

East Tennessee Natural Gas, LLC  
5400 Westheimer Court  
Houston, TX 77056

Mailing Address:  
P.O. Box 1642  
Houston, TX 77251-1642

Knop  
JUL 19 2010



2010 JUN -3 AM 9:21

June 2, 2010

VIA OVERNIGHT DELIVERY

Mr. Barry R. Stephens, Director  
Division of Air Pollution Control  
9<sup>th</sup> Floor, L & C Annex  
401 Church Street  
Nashville, Tennessee 37243-1531

**RE: EAST TENNESSEE NATURAL GAS  
STATION 3110 (WARTBURG)  
OPERATING PERMIT RENEWAL  
PERMIT NO. 053993F  
EMISSION SOURCE NO. 65-0028-01**

Dear Mr. Stephens:

Enclosed please find the completed application forms requesting renewal of the referenced operating permit. Please recall that previous correspondence has been submitted to the Department regarding alternative sulfur fuel monitoring for the turbine as provided by 40 CFR GG, §60.334(h)(3).

If you have any questions regarding this matter, please feel free to contact Sabino Gomez at 713-989-8342.

Yours truly,

Victoria L. Wagner  
EHS Manager – U.S. Operations

Enclosures

JUL 19 2010

**Station 3110 – Wartburg**

**Operating Permit Renewal Application Forms  
and  
Supporting Documentation**



JUL 19 2010

9th Floor, L & C Annex  
401 Church Street  
Nashville, TN 37243-1531  
Telephone: (615) 532-0554  
FAX: (615) 532-0614

NOT TO BE USED FOR TITLE V APPLICATIONS

PERMIT APPLICATION

2010 JUN -3 AM 9:21

APC 20

PLEASE TYPE OR PRINT AND SUBMIT IN DUPLICATE FOR EACH EMISSION SOURCE. ATTACH APPROPRIATE SOURCE DESCRIPTION FORMS.

1. ORGANIZATION'S LEGAL NAME East Tennessee Natural Gas Company			/// FOR	APC COMPANY--POINT NO.
2. MAILING ADDRESS (ST/RD/P.O. BOX) P.O. Box 1642			/// APC	APC LOG/PERMIT NO. <b>63779</b>
CITY Houston	STATE TX	ZIP CODE 77251-1642	PHONE WITH AREA CODE (713) 627-5210	
3. PRINCIPAL TECHNICAL CONTACT Edward L. Anderson - Monterey Office			PHONE WITH AREA CODE (931) 839-2268	
4. SITE ADDRESS (ST/RD/HWY) 142 Clayton Howard Road			COUNTY NAME Morgan	
CITY OR DISTANCE TO NEAREST TOWN Wartburg		ZIP CODE 37887	PHONE WITH AREA CODE (423) 346-3579	
5. EMISSION SOURCE NO. (NUMBER WHICH UNIQUELY IDENTIFIES THIS SOURCE) 65-0028-01		PERMIT RENEWAL YES (X) NO ( )		

6. BRIEF DESCRIPTION OF EMISSION SOURCE

Three natural gas-fired Solar Saturn T-1300 turbines (1,360 bhp each at ISO standard conditions).  
[1450 HP @ 0 °F]

7. TYPE OF PERMIT REQUESTED				
CONSTRUCTION ( )	STARTING DATE	COMPLETION DATE	LAST PERMIT NUMBER	EMISSION SOURCE REFERENCE NUMBER
OPERATING (X)	DATE CONSTRUCTION STARTED 06/10/1996	DATE COMPLETED 09/01/1996	LAST PERMIT NUMBER O53993F	EMISSION SOURCE REFERENCE NUMBER 65-0028-01
LOCATION TRANSFER ( )	TRANSFER DATE		LAST PERMIT NUMBER	EMISSION SOURCE REFERENCE NUMBER
ADDRESS OF LAST LOCATION				

8. DESCRIBE CHANGES THAT HAVE BEEN MADE TO THIS EQUIPMENT OR OPERATION SINCE THE LAST CONSTRUCTION OR OPERATING PERMIT APPLICATION.

None.

9. SIGNATURE (APPLICATION MUST BE SIGNED BEFORE IT WILL BE PROCESSED) 		DATE <b>6/11/10</b>
10. SIGNER'S NAME (TYPE OR PRINT) V. K. Fletcher	TITLE General Manager	PHONE WITH AREA CODE (713) 627-5400

**TABLE OF POLLUTION REDUCTION DEVICE OR METHOD CODES**  
**(ALPHABETICAL LISTING)**

NOTE: FOR CYCLONES, SETTLING CHAMBERS, WET SCRUBBERS, AND ELECTROSTATIC PRECIPITATORS. THE EFFICIENCY RANGES CORRESPOND TO THE FOLLOWING PERCENTAGES:

HIGH: 95-99+%. MEDIUM: 80-95%. AND LOW: LESS THAN 80%.

IF THE SYSTEM HAS SEVERAL PIECES OF CONNECTED CONTROL EQUIPMENT, INDICATE THE SEQUENCE, FOR EXAMPLE:

008\*010.97%.

IF NONE OF THE BELOW CODES FIT, USE 999 AS A CODE FOR OTHER AND SPECIFY IN THE COMMENTS.

