PERMIT APPLICATION FOR MANUFACTURING OR PROCESSING EQUIPMENT

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8520 (09-12)

SECTION A – GENERAL INFORMATION

Equipment items operating as a functional unit may be grouped as one application		
Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION B - FACILITY INFORMATION

Facility Name ***Davis Refinery***		
ND Air Pollution Control Permit No. (If Applicable) ***N/A***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygrou***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***
Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	MSL Elevation at Facility ***2,685 feet***	Ref. Datum

SECTION C – EQUIPMENT INFORMATION

Type of Unit or Process (rotary dryer, cupola furnace, crusher, pelletizer, etc.) ***Cooling Tower A***		
Make ***Cooling Tower Depot, Inc.***	Model ***CFD-241820-5I-14***	Date Installed ***TBD***
Capacity (manufacturer's or designer's guaranteed maximum) ***2,500 gpm***	Operating Capacity (specific units) ***2,500 gpm***	
Brief description of operation of unit or process: ***Water cooling tower, 2,500 gpm capacity, five cells in total, four operating one on standby, equipped with drift eliminators for a drift rate of 0.001%. Emission point 215-CT-1501C.***		

SECTION D – NORMAL OPERATING SCHEDULE

Hours Per Day	Days Per Week	Weeks Per Year	Peak Production Season (if any)	Dates of Annual Shutdown
24	***7***	***52***	***N/A***	***N/A***

SECTION E – RAW MATERIALS INTRODUCED INTO UNIT OR PROCESS

Include solid fuels such as coke or coal. *Exclude* indirect heat exchangers from this section
For indirect heat exchangers, complete form SFN 8518

Material	Hourly Process Weight (Pounds Per Hour)			Average Annual (Specify Units)	Intermittent Operation Only (Average Hours Per Week)
	Average	Maximum	Minimum		
Warm water from various processes	***5,004,000***	***5,004,000***	***5,004,000***	***5,256,000,000 gal***	***N/A***

SECTION F – PRODUCTS OF UNIT OR PROCESS

Include all, even those not usable because they do not meet specifications

Material	Hourly Process Weight (Pounds Per Hour)			Average Annual (Specify Units)	Intermittent Operation Only (Average Hours Per Week)
	Average	Maximum	Minimum		
N/A	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***

SECTION G – FUELS USED

Coal (Tons/Yr)	% Sulfur	% Ash	Oil (Gal/Yr)	% Sulfur	Grade No.
N/A					
Natural Gas (Thousand CF/Yr) ***N/A***		LP Gas (Gal/Yr) ***N/A***		Other (Specify) ***N/A***	

SECTION H – EMISSION POINTS

List each point separately, number each and locate on attached flow chart

Number	Stack Height (ft)	Stack Diameter (ft at top)	Gas Volume (ACFM)	Exit Temp (°F)	Gas Velocity (fps)
215-CT-1501C	***26***	***N/A***	***N/A***	***N/A***	***N/A***

SECTION I – AIR CONTAMINANTS EMITTED

Known or Suspected - Use same identification number as above

Number	Pollutant	Amount		Basis of Estimate
		Pounds/Hr	Tons/Yr	
215-CT-1501C	***VOC***	***9.00E-02***	***3.94E-01***	***Engineering data from vendor, and emission factors from Table 8-5 of the Emissions Estimation Protocol for Petroleum Refineries. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"***
215-CT-1501C	***PM 10***	***4.73E-01***	***2.07E+00***	

SECTION J – VOLATILE ORGANIC COMPOUNDS

Are any volatile organic compounds (VOCs) stored on premises? ☒ No ☐Yes – List Below See 40 CFR 51.100(s) for classes of compounds covered

Material Stored	Size Tank (Gallons)	Vapor Control Device

SECTION K – ORGANIC SOLVENTS

Are any organic solvents used or produced? ☒ No (None or less than 50 gal/yr) ☐Yes – List Below

Type	Principal Use	Gallons/Yr Consumed	Gallons/Yr Produced

SECTION L – AIR POLLUTION CONTROL EQUIPMENT

Is any air pollution control equipment installed on this unit or process? ☒ No ☐ Yes
If 'Yes' attach form SFN 8532

SECTION M – MATERIAL STORAGE

Does the input material or product from this process contain finely divided material which could become airborne? ☒No ☐Yes

Describe storage methods used:

Storage Piles	Type of Material	Particle Diameter (Avg. or Screen	Pile Size Average Tons	Pile Wetted	Pile Covered

Describe any fugitive dust problems:

Attach additional sheets if needed to explain any answers. Use separate form for each contaminant emitting process

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR MANUFACTURING OR PROCESSING EQUIPMENT

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8520 (09-12)

SECTION A – GENERAL INFORMATION

Equipment items operating as a functional unit may be grouped as one application		
Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION B - FACILITY INFORMATION

Facility Name ***Davis Refinery***		
ND Air Pollution Control Permit No. (If Applicable) ***N/A***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygrou***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site	MSL Elevation at Facility	Ref. Datum
Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W	***2,685 feet***	

SECTION C – EQUIPMENT INFORMATION

Type of Unit or Process (rotary dryer, cupola furnace, crusher, pelletizer, etc.) ***Cooling Tower A***		
Make ***Cooling Tower Depot, Inc.***	Model ***CFD-241820-5I-14***	Date Installed ***TBD***
Capacity (manufacturer's or designer's guaranteed maximum) ***2,500 gpm***	Operating Capacity (specific units) ***2,500 gpm***	
Brief description of operation of unit or process: ***Water cooling tower, 2,500 gpm capacity, five cells in total, four operating one on standby, equipped with drift eliminators for a drift rate of 0.001%. Emission point 215-CT-1501D.***		

SECTION D – NORMAL OPERATING SCHEDULE

Hours Per Day	Days Per Week	Weeks Per Year	Peak Production Season (if any)	Dates of Annual Shutdown
24	***7***	***52***	***N/A***	***N/A***

SECTION E – RAW MATERIALS INTRODUCED INTO UNIT OR PROCESS

Include solid fuels such as coke or coal. *Exclude* indirect heat exchangers from this section
For indirect heat exchangers, complete form SFN 8518

Material	Hourly Process Weight (Pounds Per Hour)			Average Annual (Specify Units)	Intermittent Operation Only (Average Hours Per Week)
	Average	Maximum	Minimum		
Warm water from various processes	***5,004,000***	***5,004,000***	***5,004,000***	***5,256,000,000 gal***	***N/A***

SECTION F – PRODUCTS OF UNIT OR PROCESS

Include all, even those not usable because they do not meet specifications

Material	Hourly Process Weight (Pounds Per Hour)			Average Annual (Specify Units)	Intermittent Operation Only (Average Hours Per Week)
	Average	Maximum	Minimum		
N/A	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***

SECTION G – FUELS USED

Coal (Tons/Yr)	% Sulfur	% Ash	Oil (Gal/Yr)	% Sulfur	Grade No.
N/A					
Natural Gas (Thousand CF/Yr) ***N/A***		LP Gas (Gal/Yr) ***N/A***		Other (Specify) ***N/A***	

SECTION H – EMISSION POINTS

List each point separately, number each and locate on attached flow chart

Number	Stack Height (ft)	Stack Diameter (ft at top)	Gas Volume (ACFM)	Exit Temp (°F)	Gas Velocity (fps)
215-CT-1501D	***26***	***N/A***	***N/A***	***N/A***	***N/A***

SECTION I – AIR CONTAMINANTS EMITTED

Known or Suspected - Use same identification number as above

Number	Pollutant	Amount		Basis of Estimate
		Pounds/Hr	Tons/Yr	
215-CT-1501D	***VOC***	***9.00E-02***	***3.94E-01***	***Engineering data from vendor, and emission factors from Table 8-5 of the Emissions Estimation Protocol for Petroleum Refineries. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"***
215-CT-1501D	***PM 10***	***4.73E-01***	***2.07E+00***	

SECTION J – VOLATILE ORGANIC COMPOUNDS

Are any volatile organic compounds (VOCs) stored on premises? ☒ No ☐Yes – List Below See 40 CFR 51.100(s) for classes of compounds covered

Material Stored	Size Tank (Gallons)	Vapor Control Device

SECTION K – ORGANIC SOLVENTS

Are any organic solvents used or produced? ☒ No (None or less than 50 gal/yr) ☐Yes – List Below

Type	Principal Use	Gallons/Yr Consumed	Gallons/Yr Produced

SECTION L – AIR POLLUTION CONTROL EQUIPMENT

Is any air pollution control equipment installed on this unit or process? ☒ No ☐ Yes
If 'Yes' attach form SFN 8532

SECTION M – MATERIAL STORAGE

Does the input material or product from this process contain finely divided material which could become airborne? ☒No ☐Yes

Describe storage methods used:

Storage Piles	Type of Material	Particle Diameter (Avg. or Screen	Pile Size Average Tons	Pile Wetted	Pile Covered

Describe any fugitive dust problems:

Attach additional sheets if needed to explain any answers. Use separate form for each contaminant emitting process

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR MANUFACTURING OR PROCESSING EQUIPMENT

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8520 (09-12)

SECTION A – GENERAL INFORMATION

Equipment items operating as a functional unit may be grouped as one application		
Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION B - FACILITY INFORMATION

Facility Name ***Davis Refinery***		
ND Air Pollution Control Permit No. (If Applicable) ***N/A***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygrou***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***
Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	MSL Elevation at Facility ***2,685 feet***	Ref. Datum

SECTION C – EQUIPMENT INFORMATION

Type of Unit or Process (rotary dryer, cupola furnace, crusher, pelletizer, etc.) ***Cooling Tower A***		
Make ***Cooling Tower Depot, Inc.***	Model ***CFD-241820-5I-14***	Date Installed ***TBD***
Capacity (manufacturer's or designer's guaranteed maximum) ***2,500 gpm***	Operating Capacity (specific units) ***2,500 gpm***	
Brief description of operation of unit or process: ***Water cooling tower, 2,500 gpm capacity, five cells in total, four operating one on standby, equipped with drift eliminators for a drift rate of 0.001%. Emission point 215-CT-1501E.***		

SECTION D – NORMAL OPERATING SCHEDULE

Hours Per Day	Days Per Week	Weeks Per Year	Peak Production Season (if any)	Dates of Annual Shutdown
24	***7***	***52***	***N/A***	***N/A***

SECTION E – RAW MATERIALS INTRODUCED INTO UNIT OR PROCESS

Include solid fuels such as coke or coal. *Exclude* indirect heat exchangers from this section
For indirect heat exchangers, complete form SFN 8518

Material	Hourly Process Weight (Pounds Per Hour)			Average Annual (Specify Units)	Intermittent Operation Only (Average Hours Per Week)
	Average	Maximum	Minimum		
Warm water from various processes	***5,004,000***	***5,004,000***	***5,004,000***	***5,256,000,000 gal***	***N/A***

SECTION F – PRODUCTS OF UNIT OR PROCESS

Include all, even those not usable because they do not meet specifications

Material	Hourly Process Weight (Pounds Per Hour)			Average Annual (Specify Units)	Intermittent Operation Only (Average Hours Per Week)
	Average	Maximum	Minimum		
N/A	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***

SECTION G – FUELS USED

Coal (Tons/Yr)	% Sulfur	% Ash	Oil (Gal/Yr)	% Sulfur	Grade No.
N/A					
Natural Gas (Thousand CF/Yr) ***N/A***		LP Gas (Gal/Yr) ***N/A***		Other (Specify) ***N/A***	

SECTION H – EMISSION POINTS

List each point separately, number each and locate on attached flow chart

Number	Stack Height (ft)	Stack Diameter (ft at top)	Gas Volume (ACFM)	Exit Temp (°F)	Gas Velocity (fps)
215-CT-1501E	***26***	***N/A***	***N/A***	***N/A***	***N/A***

SECTION I – AIR CONTAMINANTS EMITTED

Known or Suspected - Use same identification number as above

Number	Pollutant	Amount		Basis of Estimate
		Pounds/Hr	Tons/Yr	
215-CT-1501E	***VOC***	***9.00E-02***	***3.94E-01***	***Engineering data from vendor, and emission factors from Table 8-5 of the Emissions Estimation Protocol for Petroleum Refineries. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"***
215-CT-1501E	***PM 10***	***4.73E-01***	***2.07E+00***	

SECTION J – VOLATILE ORGANIC COMPOUNDS

Are any volatile organic compounds (VOCs) stored on premises? ☒ No ☐Yes – List Below See 40 CFR 51.100(s) for classes of compounds covered

Material Stored	Size Tank (Gallons)	Vapor Control Device

SECTION K – ORGANIC SOLVENTS

Are any organic solvents used or produced? ☒ No (None or less than 50 gal/yr) ☐Yes – List Below

Type	Principal Use	Gallons/Yr Consumed	Gallons/Yr Produced

SECTION L – AIR POLLUTION CONTROL EQUIPMENT

Is any air pollution control equipment installed on this unit or process? ☒ No ☐ Yes
If 'Yes' attach form SFN 8532

SECTION M – MATERIAL STORAGE

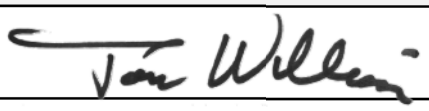
Does the input material or product from this process contain finely divided material which could become airborne? ☒No ☐Yes

Describe storage methods used:

Storage Piles	Type of Material	Particle Diameter (Avg. or Screen	Pile Size Average Tons	Pile Wetted	Pile Covered

Describe any fugitive dust problems:

Attach additional sheets if needed to explain any answers. Use separate form for each contaminant emitting process

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FLARES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 59652 (09-12)

SECTION A – GENERAL INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION B – FACILITY INFORMATION

Facility Name ***Davis Refinery / Enclosed HC Operating Flare***			
ND Air Pollution Control Permit No. (If Applicable) ***N/A***			
Contact Person for Air Pollution Matters ***Tom Johnson***			
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***	
Facility Address (Street & No.) ***37th Street***			
City ***Belfield***	State ***ND***	ZIP Code ***58622***	
Country ***USA***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***	
Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	MSL Elevation at Facility ***2,685 feet***	Source ID ***207-FL-1701***	

SECTION C – FLARE INFORMATION

Use: ☐Emergency ☒Process ☐Both	Subject to NSPS (40 CFR 60.18) ☒Yes ☐No		
Emission Point ID ***207-FL-1701***	Height Above Ground Level (ft.) ***50***	Diameter at Top (ft.) ***30***	
Flame Monitor:	☒Thermocouple ☐Infrared ☐Ultraviolet ☐Acoustic ☐Other:		
Ignition:	☐Automatic ☒Continuous Burning Pilot ☐Other:		
Average Btu/1000 scf ***0.52***	Percent H_2S ***0***	Maximum Hourly Flow Rate to Flare ***24.4 MMSCFD***	

SECTION D – AIR CONTAMINANTS EMITTED

Pollutant	Quantity		Basis Of Estimate
	Pounds/Hr	Tons/Yr	
SO_2	***7.20E-04***	***3.15E-03***	***Criteria Pollutants from Gas pilots: TABLE 1.4-2. AP 42, Chapter 1: External Combustion Sources.*** ***HAPs: Emissions Estimation Protocol for Petroleum Refineries, Table 6-4 "Flare General Emission Factors"*** ***See Document P-5715043-00-001-18042-I001 "EMISSIONS INVENTORY"***
VOC	***6.60E-03***	***2.89E-02***	
NOx	***3.67E-02***	***1.61E-01***	
CO	***3.43E-02***	***1.50E-01***	
PM 10 Total	***4.90E-03***	***2.14E-02***	
PM 10 Filterable	***1.22E-03***	***5.36E-03***	
PM 2.5 Total	***4.90E-03***	***2.14E-02***	
PM 2.5 Filterable	***1.22E-03***	***5.36E-03***	
PM 2.5 Condensable	***3.67E-03***	***1.61E-02***	
Lead (Pb)	***6.00E-07***	***2.63E-06***	
GHG (as CO2e)	***N/A***		
Total HAPS	***4.56E-05***	***5.42E-04***	

Will flaring of gas comply with applicable Ambient Air Quality Standards? ☒Yes ☐No

IS THIS UNIT IN COMPLIANCE WITH ALL APPLICABLE AIR POLLUTION RULES AND REGULATIONS?

☒YES ☐NO

If "NO" a Compliance Schedule must be completed and attached.

Signature of Applicant	Date
Jon Wilson	04/03/17

Attach and label separate sheet(s) if you need more space to explain any system or answers or to provide complete listings of Emissions, Contaminants, or other items.

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FLARES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 59652 (09-12)

SECTION A – GENERAL INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION B – FACILITY INFORMATION

Facility Name ***Davis Refinery / Acid Flare***			
ND Air Pollution Control Permit No. (If Applicable) ***N/A***			
Contact Person for Air Pollution Matters ***Tom Johnson***			
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***	
Facility Address (Street & No.) ***37th Street***			
City ***Belfield***	State ***ND***	ZIP Code ***58622***	
Country ***USA***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***	
Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	MSL Elevation at Facility ***2,685 feet***	Source ID ***207-FL-1702***	

SECTION C – FLARE INFORMATION

Use: ☐Emergency ☒Process ☐Both	Subject to NSPS (40 CFR 60.18) ☒Yes ☐No		
Emission Point ID ***207-FL-1702***	Height Above Ground Level (ft.) ***150***	Diameter at Top (ft.) ***0.8333***	
Flame Monitor:	☒Thermocouple ☐Infrared ☐Ultraviolet ☐Acoustic ☐Other:		
Ignition:	☐Automatic ☒Continuous Burning Pilot ☐Other:		
Average Btu/1000 scf ***0.52***	Percent H_2S ***0***	Maximum Hourly Flow Rate to Flare ***15.8 MMSCFD***	

SECTION D – AIR CONTAMINANTS EMITTED

Pollutant	Quantity		Basis Of Estimate
	Pounds/Hr	Tons/Yr	
SO2	***1.20E-04***	***5.26E-04***	***Criteria Pollutants from Gas pilots: TABLE 1.4-2. AP 42, Chapter 1: External Combustion Sources.*** ***See Document P-5715043-00-001-18042-I001 "EMISSIONS INVENTORY"***
VOC	***1.10E-03***	***4.82E-03***	
NOx	***6.12E-03***	***2.68E-02***	
CO	***5.71E-03***	***2.50E-02***	
PM 10 Total	***8.16E-04***	***3.57E-03***	
PM 10 Filterable	***2.04E-04***	***8.94E-04***	
PM 2.5 Total	***8.16E-04***	***3.57E-03***	
PM 2.5 Filterable	***2.04E-04***	***8.94E-04***	
PM 2.5 Condensable	***6.12E-04***	***2.68E-03***	
Lead (Pb)	***1.00E-07***	***4.38E-07***	
GHG (as CO2e)	***N/A***		
Total HAPS	***-***	***-***	

Will flaring of gas comply with applicable Ambient Air Quality Standards? ☒Yes ☐No

IS THIS UNIT IN COMPLIANCE WITH ALL APPLICABLE AIR POLLUTION RULES AND REGULATIONS?

☒YES ☐NO

If "NO" a Compliance Schedule must be completed and attached.

Signature of Applicant	Date
Jon Wilson	04/03/17

Attach and label separate sheet(s) if you need more space to explain any system or answers or to provide complete listings of Emissions, Contaminants, or other items.

