u>	<u>2028</u>	2029	<u>2030</u>	2031	2032	2033	2034
Total Tons/Year Debt Service O&M Total Annual Cost (\$) Cost/Ton (\$)	27,000 3,075,069 459,759 3,534,828 131	27,350 3,075,069 470,793 3,545,862 130	27,705 3,075,069 482,092 3,557,161 128	28,064 3,075,069 493,662 3,568,731 127	28,427 3,075,069 505,510 3,580,579 126	28,796 3,075,069 517,642 3,592,711 125	29,169 3,075,069 530,066 3,605,135 124	29,547 3,075,069 542,787 3,617,856 122	29,930 3,075,069 555,814 3,630,883 121	30,318 3,075,069 569,154 3,644,223 120	30,711 3,075,069 582,813 3,657,883 119	31,109 3,075,069 596,801 3,671,870 118	31,513 3,075,069 611,124 3,686,193 117	31,921 3,075,069 625,791 3,700,860 116	32,335 3,075,069 640,810 3,715,879 115	32,754 3,075,069 656,189 3,731,259 114	33,179 3,075,069 671,938 3,747,007 113	33,609 3,075,069 688,065 3,763,134 112	34,045 3,075,069 704,578 3,779,647 111	34,486 3,075,069 721,488 3,796,557 110