NO EQUIPMENT .....	000	LIMESTONE INJECTION--DRY .....	041
ACTIVATED CARBON ADSORPTION .....	048	LIMESTONE INJECTION--WET .....	042
AFTERBURNER--DIRECT FLAME .....	021	LIQUID FILTRATION SYSTEM .....	049
AFTERBURNER--DIRECT FLAME WITH HEAT EXCHANGER .....	022	MIST ELIMINATOR--HIGH VELOCITY .....	014
AFTERBURNER--CATALYTIC .....	019	MIST ELIMINATOR--LOW VELOCITY .....	015
AFTERBURNER--CATALYTIC WITH HEAT EXCHANGER .....	020	PROCESS CHANGE .....	046
ALKALIZED ALUMINA .....	040	PROCESS ENCLOSED .....	054
CATALYTIC OXIDATION--FLUE GAS DESULFURIZATION .....	039	PROCESS GAS RECOVERY .....	060
CYCLONE--HIGH EFFICIENCY .....	007	SETTLING CHAMBER--HIGH EFFICIENCY .....	004
CYCLONE--MEDIUM EFFICIENCY .....	008	SETTLING CHAMBER--MEDIUM EFFICIENCY .....	005
CYCLONE--LOW EFFICIENCY .....	009	SETTLING CHAMBER--LOW EFFICIENCY .....	006
DUST SUPPRESSION BY CHEMICAL STABILIZERS		SPRAY TOWER (GASEOUS CONTROL ONLY) .....	052
OR WETTING AGENTS .....	062	SULFURIC ACID PLANT--CONTACT PROCESS .....	043
ELECTROSTATIC PRECIPITATOR--HIGH EFFICIENCY .....	010	SULFURIC ACID PLANT--DOUBLE CONTACT PROCESS .....	044
ELECTROSTATIC PRECIPITATOR--MEDIUM EFFICIENCY .....	011	SULFUR PLANT .....	045
ELECTROSTATIC PRECIPITATOR--LOW EFFICIENCY .....	012	VAPOR RECOVERY SYSTEM (INCLUDING CONDENSERS,	
FABRIC FILTER--HIGH TEMPERATURE .....	016	HOODING AND OTHER ENCLOSURES) .....	047
FABRIC FILTER--MEDIUM TEMPERATURE .....	017	VENTURI SCRUBBER (GASEOUS CONTROL ONLY) .....	053
FABRIC FILTER--LOW TEMPERATURE .....	018	WET SCRUBBER--HIGH EFFICIENCY .....	001
FABRIC FILTER--METAL SCREENS (COTTON GINS) .....	059	WET SCRUBBER--MEDIUM EFFICIENCY .....	002
FLARING .....	023	WET SCRUBBER--LOW EFFICIENCY .....	003
GAS ADSORPTION COLUMN--PACKED .....	050	WET SUPPRESSION BY WATER SPRAYS .....	061
GAS ADSORPTION COLUMN--TRAY TYPE .....	051		
GAS SCRUBBER (GENERAL: NOT CLASSIFIED) .....	013		

**TABLE OF EMISSION ESTIMATION METHOD CODES**

NOT APPLICABLE EMISSIONS ARE KNOWN TO BE ZERO .....	0
EMISSIONS BASED ON SOURCE TESTING .....	1
EMISSIONS BASED ON MATERIAL BALANCE USING ENGINEERING EXPERTISE AND KNOWLEDGE OF PROCESS .....	2
EMISSIONS CALCULATED USING EMISSION FACTORS FROM EPA PUBLICATION NO. AP-42 COMPILATION OF	
AIR POLLUTANT EMISSIONS FACTORS .....	3
JUDGEMENT .....	4
EMISSIONS CALCULATED USING A SPECIAL EMISSION FACTOR DIFFERING FROM THAT IN AP-42 .....	5
OTHER (SPECIFY IN COMMENTS) .....	6



JUL 19 2010

9th Floor, L & C Annex  
401 Church Street  
Nashville, TN 37243-1531  
Telephone: (615) 532-0554  
FAX: (615) 532-0614

NOT TO BE USED FOR TITLE V APPLICATIONS

**PROCESS OR FUEL BURNING  
SOURCE DESCRIPTION**

APC21(& 24)

PLEASE TYPE OR PRINT, SUBMIT IN DUPLICATE AND ATTACH TO THE PERMIT APPLICATION.

<b>1. ORGANIZATION NAME</b> East Tennessee Natural Gas Company				/// FOR	APC COMPANY-POINT NO.
<b>2. EMISSION SOURCE NO. (AS ON PERMIT APPLICATION)</b> 65-0028-01		<b>SIC CODE</b> 4922		/// APC	APC PERMIT/LOG NO.
<b>3. DESCRIPTION OF PROCESS OR FUEL BURNING UNIT</b> Three natural gas-fired Solar Saturn T-1300 turbines (1,360 bhp each at ISO standard conditions; 1450 hp @ 0 °F).					
<b>4. NORMAL OPERATION:</b> →	<b>HOURS/DAY</b> 24	<b>DAYS/WEEK</b> 7	<b>WEEKS/YEAR</b> 52	<b>DAYS/YEAR</b> 365	
<b>5. PERCENT ANNUAL THROUGHPUT:</b> →	<b>DEC.-FEB.</b> 25	<b>MARCH-MAY</b> 25	<b>JUNE-AUG.</b> 25	<b>SEPT.-NOV.</b> 25	
<b>6. TYPE OF PERMIT APPLICATION</b>					(CHECK BELOW ONE ONLY)
PROCESS SOURCE: APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. (CHECK AT RIGHT, AND COMPLETE LINES 7, 8, 13, AND 14.)					( )
PROCESS SOURCE WITH IN-PROCESS FUEL: PRODUCTS OF COMBUSTION CONTACT MATERIALS HEATED. APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. (CHECK AT RIGHT, AND COMPLETE LINES 7, 8, AND 10 THROUGH 14)					( )
NON-PROCESS FUEL BURNING SOURCE: PRODUCTS OF COMBUSTION DO NOT CONTACT MATERIALS HEATED. COMPLETE THIS FORM FOR EACH BOILER OR FUEL BURNER AND COMPLETE AN EMISSION POINT DESCRIPTION FORM (APC 22) FOR EACH STACK. (CHECK AT RIGHT, AND COMPLETE LINES 9 TO 14)					( X )
<b>7. TYPE OF OPERATION:</b> CONTINUOUS, ( )			BATCH ( )	NORMAL BATCH TIME	NORMAL BATCHES/DAY
<b>8. PROCESS MATERIAL INPUTS AND IN-PROCESS SOLID FUELS</b>		DIAGRAM* REFERENCE	INPUT RATES (POUNDS/HOUR) DESIGN      ACTUAL		/(FOR APC USE ONLY) /SCC CODE
A.					/
B.					/
C.					/
D.					/
E.					/
F.					/
G.					/
TOTALS					/

\* A SIMPLE PROCESS FLOW DIAGRAM MUST BE ATTACHED.

( OVER )

JUL 19 2010

<b>9. BOILER OR BURNER DATA:</b> ( COMPLETE LINES 9 TO 14 USING A SEPARATE FORM FOR EACH BOILER )					
BOILER NUMBER	STACK NUMBER**	TYPE OF FIRING***	RATED BOILER HORSEPOWER	RATED INPUT CAPACITY (10 <sup>6</sup> BTU/HR)	OTHER BOILER RATING (SPECIFY CAPACITY AND UNITS)
T1A	T1A	Single Pipe, High Pressure	1450 at 0°F		
BOILER SERIAL NO.		DATE CONSTRUCTED	DATE OF LAST MODIFICATION (EXPLAIN IN COMMENTS BELOW).		