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NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 59652 (09-12)

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Applicant's Name ***Tom Williams***		
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Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION B – FACILITY INFORMATION

Facility Name ***Davis Refinery / HC Emergency Flare (Phase 1)***			
ND Air Pollution Control Permit No. (If Applicable) ***N/A***			
Contact Person for Air Pollution Matters ***Tom Johnson***			
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***	
Facility Address (Street & No.) ***37th Street***			
City ***Belfield***	State ***ND***	ZIP Code ***58622***	
Country ***USA***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***	
Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	MSL Elevation at Facility ***2,685 feet***	Source ID ***207-FL-1703***	

SECTION C – FLARE INFORMATION

Use: ☒Emergency ☐Process ☐Both	Subject to NSPS (40 CFR 60.18) ☒Yes ☐No		
Emission Point ID ***207-FL-1703***	Height Above Ground Level (ft.) ***150***	Diameter at Top (ft.) ***3***	
Flame Monitor:	☒Thermocouple ☐Infrared ☐Ultraviolet ☐Acoustic ☐Other:		
Ignition:	☐Automatic ☒Continuous Burning Pilot ☐Other:		
Average Btu/1000 scf ***0.52***	Percent H_2S ***0***	Maximum Hourly Flow Rate to Flare ***74.6 MMSCFD***	

SECTION D – AIR CONTAMINANTS EMITTED

Pollutant	Quantity		Basis Of Estimate
	Pounds/Hr	Tons/Yr	
SO2	***1.80E-04***	***7.88E-04***	***Criteria Pollutants from Gas pilots: TABLE 1.4-2. AP 42, Chapter 1: External Combustion Sources.*** ***See Document P-5715043-00-001-18042-I001 "EMISSIONS INVENTORY"***
VOC	***1.65E-03***	***7.23E-03***	
NOx	***9.18E-03***	***4.02E-02***	
CO	***8.57E-03***	***3.75E-02***	
PM 10 Total	***1.22E-03***	***5.36E-03***	
PM 10 Filterable	***3.06E-04***	***1.34E-03***	
PM 2.5 Total	***1.22E-03***	***5.36E-03***	
PM 2.5 Filterable	***3.06E-04***	***1.34E-03***	
PM 2.5 Condensable	***9.18E-04***	***4.02E-03***	
Lead (Pb)	***1.50E-07***	***6.57E-07***	
GHG (as CO2e)	***N/A***		
Total HAPS	***-***	***-***	

Will flaring of gas comply with applicable Ambient Air Quality Standards? ☒Yes ☐No

IS THIS UNIT IN COMPLIANCE WITH ALL APPLICABLE AIR POLLUTION RULES AND REGULATIONS?

☒YES ☐NO

If "NO" a Compliance Schedule must be completed and attached.

Signature of Applicant	Date
Tom Williams	04/03/17

Attach and label separate sheet(s) if you need more space to explain any system or answers or to provide complete listings of Emissions, Contaminants, or other items.

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FLARES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 59652 (09-12)

SECTION A – GENERAL INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION B – FACILITY INFORMATION

Facility Name ***Davis Refinery / HC Emergency Flare (Phase 2)***			
ND Air Pollution Control Permit No. (If Applicable) ***N/A***			
Contact Person for Air Pollution Matters ***Tom Johnson***			
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***	
Facility Address (Street & No.) ***37th Street***			
City ***Belfield***	State ***ND***	ZIP Code ***58622***	
Country ***USA***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***	
Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	MSL Elevation at Facility ***2,685 feet***	Source ID ***207-FL-1704***	

SECTION C – FLARE INFORMATION

Use: ☒Emergency ☐Process ☐Both	Subject to NSPS (40 CFR 60.18) ☒Yes ☐No		
Emission Point ID ***207-FL-1704***	Height Above Ground Level (ft.) ***150***	Diameter at Top (ft.) ***3***	
Flame Monitor:	☒Thermocouple ☐Infrared ☐Ultraviolet ☐Acoustic ☐Other:		
Ignition:	☐Automatic ☒Continuous Burning Pilot ☐Other:		
Average Btu/1000 scf ***0.52***	Percent H_2S ***0***	Maximum Hourly Flow Rate to Flare ***88.8 MMSCFD***	

SECTION D – AIR CONTAMINANTS EMITTED

Pollutant	Quantity		Basis Of Estimate
	Pounds/Hr	Tons/Yr	
SO2	***1.80E-04***	***7.88E-04***	***Criteria Pollutants from Gas pilots: TABLE 1.4-2. AP 42, Chapter 1: External Combustion Sources.*** ***See Document P-5715043-00-001-18042-I001 "EMISSIONS INVENTORY"***
VOC	***1.65E-03***	***7.23E-03***	
NOx	***9.18E-03***	***4.02E-02***	
CO	***8.57E-03***	***3.75E-02***	
PM 10 Total	***1.22E-03***	***5.36E-03***	
PM 10 Filterable	***3.06E-04***	***1.34E-03***	
PM 2.5 Total	***1.22E-03***	***5.36E-03***	
PM 2.5 Filterable	***3.06E-04***	***1.34E-03***	
PM 2.5 Condensable	***9.18E-04***	***4.02E-03***	
Lead (Pb)	***1.50E-07***	***6.57E-07***	
GHG (as CO2e)	***N/A***		
Total HAPS	***-***	***-***	

Will flaring of gas comply with applicable Ambient Air Quality Standards? ☒Yes ☐No

IS THIS UNIT IN COMPLIANCE WITH ALL APPLICABLE AIR POLLUTION RULES AND REGULATIONS?

☒YES ☐NO

If "NO" a Compliance Schedule must be completed and attached.

Signature of Applicant	Date
Tom Williams	04/03/17

Attach and label separate sheet(s) if you need more space to explain any system or answers or to provide complete listings of Emissions, Contaminants, or other items.

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FUEL BURNING EQUIPMENT FOR INDIRECT HEATING

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Applicant´s Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	Land Area at Facility Site ***261 Acres***	MSL Elevation at Facility ***2,685 feet***

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) ***101-H-0101***	Name of Manufacturer ***TBD***
Rated Capacity/Maximum Input ***TBD***	Model Number ***TBD***
Purpose Space Heat _____ % Process Heat ***100*** %	Power Generation _____ % Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here) ☐Pulverized ☐General ☐Dry Bottom ☐Wet Bottom with Fly Ash Reinjection ☐Wet Bottom without Fly Ash Reinjection ☐Other – Specify:	 ☐Spreader Stoker with Fly Ash Reinjection ☐Spreader Stoker without Fly Ash Reinjection ☐Fluidized Bed ☐Cyclone ☐Hand-Fired
Fuel Oil ☐Horizontally Fired ☐Tangentially Fired ☐Other – Specify:	Gas ☐Horizontally Fired ☐Tangentially Fired ☐Other – Specify: ***TBD***

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year Total	Peak Season (Specify Months)
24	***7***	***52***	***8760***	***N/A***

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year ***2017-2018***

Primary Fuels			Standby Fuels		
Type ***Fuel Gas***			Type ***none***		
Quantity Per Year ***26,092,536.00***	Units of Measure ***lb/yr***		Quantity Per Year	Units of Measure	
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum ***0***	Maximum ***0***	Average ***0***	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum ***TBD***	Maximum ***TBD***	Average ***27573.4 BTU/lb***	Minimum	Maximum	Average

Describe Fuel Transport and Storage Methods:
N/A, fuel gas to be generated within the refinery

SECTION F – COMBUSTION AIR

☐Natural Draft ☐Induced ☐Forced ☐Other – Specify: ***TBD***

SECTION G – STACK DATA

Inside Diameter (ft) ***6.3***	Height Above Grade (ft) ***127.6***
Gas Temperature at Exit (Avg. °F) ***790.2***	Gas Velocity at Exit (Avg. ft/sec) ***22.8***
Are Emission Control Devices in Place? If YES – Complete SFN 8532 ☒ Yes ☐No	
Stack Exit Gas Flow Rate	
Average (ACFM) ***42,559.29***	Average (DSCFM) ***TBD***
Maximum (ACFM) ***TBD***	Maximum (DSCFM) ***TBD***
Are sampling ports available? ☐No ☒ Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment.
Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM_{10} Total	***3.29E-01***	***1.44E+00***
PM_{10} Filterable	***8.21E-02***	***3.60E-01***
$PM_{2.5}$ Total	***3.29E-01***	***1.44E+00***
$PM_{2.5}$ Filterable	***8.21E-02***	***3.60E-01***
$PM_{2.5}$ Condensable	***2.46E-01***	***1.08E+00***
Sulfur Dioxide	***4.83E-02***	***2.12E-01***
Nitrogen Oxides	***5.17E-01***	***2.27E+00***
Carbon Monoxide	***2.30E+00***	***1.01E+01***
Greenhouse Gases (CO2e)	***N/A***	
Other – Specify		
Lead	***4.02E-05***	***1.76E-04***
Metal HAP (Total)	***6.01E-04***	***2.63E-03***
Organic HAPs (Total)	***4.02E-02***	***1.76E-01***
VOC	***4.43E-01***	***1.94E+00***

Basis and Calculations for Quantities:
Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR AIR POLLUTION CONTROL EQUIPMENT

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8532 (09-12)

NOTE: READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.

SECTION A – GENERAL INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION B – FACILITY INFORMATION

Facility Name ***Davis Refinery / Process Heaters and Boilers***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Location ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***		Source ID No. ***101-H-0101***

SECTION C – EQUIPMENT

Type: ☐ Cyclone ☐ Multicyclone ☐ Baghouse ☐ Electrostatic Precipitator ☐ Wet Scrubber ☐ Spray Dryer ☒ Other – Specify: ***Selective Catalytic Reduction (SCR)***

Name of Manufacturer ***TBD***	Model Number ***TBD***	Date to Be Installed ***TBD***

Application: ☐ Boiler ☐ Kiln ☐ Engine ☒ Other – Specify: ***Process heater***

Pollutants Removed	***NOx***			
Design Efficiency (%)	***TBD***			
Operating Efficiency (%)	***TBD***			

Describe method used to determine operating efficiency:
TBD

SECTION D – GAS CONDITIONS

Gas Conditions			Inlet	Outlet
Gas Volume (SCFM; 68°F; 14.7 psia)			***TBD***	***TBD***
Gas Temperature (°F)			***TBD***	***TBD***
Gas Pressure (in. H_2O)			***TBD***	***TBD***
Gas Velocity (ft/sec)			***TBD***	***TBD***
Pollutant Concentration (Specify Pollutant and Unit of Concentration)	Pollutant	Unit of Concentration		
	NOx	***ppmv***	***TBD (2.464 lb/h)***	***TBD (0.517 lb/h)***

Pressure Drop Through Gas Cleaning Device (in. H_2O)
TBD

Signature of Applicant	Date
	04/03/17

PERMIT APPLICATION FOR
HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Address (Street & No. or Lat/Long to Nearest Second) ***37th Street / 46°52'45"N/103°14'55" W***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Number of Employees at Location ***TBD***	
Land Area at Plant Site ***261*** Acres (or) Sq. Ft.	MSL Elevation at Plant ***2,685 feet***	

Describe Nature of Business/Process

Petroleum Refining / Atmospheric Distillation Unit 1 Heater

SECTION B – STACK DATA

Inside Diameter (ft) ***6.3***	Height Above Grade (ft) ***127.6***	
Gas Temperature at Exit (°F) ***790.2***	Gas Velocity at Exit (ft/sec) ***22.8***	Gas Volume (scfm) ***17,967.68***
Basis of any Estimates (attach separate sheet if necessary) ***Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"***		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes ☒ No ☐
Nearest Residences or Building ***Utility building***	Distance (ft) ***238.3 ft***	Direction ***Southwest***
Nearest Property Line ***Fenceline***	Distance (ft) ***433.9 ft***	Direction ***Southeast***

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 ***101-H-0101***	Mean Particle Diameter (μm) ***TBD***
Flow Rate (scfm) ***17,967.68***	Drift Velocity (ft/sec) ***22.8***
Stream Temperature (°F) ***790.2***	Particulate Concentration (gr/dscf) ***TBD***
Moisture Content (%) ***TBD***	Halogens or Metals Present? ***Metals***
Pressure (in. Hg) ***TBD***	Organic Content (ppmv) ***$1.79x10^{-1}$***
Heat Content (Btu/scfm) ***TBD***	O_2 Content (%) ***N/A***

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted ***Acetaldehyde***	Chemical Abstract Services (CAS) Number ***75-07-0***
Proposed Emission Rate (lb/hr) ***$2.46x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic Vapor***
Concentration in Emission Stream (ppmv) ***$2.00x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***35.51 in Hg @ 68°C***
Solubility ***$1x10^{+6}$ mg/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***44.05***
Absorptive Properties -	

Pollutant Emitted ***Benzene***	Chemical Abstract Services (CAS) Number ***71-43-2***
Proposed Emission Rate (lb/hr) ***$4.31x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.97x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***3.73 in Hg @ 77 °F***
Solubility ***In water $1.79x10^{3}$ mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***78.11***
Absorptive Properties -	

Pollutant Emitted ***Dichlorobenzene***	Chemical Abstract Services (CAS) Number ***Varies***
Proposed Emission Rate (lb/hr) ***$2.46x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$6.00x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***Varies***
Solubility ***Varies***	Molecular Weight (lb/lb-mole) ***147.00***
Absorptive Properties -	

Pollutant Emitted ***Ethylbenzene***	Chemical Abstract Services (CAS) Number ***100-41-4***
Proposed Emission Rate (lb/hr) ***3.29x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***2.06x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.37 in Hg @ 77°F***
Solubility ***In water 0.014 g/100mL @ 59 °F***	Molecular Weight (lb/lb-mole) ***106.17***
Absorptive Properties -	

Pollutant Emitted ***Formaldehyde***	Chemical Abstract Services (CAS) Number ***50-00-0***
Proposed Emission Rate (lb/hr) ***1.52x10^{-3}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.81x10^{-2}***	Vapor Pressure (in. Hg @ °F) ***0.15 in Hg @ 77 °F***
Solubility ***In water 4.00 x10^{5} mg/L @ 68°F***	Molecular Weight (lb/lb-mole) ***30.03***
Absorptive Properties -	

Pollutant Emitted ***Hexane***	Chemical Abstract Services (CAS) Number ***110-54-5***
Proposed Emission Rate (lb/hr) ***3.70x10^{-2}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.53x10^{-1}***	Vapor Pressure (in. Hg @ °F) ***5.90 in Hg @ 68 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***86.1***
Absorptive Properties -	

Pollutant Emitted ***Naphthalene***	Chemical Abstract Services (CAS) Number ***91-20-3***
Proposed Emission Rate (lb/hr) ***1.23x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.44x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0.003 in Hg @ 77 °F***
Solubility ***In water 31 mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***128.17***
Absorptive Properties -	

Pollutant Emitted ***Toluene***	Chemical Abstract Services (CAS) Number ***108-88-3***
Proposed Emission Rate (lb/hr) ***$6.78x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$2.63x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***1.12 in Hg @ 77°F***
Solubility ***In water 526 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***92.14***
Absorptive Properties -	

Pollutant Emitted ***Xylene***	Chemical Abstract Services (CAS) Number ***95-47-6***
Proposed Emission Rate (lb/hr) ***$5.13x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.73x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0.26 in Hg @ 77°F***
Solubility ***In water 178 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***106.16***
Absorptive Properties -	

Pollutant Emitted ***PAH***	Chemical Abstract Services (CAS) Number ***N/A***
Proposed Emission Rate (lb/hr) ***$8.74x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$3.21x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***N/A***
Solubility ***N/A***	Molecular Weight (lb/lb-mole) ***TBD***
Absorptive Properties -	

Pollutant Emitted ***Antimony***	Chemical Abstract Services (CAS) Number ***7740-36-0***
Proposed Emission Rate (lb/hr) ***$4.27x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/particulate***
Concentration in Emission Stream (ppmv) ***$1.25x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***121.76***
Absorptive Properties -	

Pollutant Emitted ***Arsenic***	Chemical Abstract Services (CAS) Number ***7440-38-2***
Proposed Emission Rate (lb/hr) ***1.64x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.84x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Beryllium***	Chemical Abstract Services (CAS) Number ***7440-41-7***
Proposed Emission Rate (lb/hr) ***1.07x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.24x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***9.01***
Absorptive Properties -	

Pollutant Emitted ***Cadmium***	Chemical Abstract Services (CAS) Number ***7440-43-9***
Proposed Emission Rate (lb/hr) ***9.03x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***2.87x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg@ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Chromium (hexavalent)***	Chemical Abstract Services (CAS) Number ***1333-82-0***
Proposed Emission Rate (lb/hr) ***2.30x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.58x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @77°F***
Solubility ***1,660 g/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Chromium***	Chemical Abstract Services (CAS) Number ***7440-47-3***
Proposed Emission Rate (lb/hr) ***1.15x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.91x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Cobalt***	Chemical Abstract Services (CAS) Number ***7440-48-4***
Proposed Emission Rate (lb/hr) ***6.73x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.09x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.93***
Absorptive Properties -	

Pollutant Emitted ***Manganese***	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) ***3.04x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.98x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***54.94***
Absorptive Properties -	

Pollutant Emitted ***Mercury***	Chemical Abstract Services (CAS) Number ***7439-97-6***
Proposed Emission Rate (lb/hr) ***2.05x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.66x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***7.85x10^{-5} in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***200.59***
Absorptive Properties -	

Pollutant Emitted ***Nickel***	Chemical Abstract Services (CAS) Number ***7044-02-0***
Proposed Emission Rate (lb/hr) ***$1.72x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.05x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg Q 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.69***
Absorptive Properties -	

Pollutant Emitted ***Selenium***	Chemical Abstract Services (CAS) Number ***7782-49-2***
Proposed Emission Rate (lb/hr) ***$7.23x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$3.27x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0.29 in Hg @ 807***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***78.96***
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FUEL BURNING EQUIPMENT FOR INDIRECT HEATING

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Applicant´s Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	Land Area at Facility Site ***261 Acres***	MSL Elevation at Facility ***2,685 feet***

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) ***101-H-0101***	Name of Manufacturer ***TBD***
Rated Capacity/Maximum Input ***TBD***	Model Number ***TBD***
Purpose Space Heat _____ % Process Heat ***100*** %	Power Generation _____ % Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here) ☐Pulverized ☐General ☐Dry Bottom ☐Wet Bottom with Fly Ash Reinjection ☐Wet Bottom without Fly Ash Reinjection ☐Other – Specify:	 ☐Spreader Stoker with Fly Ash Reinjection ☐Spreader Stoker without Fly Ash Reinjection ☐Fluidized Bed ☐Cyclone ☐Hand-Fired
Fuel Oil ☐Horizontally Fired ☐Tangentially Fired ☐Other – Specify:	Gas ☐Horizontally Fired ☐Tangentially Fired ☐Other – Specify: ***TBD***

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year Total	Peak Season (Specify Months)
24	***7***	***52***	***8760***	***N/A***

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year ***2017-2018***

Primary Fuels			Standby Fuels		
Type ***Fuel Gas***			Type ***none***		
Quantity Per Year ***26,092,536.00***	Units of Measure ***lb/yr***		Quantity Per Year	Units of Measure	
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum ***0***	Maximum ***0***	Average ***0***	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum ***TBD***	Maximum ***TBD***	Average ***27573.4 BTU/lb***	Minimum	Maximum	Average

Describe Fuel Transport and Storage Methods:
N/A, fuel gas to be generated within the refinery

SECTION F – COMBUSTION AIR

☐Natural Draft ☐Induced ☐Forced ☐Other – Specify: ***TBD***

SECTION G – STACK DATA

Inside Diameter (ft) ***6.3***	Height Above Grade (ft) ***127.6***
Gas Temperature at Exit (Avg. °F) ***790.2***	Gas Velocity at Exit (Avg. ft/sec) ***22.8***
Are Emission Control Devices in Place? If YES – Complete SFN 8532 ☒ Yes ☐No	
Stack Exit Gas Flow Rate	
Average (ACFM) ***42,559.29***	Average (DSCFM) ***TBD***
Maximum (ACFM) ***TBD***	Maximum (DSCFM) ***TBD***
Are sampling ports available? ☐No ☒ Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment.
Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM_{10} Total	***3.29E-01***	***1.44E+00***
PM_{10} Filterable	***8.21E-02***	***3.60E-01***
$PM_{2.5}$ Total	***3.29E-01***	***1.44E+00***
$PM_{2.5}$ Filterable	***8.21E-02***	***3.60E-01***
$PM_{2.5}$ Condensable	***2.46E-01***	***1.08E+00***
Sulfur Dioxide	***4.83E-02***	***2.12E-01***
Nitrogen Oxides	***5.17E-01***	***2.27E+00***
Carbon Monoxide	***2.30E+00***	***1.01E+01***
Greenhouse Gases (CO2e)	***N/A***	
Other – Specify		
Lead	***4.02E-05***	***1.76E-04***
Metal HAP (Total)	***6.01E-04***	***2.63E-03***
Organic HAPs (Total)	***4.02E-02***	***1.76E-01***
VOC	***4.43E-01***	***1.94E+00***

Basis and Calculations for Quantities:
Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR AIR POLLUTION CONTROL EQUIPMENT

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8532 (09-12)

NOTE: READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.

SECTION A – GENERAL INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION B – FACILITY INFORMATION

Facility Name ***Davis Refinery / Process Heaters and Boilers***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Location ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***		Source ID No. ***102-H-0201***

SECTION C – EQUIPMENT

Type: ☐ Cyclone ☐ Multicyclone ☐ Baghouse ☐ Electrostatic Precipitator ☐ Wet Scrubber ☐ Spray Dryer ☒ Other – Specify: ***Selective Catalytic Reduction (SCR)***

Name of Manufacturer ***TBD***	Model Number ***TBD***	Date to Be Installed ***TBD***

Application: ☐ Boiler ☐ Kiln ☐ Engine ☒ Other – Specify: ***Process heater***

Pollutants Removed	***NOx***			
Design Efficiency (%)	***TBD***			
Operating Efficiency (%)	***TBD***			

Describe method used to determine operating efficiency:
TBD

SECTION D – GAS CONDITIONS

Gas Conditions			Inlet	Outlet
Gas Volume (SCFM; 68°F; 14.7 psia)			***TBD***	***TBD***
Gas Temperature (°F)			***TBD***	***TBD***
Gas Pressure (in. H_2O)			***TBD***	***TBD***
Gas Velocity (ft/sec)			***TBD***	***TBD***
Pollutant Concentration (Specify Pollutant and Unit of Concentration)	Pollutant	Unit of Concentration		
	NOx	***ppmv***	***TBD (2.464 lb/h)***	***TBD (0.517 lb/h)***

Pressure Drop Through Gas Cleaning Device (in. H_2O)
TBD

Signature of Applicant	Date
	04/03/17

PERMIT APPLICATION FOR
HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Address (Street & No. or Lat/Long to Nearest Second) ***37th Street / 46°52'45"N/103°14'55" W***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Number of Employees at Location ***TBD***	
Land Area at Plant Site ***261*** Acres (or) Sq. Ft.	MSL Elevation at Plant ***2,685 feet***	

Describe Nature of Business/Process

Petroleum Refining / Atmospheric Distillation Unit 2 Heater

SECTION B – STACK DATA

Inside Diameter (ft) ***6.3***	Height Above Grade (ft) ***127.6***	
Gas Temperature at Exit (°F) ***790.2***	Gas Velocity at Exit (ft/sec) ***22.8***	Gas Volume (scfm) ***17,967.68***
Basis of any Estimates (attach separate sheet if necessary) ***Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"***		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes ☒ No ☐
Nearest Residences or Building ***FF and First Aid Building***	Distance (ft) ***615.3 ft***	Direction ***Southwest***
Nearest Property Line ***Fenceline***	Distance (ft) ***380.6 ft***	Direction ***South***

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 ***102-H-0201***	Mean Particle Diameter (μm) ***TBD***
Flow Rate (scfm) ***17,967.68***	Drift Velocity (ft/sec) ***22.8***
Stream Temperature (°F) ***790.2***	Particulate Concentration (gr/dscf) ***TBD***
Moisture Content (%) ***TBD***	Halogens or Metals Present? ***Metals***
Pressure (in. Hg) ***TBD***	Organic Content (ppmv) ***$1.79x10^{-1}$***
Heat Content (Btu/scfm) ***TBD***	O_2 Content (%) ***N/A***

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted ***Acetaldehyde***	Chemical Abstract Services (CAS) Number ***75-07-0***
Proposed Emission Rate (lb/hr) ***$2.46x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic Vapor***
Concentration in Emission Stream (ppmv) ***$2.00x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***35.51 in Hg @ 68°C***
Solubility ***$1x10^{+6}$ mg/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***44.05***
Absorptive Properties -	

Pollutant Emitted ***Benzene***	Chemical Abstract Services (CAS) Number ***71-43-2***
Proposed Emission Rate (lb/hr) ***$4.31x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.97x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***3.73 in Hg @ 77 °F***
Solubility ***In water $1.79x10^{3}$ mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***78.11***
Absorptive Properties -	

Pollutant Emitted ***Dichlorobenzene***	Chemical Abstract Services (CAS) Number ***Varies***
Proposed Emission Rate (lb/hr) ***$2.46x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$6.00x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***Varies***
Solubility ***Varies***	Molecular Weight (lb/lb-mole) ***147.00***
Absorptive Properties -	

Pollutant Emitted ***Ethylbenzene***	Chemical Abstract Services (CAS) Number ***100-41-4***
Proposed Emission Rate (lb/hr) ***3.29x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***2.06x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.37 in Hg @ 77°F***
Solubility ***In water 0.014 g/100mL @ 59 °F***	Molecular Weight (lb/lb-mole) ***106.17***
Absorptive Properties -	

Pollutant Emitted ***Formaldehyde***	Chemical Abstract Services (CAS) Number ***50-00-0***
Proposed Emission Rate (lb/hr) ***1.52x10^{-3}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.81x10^{-2}***	Vapor Pressure (in. Hg @ °F) ***0.15 in Hg @ 77 °F***
Solubility ***In water 4.00 x10^{5} mg/L @ 68°F***	Molecular Weight (lb/lb-mole) ***30.03***
Absorptive Properties -	

Pollutant Emitted ***Hexane***	Chemical Abstract Services (CAS) Number ***110-54-5***
Proposed Emission Rate (lb/hr) ***3.70x10^{-2}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.53x10^{-1}***	Vapor Pressure (in. Hg @ °F) ***5.90 in Hg @ 68 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***86.1***
Absorptive Properties -	

Pollutant Emitted ***Naphthalene***	Chemical Abstract Services (CAS) Number ***91-20-3***
Proposed Emission Rate (lb/hr) ***1.23x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.44x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0.003 in Hg @ 77 °F***
Solubility ***In water 31 mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***128.17***
Absorptive Properties -	

Pollutant Emitted ***Toluene***	Chemical Abstract Services (CAS) Number ***108-88-3***
Proposed Emission Rate (lb/hr) ***6.78x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***2.63x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***1.12 in Hg @ 77°F***
Solubility ***In water 526 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***92.14***
Absorptive Properties -	

Pollutant Emitted ***Xylene***	Chemical Abstract Services (CAS) Number ***95-47-6***
Proposed Emission Rate (lb/hr) ***5.13x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.73x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.26 in Hg @ 77°F***
Solubility ***In water 178 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***106.16***
Absorptive Properties -	

Pollutant Emitted ***PAH***	Chemical Abstract Services (CAS) Number ***N/A***
Proposed Emission Rate (lb/hr) ***8.74x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.21x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***N/A***
Solubility ***N/A***	Molecular Weight (lb/lb-mole) ***TBD***
Absorptive Properties -	

Pollutant Emitted ***Antimony***	Chemical Abstract Services (CAS) Number ***7740-36-0***
Proposed Emission Rate (lb/hr) ***4.27x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/particulate***
Concentration in Emission Stream (ppmv) ***1.25x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***121.76***
Absorptive Properties -	

Pollutant Emitted ***Arsenic***	Chemical Abstract Services (CAS) Number ***7440-38-2***
Proposed Emission Rate (lb/hr) ***1.64x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.84x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Beryllium***	Chemical Abstract Services (CAS) Number ***7440-41-7***
Proposed Emission Rate (lb/hr) ***1.07x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.24x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***9.01***
Absorptive Properties -	

Pollutant Emitted ***Cadmium***	Chemical Abstract Services (CAS) Number ***7440-43-9***
Proposed Emission Rate (lb/hr) ***9.03x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***2.87x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg@ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Chromium (hexavalent)***	Chemical Abstract Services (CAS) Number ***1333-82-0***
Proposed Emission Rate (lb/hr) ***2.30x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.58x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @77°F***
Solubility ***1,660 g/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Chromium***	Chemical Abstract Services (CAS) Number ***7440-47-3***
Proposed Emission Rate (lb/hr) ***1.15x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.91x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Cobalt***	Chemical Abstract Services (CAS) Number ***7440-48-4***
Proposed Emission Rate (lb/hr) ***6.73x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.09x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.93***
Absorptive Properties -	

Pollutant Emitted ***Manganese***	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) ***3.04x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.98x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***54.94***
Absorptive Properties -	

Pollutant Emitted ***Mercury***	Chemical Abstract Services (CAS) Number ***7439-97-6***
Proposed Emission Rate (lb/hr) ***2.05x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.66x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***7.85x10^{-5} in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***200.59***
Absorptive Properties -	

Pollutant Emitted ***Nickel***	Chemical Abstract Services (CAS) Number ***7044-02-0***
Proposed Emission Rate (lb/hr) ***$1.72x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.05x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg Q 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.69***
Absorptive Properties -	

Pollutant Emitted ***Selenium***	Chemical Abstract Services (CAS) Number ***7782-49-2***
Proposed Emission Rate (lb/hr) ***$7.23x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$3.27x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0.29 in Hg @ 807***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***78.96***
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FUEL BURNING EQUIPMENT FOR INDIRECT HEATING

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Applicant´s Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	Land Area at Facility Site ***261 Acres***	MSL Elevation at Facility ***2,685 feet***

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) ***103-H-0301***		Name of Manufacturer ***TBD***	
Rated Capacity/Maximum Input ***TBD***		Model Number ***TBD***	
Purpose	Space Heat _____ %	Power Generation	_____ %
	Process Heat ***100*** %	Other (Specify % if Multi Purpose)	_____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here)	
☐Pulverized	☐Spreader Stoker with Fly Ash Reinjection
☐General	☐Spreader Stoker without Fly Ash Reinjection
☐Dry Bottom	☐Fluidized Bed
☐Wet Bottom with Fly Ash Reinjection	☐Cyclone
☐Wet Bottom without Fly Ash Reinjection	☐Hand-Fired
☐Other – Specify:	
Fuel Oil	Gas
☐Horizontally Fired	☐Horizontally Fired
☐Tangentially Fired	☐Tangentially Fired
☐Other – Specify:	☐Other – Specify: ***TBD***

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year Total	Peak Season (Specify Months)
24	***7***	***52***	***8760***	***N/A***

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year ***2017-2018***

Primary Fuels			Standby Fuels		
Type ***Fuel Gas***			Type ***None***		
Quantity Per Year ***23,828,952.00***	Units of Measure ***lb/yr***		Quantity Per Year	Units of Measure	
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum ***0***	Maximum ***0***	Average ***0***	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum ***TBD***	Maximum ***TBD***	Average ***27571.5***	Minimum	Maximum	Average

Describe Fuel Transport and Storage Methods:
N/A, fuel gas to be generated within the refinery

SECTION F – COMBUSTION AIR

☐Natural Draft ☐Induced ☐Forced ☐Other – Specify: ***TBD***

SECTION G – STACK DATA

Inside Diameter (ft) ***6.5***	Height Above Grade (ft) ***125***
Gas Temperature at Exit (Avg. °F) ***790.2***	Gas Velocity at Exit (Avg. ft/sec) ***19.5***
Are Emission Control Devices in Place? If YES – Complete SFN 8532 ☒ Yes ☐No	
Stack Exit Gas Flow Rate	
Average (ACFM) ***38,866.95***	Average (DSCFM) ***TBD***
Maximum (ACFM) ***TBD***	Maximum (DSCFM) ***TBD***
Are sampling ports available? ☐No ☒ Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment.
Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM_{10} Total	***3.00E-01***	***1.31E+00***
PM_{10} Filterable	***7.50E-02***	***3.29E-01***
$PM_{2.5}$ Total	***3.00E-01***	***1.31E+00***
$PM_{2.5}$ Filterable	***2.25E-02***	***9.86E-02***
$PM_{2.5}$ Condensable	***7.50E-02***	***3.29E-01***
Sulfur Dioxide	***4.41E-02***	***1.93E-01***
Nitrogen Oxides	***4.73E-01***	***2.07E+00***
Carbon Monoxide	***2.10E+00***	***9.20E+00***
Greenhouse Gases (CO2e)	***N/A***	
Other – Specify		
Lead	***3.68E-05***	***1.61E-04***
Metal HAP (Total)	***5.48E-04***	***2.40E-03***
Organic HAPs (Total)	***3.67E-02***	***1.61E-01***
VOC	***4.04E-01***	***1.77E+00***

Basis and Calculations for Quantities:
Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR AIR POLLUTION CONTROL EQUIPMENT

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8532 (09-12)

NOTE: READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.

SECTION A – GENERAL INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION B – FACILITY INFORMATION

Facility Name ***Davis Refinery / Process Heaters and Boilers***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Location ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***		Source ID No. ***103-H-0301***

SECTION C – EQUIPMENT

Type: ☐ Cyclone ☐ Multicyclone ☐ Baghouse ☐ Electrostatic Precipitator ☐ Wet Scrubber ☐ Spray Dryer ☒ Other – Specify: ***Selective Catalytic Reduction (SCR)***

Name of Manufacturer ***TBD***	Model Number ***TBD***	Date to Be Installed ***TBD***

Application: ☐ Boiler ☐ Kiln ☐ Engine ☒ Other – Specify: ***Process heater***

Pollutants Removed	***NOx***			
Design Efficiency (%)	***TBD***			
Operating Efficiency (%)	***TBD***			

Describe method used to determine operating efficiency:
TBD

SECTION D – GAS CONDITIONS

Gas Conditions			Inlet	Outlet
Gas Volume (SCFM; 68°F; 14.7 psia)			***TBD***	***TBD***
Gas Temperature (°F)			***TBD***	***TBD***
Gas Pressure (in. H_2O)			***TBD***	***TBD***
Gas Velocity (ft/sec)			***TBD***	***TBD***
Pollutant Concentration (Specify Pollutant and Unit of Concentration)	Pollutant	Unit of Concentration		
	NOx	***ppmv***	***TBD (2.250 lb/h)***	***TBD (0.473 lb/h)***

Pressure Drop Through Gas Cleaning Device (in. H_2O)
TBD

Signature of Applicant	Date
	04/03/17

PERMIT APPLICATION FOR
HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Address (Street & No. or Lat/Long to Nearest Second) ***37th Street / 46°52'45"N/103°14'55" W***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Number of Employees at Location ***TBD***	
Land Area at Plant Site ***261*** Acres (or) Sq. Ft.	MSL Elevation at Plant ***2,685 feet***	

Describe Nature of Business/Process

Petroleum Refining / Vacuum Distillation Unit / Vacuum Heater

SECTION B – STACK DATA

Inside Diameter (ft) ***6.5***	Height Above Grade (ft) ***125***	
Gas Temperature at Exit (°F) ***790.2***	Gas Velocity at Exit (ft/sec) ***19.5***	Gas Volume (scfm) ***16,408.84***
Basis of any Estimates (attach separate sheet if necessary) ***Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"***		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes ☒ No ☐
Nearest Residences or Building ***Arrow K***	Distance (ft) ***666.7 ft***	Direction ***South***
Nearest Property Line ***Fenceline***	Distance (ft) ***355.6 ft***	Direction ***South***

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 ***103-H-0301***	Mean Particle Diameter (μm) ***TBD***
Flow Rate (scfm) ***16,408.84***	Drift Velocity (ft/sec) ***19.5***
Stream Temperature (°F) ***790.2***	Particulate Concentration (gr/dscf) ***TBD***
Moisture Content (%) ***TBD***	Halogens or Metals Present? ***Metals***
Pressure (in. Hg) ***TBD***	Organic Content (ppmv) ***$1.79x10^{-1}$***
Heat Content (Btu/scfm) ***TBD***	O_2 Content (%) ***N/A***

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted ***Acetaldehyde***	Chemical Abstract Services (CAS) Number ***75-07-0***
Proposed Emission Rate (lb/hr) ***$2.25x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic Vapor***
Concentration in Emission Stream (ppmv) ***$2.00x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***35.51 in Hg @ 68°C***
Solubility ***$1x10^{+6}$ mg/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***44.05***
Absorptive Properties -	

Pollutant Emitted ***Benzene***	Chemical Abstract Services (CAS) Number ***71-43-2***
Proposed Emission Rate (lb/hr) ***$3.94x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.97x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***3.73 in Hg @ 77 °F***
Solubility ***In water $1.79x10^{3}$ mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***78.11***
Absorptive Properties -	

Pollutant Emitted ***Dichlorobenzene***	Chemical Abstract Services (CAS) Number ***Varies***
Proposed Emission Rate (lb/hr) ***$2.25x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$6.00x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***Varies***
Solubility ***Varies***	Molecular Weight (lb/lb-mole) ***147.00***
Absorptive Properties -	

Pollutant Emitted ***Ethylbenzene***	Chemical Abstract Services (CAS) Number ***100-41-4***
Proposed Emission Rate (lb/hr) ***3.00x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.11x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.37 in Hg @ 77°F***
Solubility ***In water 0.014 g/100mL @ 59 °F***	Molecular Weight (lb/lb-mole) ***106.17***
Absorptive Properties -	

Pollutant Emitted ***Formaldehyde***	Chemical Abstract Services (CAS) Number ***50-00-0***
Proposed Emission Rate (lb/hr) ***1.39x10^{-3}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.81x10^{-2}***	Vapor Pressure (in. Hg @ °F) ***0.15 in Hg @ 77 °F***
Solubility ***In water 4.00 x10^{5} mg/L @ 68°F***	Molecular Weight (lb/lb-mole) ***30.03***
Absorptive Properties -	

Pollutant Emitted ***Hexane***	Chemical Abstract Services (CAS) Number ***110-54-5***
Proposed Emission Rate (lb/hr) ***3.38x10^{-2}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.53x10^{-1}***	Vapor Pressure (in. Hg @ °F) ***5.90 in Hg @ 68 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***86.1***
Absorptive Properties -	

Pollutant Emitted ***Naphthalene***	Chemical Abstract Services (CAS) Number ***91-20-3***
Proposed Emission Rate (lb/hr) ***1.13x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.44x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0.003 in Hg @ 77 °F***
Solubility ***In water 31 mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***128.17***
Absorptive Properties -	

Pollutant Emitted ***Toluene***	Chemical Abstract Services (CAS) Number ***108-88-3***
Proposed Emission Rate (lb/hr) ***6.19x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***2.63x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***1.12 in Hg @ 77°F***
Solubility ***In water 526 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***92.14***
Absorptive Properties -	

Pollutant Emitted ***Xylene***	Chemical Abstract Services (CAS) Number ***95-47-6***
Proposed Emission Rate (lb/hr) ***4.69x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.73x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.26 in Hg @ 77°F***
Solubility ***In water 178 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***106.16***
Absorptive Properties -	

Pollutant Emitted ***PAH***	Chemical Abstract Services (CAS) Number ***N/A***
Proposed Emission Rate (lb/hr) ***7.99x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.21x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***N/A***
Solubility ***N/A***	Molecular Weight (lb/lb-mole) ***TBD***
Absorptive Properties -	

Pollutant Emitted ***Antimony***	Chemical Abstract Services (CAS) Number ***7740-36-0***
Proposed Emission Rate (lb/hr) ***3.90x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/particulate***
Concentration in Emission Stream (ppmv) ***1.25x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***121.76***
Absorptive Properties -	

Pollutant Emitted ***Arsenic***	Chemical Abstract Services (CAS) Number ***7440-38-2***
Proposed Emission Rate (lb/hr) ***1.50x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.84x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Beryllium***	Chemical Abstract Services (CAS) Number ***7440-41-7***
Proposed Emission Rate (lb/hr) ***9.75x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.24x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***9.01***
Absorptive Properties -	

Pollutant Emitted ***Cadmium***	Chemical Abstract Services (CAS) Number ***7440-43-9***
Proposed Emission Rate (lb/hr) ***8.25x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***2.87x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg@ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Chromium (hexavalent)***	Chemical Abstract Services (CAS) Number ***1333-82-0***
Proposed Emission Rate (lb/hr) ***2.10x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.58x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @77°F***
Solubility ***1,660 g/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Chromium***	Chemical Abstract Services (CAS) Number ***7440-47-3***
Proposed Emission Rate (lb/hr) ***1.05x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.91x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Cobalt***	Chemical Abstract Services (CAS) Number ***7440-48-4***
Proposed Emission Rate (lb/hr) ***6.15x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.09x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.93***
Absorptive Properties -	

Pollutant Emitted ***Manganese***	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) ***2.78x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.98x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***54.94***
Absorptive Properties -	

Pollutant Emitted ***Mercury***	Chemical Abstract Services (CAS) Number ***7439-97-6***
Proposed Emission Rate (lb/hr) ***1.88x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.66x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***7.85x10^{-5} in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***200.59***
Absorptive Properties -	

Pollutant Emitted ***Nickel***	Chemical Abstract Services (CAS) Number ***7044-02-0***
Proposed Emission Rate (lb/hr) ***1.58x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.05x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg Q 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.69***
Absorptive Properties -	

Pollutant Emitted ***Selenium***	Chemical Abstract Services (CAS) Number ***7782-49-2***
Proposed Emission Rate (lb/hr) ***6.60x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.27x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0.29 in Hg @ 807***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***78.96***
Absorptive Properties -	