\*\* BOILERS WITH A COMMON STACK WILL HAVE THE SAME STACK NUMBER.

\*\*\* CYCLONE, SPREADER ( WITH OR WITHOUT REINJECTION ), PULVERIZED ( WET OR DRY BOTTOM, WITH OR WITHOUT REINJECTION ), OTHER STOKER ( SPECIFY TYPE ), HAND FIRED, AUTOMATIC, OR OTHER TYPE ( DESCRIBE BELOW IN COMMENTS ).

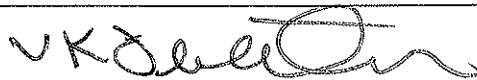
<b>10. FUEL DATA:</b> ( COMPLETE FOR A PROCESS SOURCE WITH IN-PROCESS FUEL OR A NON-PROCESS FUEL BURNING SOURCE )							
PRIMARY FUEL TYPE ( SPECIFY )				STANDBY FUEL TYPE( S ) ( SPECIFY )			
Natural Gas				None			
FUELS USED	ANNUAL USAGE	HOURLY USAGE		%	%	BTU VALUE	(FOR APC ONLY)
		DESIGN	AVERAGE	SULFUR	ASH	OF FUEL	SCC CODE
NATURAL GAS:	10 <sup>6</sup> CUFT 137,705	CUFT 15,948	CUFT 15,948	/ / / / / / / /	/ / / / /	1,020 BTU/scf (HHV)	
#2 FUEL OIL:	10 <sup>3</sup> GAL	GAL	GAL		/ / / / /		
#5 FUEL OIL:	10 <sup>3</sup> GAL	GAL	GAL		/ / / / /		
#6 FUEL OIL:	10 <sup>3</sup> GAL	GAL	GAL		/ / / / /		
COAL:	TONS	LBS	LBS				
WOOD:	TONS	LBS	LBS	/ / / / / / / /	/ / / / /		
LIQUID PROPANE:	10 <sup>3</sup> GAL	GAL	GAL	/ / / / / / / /	/ / / / /	85,000	
OTHER (.SPECIFY TYPE & UNITS.):							

11. IF WOOD IS USED AS A FUEL, SPECIFY TYPES AND ESTIMATE PERCENT BY WEIGHT OF BARK

12. IF WOOD IS USED WITH OTHER FUELS, SPECIFY PERCENT BY WEIGHT OF WOOD CHARGED TO THE BURNER.

13. COMMENTS

14. SIGNATURE



V.K. Fletcher, General Manager

DATE

6/1/10

JUL 19 2010

<b>9. BOILER OR BURNER DATA:</b> ( COMPLETE LINES 9 TO 14 USING A SEPARATE FORM FOR EACH BOILER )					
BOILER NUMBER	STACK NUMBER**	TYPE OF FIRING***	RATED BOILER HORSEPOWER	RATED INPUT CAPACITY (10 <sup>6</sup> BTU/HR) (HHV)	OTHER BOILER RATING (SPECIFY CAPACITY AND UNITS)
T-2A	T-2A	Single Pipe, High Pressure	1,466 at 0°F	18.11 at 0°F (HHV)	Please see Table A-1 for site-rated capacities at different ambient temperatures.
BOILER SERIAL NO.		DATE CONSTRUCTED 06/10/1996	DATE OF LAST MODIFICATION (EXPLAIN IN COMMENTS BELOW).		

\*\* BOILERS WITH A COMMON STACK WILL HAVE THE SAME STACK NUMBER.

\*\*\* CYCLONE, SPREADER ( WITH OR WITHOUT REINJECTION ), PULVERIZED ( WET OR DRY BOTTOM, WITH OR WITHOUT REINJECTION ), OTHER STOKER ( SPECIFY TYPE ), HAND FIRED, AUTOMATIC, OR OTHER TYPE ( DESCRIBE BELOW IN COMMENTS ).

<b>10. FUEL DATA:</b> ( COMPLETE FOR A PROCESS SOURCE WITH IN-PROCESS FUEL OR A NON-PROCESS FUEL BURNING SOURCE )							
PRIMARY FUEL TYPE ( SPECIFY ) Natural Gas				STANDBY FUEL TYPE( S ) ( SPECIFY ) None			
FUELS USED	ANNUAL USAGE	HOURLY USAGE		%		BTU VALUE OF FUEL	(FOR APC ONLY) SCC CODE
		DESIGN	AVERAGE	SULFUR	ASH		
NATURAL GAS:	10 <sup>6</sup> CUFT 137,705	CUFT 15,948	CUFT 15,948	/ / / / / / / /	/ / / /	1,020 BTU/scf (HHV)	
#2 FUEL OIL:	10 <sup>3</sup> GAL	GAL	GAL		/ / / /		
#5 FUEL OIL:	10 <sup>3</sup> GAL	GAL	GAL		/ / / /		
#6 FUEL OIL:	10 <sup>3</sup> GAL	GAL	GAL		/ / / /		
COAL:	TONS	LBS	LBS				
WOOD:	TONS	LBS	LBS	/ / / / / / / /	/ / / /		
LIQUID PROPANE:	10 <sup>3</sup> GAL	GAL	GAL	/ / / / / / / /	/ / / /	85,000	
OTHER (.SPECIFY TYPE & UNITS.):							

11. IF WOOD IS USED AS A FUEL, SPECIFY TYPES AND ESTIMATE PERCENT BY WEIGHT OF BARK

12. IF WOOD IS USED WITH OTHER FUELS, SPECIFY PERCENT BY WEIGHT OF WOOD CHARGED TO THE BURNER.

13. COMMENTS

14. SIGNATURE



V.K. Fletcher, General Manager

DATE

6/1/10

JUL 19 2010

<b>9. BOILER OR BURNER DATA:</b> ( COMPLETE LINES 9 TO 14 USING A SEPARATE FORM FOR EACH BOILER )					
BOILER NUMBER	STACK NUMBER**	TYPE OF FIRING***	RATED BOILER HORSEPOWER	RATED INPUT CAPACITY (10 <sup>6</sup> BTU/HR) (HHV)	OTHER BOILER RATING (SPECIFY CAPACITY AND UNITS)
T-3A	T-3A	Single Pipe, High Pressure	1,450 at 0°F	18.11 at 0°F (HHV)	Please see Table A-1 for site-rated capacities at different ambient temperatures.
BOILER SERIAL NO.		DATE CONSTRUCTED 06/10/1996	DATE OF LAST MODIFICATION (EXPLAIN IN COMMENTS BELOW).		

\*\* BOILERS WITH A COMMON STACK WILL HAVE THE SAME STACK NUMBER.

\*\*\* CYCLONE, SPREADER ( WITH OR WITHOUT REINJECTION ), PULVERIZED ( WET OR DRY BOTTOM, WITH OR WITHOUT REINJECTION ), OTHER STOKER ( SPECIFY TYPE ), HAND FIRED, AUTOMATIC, OR OTHER TYPE ( DESCRIBE BELOW IN COMMENTS ).

<b>10. FUEL DATA:</b> ( COMPLETE FOR A PROCESS SOURCE WITH IN-PROCESS FUEL OR A NON-PROCESS FUEL BURNING SOURCE )							
PRIMARY FUEL TYPE ( SPECIFY ) Natural Gas							
STANDBY FUEL TYPE( S ) ( SPECIFY ) None							
FUELS USED	ANNUAL USAGE	HOURLY USAGE		% SULFUR	% ASH	BTU VALUE OF FUEL	(FOR APC ONLY) SCC CODE
		DESIGN	AVERAGE				
NATURAL GAS:	10 <sup>6</sup> CUFT 137,705	CUFT 15,948	CUFT 15,948	/ / / / / / / /	/ / / / / /	1,020 BTU/scf (HHV)	
#2 FUEL OIL:	10 <sup>3</sup> GAL	GAL	GAL		/ / / / / /		
#5 FUEL OIL:	10 <sup>3</sup> GAL	GAL	GAL		/ / / / / /		
#6 FUEL OIL:	10 <sup>3</sup> GAL	GAL	GAL		/ / / / / /		
COAL:	TONS	LBS	LBS				
WOOD:	TONS	LBS	LBS	/ / / / / / / /	/ / / / / /		
LIQUID PROPANE:	10 <sup>3</sup> GAL	GAL	GAL	/ / / / / / / /	/ / / / / /	85,000	
OTHER (SPECIFY TYPE & UNITS.):							

11. IF WOOD IS USED AS A FUEL, SPECIFY TYPES AND ESTIMATE PERCENT BY WEIGHT OF BARK

12. IF WOOD IS USED WITH OTHER FUELS, SPECIFY PERCENT BY WEIGHT OF WOOD CHARGED TO THE BURNER.

13. COMMENTS

14. SIGNATURE  V.K. Fletcher, General Manager	DATE 6/1/10
--	----------------





JUL 19 2010

9th Floor, L & C Annex  
401 Church Street  
Nashville, TN 37243-1531  
Telephone: (615) 532-0554  
FAX: (615) 532-0614

NOT TO BE USED FOR TITLE V APPLICATIONS

# EMISSION POINT DESCRIPTION -3 AM 9:21

APC 22

PLEASE TYPE OR PRINT AND SUBMIT IN DUPLICATE FOR EACH STACK OR EMISSION POINT.  
ATTACH TO THE PERMIT APPLICATION.

<b>1. ORGANIZATION NAME</b> East Tennessee Natural Gas Company					/// FOR	APC COMPANY POINT NO.	
<b>2. EMISSION SOURCE NO. (FROM APPLICATION)</b> 65-0028-01			<b>FLOW DIAGRAM POINT NUMBER</b> Not Applicable		/// APC	APC SEQUENCE NO.	
<b>3. LOCATION:</b> →	<b>LATITUDE</b> 36° 04' 15"	<b>LONGITUDE</b> 84° 32' 29"	<b>UTM VERTICAL</b>		<b>UTM HORIZONTAL</b>		
<b>4. BRIEF EMISSION POINT DESCRIPTION (ATTACH A SKETCH IF APPROPRIATE):</b> T-1A: Natural gas-fired Solar Saturn T-1300 turbine (1,360 bhp at ISO standard conditions) exhaust stack.						<b>DISTANCE TO NEAREST PROPERTY LINE (FT)</b>	
COMPLETE LINES 5 AND 6 IF DIFFERENT FROM THAT ON THE PROCESS OR FUEL BURNING SOURCE DESCRIPTION (APC 21)							
<b>5. NORMAL OPERATION:</b> →	<b>HOURS/DAY</b> 24	<b>DAYS/WEEK</b> 7	<b>WEEK/YEAR</b> 52		<b>DAYS/YEAR</b> 365		
<b>6. PERCENT ANNUAL THROUGHPUT:</b> →	<b>DEC.-FEB.</b> 25	<b>MARCH-MAY</b> 25	<b>JUNE-AUG.</b> 25		<b>SEPT.-NOV.</b> 25		
<b>7. STACK OR EMISSION POINT DATA:</b> →	<b>HEIGHT ABOVE GRADE ( FT )</b> 22.33	<b>DIAMETER (FT)</b> 2.00	<b>TEMPERATURE (°F)</b> 974	<b>% OF TIME OVER 125°F</b> 100	<b>DIRECTION OF EXIT (UP, DOWN OR HORIZONTAL)</b> UP		
<b>DATA AT EXIT CONDITIONS:</b> →	<b>FLOW (ACTUAL FT<sup>3</sup>/MIN. )</b> 30,493	<b>VELOCITY (FT/SEC)</b> 161.77	<b>MOISTURE (GRAINS/FT<sup>3</sup>)</b> 187		<b>MOISTURE (PERCENT)</b> 5.93 vol%		
<b>DATA AT STANDARD CONDITIONS:</b> →	<b>FLOW (DRY STD. FT<sup>3</sup>/MIN)</b> 10,172	<b>VELOCITY (FT/SEC)</b> 53.96 (dry)	<b>MOISTURE (GRAINS/FT<sup>3</sup>)</b> 0 (dry)		<b>MOISTURE (PERCENT)</b> 0.00 vol% (dry)		
<b>8. AIR CONTAMINANTS</b>	<b>ACTUAL EMISSIONS</b>				<b>EMISSIONS* EST.</b>	<b>CONTROL DEVICES*</b>	<b>CONTROL EFFICIENCY%</b>
	<b>EMISSIONS (LBS/HR)</b>		<b>CONCENTRATION</b>	<b>AVG. EMISSIONS (TONS/YR)</b>			
	<b>AVG.</b>	<b>MAXIMUM</b>					
PARTICULATES	0.11	0.11	**	0.47	3	000	0
SULFUR DIOXIDE	0.06	0.06	***	0.24	3	000	0
CARBON MONOXIDE	14.21	15.13	PPMVD at 15% O2	62.26	5	000	0
ORGANIC COMPOUNDS	0.45	0.47	PPMVD at 15% O2	1.95	5	000	0
NITROGEN OXIDES	8.75	9.32	PPMVD at 15% O2	38.35	5	000	0
FLUORIDES							
OTHER( SPECIFY )						000	0
OTHER( SPECIFY ) Formaldehyde	0.15	0.16		0.66	3	000	0