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FUEL BURNING EQUIPMENT FOR INDIRECT HEATING

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Applicant´s Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	Land Area at Facility Site ***261 Acres***	MSL Elevation at Facility ***2,685 feet***

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) ***105-H-0501***	Name of Manufacturer ***TBD***
Rated Capacity/Maximum Input ***TBD***	Model Number ***TBD***
Purpose Space Heat _____ %	Power Generation _____ %
Process Heat ***100*** %	Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here)	
☐Pulverized	☐Spreader Stoker with Fly Ash Reinjection
☐General	☐Spreader Stoker without Fly Ash Reinjection
☐Dry Bottom	☐Fluidized Bed
☐Wet Bottom with Fly Ash Reinjection	☐Cyclone
☐Wet Bottom without Fly Ash Reinjection	☐Hand-Fired
☐Other – Specify:	
Fuel Oil	Gas
☐Horizontally Fired	☐Horizontally Fired
☐Tangentially Fired	☐Tangentially Fired
☐Other – Specify:	☐Other – Specify: ***TBD***

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year Total	Peak Season (Specify Months)
24	***7***	***52***	***8760***	***N/A***

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year ***2017-2018***

Primary Fuels			Standby Fuels		
Type ***Fuel Gas***			Type ***None***		
Quantity Per Year ***2,732,244.00***	Units of Measure ***lb/yr***		Quantity Per Year	Units of Measure	
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum ***0***	Maximum ***0***	Average ***0***	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum ***TBD***	Maximum ***TBD***	Average ***27572.9 BTU/lb***	Minimum	Maximum	Average

Describe Fuel Transport and Storage Methods:
N/A, fuel gas to be generated within the refinery

SECTION F – COMBUSTION AIR

☐Natural Draft ☐Induced ☐Forced ☐Other – Specify: ***TBD***

SECTION G – STACK DATA

Inside Diameter (ft) ***2.4***	Height Above Grade (ft) ***91***
Gas Temperature at Exit (Avg. °F) ***790.2***	Gas Velocity at Exit (Avg. ft/sec) ***16.2***
Are Emission Control Devices in Place? If YES – Complete SFN 8532 ☐ Yes ☒No	
Stack Exit Gas Flow Rate	
Average (ACFM) ***4,456.76***	Average (DSCFM) ***TBD***
Maximum (ACFM) ***TBD***	Maximum (DSCFM) ***TBD***
Are sampling ports available? ☐No ☒ Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment.
Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM_{10} Total	***3.44E-02***	***1.51E-01***
PM_{10} Filterable	***8.60E-03***	***3.77E-02***
$PM_{2.5}$ Total	***3.44E-02***	***1.51E-01***
$PM_{2.5}$ Filterable	***8.60E-03***	***3.77E-02***
$PM_{2.5}$ Condensable	***2.58E-02***	***1.13E-01***
Sulfur Dioxide	***5.06E-03***	***2.22E-02***
Nitrogen Oxides	***2.58E-01***	***1.13E+00***
Carbon Monoxide	***2.41E-01***	***1.05E+00***
Greenhouse Gases (CO2e)	***N/A***	
Other – Specify		
Lead	***4.21E-06***	***1.85E-05***
Metal HAP (Total)	***6.29E-05***	***2.75E-04***
Organic HAPs (Total)	***4.20E-03***	***1.84E-02***
VOC	***4.64E-02***	***2.03E-01***

Basis and Calculations for Quantities:
Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR
HAZARDOUS AIR POLLUTANT (HAP) SOURCES
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Address (Street & No. or Lat/Long to Nearest Second) ***37th Street / 46°52'45"N/103°14'55" W***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Number of Employees at Location ***TBD***	
Land Area at Plant Site ***261*** Acres (or) Sq. Ft.	MSL Elevation at Plant ***2,685 feet***	

Describe Nature of Business/Process

Petroleum Refining / Naphtha Hydrotreater (NHT) Reactor Feed Heater

SECTION B – STACK DATA

Inside Diameter (ft) ***2.4***	Height Above Grade (ft) ***91.0***	
Gas Temperature at Exit (°F) ***790.2***	Gas Velocity at Exit (ft/sec) ***16.2***	Gas Volume (scfm) ***1,881.55***
Basis of any Estimates (attach separate sheet if necessary) ***Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"***		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes ☐ No ☒
Nearest Residences or Building ***Utility building***	Distance (ft) ***598.1 ft***	Direction ***Southwest***
Nearest Property Line ***Fenceline***	Distance (ft) ***618.6 ft***	Direction ***South***

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 ***105-H-0501***	Mean Particle Diameter (μm) ***TBD***
Flow Rate (scfm) ***1,881.55***	Drift Velocity (ft/sec) ***16.2***
Stream Temperature (°F) ***790.2***	Particulate Concentration (gr/dscf) ***TBD***
Moisture Content (%) ***TBD***	Halogens or Metals Present? ***Metals***
Pressure (in. Hg) ***TBD***	Organic Content (ppmv) ***$2.52x10^{-1}$***
Heat Content (Btu/scfm) ***TBD***	O_2 Content (%) ***N/A***

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted ***Acetaldehyde***	Chemical Abstract Services (CAS) Number ***75-07-0***
Proposed Emission Rate (lb/hr) ***$2.58x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic Vapor***
Concentration in Emission Stream (ppmv) ***$2.00x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***35.51 in Hg @ 68°C***
Solubility ***$1x10^{+6}$ mg/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***44.05***
Absorptive Properties -	

Pollutant Emitted ***Benzene***	Chemical Abstract Services (CAS) Number ***71-43-2***
Proposed Emission Rate (lb/hr) ***$4.52x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.97x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***3.73 in Hg @ 77 °F***
Solubility ***In water $1.79x10^{3}$ mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***78.11***
Absorptive Properties -	

Pollutant Emitted ***Dichlorobenzene***	Chemical Abstract Services (CAS) Number ***Varies***
Proposed Emission Rate (lb/hr) ***$2.58x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$6.00x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***Varies***
Solubility ***Varies***	Molecular Weight (lb/lb-mole) ***147.00***
Absorptive Properties -	

Pollutant Emitted ***Ethylbenzene***	Chemical Abstract Services (CAS) Number ***100-41-4***
Proposed Emission Rate (lb/hr) ***3.44x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.11x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.37 in Hg @ 77°F***
Solubility ***In water 0.014 g/100mL @ 59 °F***	Molecular Weight (lb/lb-mole) ***106.17***
Absorptive Properties -	

Pollutant Emitted ***Formaldehyde***	Chemical Abstract Services (CAS) Number ***50-00-0***
Proposed Emission Rate (lb/hr) ***1.59x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.81x10^{-2}***	Vapor Pressure (in. Hg @ °F) ***0.15 in Hg @ 77 °F***
Solubility ***In water 4.00 x10^{5} mg/L @ 68°F***	Molecular Weight (lb/lb-mole) ***30.03***
Absorptive Properties -	

Pollutant Emitted ***Hexane***	Chemical Abstract Services (CAS) Number ***110-54-5***
Proposed Emission Rate (lb/hr) ***3.87x10^{-3}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.53x10^{-1}***	Vapor Pressure (in. Hg @ °F) ***5.90 in Hg @ 68 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***86.1***
Absorptive Properties -	

Pollutant Emitted ***Naphthalene***	Chemical Abstract Services (CAS) Number ***91-20-3***
Proposed Emission Rate (lb/hr) ***1.29x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.44x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0.003 in Hg @ 77 °F***
Solubility ***In water 31 mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***128.17***
Absorptive Properties -	

Pollutant Emitted ***Toluene***	Chemical Abstract Services (CAS) Number ***108-88-3***
Proposed Emission Rate (lb/hr) ***$7.10x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$2.63x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***1.12 in Hg @ 77°F***
Solubility ***In water 526 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***92.14***
Absorptive Properties -	

Pollutant Emitted ***Xylene***	Chemical Abstract Services (CAS) Number ***95-47-6***
Proposed Emission Rate (lb/hr) ***$5.38x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.73x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0.26 in Hg @ 77°F***
Solubility ***In water 178 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***106.16***
Absorptive Properties -	

Pollutant Emitted ***PAH***	Chemical Abstract Services (CAS) Number ***N/A***
Proposed Emission Rate (lb/hr) ***$9.16x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$3.21x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***N/A***
Solubility ***N/A***	Molecular Weight (lb/lb-mole) ***TBD***
Absorptive Properties -	

Pollutant Emitted ***Antimony***	Chemical Abstract Services (CAS) Number ***7740-36-0***
Proposed Emission Rate (lb/hr) ***$4.47x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/particulate***
Concentration in Emission Stream (ppmv) ***$1.25x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***121.76***
Absorptive Properties -	

Pollutant Emitted ***Arsenic***	Chemical Abstract Services (CAS) Number ***7440-38-2***
Proposed Emission Rate (lb/hr) ***$1.72x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$7.84x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Beryllium***	Chemical Abstract Services (CAS) Number ***7440-41-7***
Proposed Emission Rate (lb/hr) ***$1.12x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$4.24x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***9.01***
Absorptive Properties -	

Pollutant Emitted ***Cadmium***	Chemical Abstract Services (CAS) Number ***7440-43-9***
Proposed Emission Rate (lb/hr) ***$9.46x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$2.87x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg@ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Chromium (hexavalent)***	Chemical Abstract Services (CAS) Number ***1333-82-0***
Proposed Emission Rate (lb/hr) ***$2.41x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.58x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @77°F***
Solubility ***1,660 g/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Chromium***	Chemical Abstract Services (CAS) Number ***7440-47-3***
Proposed Emission Rate (lb/hr) ***1.20x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.91x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Cobalt***	Chemical Abstract Services (CAS) Number ***7440-48-4***
Proposed Emission Rate (lb/hr) ***7.05x10^{-7}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.09x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.93***
Absorptive Properties -	

Pollutant Emitted ***Manganese***	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) ***3.18x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.98x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***54.94***
Absorptive Properties -	

Pollutant Emitted ***Mercury***	Chemical Abstract Services (CAS) Number ***7439-97-6***
Proposed Emission Rate (lb/hr) ***2.15x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.66x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***7.85x10^{-5} in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***200.59***
Absorptive Properties -	

Pollutant Emitted ***Nickel***	Chemical Abstract Services (CAS) Number ***7044-02-0***
Proposed Emission Rate (lb/hr) ***$1.81x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.05x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg Q 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.69***
Absorptive Properties -	

Pollutant Emitted ***Selenium***	Chemical Abstract Services (CAS) Number ***7782-49-2***
Proposed Emission Rate (lb/hr) ***$7.57x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$3.27x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0.29 in Hg @ 807***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***78.96***
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FUEL BURNING EQUIPMENT FOR INDIRECT HEATING

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Applicant´s Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	Land Area at Facility Site ***261 Acres***	MSL Elevation at Facility ***2,685 feet***

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) ***105-H-0502***	Name of Manufacturer ***TBD***
Rated Capacity/Maximum Input ***TBD***	Model Number ***TBD***
Purpose Space Heat _____ % Process Heat ***100*** %	Power Generation _____ % Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here)	
☐Pulverized	☐Spreader Stoker with Fly Ash Reinjection
☐General	☐Spreader Stoker without Fly Ash Reinjection
☐Dry Bottom	☐Fluidized Bed
☐Wet Bottom with Fly Ash Reinjection	☐Cyclone
☐Wet Bottom without Fly Ash Reinjection	☐Hand-Fired
☐Other – Specify:	
Fuel Oil	Gas
☐Horizontally Fired	☐Horizontally Fired
☐Tangentially Fired	☐Tangentially Fired
☐Other – Specify:	☐Other – Specify: ***TBD***

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year Total	Peak Season (Specify Months)
24	***7***	***52***	***8760***	***N/A***

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year ***2017-2018***

Primary Fuels			Standby Fuels		
Type ***Fuel Gas***			Type ***None***		
Quantity Per Year ***2,954,748.00***	Units of Measure ***lb/yr***		Quantity Per Year	Units of Measure	
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum ***0***	Maximum ***0***	Average ***0***	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum ***TBD***	Maximum ***TBD***	Average ***27571.9 BTU/lb***	Minimum	Maximum	Average

Describe Fuel Transport and Storage Methods:
N/A, fuel gas to be generated within the refinery

SECTION F – COMBUSTION AIR

☐Natural Draft ☐Induced ☐Forced ☐Other – Specify: ***TBD***

SECTION G – STACK DATA

Inside Diameter (ft) ***2.3***	Height Above Grade (ft) ***91***
Gas Temperature at Exit (Avg. °F) ***790.2***	Gas Velocity at Exit (Avg. ft/sec) ***19.1***
Are Emission Control Devices in Place? If YES – Complete SFN 8532 ☐ Yes ☒No	
Stack Exit Gas Flow Rate	
Average (ACFM) ***4,819.48***	Average (DSCFM) ***TBD***
Maximum (ACFM) ***TBD***	Maximum (DSCFM) ***TBD***
Are sampling ports available? ☐No ☒ Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment.
Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM_{10} Total	***3.72E-02***	***1.63E-01***
PM_{10} Filterable	***9.30E-03***	***4.07E-02***
$PM_{2.5}$ Total	***3.72E-02***	***1.63E-01***
$PM_{2.5}$ Filterable	***9.30E-03***	***4.07E-02***
$PM_{2.5}$ Condensable	***2.79E-02***	***1.22E-01***
Sulfur Dioxide	***5.47E-03***	***2.40E-02***
Nitrogen Oxides	***2.79E-01***	***1.22E+00***
Carbon Monoxide	***2.60E-01***	***1.14E+00***
Greenhouse Gases (CO2e)	***N/A***	
Other – Specify		
Lead	***4.56E-06***	***2.00E-05***
Metal HAP (Total)	***6.80E-05***	***2.98E-04***
Organic HAPs (Total)	***4.55E-03***	***1.99E-02***
VOC	***5.01E-02***	***2.20E-01***

Basis and Calculations for Quantities:
Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR
HAZARDOUS AIR POLLUTANT (HAP) SOURCES
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Address (Street & No. or Lat/Long to Nearest Second) ***37th Street / 46°52'45"N/103°14'55" W***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Number of Employees at Location ***TBD***	
Land Area at Plant Site ***261*** Acres (or) Sq. Ft.	MSL Elevation at Plant ***2,685 feet***	

Describe Nature of Business/Process

Petroleum Refining / Naphtha Hydrotreater (NHT) Stabilizer Reboiler Heater

SECTION B – STACK DATA

Inside Diameter (ft) ***2.3***	Height Above Grade (ft) ***91.0***	
Gas Temperature at Exit (°F) ***790.2***	Gas Velocity at Exit (ft/sec) ***19.1***	Gas Volume (scfm) ***2,034.69***
Basis of any Estimates (attach separate sheet if necessary) ***Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "BACT Analysis"***		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes ☐ No ☒
Nearest Residences or Building ***Utility building***	Distance (ft) ***645.6 ft***	Direction ***Southwest***
Nearest Property Line ***Fenceline***	Distance (ft) ***678.6 ft***	Direction ***South***

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 ***105-H-0502***	Mean Particle Diameter (μm) ***TBD***
Flow Rate (scfm) ***2,034.69***	Drift Velocity (ft/sec) ***19.1***
Stream Temperature (°F) ***790.2***	Particulate Concentration (gr/dscf) ***TBD***
Moisture Content (%) ***TBD***	Halogens or Metals Present? ***Metals***
Pressure (in. Hg) ***TBD***	Organic Content (ppmv) $***1.79x10^{-1}***$
Heat Content (Btu/scfm) ***TBD***	O_2 Content (%) ***N/A***

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted ***Acetaldehyde***	Chemical Abstract Services (CAS) Number ***75-07-0***
Proposed Emission Rate (lb/hr) $***2.79x10^{-5}***$	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic Vapor***
Concentration in Emission Stream (ppmv) $***2.00x10^{-3}***$	Vapor Pressure (in. Hg @ °F) ***35.51 in Hg @ 68°C***
Solubility $***1x10^{+6}$ mg/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***44.05***
Absorptive Properties -	

Pollutant Emitted ***Benzene***	Chemical Abstract Services (CAS) Number ***71-43-2***
Proposed Emission Rate (lb/hr) $***4.88x10^{-6}***$	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) $***1.97x10^{-4}***$	Vapor Pressure (in. Hg @ °F) ***3.73 in Hg @ 77 °F***
Solubility $***In water 1.79x10^{3}$ mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***78.11***
Absorptive Properties -	

Pollutant Emitted ***Dichlorobenzene***	Chemical Abstract Services (CAS) Number ***Varies***
Proposed Emission Rate (lb/hr) $***2.79x10^{-6}***$	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) $***6.00x10^{-5}***$	Vapor Pressure (in. Hg @ °F) ***Varies***
Solubility ***Varies***	Molecular Weight (lb/lb-mole) ***147.00***
Absorptive Properties -	

Pollutant Emitted ***Ethylbenzene***	Chemical Abstract Services (CAS) Number ***100-41-4***
Proposed Emission Rate (lb/hr) ***3.72x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.11x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.37 in Hg @ 77°F***
Solubility ***In water 0.014 g/100mL @ 59 °F***	Molecular Weight (lb/lb-mole) ***106.17***
Absorptive Properties -	

Pollutant Emitted ***Formaldehyde***	Chemical Abstract Services (CAS) Number ***50-00-0***
Proposed Emission Rate (lb/hr) ***1.72x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.81x10^{-2}***	Vapor Pressure (in. Hg @ °F) ***0.15 in Hg @ 77 °F***
Solubility ***In water 4.00 x10^{5} mg/L @ 68°F***	Molecular Weight (lb/lb-mole) ***30.03***
Absorptive Properties -	

Pollutant Emitted ***Hexane***	Chemical Abstract Services (CAS) Number ***110-54-5***
Proposed Emission Rate (lb/hr) ***4.19x10^{-3}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.53x10^{-1}***	Vapor Pressure (in. Hg @ °F) ***5.90 in Hg @ 68 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***86.1***
Absorptive Properties -	

Pollutant Emitted ***Naphthalene***	Chemical Abstract Services (CAS) Number ***91-20-3***
Proposed Emission Rate (lb/hr) ***1.40x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.44x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0.003 in Hg @ 77 °F***
Solubility ***In water 31 mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***128.17***
Absorptive Properties -	

Pollutant Emitted ***Toluene***	Chemical Abstract Services (CAS) Number ***108-88-3***
Proposed Emission Rate (lb/hr) ***7.67x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***2.63x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***1.12 in Hg @ 77°F***
Solubility ***In water 526 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***92.14***
Absorptive Properties -	

Pollutant Emitted ***Xylene***	Chemical Abstract Services (CAS) Number ***95-47-6***
Proposed Emission Rate (lb/hr) ***5.81x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.73x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.26 in Hg @ 77°F***
Solubility ***In water 178 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***106.16***
Absorptive Properties -	

Pollutant Emitted ***PAH***	Chemical Abstract Services (CAS) Number ***N/A***
Proposed Emission Rate (lb/hr) ***9.90 x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.21x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***N/A***
Solubility ***N/A***	Molecular Weight (lb/lb-mole) ***TBD***
Absorptive Properties -	

Pollutant Emitted ***Antimony***	Chemical Abstract Services (CAS) Number ***7740-36-0***
Proposed Emission Rate (lb/hr) ***4.84x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/particulate***
Concentration in Emission Stream (ppmv) ***1.25x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***121.76***
Absorptive Properties -	

Pollutant Emitted ***Arsenic***	Chemical Abstract Services (CAS) Number ***7440-38-2***
Proposed Emission Rate (lb/hr) ***$1.86x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$7.84x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Beryllium***	Chemical Abstract Services (CAS) Number ***7440-41-7***
Proposed Emission Rate (lb/hr) ***$1.21x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$4.24x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***9.01***
Absorptive Properties -	

Pollutant Emitted ***Cadmium***	Chemical Abstract Services (CAS) Number ***7440-43-9***
Proposed Emission Rate (lb/hr) ***$1.02x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$2.87x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg@ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Chromium (hexavalent)***	Chemical Abstract Services (CAS) Number ***1333-82-0***
Proposed Emission Rate (lb/hr) ***$2.60x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.58x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @77°F***
Solubility ***1,660 g/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Chromium***	Chemical Abstract Services (CAS) Number ***7440-47-3***
Proposed Emission Rate (lb/hr) ***1.30x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.91x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Cobalt***	Chemical Abstract Services (CAS) Number ***7440-48-4***
Proposed Emission Rate (lb/hr) ***7.63x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.09x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.93***
Absorptive Properties -	

Pollutant Emitted ***Manganese***	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) ***3.44x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.98x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***54.94***
Absorptive Properties -	

Pollutant Emitted ***Mercury***	Chemical Abstract Services (CAS) Number ***7439-97-6***
Proposed Emission Rate (lb/hr) ***2.33x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.66x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***7.85x10^{-5} in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***200.59***
Absorptive Properties -	

Pollutant Emitted ***Nickel***	Chemical Abstract Services (CAS) Number ***7044-02-0***
Proposed Emission Rate (lb/hr) ***$1.95x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.05x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg Q 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.69***
Absorptive Properties -	

Pollutant Emitted ***Selenium***	Chemical Abstract Services (CAS) Number ***7782-49-2***
Proposed Emission Rate (lb/hr) ***$8.18x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$3.27x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0.29 in Hg @ 807***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***78.96***
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FUEL BURNING EQUIPMENT FOR INDIRECT HEATING

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Applicant´s Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	Land Area at Facility Site ***261 Acres***	MSL Elevation at Facility ***2,685 feet***

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) ***105-H-0503***	Name of Manufacturer ***TBD***
Rated Capacity/Maximum Input ***TBD***	Model Number ***TBD***
Purpose Space Heat _____ %	Power Generation _____ %
Process Heat ***100*** %	Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here)	
☐Pulverized	☐Spreader Stoker with Fly Ash Reinjection
☐General	☐Spreader Stoker without Fly Ash Reinjection
☐Dry Bottom	☐Fluidized Bed
☐Wet Bottom with Fly Ash Reinjection	☐Cyclone
☐Wet Bottom without Fly Ash Reinjection	☐Hand-Fired
☐Other – Specify:	
Fuel Oil	Gas
☐Horizontally Fired	☐Horizontally Fired
☐Tangentially Fired	☐Tangentially Fired
☐Other – Specify:	☐Other – Specify: ***TBD***

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year Total	Peak Season (Specify Months)
24	***7***	***52***	***8760***	***N/A***

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year ***2017-2018***

Primary Fuels			Standby Fuels		
Type ***Fuel Gas***			Type ***None***		
Quantity Per Year ***5,686,992.00***	Units of Measure ***lb/yr***		Quantity Per Year	Units of Measure	
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum ***0***	Maximum ***0***	Average ***0***	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum ***TBD***	Maximum ***TBD***	Average ***27572.4 BUT/lb***	Minimum	Maximum	Average

Describe Fuel Transport and Storage Methods:
N/A, fuel gas to be generated within the refinery

SECTION F – COMBUSTION AIR

☐Natural Draft ☐Induced ☐Forced ☐Other – Specify: ***TBD***

SECTION G – STACK DATA

Inside Diameter (ft) ***3.5***	Height Above Grade (ft) ***105***
Gas Temperature at Exit (Avg. °F) ***790.2***	Gas Velocity at Exit (Avg. ft/sec) ***16.1***
Are Emission Control Devices in Place? If YES – Complete SFN 8532 ☐ Yes ☒No	
Stack Exit Gas Flow Rate	
Average (ACFM) ***9,276.24***	Average (DSCFM) ***TBD***
Maximum (ACFM) ***TBD***	Maximum (DSCFM) ***TBD***
Are sampling ports available? ☐No ☒ Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment.
Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM_{10} Total	***7.16E-02***	***3.14E-01***
PM_{10} Filterable	***1.79E-02***	***7.84E-02***
$PM_{2.5}$ Total	***7.16E-02***	***3.14E-01***
$PM_{2.5}$ Filterable	***1.79E-02***	***7.84E-02***
$PM_{2.5}$ Condensable	***5.37E-02***	***2.35E-01***
Sulfur Dioxide	***1.05E-02***	***4.61E-02***
Nitrogen Oxides	***5.37E-01***	***2.35E+00***
Carbon Monoxide	***5.01E-01***	***2.20E+00***
Greenhouse Gases (CO2e)	***N/A***	
Other – Specify		
Lead	***8.77E-06***	***3.84E-05***
Metal HAP (Total)	***1.31E-04***	***5.73E-04***
Organic HAPs (Total)	***8.75E-03***	***3.83E-02***
VOC	***9.65E-02***	***4.23E-01***

Basis and Calculations for Quantities:
Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR
HAZARDOUS AIR POLLUTANT (HAP) SOURCES
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Address (Street & No. or Lat/Long to Nearest Second) ***37th Street / 46°52'45"N/103°14'55" W***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Number of Employees at Location ***TBD***	
Land Area at Plant Site ***261*** Acres (or) Sq. Ft.	MSL Elevation at Plant ***2,685 feet***	

Describe Nature of Business/Process

Petroleum Refining / Naphtha Hydrotreater (NHT) Splitter Reboiler Heater

SECTION B – STACK DATA

Inside Diameter (ft) ***3.5***	Height Above Grade (ft) ***105.0***	
Gas Temperature at Exit (°F) ***790.2***	Gas Velocity at Exit (ft/sec) ***16.1***	Gas Volume (scfm) ***3,916.24***
Basis of any Estimates (attach separate sheet if necessary) ***Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"***		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes ☐ No ☒
Nearest Residences or Building ***Utility building***	Distance (ft) ***695.0 ft***	Direction ***Southwest***
Nearest Property Line ***Fenceline***	Distance (ft) ***738.5 ft***	Direction ***South***

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 ***105-H-0503***	Mean Particle Diameter (μm) ***TBD***
Flow Rate (scfm) ***3,916.24***	Drift Velocity (ft/sec) ***16.1***
Stream Temperature (°F) ***790.2***	Particulate Concentration (gr/dscf) ***TBD***
Moisture Content (%) ***TBD***	Halogens or Metals Present? ***Metals***
Pressure (in. Hg) ***TBD***	Organic Content (ppmv) ***$1.79x10^{-1}$***
Heat Content (Btu/scfm) ***TBD***	O_2 Content (%) ***N/A***

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted ***Acetaldehyde***	Chemical Abstract Services (CAS) Number ***75-07-0***
Proposed Emission Rate (lb/hr) ***$5.37x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic Vapor***
Concentration in Emission Stream (ppmv) ***$2.00x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***35.51 in Hg @ 68°C***
Solubility ***$1x10^{+6}$ mg/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***44.05***
Absorptive Properties -	

Pollutant Emitted ***Benzene***	Chemical Abstract Services (CAS) Number ***71-43-2***
Proposed Emission Rate (lb/hr) ***$9.40x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.97x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***3.73 in Hg @ 77 °F***
Solubility ***In water $1.79x10^{3}$ mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***78.11***
Absorptive Properties -	

Pollutant Emitted ***Dichlorobenzene***	Chemical Abstract Services (CAS) Number ***Varies***
Proposed Emission Rate (lb/hr) ***$5.37x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$6.00x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***Varies***
Solubility ***Varies***	Molecular Weight (lb/lb-mole) ***147.00***
Absorptive Properties -	

Pollutant Emitted ***Ethylbenzene***	Chemical Abstract Services (CAS) Number ***100-41-4***
Proposed Emission Rate (lb/hr) ***7.16x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.11x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.37 in Hg @ 77°F***
Solubility ***In water 0.014 g/100mL @ 59 °F***	Molecular Weight (lb/lb-mole) ***106.17***
Absorptive Properties -	

Pollutant Emitted ***Formaldehyde***	Chemical Abstract Services (CAS) Number ***50-00-0***
Proposed Emission Rate (lb/hr) ***3.31x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.81x10^{-2}***	Vapor Pressure (in. Hg @ °F) ***0.15 in Hg @ 77 °F***
Solubility ***In water 4.00 x10^{5} mg/L @ 68°F***	Molecular Weight (lb/lb-mole) ***30.03***
Absorptive Properties -	

Pollutant Emitted ***Hexane***	Chemical Abstract Services (CAS) Number ***110-54-5***
Proposed Emission Rate (lb/hr) ***8.06x10^{-3}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.53x10^{-1}***	Vapor Pressure (in. Hg @ °F) ***5.90 in Hg @ 68 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***86.1***
Absorptive Properties -	

Pollutant Emitted ***Naphthalene***	Chemical Abstract Services (CAS) Number ***91-20-3***
Proposed Emission Rate (lb/hr) ***2.69x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.44x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0.003 in Hg @ 77 °F***
Solubility ***In water 31 mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***128.17***
Absorptive Properties -	

Pollutant Emitted ***Toluene***	Chemical Abstract Services (CAS) Number ***108-88-3***
Proposed Emission Rate (lb/hr) ***1.48x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***2.63x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***1.12 in Hg @ 77°F***
Solubility ***In water 526 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***92.14***
Absorptive Properties -	

Pollutant Emitted ***Xylene***	Chemical Abstract Services (CAS) Number ***95-47-6***
Proposed Emission Rate (lb/hr) ***1.12x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.73x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.26 in Hg @ 77°F***
Solubility ***In water 178 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***106.16***
Absorptive Properties -	

Pollutant Emitted ***PAH***	Chemical Abstract Services (CAS) Number ***N/A***
Proposed Emission Rate (lb/hr) ***1.91x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.21x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***N/A***
Solubility ***N/A***	Molecular Weight (lb/lb-mole) ***TBD***
Absorptive Properties -	

Pollutant Emitted ***Antimony***	Chemical Abstract Services (CAS) Number ***7740-36-0***
Proposed Emission Rate (lb/hr) ***9.31x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/particulate***
Concentration in Emission Stream (ppmv) ***1.25x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***121.76***
Absorptive Properties -	

Pollutant Emitted ***Arsenic***	Chemical Abstract Services (CAS) Number ***7440-38-2***
Proposed Emission Rate (lb/hr) ***$3.58x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$7.84x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Beryllium***	Chemical Abstract Services (CAS) Number ***7440-41-7***
Proposed Emission Rate (lb/hr) ***$2.33x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$4.24x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***9.01***
Absorptive Properties -	

Pollutant Emitted ***Cadmium***	Chemical Abstract Services (CAS) Number ***7440-43-9***
Proposed Emission Rate (lb/hr) ***$1.97x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$2.87x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg@ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Chromium (hexavalent)***	Chemical Abstract Services (CAS) Number ***1333-82-0***
Proposed Emission Rate (lb/hr) ***$5.01x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.58x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @77°F***
Solubility ***1,660 g/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Chromium***	Chemical Abstract Services (CAS) Number ***7440-47-3***
Proposed Emission Rate (lb/hr) ***2.51x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.91x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Cobalt***	Chemical Abstract Services (CAS) Number ***7440-48-4***
Proposed Emission Rate (lb/hr) ***1.47x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.09x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.93***
Absorptive Properties -	

Pollutant Emitted ***Manganese***	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) ***6.62x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.98x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***54.94***
Absorptive Properties -	

Pollutant Emitted ***Mercury***	Chemical Abstract Services (CAS) Number ***7439-97-6***
Proposed Emission Rate (lb/hr) ***4.48x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.66x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***7.85x10^{-5} in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***200.59***
Absorptive Properties -	

Pollutant Emitted ***Nickel***	Chemical Abstract Services (CAS) Number ***7044-02-0***
Proposed Emission Rate (lb/hr) ***$3.76x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.05x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg Q 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.69***
Absorptive Properties -	

Pollutant Emitted ***Selenium***	Chemical Abstract Services (CAS) Number ***7782-49-2***
Proposed Emission Rate (lb/hr) ***$1.58x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$3.27x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0.29 in Hg @ 807***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***78.96***
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FUEL BURNING EQUIPMENT FOR INDIRECT HEATING

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Applicant´s Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	Land Area at Facility Site ***261 Acres***	MSL Elevation at Facility ***2,685 feet***

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) ***106-H-0601/2/3 (a single combined flue stack)***	Name of Manufacturer ***TBD***
Rated Capacity/Maximum Input ***TBD***	Model Number ***TBD***
Purpose Space Heat _____ % Process Heat ***100*** %	Power Generation _____ % Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here)	
☐Pulverized	☐Spreader Stoker with Fly Ash Reinjection
☐General	☐Spreader Stoker without Fly Ash Reinjection
☐Dry Bottom	☐Fluidized Bed
☐Wet Bottom with Fly Ash Reinjection	☐Cyclone
☐Wet Bottom without Fly Ash Reinjection	☐Hand-Fired
☐Other – Specify:	
Fuel Oil	Gas
☐Horizontally Fired	☐Horizontally Fired
☐Tangentially Fired	☐Tangentially Fired
☐Other – Specify:	☐Other – Specify: ***TBD***

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year Total	Peak Season (Specify Months)
24	***7***	***52***	***8760***	***N/A***

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year ***2017-2018***

Primary Fuels			Standby Fuels		
Type ***Fuel Gas***			Type ***none***		
Quantity Per Year ***43,496,028.00***	Units of Measure ***lb/yr***		Quantity Per Year	Units of Measure	
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum ***0***	Maximum ***0***	Average ***0***	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum ***TBD***	Maximum ***TBD***	Average ***27571.3 BUT/lb***	Minimum	Maximum	Average

Describe Fuel Transport and Storage Methods:
N/A, fuel gas to be generated within the refinery

SECTION F – COMBUSTION AIR

☐Natural Draft ☐Induced ☐Forced ☐Other – Specify: ***TBD***

SECTION G – STACK DATA

Inside Diameter (ft) ***7.4***	Height Above Grade (ft) ***130***
Gas Temperature at Exit (Avg. °F) ***790.2***	Gas Velocity at Exit (Avg. ft/sec) ***27.2***
Are Emission Control Devices in Place? If YES – Complete SFN 8532 ☒ Yes ☐No	
Stack Exit Gas Flow Rate	
Average (ACFM) ***70,944.82***	Average (DSCFM) ***TBD***
Maximum (ACFM) ***TBD***	Maximum (DSCFM) ***TBD***
Are sampling ports available? ☐No ☒ Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment.
Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM_{10} Total	***5.48E-01***	***2.40E+00***
PM_{10} Filterable	***1.37E-01***	***6.00E-01***
$PM_{2.5}$ Total	***5.48E-01***	***2.40E+00***
$PM_{2.5}$ Filterable	***1.37E-01***	***6.00E-01***
$PM_{2.5}$ Condensable	***4.11E-01***	***1.80E+00***
Sulfur Dioxide	***8.05E-02***	***3.53E-01***
Nitrogen Oxides	***8.62E-01***	***3.78E+00***
Carbon Monoxide	***3.83E+00***	***1.68E+01***
Greenhouse Gases (CO2e)	***N/A***	
Other – Specify		
Lead	***6.71E-05***	***2.94E-04***
Metal HAP (Total)	***1.00E-03***	***4.38E-03***
Organic HAPs (Total)	***6.69E-02***	***2.93E-01***
VOC	***7.38E-01***	***3.23E+00***

Basis and Calculations for Quantities:

Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"

Estimation of contaminants is based on the combined duties and fuel gas requirements of all three reactor feed heaters 106-H-0601/2/3 which are discharged through a common flue stack.

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR AIR POLLUTION CONTROL EQUIPMENT

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8532 (09-12)

NOTE: READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.

SECTION A – GENERAL INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION B – FACILITY INFORMATION

Facility Name ***Davis Refinery / Process Heaters and Boilers***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Location ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***		Source ID No. ***106-H-0601/2/3 (common flue stack)***

SECTION C – EQUIPMENT

Type: ☐ Cyclone ☐ Multicyclone ☐ Baghouse ☐ Electrostatic Precipitator ☐ Wet Scrubber ☐ Spray Dryer ☒ Other – Specify: ***Selective Catalytic Reduction (SCR)***

Name of Manufacturer ***TBD***	Model Number ***TBD***	Date to Be Installed ***TBD***

Application: ☐ Boiler ☐ Kiln ☐ Engine ☒ Other – Specify: ***Process heater***

Pollutants Removed	***NOx***			
Design Efficiency (%)	***TBD***			
Operating Efficiency (%)	***TBD***			

Describe method used to determine operating efficiency:
TBD

SECTION D – GAS CONDITIONS

Gas Conditions			Inlet	Outlet
Gas Volume (SCFM; 68°F; 14.7 psia)			***TBD***	***TBD***
Gas Temperature (°F)			***TBD***	***TBD***
Gas Pressure (in. H_2O)			***TBD***	***TBD***
Gas Velocity (ft/sec)			***TBD***	***TBD***
Pollutant Concentration (Specify Pollutant and Unit of Concentration)	Pollutant	Unit of Concentration		
	NOx	***ppmv***	***TBD (4.107 lb/h)***	***TBD (0.862 lb/h)***
Pressure Drop Through Gas Cleaning Device (in. H_2O) ***TBD***				

Signature of Applicant	Date
	04/03/17

PERMIT APPLICATION FOR
HAZARDOUS AIR POLLUTANT (HAP) SOURCES
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Address (Street & No. or Lat/Long to Nearest Second) ***37th Street / 46°52'45"N/103°14'55" W***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Number of Employees at Location ***TBD***	
Land Area at Plant Site ***261*** Acres (or) Sq. Ft.	MSL Elevation at Plant ***2,685 feet***	

Describe Nature of Business/Process

Petroleum Refining / Reformer Reactor Heater

SECTION B – STACK DATA

Inside Diameter (ft) ***7.4***	Height Above Grade (ft) ***130.0***	
Gas Temperature at Exit (°F) ***790.2***	Gas Velocity at Exit (ft/sec) ***27.5***	Gas Volume (scfm) ***29,951.48***
Basis of any Estimates (attach separate sheet if necessary) ***Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"***		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes ☒ No ☐
Nearest Residences or Building ***Utility building***	Distance (ft) ***1213.8 ft***	Direction ***Southwest***
Nearest Property Line ***Fenceline***	Distance (ft) ***946.9 ft***	Direction ***Northwest***

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 ***106-H-0601/2/3 (through single combined stack)***	Mean Particle Diameter (μm) ***TBD***
Flow Rate (scfm) ***29,951.48***	Drift Velocity (ft/sec) ***27.5***
Stream Temperature (°F) ***790.2***	Particulate Concentration (gr/dscf) ***TBD***
Moisture Content (%) ***TBD***	Halogens or Metals Present? ***Metals***
Pressure (in. Hg) ***TBD***	Organic Content (ppmv) ***$1.79x10^{-1}$***
Heat Content (Btu/scfm) ***TBD***	O_2 Content (%) ***N/A***

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted ***Acetaldehyde***	Chemical Abstract Services (CAS) Number ***75-07-0***
Proposed Emission Rate (lb/hr) ***$4.11x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic Vapor***
Concentration in Emission Stream (ppmv) ***$2.00x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***35.51 in Hg @ 68°C***
Solubility ***$1x10^{+6}$ mg/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***44.05***
Absorptive Properties -	

Pollutant Emitted ***Benzene***	Chemical Abstract Services (CAS) Number ***71-43-2***
Proposed Emission Rate (lb/hr) ***$7.19x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.97x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***3.73 in Hg @ 77 °F***
Solubility ***In water $1.79x10^{3}$ mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***78.11***
Absorptive Properties -	

Pollutant Emitted ***Dichlorobenzene***	Chemical Abstract Services (CAS) Number ***Varies***
Proposed Emission Rate (lb/hr) ***$4.11x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$6.00x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***Varies***
Solubility ***Varies***	Molecular Weight (lb/lb-mole) ***147.00***
Absorptive Properties -	

Pollutant Emitted ***Ethylbenzene***	Chemical Abstract Services (CAS) Number ***100-41-4***
Proposed Emission Rate (lb/hr) ***5.48x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.11x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.37 in Hg @ 77°F***
Solubility ***In water 0.014 g/100mL @ 59 °F***	Molecular Weight (lb/lb-mole) ***106.17***
Absorptive Properties -	

Pollutant Emitted ***Formaldehyde***	Chemical Abstract Services (CAS) Number ***50-00-0***
Proposed Emission Rate (lb/hr) ***2.53x10^{-3}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.81x10^{-2}***	Vapor Pressure (in. Hg @ °F) ***0.15 in Hg @ 77 °F***
Solubility ***In water 4.00 x10^{5} mg/L @ 68°F***	Molecular Weight (lb/lb-mole) ***30.03***
Absorptive Properties -	

Pollutant Emitted ***Hexane***	Chemical Abstract Services (CAS) Number ***110-54-5***
Proposed Emission Rate (lb/hr) ***6.16x10^{-2}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.53x10^{-1}***	Vapor Pressure (in. Hg @ °F) ***5.90 in Hg @ 68 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***86.1***
Absorptive Properties -	