( OVER )

JUL 19 2010

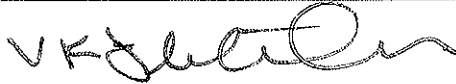
**9. CHECK TYPES OF MONITORING AND RECORDING INSTRUMENTS THAT ARE ATTACHED:**OPACITY MONITOR ( ☐ ), SO2 MONITOR ( ☐ ), NOX MONITOR ( ☐ ), OTHER (SPECIFY IN COMMENTS) (X ☒ )**10. COMMENTS**

Section 7: Stack exhaust data is based on manufacturer's data at an average annual ambient temperature of 59.10°F (see Table A-1).

Section 8: Emissions data is based on calculations that are documented in Tables A-2.

Section 9: Monitoring or recordkeeping should be necessary to document compliance with the terms and condition of the permit. Monthly fuel consumption records and 12-month running total fuel consumption records should be sufficient.

The turbine is subject to NSPS, Subpart GG. Performance testing was conducted on November 20, 1996 in accordance with the applicable requirements of NSPS, Subparts A and GG. The turbine complies with the NSPS, Subpart GG nitrogen and sulfur monitoring requirements in accordance with §§60.334(h)(2) and 60.334(h)(3), respectively.

**11. SIGNATURE****DATE**

6/1/10

V.K. Fletcher, General Manager

\* REFER TO THE BACK OF THE PERMIT APPLICATION FORM FOR ESTIMATION METHOD AND CONTROL DEVICE CODES.

\*\* EXIT GAS PARTICULATE CONCENTRATION UNITS: PROCESS — GRAINS/DRY STANDARD FT<sup>3</sup> ( 70°F ); WOOD FIRED BOILERS — GRAINS/DRY STANDARD FT<sup>3</sup> ( 70°F ); ALL OTHER BOILERS — LBS/MILLION BTU HEAT INPUT.

\*\*\* EXIT GAS SULFUR DIOXIDE CONCENTRATIONS UNITS: PROCESS — PPM BY VOLUME, DRY BASES; BOILERS — LBS/MILLION BTU HEAT INPUT.



NOT TO BE USED FOR TITLE V APPLICATIONS

EMISSION POINT DESCRIPTION

2010 JUN -3 AM 9:21

APC 22

PLEASE TYPE OR PRINT AND SUBMIT IN DUPLICATE FOR EACH STACK OR EMISSION POINT.  
ATTACH TO THE PERMIT APPLICATION.

<b>1. ORGANIZATION NAME</b> East Tennessee Natural Gas Company					///	APC COMPANY POINT NO.	
					FOR		
<b>2. EMISSION SOURCE NO. (FROM APPLICATION)</b> 65-0028-01			<b>FLOW DIAGRAM POINT NUMBER</b> Not Applicable		///	APC SEQUENCE NO.	
					APC		
<b>3. LOCATION:</b>	<b>LATITUDE</b> 36° 04' 15"	<b>LONGITUDE</b> 84° 32' 29"	<b>UTM VERTICAL</b>		<b>UTM HORIZONTAL</b>		
<b>4. BRIEF EMISSION POINT DESCRIPTION (ATTACH A SKETCH IF APPROPRIATE):</b> T-2A: Natural gas-fired Solar Saturn T-1300 turbine (1,360 bhp at ISO standard conditions) exhaust stack.						<b>DISTANCE TO NEAREST PROPERTY LINE (FT)</b>	
COMPLETE LINES 5 AND 6 IF DIFFERENT FROM THAT ON THE PROCESS OR FUEL BURNING SOURCE DESCRIPTION (APC 21)							
<b>5. NORMAL OPERATION:</b>	<b>HOURS/DAY</b> 24	<b>DAYS/WEEK</b> 7	<b>WEEK/YEAR</b> 52		<b>DAYS/YEAR</b> 365		
<b>6. PERCENT ANNUAL THROUGHPUT:</b>	<b>DEC.-FEB.</b> 25	<b>MARCH-MAY</b> 25	<b>JUNE-AUG.</b> 25		<b>SEPT.-NOV.</b> 25		
<b>7. STACK OR EMISSION POINT DATA:</b>	<b>HEIGHT ABOVE GRADE ( FT )</b>	<b>DIAMETER (FT)</b>	<b>TEMPERATURE (°F)</b>	<b>% OF TIME OVER 125°F</b>	<b>DIRECTION OF EXIT (UP, DOWN OR HORIZONTAL)</b>		
	22.33	2.00	974	100	UP		
<b>DATA AT EXIT CONDITIONS:</b>	<b>FLOW (ACTUAL FT<sup>3</sup>/MIN. )</b> 30,493	<b>VELOCITY (FT/SEC)</b> 161.77	<b>MOISTURE (GRAINS/FT<sup>3</sup>)</b> 187		<b>MOISTURE (PERCENT)</b> 5.93 vol%		
<b>DATA AT STANDARD CONDITIONS:</b>	<b>FLOW (DRY STD. FT<sup>3</sup>/MIN)</b> 10,172	<b>VELOCITY (FT/SEC)</b> 53.96 (dry)	<b>MOISTURE (GRAINS/FT<sup>3</sup>)</b> 0 (dry)		<b>MOISTURE (PERCENT)</b> 0.00 vol% (dry)		
<b>8. AIR CONTAMINANTS</b>	<b>ACTUAL EMISSIONS</b>				<b>EMISSIONS* EST.</b>	<b>CONTROL DEVICES*</b>	<b>CONTROL EFFICIENCY%</b>
	<b>EMISSIONS (LBS/HR)</b>		<b>CONCENTRATION</b>	<b>AVG. EMISSIONS (TONS/YR)</b>			
	<b>AVG.</b>	<b>MAXIMUM</b>					
PARTICULATES	0.11	0.11	**	0.47	3	000	0
SULFUR DIOXIDE	0.06	0.06	***	0.24	3	000	0
CARBON MONOXIDE	14.21	15.13	PPMVD at 15% O2	62.26	5	000	0
ORGANIC COMPOUNDS	0.45	0.47	PPMVD at 15% O2	1.95	5	000	0
NITROGEN OXIDES	8.75	9.32	PPMVD at 15% O2	38.35	5	000	0
FLUORIDES							
OTHER( SPECIFY )						000	0
OTHER( SPECIFY ) Formaldehyde	0.15	0.16		0.66	3	000	0