Pollutant Emitted ***Naphthalene***	Chemical Abstract Services (CAS) Number ***91-20-3***
Proposed Emission Rate (lb/hr) ***2.05x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.44x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0.003 in Hg @ 77 °F***
Solubility ***In water 31 mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***128.17***
Absorptive Properties -	

Pollutant Emitted ***Toluene***	Chemical Abstract Services (CAS) Number ***108-88-3***
Proposed Emission Rate (lb/hr) ***1.13 x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***2.63x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***1.12 in Hg @ 77°F***
Solubility ***In water 526 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***92.14***
Absorptive Properties -	

Pollutant Emitted ***Xylene***	Chemical Abstract Services (CAS) Number ***95-47-6***
Proposed Emission Rate (lb/hr) ***8.56x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.73x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.26 in Hg @ 77°F***
Solubility ***In water 178 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***106.16***
Absorptive Properties -	

Pollutant Emitted ***PAH***	Chemical Abstract Services (CAS) Number ***N/A***
Proposed Emission Rate (lb/hr) ***1.46x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.21x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***N/A***
Solubility ***N/A***	Molecular Weight (lb/lb-mole) ***TBD***
Absorptive Properties -	

Pollutant Emitted ***Antimony***	Chemical Abstract Services (CAS) Number ***7740-36-0***
Proposed Emission Rate (lb/hr) ***7.12x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/particulate***
Concentration in Emission Stream (ppmv) ***1.25x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***121.76***
Absorptive Properties -	

Pollutant Emitted ***Arsenic***	Chemical Abstract Services (CAS) Number ***7440-38-2***
Proposed Emission Rate (lb/hr) ***$2.74x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$7.84x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Beryllium***	Chemical Abstract Services (CAS) Number ***7440-41-7***
Proposed Emission Rate (lb/hr) ***$1.78x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$4.24x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***9.01***
Absorptive Properties -	

Pollutant Emitted ***Cadmium***	Chemical Abstract Services (CAS) Number ***7440-43-9***
Proposed Emission Rate (lb/hr) ***$1.51x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$2.87x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg@ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Chromium (hexavalent)***	Chemical Abstract Services (CAS) Number ***1333-82-0***
Proposed Emission Rate (lb/hr) ***$3.83x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.58x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @77°F***
Solubility ***1,660 g/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Chromium***	Chemical Abstract Services (CAS) Number ***7440-47-3***
Proposed Emission Rate (lb/hr) ***1.92x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.91x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Cobalt***	Chemical Abstract Services (CAS) Number ***7440-48-4***
Proposed Emission Rate (lb/hr) ***1.12x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.09x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.93***
Absorptive Properties -	

Pollutant Emitted ***Manganese***	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) ***5.07x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.98x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***54.94***
Absorptive Properties -	

Pollutant Emitted ***Mercury***	Chemical Abstract Services (CAS) Number ***7439-97-6***
Proposed Emission Rate (lb/hr) ***3.42x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.66x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***7.85x10^{-5} in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***200.59***
Absorptive Properties -	

Pollutant Emitted ***Nickel***	Chemical Abstract Services (CAS) Number ***7044-02-0***
Proposed Emission Rate (lb/hr) ***$2.87x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.05x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg Q 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.69***
Absorptive Properties -	

Pollutant Emitted ***Selenium***	Chemical Abstract Services (CAS) Number ***7782-49-2***
Proposed Emission Rate (lb/hr) ***$1.20x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$3.27x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0.29 in Hg @ 807***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***78.96***
Absorptive Properties -	

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FUEL BURNING EQUIPMENT FOR INDIRECT HEATING

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Applicant´s Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	Land Area at Facility Site ***261 Acres***	MSL Elevation at Facility ***2,685 feet***

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) ***106-H-0605***	Name of Manufacturer ***TBD***
Rated Capacity/Maximum Input ***TBD***	Model Number ***TBD***
Purpose Space Heat _____ % Process Heat ***100*** %	Power Generation _____ % Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here)	
☐Pulverized	☐Spreader Stoker with Fly Ash Reinjection
☐General	☐Spreader Stoker without Fly Ash Reinjection
☐Dry Bottom	☐Fluidized Bed
☐Wet Bottom with Fly Ash Reinjection	☐Cyclone
☐Wet Bottom without Fly Ash Reinjection	☐Hand-Fired
☐Other – Specify:	
Fuel Oil	Gas
☐Horizontally Fired	☐Horizontally Fired
☐Tangentially Fired	☐Tangentially Fired
☐Other – Specify:	☐Other – Specify: ***TBD***

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year Total	Peak Season (Specify Months)
24	***7***	***52***	***8760***	***N/A***

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year ***2017-2018***

Primary Fuels			Standby Fuels		
Type ***Fuel Gas***			Type ***none***		
Quantity Per Year ***1,810,692.00***	Units of Measure ***lb/yr***		Quantity Per Year	Units of Measure	
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum ***0***	Maximum ***0***	Average ***0***	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum ***TBD***	Maximum ***TBD***	Average ***27576.2 BUT/lb***	Minimum	Maximum	Average

Describe Fuel Transport and Storage Methods:
N/A, fuel gas to be generated within the refinery

SECTION F – COMBUSTION AIR

☐Natural Draft ☐Induced ☐Forced ☐Other – Specify: ***TBD***

SECTION G – STACK DATA

Inside Diameter (ft) ***7.4***	Height Above Grade (ft) ***42***
Gas Temperature at Exit (Avg. °F) ***790.2***	Gas Velocity at Exit (Avg. ft/sec) ***15.7***
Are Emission Control Devices in Place? If YES – Complete SFN 8532 ☒ Yes ☐No	
Stack Exit Gas Flow Rate	
Average (ACFM) ***2,953.89***	Average (DSCFM) ***TBD***
Maximum (ACFM) ***TBD***	Maximum (DSCFM) ***TBD***
Are sampling ports available? ☐No ☒ Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment.
Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM_{10} Total	***2.28E-02***	***9.99E-02***
PM_{10} Filterable	***5.70E-03***	***2.50E-02***
$PM_{2.5}$ Total	***2.28E-02***	***9.99E-02***
$PM_{2.5}$ Filterable	***5.70E-03***	***2.50E-02***
$PM_{2.5}$ Condensable	***1.71E-02***	***7.49E-02***
Sulfur Dioxide	***3.35E-03***	***1.47E-02***
Nitrogen Oxides	***1.71E-01***	***7.49E-01***
Carbon Monoxide	***1.60E-01***	***6.99E-01***
Greenhouse Gases (CO2e)	***N/A***	
Other – Specify		
Lead	***2.79E-06***	***1.22E-05***
Metal HAP (Total)	***4.17E-05***	***1.83E-04***
Organic HAPs (Total)	***2.79E-03***	***1.22E-02***
VOC	***3.07E-02***	***1.35E-01***

Basis and Calculations for Quantities:
Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR
HAZARDOUS AIR POLLUTANT (HAP) SOURCES
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Address (Street & No. or Lat/Long to Nearest Second) ***37th Street / 46°52'45"N/103°14'55" W***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Number of Employees at Location ***TBD***	
Land Area at Plant Site ***261*** Acres (or) Sq. Ft.	MSL Elevation at Plant ***2,685 feet***	

Describe Nature of Business/Process

Petroleum Refining / Reformer Stabilizer Reboiler Heater

SECTION B – STACK DATA

Inside Diameter (ft) ***2.0***	Height Above Grade (ft) ***42.0***	
Gas Temperature at Exit (°F) ***790.2***	Gas Velocity at Exit (ft/sec) ***15.7***	Gas Volume (scfm) ***1,247.07***
Basis of any Estimates (attach separate sheet if necessary) ***Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "BACT Analysis"***		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes ☒ No ☐
Nearest Residences or Building ***Utility building***	Distance (ft) ***1194.0 ft***	Direction ***Southwest***
Nearest Property Line ***Fenceline***	Distance (ft) ***893.6 ft***	Direction ***Northwest***

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 ***106-H-0605***	Mean Particle Diameter (μm) ***TBD***
Flow Rate (scfm) ***1,247.07***	Drift Velocity (ft/sec) ***27.5***
Stream Temperature (°F) ***790.2***	Particulate Concentration (gr/dscf) ***TBD***
Moisture Content (%) ***TBD***	Halogens or Metals Present? ***Metals***
Pressure (in. Hg) ***TBD***	Organic Content (ppmv) ***$1.79x10^{-1}$***
Heat Content (Btu/scfm) ***TBD***	O_2 Content (%) ***N/A***

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted ***Acetaldehyde***	Chemical Abstract Services (CAS) Number ***75-07-0***
Proposed Emission Rate (lb/hr) ***$1.71x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic Vapor***
Concentration in Emission Stream (ppmv) ***$2.00x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***35.51 in Hg @ 68°C***
Solubility ***$1x10^{+6}$ mg/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***44.05***
Absorptive Properties -	

Pollutant Emitted ***Benzene***	Chemical Abstract Services (CAS) Number ***71-43-2***
Proposed Emission Rate (lb/hr) ***$2.99x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.97x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***3.73 in Hg @ 77 °F***
Solubility ***In water $1.79x10^{3}$ mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***78.11***
Absorptive Properties -	

Pollutant Emitted ***Dichlorobenzene***	Chemical Abstract Services (CAS) Number ***Varies***
Proposed Emission Rate (lb/hr) ***$1.71x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$6.00x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***Varies***
Solubility ***Varies***	Molecular Weight (lb/lb-mole) ***147.00***
Absorptive Properties -	

Pollutant Emitted ***Ethylbenzene***	Chemical Abstract Services (CAS) Number ***100-41-4***
Proposed Emission Rate (lb/hr) ***2.28x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.11x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.37 in Hg @ 77°F***
Solubility ***In water 0.014 g/100mL @ 59 °F***	Molecular Weight (lb/lb-mole) ***106.17***
Absorptive Properties -	

Pollutant Emitted ***Formaldehyde***	Chemical Abstract Services (CAS) Number ***50-00-0***
Proposed Emission Rate (lb/hr) ***1.05x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.81x10^{-2}***	Vapor Pressure (in. Hg @ °F) ***0.15 in Hg @ 77 °F***
Solubility ***In water 4.00 x10^{5} mg/L @ 68°F***	Molecular Weight (lb/lb-mole) ***30.03***
Absorptive Properties -	

Pollutant Emitted ***Hexane***	Chemical Abstract Services (CAS) Number ***110-54-5***
Proposed Emission Rate (lb/hr) ***2.57x10^{-2}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.53x10^{-1}***	Vapor Pressure (in. Hg @ °F) ***5.90 in Hg @ 68 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***86.1***
Absorptive Properties -	

Pollutant Emitted ***Naphthalene***	Chemical Abstract Services (CAS) Number ***91-20-3***
Proposed Emission Rate (lb/hr) ***8.55x10^{-7}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.44x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0.003 in Hg @ 77 °F***
Solubility ***In water 31 mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***128.17***
Absorptive Properties -	

Pollutant Emitted ***Toluene***	Chemical Abstract Services (CAS) Number ***108-88-3***
Proposed Emission Rate (lb/hr) ***4.70x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***2.63x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***1.12 in Hg @ 77°F***
Solubility ***In water 526 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***92.14***
Absorptive Properties -	

Pollutant Emitted ***Xylene***	Chemical Abstract Services (CAS) Number ***95-47-6***
Proposed Emission Rate (lb/hr) ***3.56x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.73x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.26 in Hg @ 77°F***
Solubility ***In water 178 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***106.16***
Absorptive Properties -	

Pollutant Emitted ***PAH***	Chemical Abstract Services (CAS) Number ***N/A***
Proposed Emission Rate (lb/hr) ***6.07x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.21x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***N/A***
Solubility ***N/A***	Molecular Weight (lb/lb-mole) ***TBD***
Absorptive Properties -	

Pollutant Emitted ***Antimony***	Chemical Abstract Services (CAS) Number ***7740-36-0***
Proposed Emission Rate (lb/hr) ***2.96x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/particulate***
Concentration in Emission Stream (ppmv) ***1.25x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***121.76***
Absorptive Properties -	

Pollutant Emitted ***Arsenic***	Chemical Abstract Services (CAS) Number ***7440-38-2***
Proposed Emission Rate (lb/hr) ***$1.14x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$7.84x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Beryllium***	Chemical Abstract Services (CAS) Number ***7440-41-7***
Proposed Emission Rate (lb/hr) ***$7.41x10^{-7}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$4.24x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***9.01***
Absorptive Properties -	

Pollutant Emitted ***Cadmium***	Chemical Abstract Services (CAS) Number ***7440-43-9***
Proposed Emission Rate (lb/hr) ***$6.27x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$2.87x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg@ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Chromium (hexavalent)***	Chemical Abstract Services (CAS) Number ***1333-82-0***
Proposed Emission Rate (lb/hr) ***$1.60x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.58x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @77°F***
Solubility ***1,660 g/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Chromium***	Chemical Abstract Services (CAS) Number ***7440-47-3***
Proposed Emission Rate (lb/hr) ***7.98x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.91x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Cobalt***	Chemical Abstract Services (CAS) Number ***7440-48-4***
Proposed Emission Rate (lb/hr) ***4.67x10^{-7}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.09x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.93***
Absorptive Properties -	

Pollutant Emitted ***Manganese***	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) ***2.11x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.98x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***54.94***
Absorptive Properties -	

Pollutant Emitted ***Mercury***	Chemical Abstract Services (CAS) Number ***7439-97-6***
Proposed Emission Rate (lb/hr) ***1.43x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.66x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***7.85x10^{-5} in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***200.59***
Absorptive Properties -	

Pollutant Emitted ***Nickel***	Chemical Abstract Services (CAS) Number ***7044-02-0***
Proposed Emission Rate (lb/hr) ***1.20x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.05x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg Q 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.69***
Absorptive Properties -	

Pollutant Emitted ***Selenium***	Chemical Abstract Services (CAS) Number ***7782-49-2***
Proposed Emission Rate (lb/hr) ***5.02x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.27x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0.29 in Hg @ 807***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***78.96***
Absorptive Properties -	

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FUEL BURNING EQUIPMENT FOR INDIRECT HEATING

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Applicant´s Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	Land Area at Facility Site ***261 Acres***	MSL Elevation at Facility ***2,685 feet***

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) ***110-H-1001***	Name of Manufacturer ***TBD***
Rated Capacity/Maximum Input ***TBD***	Model Number ***TBD***
Purpose Space Heat _____ %	Power Generation _____ %
Process Heat ***100*** %	Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here)	
☐Pulverized	☐Spreader Stoker with Fly Ash Reinjection
☐General	☐Spreader Stoker without Fly Ash Reinjection
☐Dry Bottom	☐Fluidized Bed
☐Wet Bottom with Fly Ash Reinjection	☐Cyclone
☐Wet Bottom without Fly Ash Reinjection	☐Hand-Fired
☐Other – Specify:	
Fuel Oil	Gas
☐Horizontally Fired	☐Horizontally Fired
☐Tangentially Fired	☐Tangentially Fired
☐Other – Specify:	☐Other – Specify: ***TBD***

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year Total	Peak Season (Specify Months)
24	***7***	***52***	***8760***	***N/A***

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year ***2017-2018***

Primary Fuels			Standby Fuels		
Type ***Fuel Gas***			Type ***none***		
Quantity Per Year ***6,195,948.00***	Units of Measure ***lb/yr***		Quantity Per Year	Units of Measure	
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum ***0***	Maximum ***0***	Average ***0***	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum ***TBD***	Maximum ***TBD***	Average ***27569.6 BTU/lb***	Minimum	Maximum	Average

Describe Fuel Transport and Storage Methods:
N/A, fuel gas to be generated within the refinery

SECTION F – COMBUSTION AIR

☐Natural Draft ☐Induced ☐Forced ☐Other – Specify: ***TBD***

SECTION G – STACK DATA

Inside Diameter (ft) ***2.8***	Height Above Grade (ft) ***96***
Gas Temperature at Exit (Avg. °F) ***790.2***	Gas Velocity at Exit (Avg. ft/sec) ***28.4***
Are Emission Control Devices in Place? If YES – Complete SFN 8532 ☒ Yes ☐No	
Stack Exit Gas Flow Rate	
Average (ACFM) ***10,105.41***	Average (DSCFM) ***TBD***
Maximum (ACFM) ***TBD***	Maximum (DSCFM) ***TBD***
Are sampling ports available? ☐No ☒ Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment.
Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM_{10} Total	***7.80E-02***	***3.42E-01***
PM_{10} Filterable	***1.95E-02***	***8.54E-02***
$PM_{2.5}$ Total	***7.80E-02***	***3.42E-01***
$PM_{2.5}$ Filterable	***1.95E-02***	***8.54E-02***
$PM_{2.5}$ Condensable	***5.85E-02***	***2.56E-01***
Sulfur Dioxide	***1.15E-02***	***5.02E-02***
Nitrogen Oxides	***5.85E-01***	***2.56E+00***
Carbon Monoxide	***5.46E-01***	***2.39E+00***
Greenhouse Gases (CO2e)	***N/A***	
Other – Specify		
Lead	***9.56E-06***	***4.19E-05***
Metal HAP (Total)	***1.43E-04***	***6.25E-04***
Organic HAPs (Total)	***9.53E-03***	***4.18E-02***
VOC	***1.05E-01***	***4.61E-01***

Basis and Calculations for Quantities:
Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR
HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Address (Street & No. or Lat/Long to Nearest Second) ***37th Street / 46°52'45"N/103°14'55" W***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Number of Employees at Location ***TBD***	
Land Area at Plant Site ***261*** Acres (or) Sq. Ft.	MSL Elevation at Plant ***2,685 feet***	

Describe Nature of Business/Process

Petroleum Refining / Distillates Hydrotreater (DHT) Reactor Heater

SECTION B – STACK DATA

Inside Diameter (ft) ***2.8***	Height Above Grade (ft) ***96***	
Gas Temperature at Exit (°F) ***790.2***	Gas Velocity at Exit (ft/sec) ***28.4***	Gas Volume (scfm) ***4,266.30***
Basis of any Estimates (attach separate sheet if necessary) ***Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"***		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes ☐ No ☒
Nearest Residences or Building ***Utility building***	Distance (ft) ***748.0 ft***	Direction ***Southwest***
Nearest Property Line ***Fenceline***	Distance (ft) ***673.8 ft***	Direction ***South***

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 ***110-H-1001***	Mean Particle Diameter (μm) ***TBD***
Flow Rate (scfm) ***4,266.30***	Drift Velocity (ft/sec) ***28.4***
Stream Temperature (°F) ***790.2***	Particulate Concentration (gr/dscf) ***TBD***
Moisture Content (%) ***TBD***	Halogens or Metals Present? ***Metals***
Pressure (in. Hg) ***TBD***	Organic Content (ppmv) ***$1.79x10^{-1}$***
Heat Content (Btu/scfm) ***TBD***	O_2 Content (%) ***N/A***

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted ***Acetaldehyde***	Chemical Abstract Services (CAS) Number ***75-07-0***
Proposed Emission Rate (lb/hr) ***$5.85x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic Vapor***
Concentration in Emission Stream (ppmv) ***$2.00x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***35.51 in Hg @ 68°C***
Solubility ***$1x10^{+6}$ mg/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***44.05***
Absorptive Properties -	

Pollutant Emitted ***Benzene***	Chemical Abstract Services (CAS) Number ***71-43-2***
Proposed Emission Rate (lb/hr) ***$1.02x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.97x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***3.73 in Hg @ 77 °F***
Solubility ***In water $1.79x10^{3}$ mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***78.11***
Absorptive Properties -	

Pollutant Emitted ***Dichlorobenzene***	Chemical Abstract Services (CAS) Number ***Varies***
Proposed Emission Rate (lb/hr) ***$5.85x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$6.00x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***Varies***
Solubility ***Varies***	Molecular Weight (lb/lb-mole) ***147.00***
Absorptive Properties -	

Pollutant Emitted ***Ethylbenzene***	Chemical Abstract Services (CAS) Number ***100-41-4***
Proposed Emission Rate (lb/hr) ***7.80x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.11x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.37 in Hg @ 77°F***
Solubility ***In water 0.014 g/100mL @ 59 °F***	Molecular Weight (lb/lb-mole) ***106.17***
Absorptive Properties -	

Pollutant Emitted ***Formaldehyde***	Chemical Abstract Services (CAS) Number ***50-00-0***
Proposed Emission Rate (lb/hr) ***3.61x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.81x10^{-2}***	Vapor Pressure (in. Hg @ °F) ***0.15 in Hg @ 77 °F***
Solubility ***In water 4.00 x10^{5} mg/L @ 68°F***	Molecular Weight (lb/lb-mole) ***30.03***
Absorptive Properties -	

Pollutant Emitted ***Hexane***	Chemical Abstract Services (CAS) Number ***110-54-5***
Proposed Emission Rate (lb/hr) ***8.78x10^{-3}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.53x10^{-1}***	Vapor Pressure (in. Hg @ °F) ***5.90 in Hg @ 68 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***86.1***
Absorptive Properties -	

Pollutant Emitted ***Naphthalene***	Chemical Abstract Services (CAS) Number ***91-20-3***
Proposed Emission Rate (lb/hr) ***2.93x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.44x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0.003 in Hg @ 77 °F***
Solubility ***In water 31 mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***128.17***
Absorptive Properties -	

Pollutant Emitted ***Toluene***	Chemical Abstract Services (CAS) Number ***108-88-3***
Proposed Emission Rate (lb/hr) ***$1.61x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$2.63x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***1.12 in Hg @ 77°F***
Solubility ***In water 526 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***92.14***
Absorptive Properties -	

Pollutant Emitted ***Xylene***	Chemical Abstract Services (CAS) Number ***95-47-6***
Proposed Emission Rate (lb/hr) ***$1.22x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.73x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0.26 in Hg @ 77°F***
Solubility ***In water 178 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***106.16***
Absorptive Properties -	

Pollutant Emitted ***PAH***	Chemical Abstract Services (CAS) Number ***N/A***
Proposed Emission Rate (lb/hr) ***$2.08x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$3.21x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***N/A***
Solubility ***N/A***	Molecular Weight (lb/lb-mole) ***TBD***
Absorptive Properties -	

Pollutant Emitted ***Antimony***	Chemical Abstract Services (CAS) Number ***7740-36-0***
Proposed Emission Rate (lb/hr) ***$1.01x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/particulate***
Concentration in Emission Stream (ppmv) ***$1.25x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***121.76***
Absorptive Properties -	

Pollutant Emitted ***Arsenic***	Chemical Abstract Services (CAS) Number ***7440-38-2***
Proposed Emission Rate (lb/hr) ***$3.90x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$7.84x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Beryllium***	Chemical Abstract Services (CAS) Number ***7440-41-7***
Proposed Emission Rate (lb/hr) ***$2.54x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$4.24x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***9.01***
Absorptive Properties -	

Pollutant Emitted ***Cadmium***	Chemical Abstract Services (CAS) Number ***7440-43-9***
Proposed Emission Rate (lb/hr) ***$2.15x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$2.87x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg@ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Chromium (hexavalent)***	Chemical Abstract Services (CAS) Number ***1333-82-0***
Proposed Emission Rate (lb/hr) ***$5.46x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.58x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @77°F***
Solubility ***1,660 g/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Chromium***	Chemical Abstract Services (CAS) Number ***7440-47-3***
Proposed Emission Rate (lb/hr) ***2.73x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.91x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Cobalt***	Chemical Abstract Services (CAS) Number ***7440-48-4***
Proposed Emission Rate (lb/hr) ***1.60x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.09x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.93***
Absorptive Properties -	

Pollutant Emitted ***Manganese***	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) ***7.22x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.98x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***54.94***
Absorptive Properties -	

Pollutant Emitted ***Mercury***	Chemical Abstract Services (CAS) Number ***7439-97-6***
Proposed Emission Rate (lb/hr) ***4.88x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.66x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***7.85x10^{-5} in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***200.59***
Absorptive Properties -	

Pollutant Emitted ***Nickel***	Chemical Abstract Services (CAS) Number ***7044-02-0***
Proposed Emission Rate (lb/hr) ***$4.10x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.05x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg Q 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.69***
Absorptive Properties -	

Pollutant Emitted ***Selenium***	Chemical Abstract Services (CAS) Number ***7782-49-2***
Proposed Emission Rate (lb/hr) ***$1.72x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$3.27x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0.29 in Hg @ 807***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***78.96***
Absorptive Properties -	

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FUEL BURNING EQUIPMENT FOR INDIRECT HEATING

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Applicant´s Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	Land Area at Facility Site ***261 Acres***	MSL Elevation at Facility ***2,685 feet***

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) ***110-H-1002***	Name of Manufacturer ***TBD***
Rated Capacity/Maximum Input ***TBD***	Model Number ***TBD***
Purpose Space Heat _____ % Process Heat ***100*** %	Power Generation _____ % Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here)	
☐Pulverized	☐Spreader Stoker with Fly Ash Reinjection
☐General	☐Spreader Stoker without Fly Ash Reinjection
☐Dry Bottom	☐Fluidized Bed
☐Wet Bottom with Fly Ash Reinjection	☐Cyclone
☐Wet Bottom without Fly Ash Reinjection	☐Hand-Fired
☐Other – Specify:	
Fuel Oil	Gas
☐Horizontally Fired	☐Horizontally Fired
☐Tangentially Fired	☐Tangentially Fired
☐Other – Specify:	☐Other – Specify: ***TBD***

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year Total	Peak Season (Specify Months)
24	***7***	***52***	***8760***	***N/A***

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year ***2017-2018***					
Primary Fuels			Standby Fuels		
Type ***Fuel Gas***			Type ***None***		
Quantity Per Year ***8,674,152.00***	Units of Measure ***lb/yr***		Quantity Per Year	Units of Measure	
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum ***0***	Maximum ***0***	Average ***0***	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum ***TBD***	Maximum ***TBD***	Average ***27570.2 BTU/lb***	Minimum	Maximum	Average
Describe Fuel Transport and Storage Methods: ***N/A, fuel gas to be generated within the refinery***					

SECTION F – COMBUSTION AIR

☐Natural Draft ☐Induced ☐Forced ☐Other – Specify: ***TBD***

SECTION G – STACK DATA

Inside Diameter (ft) ***3.5***	Height Above Grade (ft) ***91***
Gas Temperature at Exit (Avg. °F) ***790.2***	Gas Velocity at Exit (Avg. ft/sec) ***24.5***
Are Emission Control Devices in Place? If YES – Complete SFN 8532 ☐ Yes ☒No	
Stack Exit Gas Flow Rate	
Average (ACFM) ***14,147.58***	Average (DSCFM) ***TBD***
Maximum (ACFM) ***TBD***	Maximum (DSCFM) ***TBD***
Are sampling ports available? ☐No ☒ Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment.
Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM_{10} Total	***1.09E-01***	***4.78E-01***
PM_{10} Filterable	***2.73E-02***	***1.20E-01***
$PM_{2.5}$ Total	***1.09E-01***	***4.78E-01***
$PM_{2.5}$ Filterable	***2.73E-02***	***1.20E-01***
$PM_{2.5}$ Condensable	***8.19E-02***	***3.59E-01***
Sulfur Dioxide	***1.61E-02***	***7.03E-02***
Nitrogen Oxides	***8.19E-01***	***3.59E+00***
Carbon Monoxide	***7.64E-01***	***3.35E+00***
Greenhouse Gases (CO2e)	***N/A***	
Other – Specify		
Lead	***1.34E-05***	***5.86E-05***
Metal HAP (Total)	***2.00E-04***	***8.74E-04***
Organic HAPs (Total)	***1.33E-02***	***5.85E-02***
VOC	***1.47E-01***	***6.45E-01***

Basis and Calculations for Quantities:
Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"

Signature of Applicant	Date
Jon Wilson	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR
HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Address (Street & No. or Lat/Long to Nearest Second) ***37th Street / 46°52'45"N/103°14'55" W***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Number of Employees at Location ***TBD***	
Land Area at Plant Site ***261*** Acres (or) Sq. Ft.	MSL Elevation at Plant ***2,685 feet***	

Describe Nature of Business/Process

Petroleum Refining / Distillates Hydrotreater (DHT) Splitter Heater

SECTION B – STACK DATA

Inside Diameter (ft) ***3.5***	Height Above Grade (ft) ***91***	
Gas Temperature at Exit (°F) ***790.2***	Gas Velocity at Exit (ft/sec) ***24.5***	Gas Volume (scfm) ***5,972.82***
Basis of any Estimates (attach separate sheet if necessary) ***Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"***		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes ☐ No ☒
Nearest Residences or Building ***Utility building***	Distance (ft) ***811.5 ft***	Direction ***Southwest***
Nearest Property Line ***Fenceline***	Distance (ft) ***757.1 ft***	Direction ***South***

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 ***110-H-1002***	Mean Particle Diameter (μm) ***TBD***
Flow Rate (scfm) ***5,972.82***	Drift Velocity (ft/sec) ***24.5***
Stream Temperature (°F) ***790.2***	Particulate Concentration (gr/dscf) ***TBD***
Moisture Content (%) ***TBD***	Halogens or Metals Present? ***Metals***
Pressure (in. Hg) ***TBD***	Organic Content (ppmv) ***$1.79x10^{-1}$***
Heat Content (Btu/scfm) ***TBD***	O_2 Content (%) ***N/A***

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted ***Acetaldehyde***	Chemical Abstract Services (CAS) Number ***75-07-0***
Proposed Emission Rate (lb/hr) ***$8.19x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic Vapor***
Concentration in Emission Stream (ppmv) ***$2.00x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***35.51 in Hg @ 68°C***
Solubility ***$1x10^{+6}$ mg/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***44.05***
Absorptive Properties -	

Pollutant Emitted ***Benzene***	Chemical Abstract Services (CAS) Number ***71-43-2***
Proposed Emission Rate (lb/hr) ***$1.43x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.97x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***3.73 in Hg @ 77 °F***
Solubility ***In water $1.79x10^{3}$ mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***78.11***
Absorptive Properties -	

Pollutant Emitted ***Dichlorobenzene***	Chemical Abstract Services (CAS) Number ***Varies***
Proposed Emission Rate (lb/hr) ***$8.19x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$6.00x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***Varies***
Solubility ***Varies***	Molecular Weight (lb/lb-mole) ***147.00***
Absorptive Properties -	

Pollutant Emitted ***Ethylbenzene***	Chemical Abstract Services (CAS) Number ***100-41-4***
Proposed Emission Rate (lb/hr) ***1.09x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.11x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.37 in Hg @ 77°F***
Solubility ***In water 0.014 g/100mL @ 59 °F***	Molecular Weight (lb/lb-mole) ***106.17***
Absorptive Properties -	

Pollutant Emitted ***Formaldehyde***	Chemical Abstract Services (CAS) Number ***50-00-0***
Proposed Emission Rate (lb/hr) ***5.05x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.81x10^{-2}***	Vapor Pressure (in. Hg @ °F) ***0.15 in Hg @ 77 °F***
Solubility ***In water 4.00 x10^{5} mg/L @ 68°F***	Molecular Weight (lb/lb-mole) ***30.03***
Absorptive Properties -	

Pollutant Emitted ***Hexane***	Chemical Abstract Services (CAS) Number ***110-54-5***
Proposed Emission Rate (lb/hr) ***1.23x10^{-2}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.53x10^{-1}***	Vapor Pressure (in. Hg @ °F) ***5.90 in Hg @ 68 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***86.1***
Absorptive Properties -	

Pollutant Emitted ***Naphthalene***	Chemical Abstract Services (CAS) Number ***91-20-3***
Proposed Emission Rate (lb/hr) ***4.10x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.44x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0.003 in Hg @ 77 °F***
Solubility ***In water 31 mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***128.17***
Absorptive Properties -	

Pollutant Emitted ***Toluene***	Chemical Abstract Services (CAS) Number ***108-88-3***
Proposed Emission Rate (lb/hr) ***$2.25x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$2.63x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***1.12 in Hg @ 77°F***
Solubility ***In water 526 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***92.14***
Absorptive Properties -	

Pollutant Emitted ***Xylene***	Chemical Abstract Services (CAS) Number ***95-47-6***
Proposed Emission Rate (lb/hr) ***$1.71x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.73x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0.26 in Hg @ 77°F***
Solubility ***In water 178 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***106.16***
Absorptive Properties -	

Pollutant Emitted ***PAH***	Chemical Abstract Services (CAS) Number ***N/A***
Proposed Emission Rate (lb/hr) ***$2.91x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$3.21x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***N/A***
Solubility ***N/A***	Molecular Weight (lb/lb-mole) ***TBD***
Absorptive Properties -	

Pollutant Emitted ***Antimony***	Chemical Abstract Services (CAS) Number ***7740-36-0***
Proposed Emission Rate (lb/hr) ***$1.42x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/particulate***
Concentration in Emission Stream (ppmv) ***$1.25x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***121.76***
Absorptive Properties -	

Pollutant Emitted ***Arsenic***	Chemical Abstract Services (CAS) Number ***7440-38-2***
Proposed Emission Rate (lb/hr) ***5.46x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.84x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Beryllium***	Chemical Abstract Services (CAS) Number ***7440-41-7***
Proposed Emission Rate (lb/hr) ***3.55x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.24x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***9.01***
Absorptive Properties -	

Pollutant Emitted ***Cadmium***	Chemical Abstract Services (CAS) Number ***7440-43-9***
Proposed Emission Rate (lb/hr) ***3.00x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***2.87x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg@ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Chromium (hexavalent)***	Chemical Abstract Services (CAS) Number ***1333-82-0***
Proposed Emission Rate (lb/hr) ***7.64x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.58x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @77°F***
Solubility ***1,660 g/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Chromium***	Chemical Abstract Services (CAS) Number ***7440-47-3***
Proposed Emission Rate (lb/hr) ***3.82x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.91x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Cobalt***	Chemical Abstract Services (CAS) Number ***7440-48-4***
Proposed Emission Rate (lb/hr) ***2.24x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.09x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.93***
Absorptive Properties -	

Pollutant Emitted ***Manganese***	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) ***1.01x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.98x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***54.94***
Absorptive Properties -	

Pollutant Emitted ***Mercury***	Chemical Abstract Services (CAS) Number ***7439-97-6***
Proposed Emission Rate (lb/hr) ***6.83x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.66x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***7.85x10^{-5} in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***200.59***
Absorptive Properties -	

Pollutant Emitted ***Nickel***	Chemical Abstract Services (CAS) Number ***7044-02-0***
Proposed Emission Rate (lb/hr) ***5.73x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.05x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg Q 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.69***
Absorptive Properties -	

Pollutant Emitted ***Selenium***	Chemical Abstract Services (CAS) Number ***7782-49-2***
Proposed Emission Rate (lb/hr) ***2.40x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.27x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0.29 in Hg @ 807***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***78.96***
Absorptive Properties -	

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FUEL BURNING EQUIPMENT FOR INDIRECT HEATING

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Applicant´s Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	Land Area at Facility Site ***261 Acres***	MSL Elevation at Facility ***2,685 feet***

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) ***112-H-1201***	Name of Manufacturer ***TBD***
Rated Capacity/Maximum Input ***TBD***	Model Number ***TBD***
Purpose Space Heat _____ %	Power Generation _____ %
Process Heat ***100*** %	Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here)	
☐Pulverized	☐Spreader Stoker with Fly Ash Reinjection
☐General	☐Spreader Stoker without Fly Ash Reinjection
☐Dry Bottom	☐Fluidized Bed
☐Wet Bottom with Fly Ash Reinjection	☐Cyclone
☐Wet Bottom without Fly Ash Reinjection	☐Hand-Fired
☐Other – Specify:	
Fuel Oil	Gas
☐Horizontally Fired	☐Horizontally Fired
☐Tangentially Fired	☐Tangentially Fired
☐Other – Specify:	☐Other – Specify: ***TBD***

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year Total	Peak Season (Specify Months)
24	***7***	***52***	***8760***	***N/A***

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year ***2017-2018***

Primary Fuels			Standby Fuels		
Type ***Fuel Gas***			Type ***none***		
Quantity Per Year ***9,277,716.00***	Units of Measure ***lb/yr***		Quantity Per Year	Units of Measure	
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum ***0***	Maximum ***0***	Average ***0***	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum ***TBD***	Maximum ***TBD***	Average ***35,086.4 BTU/lb***	Minimum	Maximum	Average

Describe Fuel Transport and Storage Methods:
N/A, fuel gas to be generated within the refinery

SECTION F – COMBUSTION AIR

☐Natural Draft ☐Induced ☐Forced ☐Other – Specify: ***TBD***

SECTION G – STACK DATA

Inside Diameter (ft) ***4***	Height Above Grade (ft) ***100***
Gas Temperature at Exit (Avg. °F) ***790.2***	Gas Velocity at Exit (Avg. ft/sec) ***25.5***
Are Emission Control Devices in Place? If YES – Complete SFN 8532 ☒ Yes ☐No	
Stack Exit Gas Flow Rate	
Average (ACFM) ***19,257.26***	Average (DSCFM) ***TBD***
Maximum (ACFM) ***TBD***	Maximum (DSCFM) ***TBD***
Are sampling ports available? ☐No ☒ Yes – Describe:	

SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment.
Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM_{10} Total	***1.49E-01***	***6.51E-01***
PM_{10} Filterable	***3.72E-02***	***1.63E-01***
$PM_{2.5}$ Total	***1.49E-01***	***6.51E-01***
$PM_{2.5}$ Filterable	***3.72E-02***	***1.63E-01***
$PM_{2.5}$ Condensable	***1.11E-01***	***4.88E-01***
Sulfur Dioxide	***2.19E-02***	***9.57E-02***
Nitrogen Oxides	***2.34E-01***	***1.03E+00***
Carbon Monoxide	***1.04E+00***	***4.56E+00***
Greenhouse Gases (CO2e)	***N/A***	
Other – Specify		
Lead	***1.82E-05***	***7.98E-05***
Metal HAP (Total)	***2.72E-04***	***1.19E-03***
Organic HAPs (Total)	***1.82E-02***	***7.96E-02***
VOC	***2.00E-01***	***8.78E-01***

Basis and Calculations for Quantities:
Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR AIR POLLUTION CONTROL EQUIPMENT

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8532 (09-12)

NOTE: READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.