( OVER )

JUL 19 2010

**9. CHECK TYPES OF MONITORING AND RECORDING INSTRUMENTS THAT ARE ATTACHED:**

OPACITY MONITOR ( ), SO2 MONITOR ( ), NOX MONITOR ( ), OTHER (SPECIFY IN COMMENTS) (X )

**10. COMMENTS**

Section 7: Stack exhaust data is based on manufacturer's data at an average annual ambient temperature of 59.10°F (see Table A-1).

Section 8: Emissions data is based on calculations that are documented in Tables A-2.

Section 9: Monitoring or recordkeeping should be necessary to document compliance with the terms and condition of the permit. Monthly fuel consumption records and 12-month running total fuel consumption records should be sufficient.

The turbine is subject to NSPS, Subpart GG. Performance testing was conducted on November 20, 1996 in accordance with the applicable requirements of NSPS, Subparts A and GG. The turbine complies with the NSPS, Subpart GG nitrogen and sulfur monitoring requirements in accordance with §§60.334(h)(2) and 60.334(h)(3), respectively.

**11. SIGNATURE**

V.K. Fletcher, General Manager

**DATE**

6/1/10

\* REFER TO THE BACK OF THE PERMIT APPLICATION FORM FOR ESTIMATION METHOD AND CONTROL DEVICE CODES.

\*\* EXIT GAS PARTICULATE CONCENTRATION UNITS: PROCESS — GRAINS/DRY STANDARD FT<sup>3</sup> ( 70°F ); WOOD FIRED BOILERS — GRAINS/DRY STANDARD FT<sup>3</sup> ( 70°F ); ALL OTHER BOILERS — LBS/MILLION BTU HEAT INPUT.

\*\*\* EXIT GAS SULFUR DIOXIDE CONCENTRATIONS UNITS: PROCESS — PPM BY VOLUME, DRY BASES; BOILERS — LBS/MILLION BTU HEAT INPUT.



JUL 19 2010

9th Floor, L & C Annex  
401 Church Street  
Nashville, TN 37243-1531  
Telephone: ( 615 ) 532-0554  
FAX: ( 615 ) 532-0614

NOT TO BE USED FOR TITLE V APPLICATIONS

EMISSION POINT DESCRIPTION JUN -3 AM 9:21

APC 22

PLEASE TYPE OR PRINT AND SUBMIT IN DUPLICATE FOR EACH STACK OR EMISSION POINT.  
ATTACH TO THE PERMIT APPLICATION.

<b>1. ORGANIZATION NAME</b> East Tennessee Natural Gas Company				/// FOR	APC COMPANY POINT NO.		
<b>2. EMISSION SOURCE NO. (FROM APPLICATION)</b> 65-0028-01		<b>FLOW DIAGRAM POINT NUMBER</b> Not Applicable		/// APC	APC SEQUENCE NO.		
<b>3. LOCATION:</b> →	<b>LATITUDE</b> 36° 04' 15"	<b>LONGITUDE</b> 84° 32' 29"	<b>UTM VERTICAL</b>		<b>UTM HORIZONTAL</b>		
<b>4. BRIEF EMISSION POINT DESCRIPTION (ATTACH A SKETCH IF APPROPRIATE):</b> T-3A: Natural gas-fired Solar Saturn T-1300 turbine (1,360 bhp at ISO standard conditions) exhaust stack.					<b>DISTANCE TO NEAREST PROPERTY LINE (FT)</b>		
COMPLETE LINES 5 AND 6 IF DIFFERENT FROM THAT ON THE PROCESS OR FUEL BURNING SOURCE DESCRIPTION (APC 21)							
<b>5. NORMAL OPERATION:</b> →	<b>HOURS/DAY</b> 24	<b>DAYS/WEEK</b> 7	<b>WEEK/YEAR</b> 52		<b>DAYS/YEAR</b> 365		
<b>6. PERCENT ANNUAL THROUGHPUT:</b> →	<b>DEC.-FEB.</b> 25	<b>MARCH-MAY</b> 25	<b>JUNE-AUG.</b> 25		<b>SEPT.-NOV.</b> 25		
<b>7. STACK OR EMISSION POINT DATA:</b> →	<b>HEIGHT ABOVE GRADE ( FT )</b> 22.33	<b>DIAMETER (FT)</b> 2.00	<b>TEMPERATURE (°F)</b> 974	<b>% OF TIME OVER 125°F</b> 100	<b>DIRECTION OF EXIT (UP, DOWN OR HORIZONTAL)</b> UP		
<b>DATA AT EXIT CONDITIONS:</b> →	<b>FLOW (ACTUAL FT<sup>3</sup>/MIN. )</b> 30,493	<b>VELOCITY (FT/SEC)</b> 161.77	<b>MOISTURE (GRAINS/FT<sup>3</sup>)</b> 187		<b>MOISTURE (PERCENT)</b> 5.93 vol%		
<b>DATA AT STANDARD CONDITIONS:</b> →	<b>FLOW (DRY STD. FT<sup>3</sup>/MIN)</b> 10,172	<b>VELOCITY (FT/SEC)</b> 53.96 (dry)	<b>MOISTURE (GRAINS/FT<sup>3</sup>)</b> 0 (dry)		<b>MOISTURE (PERCENT)</b> 0.00 vol% (dry)		
<b>8. AIR CONTAMINANTS</b>	<b>ACTUAL EMISSIONS</b>			<b>EMISSIONS* EST.</b>	<b>CONTROL DEVICES*</b>	<b>CONTROL EFFICIENCY%</b>	
	<b>EMISSIONS (LBS/HR)</b>		<b>CONCENTRATION</b>				
	<b>AVG.</b>	<b>MAXIMUM</b>					
PARTICULATES	0.11	0.11	**	0.47	3	000	0
SULFUR DIOXIDE	0.06	0.06	***	0.24	3	000	0
CARBON MONOXIDE	14.21	15.13	PPMVD at 15% O2	62.26	5	000	0
ORGANIC COMPOUNDS	0.45	0.47	PPMVD at 15% O2	1.95	5	000	0
NITROGEN OXIDES	8.75	9.32	PPMVD at 15% O2	38.35	5	000	0
FLUORIDES							
OTHER( SPECIFY )						000	0
OTHER( SPECIFY ) Formaldehyde	0.15	0.16		0.66	3	000	0

( OVER )

JUN 19 2010

**9. CHECK TYPES OF MONITORING AND RECORDING INSTRUMENTS THAT ARE ATTACHED:**

OPACITY MONITOR ( ), SO2 MONITOR ( ), NOX MONITOR ( ), OTHER (SPECIFY IN COMMENTS) (X )

**10. COMMENTS**

Section 7: Stack exhaust data is based on manufacturer's data at an average annual ambient temperature of 59.10°F (see Table A-1).

Section 8: Emissions data is based on calculations that are documented in Tables A-2.

Section 9: Monitoring or recordkeeping should be necessary to document compliance with the terms and condition of the permit. Monthly fuel consumption records and 12-month running total fuel consumption records should be sufficient.

The turbine is subject to NSPS, Subpart GG. Performance testing was conducted on November 20, 1996 in accordance with the applicable requirements of NSPS, Subparts A and GG. The turbine complies with the NSPS, Subpart GG nitrogen and sulfur monitoring requirements in accordance with §§60.334(h)(2) and 60.334(h)(3), respectively.

**11. SIGNATURE**

V.K. Fletcher, General Manager

**DATE**

6/1/10

\* REFER TO THE BACK OF THE PERMIT APPLICATION FORM FOR ESTIMATION METHOD AND CONTROL DEVICE CODES.

\*\* EXIT GAS PARTICULATE CONCENTRATION UNITS: PROCESS — GRAINS/DRY STANDARD FT<sup>3</sup> ( 70°F ); WOOD FIRED BOILERS — GRAINS/DRY STANDARD FT<sup>3</sup> ( 70°F ); ALL OTHER BOILERS — LBS/MILLION BTU HEAT INPUT.

\*\*\* EXIT GAS SULFUR DIOXIDE CONCENTRATIONS UNITS: PROCESS — PPM BY VOLUME, DRY BASES; BOILERS — LBS/MILLION BTU HEAT INPUT.

**TABLE A-1**  
**Manufacturer's Operating and Emissions Data<sup>1</sup>**  
**Solar Saturn 10-1300**

Parameters			Values						
Ambient <sup>2</sup>	Temperature	°F	0.00	20.00	40.00	55.00	60.00	80.00	100.00
	Altitude	ft	0	0	0	0	0	0	0
	Pressure	psia	14.70	14.70	14.70	14.70	14.70	14.70	14.70
	Relative Humidity	%	60	60	60	60	60	60	60
	Specific Humidity	lb <sub>H<sub>2</sub>O</sub> /lb <sub>Day Air</sub>	0.0006	0.0014	0.0031	0.0057	0.0066	0.0133	0.0253
Fuel <sup>3</sup>	Lower Heating Value (LHV)	BTU/scf	939.2	939.2	939.2	939.2	939.2	939.2	939.2
	Higher Heating Value (HHV)	BTU/scf	1,043.6	1,043.6	1,043.6	1,043.6	1,043.6	1,043.6	1,043.6
Turbine	Net Output Power	hp	1,450	1,420	1,369	1,322	1,306	1,226	1,120
	Fuel Consumption	scf/hr	16,514	16,333	15,941	15,588	15,471	14,842	14,004
	Heat Input at LHV	MMBTU/hr	15.51	15.34	14.97	14.64	14.53	13.94	13.15
	Heat Input at HHV	MMBTU/hr	17.23	17.04	16.63	16.27	16.14	15.49	14.61
	Heat Rate at LHV	BTU/hp-hr	10,695	10,799	10,936	11,076	11,121	11,370	11,743
	Heat Rate at HHV	BTU/hp-hr	11,885	12,003	12,151	12,307	12,362	12,634	13,048
Exhaust	Temperature	°F	815	847	872	890	896	914	925
	Water Fraction	%	4.58%	4.78%	5.07%	5.48%	5.62%	6.58%	8.24%
	Non-Water Fraction	%	95.42%	95.22%	94.93%	94.52%	94.38%	93.42%	91.76%
	O <sub>2</sub> Content	% (dry)	16.65%	16.57%	16.54%	16.52%	16.51%	16.51%	16.55%
	Molecular Weight	lb/lb-mol	28.67	28.66	28.62	28.58	28.57	28.46	28.27
	Flow Rate	lb/hr	56,310	54,752	53,037	51,651	51,189	49,125	46,709
		scfm (1 atm, 68°F)	12,616	12,279	11,909	11,612	11,515	11,094	10,621
NO <sub>x</sub> Emissions		acfm	30,462	30,394	30,042	29,689	29,571	28,868	27,859
		lb/lb-mol	46.01	46.01	46.01	46.01	46.01	46.01	46.01
		ppmvd, 15% O <sub>2</sub>	150.00	150.00	150.00	150.00	150.00	150.00	150.00
		ppmvw	103.10	104.82	105.23	105.31	105.34	104.27	101.48
		lb/hr	9.32	9.21	8.97	8.76	8.68	8.28	7.71
		lb/MMBTU at LHV	0.601	0.601	0.599	0.598	0.598	0.594	0.587
CO Emissions		lb/MMBTU at HHV	0.5406	0.5406	0.5394	0.5383	0.5379	0.5346	0.5279
		lb/lb-mol	28.01	28.01	28.01	28.01	28.01	28.01	28.01
		ppmvd, 15% O <sub>2</sub>	400.00	400.00	400.00	400.00	400.00	400.00	400.00
		ppmvw	274.94	279.53	280.61	280.83	280.90	278.04	270.61
		lb/hr	15.13	14.96	14.57	14.21	14.10	13.44	12.52
		lb/MMBTU at LHV	0.975	0.975	0.973	0.971	0.970	0.964	0.952
UHC Emissions		lb/MMBTU at HHV	0.8777	0.8776	0.8756	0.8738	0.8732	0.8679	0.8570
		lb/lb-mol	18.37	18.37	18.37	18.37	18.37	18.37	18.37
		ppmvd, 15% O <sub>2</sub>	100.00	100.00	100.00	100.00	100.00	100.00	100.00
		ppmvw	68.73	69.88	70.15	70.21	70.23	69.51	67.65
		lb/hr	2.48	2.45	2.39	2.33	2.31	2.20	2.05
		lb/MMBTU at LHV	0.160	0.160	0.160	0.159	0.159	0.158	0.156
		lb/MMBTU at HHV	0.144	0.144	0.144	0.143	0.143	0.142	0.141

**NOTES**

1. Operating and emissions data was provided by the manufacturer (Solar Turbines, Inc.) for the following ambient temperatures: 0°F, 20°F, 40°F, 60°F, 80°F and 100°F. Data for other ambient temperatures are interpolated. USEPA's TANKS 4.0 indicates an average annual ambient temperature of 59°F for Nashville, TN. An average annual temperature of 55°F is used to be conservative.
2. Ambient pressure and humidity are values assumed by the manufacturer to be representative. Emissions are affected by the values used; however, it is believed that any variations would not affect compliance with the proposed emission limits.
3. The heating value of the natural gas used to fuel the turbine will vary. However, it is believed that any variation would not affect compliance with the proposed emission limits.
4. Due to mechanical ("physical") limitations, net output power is limited to 1,450 hp.

**TABLE A-2**  
**Gas-Fired Turbines**  
**Hourly and Annual Emission Estimates**

Source	Wartburg				
Unit	3110-01:3111-03				
Type	turbine				
Make	Solar				
Model	10-1300				
Fuel	Natural Gas				
Fuel Higher Heating Value (HHV)	1,020 BTU/scf			1,020 BTU/scf	
Ambient Temperature	55 °F			0 °F	
Power Output	1,322 bhp (mech.)			1,450 bhp (mech.)	
	986 kW (elec.)			1,081 kW (elec.)	
Heat Rate at HHV	12,307 BTU/hp-hr			11,885 BTU/hp-hr	
Operating Hours	8,760 hrs/yr				
Fuel Consumption	15,948 scfh			16,895 scfh	
	139,705 MMscf/yr				
Heat Input at HHV	16.27 MMBTU/hr			17.23 MMBTU/hr	
	142,499 MMBTU/yr	Avg. Hourly	Max. Annual		Max. Hourly
NO <sub>x</sub>	549.03 lb/MMscf	8.7560 lb/hr	38.3511 tpy	551.45 lb/MMscf	9.3170 lb/hr
CO	891.30 lb/MMscf	14.2146 lb/hr	62.2598 tpy	895.24 lb/MMscf	15.1254 lb/hr
SO <sub>2</sub>	3.47 lb/MMscf	0.0553 lb/hr	0.2422 tpy	3.47 lb/MMscf	0.0586 lb/hr
PM <sub>10</sub>	6.73 lb/MMscf	0.1074 lb/hr	0.4702 tpy	6.73 lb/MMscf	0.1137 lb/hr
TOC (Total)	146.15 lb/MMscf	2.3308 lb/hr	10.2091 tpy	146.80 lb/MMscf	2.4802 lb/hr
Methane	114.26 lb/MMscf	1.8223 lb/hr	7.9816 tpy	114.77 lb/MMscf	1.9391 lb/hr
Ethane	3.99 lb/MMscf	0.0636 lb/hr	0.2784 tpy	4.00 lb/MMscf	0.0676 lb/hr
VOC (Total)	27.90 lb/MMscf	0.4450 lb/hr	1.9490 tpy	28.02 lb/MMscf	0.4735 lb/hr
HAP (Total)	13.65 lb/MMscf	0.2177 lb/hr	0.9535 tpy	13.71 lb/MMscf	0.2316 lb/hr
Acetaldehyde	5.31E-01 lb/MMscf	0.0085 lb/hr	0.0371 tpy	5.34E-01 lb/MMscf	0.0090 lb/hr
Acrolein	8.50E-02 lb/MMscf	0.0014 lb/hr	0.0059 tpy	8.54E-02 lb/MMscf	0.0014 lb/hr
Benzene	1.59E-01 lb/MMscf	0.0025 lb/hr	0.0111 tpy	1.60E-01 lb/MMscf	0.0027 lb/hr
Butadiene (1,3-)	5.71E-03 lb/MMscf	0.0001 lb/hr	0.0004 tpy	5.74E-03 lb/MMscf	0.0001 lb/hr
Ethylbenzene	4.25E-01 lb/MMscf	0.0068 lb/hr	0.0297 tpy	4.27E-01 lb/MMscf	0.0072 lb/hr
Formaldehyde	9.43E+00 lb/MMscf	0.1504 lb/hr	0.6589 tpy	9.48E+00 lb/MMscf	0.1601 lb/hr
Naphthalene	1.73E-02 lb/MMscf	0.0003 lb/hr	0.0012 tpy	1.73E-02 lb/MMscf	0.0003 lb/hr
PAH	2.92E-02 lb/MMscf	0.0005 lb/hr	0.0020 tpy	2.94E-02 lb/MMscf	0.0005 lb/hr
Propylene Oxide	3.85E-01 lb/MMscf	0.0061 lb/hr	0.0269 tpy	3.87E-01 lb/MMscf	0.0065 lb/hr
Toluene	1.73E+00 lb/MMscf	0.0275 lb/hr	0.1207 tpy	1.73E+00 lb/MMscf	0.0293 lb/hr
Xylenes	8.50E-01 lb/MMscf	0.0136 lb/hr	0.0594 tpy	8.54E-01 lb/MMscf	0.0144 lb/hr

**NOTES**

1. Fuel higher heating value selected to correspond to AP-42 emissions factors, but representative of gas in Tennessee.
2. Manufacturer provided data on: power output, heat rate, along with NO<sub>x</sub>, CO, and UHC (or TOC) emissions.
3. The average annual temperature for Nashville, TN (59°F) was extracted from USEPA's TANKS program and 55°F is used as the temperature appropriate for estimating annual emissions. A temperature of 0°F is used to estimate maximum hourly emissions.
4. With the exception of NO<sub>x</sub>, CO, TOC, and TAPs, emissions based data provided in Table 3.1-1 of AP-42 (dated 4/00).
5. Speciated TAP emissions based on data provided in Table 3.1-3 of AP-42 (dated 4/00).
6. Methane, Ethane, VOC, HAP, and Speciate TAP AP-42 emission factors were scaled based on manufacturer's data for TOC:  

$$EF_{Scaled} = (EF_{AP42})(EF_{TOC}/EF_{TOC-AP42})$$