SECTION A – GENERAL INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION B – FACILITY INFORMATION

Facility Name ***Davis Refinery / Process Heaters and Boilers***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Location ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***		Source ID No. ***112-H-1201***

SECTION C – EQUIPMENT

Type: ☐ Cyclone ☐ Multicyclone ☐ Baghouse ☐ Electrostatic Precipitator ☐ Wet Scrubber ☐ Spray Dryer ☒ Other – Specify: ***Selective Catalytic Reduction (SCR)***

Name of Manufacturer ***TBD***	Model Number ***TBD***	Date to Be Installed ***TBD***

Application: ☐ Boiler ☐ Kiln ☐ Engine ☒ Other – Specify: ***Process heater***

Pollutants Removed	***NOx***	***Organic HAP***		
Design Efficiency (%)	***75***	***75***		
Operating Efficiency (%)	***TBD***	***TBD***		

Describe method used to determine operating efficiency:
TBD

SECTION D – GAS CONDITIONS

Gas Conditions			Inlet	Outlet
Gas Volume (SCFM; 68°F; 14.7 psia)			***TBD***	***TBD***
Gas Temperature (°F)			***TBD***	***TBD***
Gas Pressure (in. H_2O)			***TBD***	***TBD***
Gas Velocity (ft/sec)			***TBD***	***TBD***
Pollutant Concentration (Specify Pollutant and Unit of Concentration)	Pollutant	Unit of Concentration		
	NOx	***ppmv***	***TBD (1.115 lb/h)***	***TBD (0.234 lb/h)***
	Organic HAPs	***ppmv***	***TBD (7.27E-02 lb/h)***	***TBD (1.82E-02 lb/h)***
Pressure Drop Through Gas Cleaning Device (in. H_2O) ***TBD***				

Signature of Applicant	Date
	04/03/17

PERMIT APPLICATION FOR
HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Address (Street & No. or Lat/Long to Nearest Second) ***37th Street / 46°52'45"N/103°14'55" W***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Number of Employees at Location ***TBD***	
Land Area at Plant Site ***261*** Acres (or) Sq. Ft.	MSL Elevation at Plant ***2,685 feet***	

Describe Nature of Business/Process

Petroleum Refining / Hydrocracker Reactor Feed Heater

SECTION B – STACK DATA

Inside Diameter (ft) ***4.0***	Height Above Grade (ft) ***100***	
Gas Temperature at Exit (°F) ***790.2***	Gas Velocity at Exit (ft/sec) ***25.5***	Gas Volume (scfm) ***8,131.33***
Basis of any Estimates (attach separate sheet if necessary) ***Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"***		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes ☐ No ☒
Nearest Residences or Building ***Arrow K***	Distance (ft) ***1380 ft***	Direction ***Southwest***
Nearest Property Line ***Fenceline***	Distance (ft) ***427.3 ft***	Direction ***East***

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 ***112-H-1201***	Mean Particle Diameter (μm) ***TBD***
Flow Rate (scfm) ***8,131.33***	Drift Velocity (ft/sec) ***25.5***
Stream Temperature (°F) ***790.2***	Particulate Concentration (gr/dscf) ***TBD***
Moisture Content (%) ***TBD***	Halogens or Metals Present? ***Metals***
Pressure (in. Hg) ***TBD***	Organic Content (ppmv) ***$1.79x10^{-1}$***
Heat Content (Btu/scfm) ***TBD***	O_2 Content (%) ***N/A***

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted ***Acetaldehyde***	Chemical Abstract Services (CAS) Number ***75-07-0***
Proposed Emission Rate (lb/hr) ***$1.11x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic Vapor***
Concentration in Emission Stream (ppmv) ***$2.00x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***35.51 in Hg @ 68°C***
Solubility ***$1x10^{+6}$ mg/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***44.05***
Absorptive Properties -	

Pollutant Emitted ***Benzene***	Chemical Abstract Services (CAS) Number ***71-43-2***
Proposed Emission Rate (lb/hr) ***$1.95x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.97x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***3.73 in Hg @ 77 °F***
Solubility ***In water $1.79x10^{3}$ mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***78.11***
Absorptive Properties -	

Pollutant Emitted ***Dichlorobenzene***	Chemical Abstract Services (CAS) Number ***Varies***
Proposed Emission Rate (lb/hr) ***$1.11x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$5.99x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***Varies***
Solubility ***Varies***	Molecular Weight (lb/lb-mole) ***147.00***
Absorptive Properties -	

Pollutant Emitted ***Ethylbenzene***	Chemical Abstract Services (CAS) Number ***100-41-4***
Proposed Emission Rate (lb/hr) ***1.49x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.11x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.37 in Hg @ 77°F***
Solubility ***In water 0.014 g/100mL @ 59 °F***	Molecular Weight (lb/lb-mole) ***106.17***
Absorptive Properties -	

Pollutant Emitted ***Formaldehyde***	Chemical Abstract Services (CAS) Number ***50-00-0***
Proposed Emission Rate (lb/hr) ***6.87x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.81x10^{-2}***	Vapor Pressure (in. Hg @ °F) ***0.15 in Hg @ 77 °F***
Solubility ***In water 4.00 x10^{5} mg/L @ 68°F***	Molecular Weight (lb/lb-mole) ***30.03***
Absorptive Properties -	

Pollutant Emitted ***Hexane***	Chemical Abstract Services (CAS) Number ***110-54-5***
Proposed Emission Rate (lb/hr) ***1.67x10^{-2}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.53x10^{-1}***	Vapor Pressure (in. Hg @ °F) ***5.90 in Hg @ 68 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***86.1***
Absorptive Properties -	

Pollutant Emitted ***Naphthalene***	Chemical Abstract Services (CAS) Number ***91-20-3***
Proposed Emission Rate (lb/hr) ***5.57x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.44x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0.003 in Hg @ 77 °F***
Solubility ***In water 31 mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***128.17***
Absorptive Properties -	

Pollutant Emitted ***Toluene***	Chemical Abstract Services (CAS) Number ***108-88-3***
Proposed Emission Rate (lb/hr) ***$3.07x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$2.63x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***1.12 in Hg @ 77°F***
Solubility ***In water 526 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***92.14***
Absorptive Properties -	

Pollutant Emitted ***Xylene***	Chemical Abstract Services (CAS) Number ***95-47-6***
Proposed Emission Rate (lb/hr) ***$2.32x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.73x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0.26 in Hg @ 77°F***
Solubility ***In water 178 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***106.16***
Absorptive Properties -	

Pollutant Emitted ***PAH***	Chemical Abstract Services (CAS) Number ***N/A***
Proposed Emission Rate (lb/hr) ***$3.96x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$3.21x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***N/A***
Solubility ***N/A***	Molecular Weight (lb/lb-mole) ***TBD***
Absorptive Properties -	

Pollutant Emitted ***Antimony***	Chemical Abstract Services (CAS) Number ***7740-36-0***
Proposed Emission Rate (lb/hr) ***$1.93x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/particulate***
Concentration in Emission Stream (ppmv) ***$1.25x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***121.76***
Absorptive Properties -	

Pollutant Emitted ***Arsenic***	Chemical Abstract Services (CAS) Number ***7440-38-2***
Proposed Emission Rate (lb/hr) ***$7.43x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$7.84x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Beryllium***	Chemical Abstract Services (CAS) Number ***7440-41-7***
Proposed Emission Rate (lb/hr) ***$4.83x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$4.24x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***9.01***
Absorptive Properties -	

Pollutant Emitted ***Cadmium***	Chemical Abstract Services (CAS) Number ***7440-43-9***
Proposed Emission Rate (lb/hr) ***$4.09x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$2.87x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg@ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Chromium (hexavalent)***	Chemical Abstract Services (CAS) Number ***1333-82-0***
Proposed Emission Rate (lb/hr) ***$1.04x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.58x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @77°F***
Solubility ***1,660 g/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Chromium***	Chemical Abstract Services (CAS) Number ***7440-47-3***
Proposed Emission Rate (lb/hr) ***5.20x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***7.91x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Cobalt***	Chemical Abstract Services (CAS) Number ***7440-48-4***
Proposed Emission Rate (lb/hr) ***3.05x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.09x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.93***
Absorptive Properties -	

Pollutant Emitted ***Manganese***	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) ***1.37x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***1.98x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***54.94***
Absorptive Properties -	

Pollutant Emitted ***Mercury***	Chemical Abstract Services (CAS) Number ***7439-97-6***
Proposed Emission Rate (lb/hr) ***9.29x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.66x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***7.85x10^{-5} in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***200.59***
Absorptive Properties -	

Pollutant Emitted ***Nickel***	Chemical Abstract Services (CAS) Number ***7044-02-0***
Proposed Emission Rate (lb/hr) ***$7.80x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.05x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg Q 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.69***
Absorptive Properties -	

Pollutant Emitted ***Selenium***	Chemical Abstract Services (CAS) Number ***7782-49-2***
Proposed Emission Rate (lb/hr) ***$3.27x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$3.27x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0.29 in Hg @ 807***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***78.96***
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FUEL BURNING EQUIPMENT FOR INDIRECT HEATING

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Applicant´s Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	Land Area at Facility Site ***261 Acres***	MSL Elevation at Facility ***2,685 feet***

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) ***112-H-1202***	Name of Manufacturer ***TBD***
Rated Capacity/Maximum Input ***TBD***	Model Number ***TBD***
Purpose Space Heat _____ %	Power Generation _____ %
Process Heat ***100*** %	Other (Specify % if Multi Purpose) _____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here)	
☐Pulverized	☐Spreader Stoker with Fly Ash Reinjection
☐General	☐Spreader Stoker without Fly Ash Reinjection
☐Dry Bottom	☐Fluidized Bed
☐Wet Bottom with Fly Ash Reinjection	☐Cyclone
☐Wet Bottom without Fly Ash Reinjection	☐Hand-Fired
☐Other – Specify:	
Fuel Oil	Gas
☐Horizontally Fired	☐Horizontally Fired
☐Tangentially Fired	☐Tangentially Fired
☐Other – Specify:	☐Other – Specify: ***TBD***

SECTION D – NORMAL SCHEDULE OF OPERATION

Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year Total	Peak Season (Specify Months)
24	***7***	***52***	***8760***	***N/A***

SECTION E – FUEL USE EXPECTED IN A CALENDAR YEAR

Year ***2017-2018***

Primary Fuels			Standby Fuels		
Type ***Fuel Gas***			Type ***None***		
Quantity Per Year ***10,072,248.00***	Units of Measure ***lb/yr***		Quantity Per Year	Units of Measure	
Percent Ash (Solid Fuels Only)					
Minimum	Maximum	Average	Minimum	Maximum	Average
Percent Sulfur					
Minimum ***0***	Maximum ***0***	Average ***0***	Minimum	Maximum	Average
Btu Per Unit of Measure (e.g. lb, gal, etc. - Specify)					
Minimum ***TBD***	Maximum ***TBD***	Average ***35,084.36 BTU/lb***	Minimum	Maximum	Average

Describe Fuel Transport and Storage Methods:
N/A, fuel gas to be generated within the refinery

SECTION F – COMBUSTION AIR

☐Natural Draft ☐Induced ☐Forced ☐Other – Specify: ***TBD***

SECTION G – STACK DATA

Inside Diameter (ft) ***4***	Height Above Grade (ft) ***100***
Gas Temperature at Exit (Avg. °F) ***790.2***	Gas Velocity at Exit (Avg. ft/sec) ***27.7***
Are Emission Control Devices in Place? If YES – Complete SFN 8532 ☒ Yes ☐No	
Stack Exit Gas Flow Rate	
Average (ACFM) ***20,905.24***	Average (DSCFM) ***TBD***
Maximum (ACFM) ***TBD***	Maximum (DSCFM) ***TBD***
Are sampling ports available? ☐No ☒ Yes – Describe:	

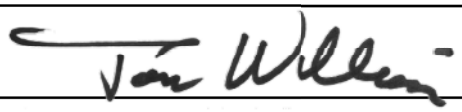
SECTION H – NEARBY BUILDINGS

Attach drawings which show the plan and elevation views of any nearby buildings including the building that houses the fuel-fired equipment.
Plant layout drawings attached to this permit application.

SECTION I – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Tons Per Year
PM_{10} Total	***1.61E-01***	***7.07E-01***
PM_{10} Filterable	***4.03E-02***	***1.77E-01***
$PM_{2.5}$ Total	***1.61E-01***	***7.07E-01***
$PM_{2.5}$ Filterable	***4.03E-02***	***1.77E-01***
$PM_{2.5}$ Condensable	***1.21E-01***	***5.30E-01***
Sulfur Dioxide	***2.37E-02***	***1.04E-01***
Nitrogen Oxides	***2.54E-01***	***1.11E+00***
Carbon Monoxide	***1.13E+00***	***4.95E+00***
Greenhouse Gases (CO2e)	***N/A***	
Other – Specify		
Lead	***1.98E-05***	***8.66E-05***
Metal HAP (Total)	***2.95E-04***	***1.29E-03***
Organic HAPs (Total)	***1.97E-02***	***8.64E-02***
VOC	***2.18E-01***	***9.53E-01***

Basis and Calculations for Quantities:
Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"

Signature of Applicant	Date
	04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Health
Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR AIR POLLUTION CONTROL EQUIPMENT

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8532 (09-12)

NOTE: READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.

SECTION A – GENERAL INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION B – FACILITY INFORMATION

Facility Name ***Davis Refinery / Process Heaters and Boilers***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Location ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***		Source ID No. ***112-H-1202***

SECTION C – EQUIPMENT

Type: ☐ Cyclone ☐ Multicyclone ☐ Baghouse ☐ Electrostatic Precipitator ☐ Wet Scrubber ☐ Spray Dryer ☒ Other – Specify: ***Selective Catalytic Reduction (SCR)***

Name of Manufacturer ***TBD***	Model Number ***TBD***	Date to Be Installed ***TBD***

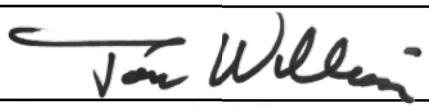
Application: ☐ Boiler ☐ Kiln ☐ Engine ☒ Other – Specify: ***Process heater***

Pollutants Removed	***NOx***	***Organic HAP***		
Design Efficiency (%)	***75***	***75***		
Operating Efficiency (%)	***TBD***	***TBD***		

Describe method used to determine operating efficiency:
TBD

SECTION D – GAS CONDITIONS

Gas Conditions			Inlet	Outlet
Gas Volume (SCFM; 68°F; 14.7 psia)			***TBD***	***TBD***
Gas Temperature (°F)			***TBD***	***TBD***
Gas Pressure (in. H_2O)			***TBD***	***TBD***
Gas Velocity (ft/sec)			***TBD***	***TBD***
Pollutant Concentration (Specify Pollutant and Unit of Concentration)	Pollutant	Unit of Concentration		
	NOx	***ppmv***	***TBD (1.210 lb/h)***	***TBD (0.254 lb/h)***
	Organic HAPs	***ppmv***	***TBD (7.89E-02 lb/h)***	***TBD (1.97E-02 lb/h)***
Pressure Drop Through Gas Cleaning Device (in. H_2O) ***TBD***				

Signature of Applicant	Date
	04/03/17

PERMIT APPLICATION FOR
HAZARDOUS AIR POLLUTANT (HAP) SOURCES
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8329 (09-12)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization ***Meridian Energy Group - Davis Refinery***		
Applicant's Name ***Tom Williams***		
Title ***VP of Planning &Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Facility Address (Street & No. or Lat/Long to Nearest Second) ***37th Street / 46°52'45"N/103°14'55" W***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***
County ***Billings***	Number of Employees at Location ***TBD***	
Land Area at Plant Site ***261*** Acres (or) Sq. Ft.	MSL Elevation at Plant ***2,685 feet***	

Describe Nature of Business/Process

Petroleum Refining / Hydrocracker Fractionator Feed Heater

SECTION B – STACK DATA

Inside Diameter (ft) ***4.0***	Height Above Grade (ft) ***100***	
Gas Temperature at Exit (°F) ***790.4***	Gas Velocity at Exit (ft/sec) ***27.7***	Gas Volume (scfm) ***8,824.36***
Basis of any Estimates (attach separate sheet if necessary) ***Engineering data and Emission factors from Table 1.4-2. AP 42, Chapter 1: External Combustion Sources. See Document P-5715043-01-001-18042-I001 "EMISSIONS INVENTORY" and P-5715043-01-001-18035-I001 "Control Technology Review"***		
Are Emission Control Devices in Place? If YES – Complete SFN 8532		Yes ☐ No ☒
Nearest Residences or Building ***Arrow K***	Distance (ft) ***1365 ft***	Direction ***South***
Nearest Property Line ***Fenceline***	Distance (ft) ***567.1***	Direction ***East***

SECTION C – EMISSION STREAM DATA

Source ID No. From SFN 8516 ***112-H-1202***	Mean Particle Diameter (μm) ***TBD***
Flow Rate (scfm) ***8,824.36***	Drift Velocity (ft/sec) ***27.7***
Stream Temperature (°F) ***790.4***	Particulate Concentration (gr/dscf) ***TBD***
Moisture Content (%) ***TBD***	Halogens or Metals Present? ***Metals***
Pressure (in. Hg) ***TBD***	Organic Content (ppmv) ***$1.79x10^{-1}$***
Heat Content (Btu/scfm) ***TBD***	O_2 Content (%) ***N/A***

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted ***Acetaldehyde***	Chemical Abstract Services (CAS) Number ***75-07-0***
Proposed Emission Rate (lb/hr) ***$1.21x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic Vapor***
Concentration in Emission Stream (ppmv) ***$2.14x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***35.51 in Hg @ 68°C***
Solubility ***$1x10^{+6}$ mg/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***44.05***
Absorptive Properties -	

Pollutant Emitted ***Benzene***	Chemical Abstract Services (CAS) Number ***71-43-2***
Proposed Emission Rate (lb/hr) ***$2.12x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$2.11x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***3.73 in Hg @ 77 °F***
Solubility ***In water $1.79x10^{3}$ mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***78.11***
Absorptive Properties -	

Pollutant Emitted ***Dichlorobenzene***	Chemical Abstract Services (CAS) Number ***Varies***
Proposed Emission Rate (lb/hr) ***$1.21x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$6.40x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***Varies***
Solubility ***Varies***	Molecular Weight (lb/lb-mole) ***147.00***
Absorptive Properties -	

Pollutant Emitted ***Ethylbenzene***	Chemical Abstract Services (CAS) Number ***100-41-4***
Proposed Emission Rate (lb/hr) ***1.61x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.18x10^{-3}***	Vapor Pressure (in. Hg @ °F) ***0.37 in Hg @ 77°F***
Solubility ***In water 0.014 g/100mL @ 59 °F***	Molecular Weight (lb/lb-mole) ***106.17***
Absorptive Properties -	

Pollutant Emitted ***Formaldehyde***	Chemical Abstract Services (CAS) Number ***50-00-0***
Proposed Emission Rate (lb/hr) ***7.46x10^{-4}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.93x10^{-2}***	Vapor Pressure (in. Hg @ °F) ***0.15 in Hg @ 77 °F***
Solubility ***In water 4.00 x10^{5} mg/L @ 68°F***	Molecular Weight (lb/lb-mole) ***30.03***
Absorptive Properties -	

Pollutant Emitted ***Hexane***	Chemical Abstract Services (CAS) Number ***110-54-5***
Proposed Emission Rate (lb/hr) ***1.82x10^{-2}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***1.64x10^{-1}***	Vapor Pressure (in. Hg @ °F) ***5.90 in Hg @ 68 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***86.1***
Absorptive Properties -	

Pollutant Emitted ***Naphthalene***	Chemical Abstract Services (CAS) Number ***91-20-3***
Proposed Emission Rate (lb/hr) ***6.05x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***3.67x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0.003 in Hg @ 77 °F***
Solubility ***In water 31 mg/L @ 77 °F***	Molecular Weight (lb/lb-mole) ***128.17***
Absorptive Properties -	

Pollutant Emitted ***Toluene***	Chemical Abstract Services (CAS) Number ***108-88-3***
Proposed Emission Rate (lb/hr) ***$3.33x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$2.81x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***1.12 in Hg @ 77°F***
Solubility ***In water 526 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***92.14***
Absorptive Properties -	

Pollutant Emitted ***Xylene***	Chemical Abstract Services (CAS) Number ***95-47-6***
Proposed Emission Rate (lb/hr) ***$2.52x10^{-4}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$1.85x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0.26 in Hg @ 77°F***
Solubility ***In water 178 mg/L @ 77°F***	Molecular Weight (lb/lb-mole) ***106.16***
Absorptive Properties -	

Pollutant Emitted ***PAH***	Chemical Abstract Services (CAS) Number ***N/A***
Proposed Emission Rate (lb/hr) ***$4.30x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Organic /Vapor***
Concentration in Emission Stream (ppmv) ***$3.42x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***N/A***
Solubility ***N/A***	Molecular Weight (lb/lb-mole) ***TBD***
Absorptive Properties -	

Pollutant Emitted ***Antimony***	Chemical Abstract Services (CAS) Number ***7740-36-0***
Proposed Emission Rate (lb/hr) ***$2.10x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/particulate***
Concentration in Emission Stream (ppmv) ***$1.34x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***121.76***
Absorptive Properties -	

Pollutant Emitted ***Arsenic***	Chemical Abstract Services (CAS) Number ***7440-38-2***
Proposed Emission Rate (lb/hr) ***$8.07x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$8.37x10^{-5}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Beryllium***	Chemical Abstract Services (CAS) Number ***7440-41-7***
Proposed Emission Rate (lb/hr) ***$5.24x10^{-6}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$4.52x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***9.01***
Absorptive Properties -	

Pollutant Emitted ***Cadmium***	Chemical Abstract Services (CAS) Number ***7440-43-9***
Proposed Emission Rate (lb/hr) ***$4.44x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$3.07x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg@ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole)
Absorptive Properties -	

Pollutant Emitted ***Chromium (hexavalent)***	Chemical Abstract Services (CAS) Number ***1333-82-0***
Proposed Emission Rate (lb/hr) ***$1.13x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.69x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @77°F***
Solubility ***1,660 g/L in water @ 77°F***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Chromium***	Chemical Abstract Services (CAS) Number ***7440-47-3***
Proposed Emission Rate (lb/hr) ***5.65x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***8.44x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***51.99***
Absorptive Properties -	

Pollutant Emitted ***Cobalt***	Chemical Abstract Services (CAS) Number ***7440-48-4***
Proposed Emission Rate (lb/hr) ***3.31x10^{-6}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***4.36x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.93***
Absorptive Properties -	

Pollutant Emitted ***Manganese***	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr) ***1.49x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***2.11x10^{-4}***	Vapor Pressure (in. Hg @ °F) ***0 in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***54.94***
Absorptive Properties -	

Pollutant Emitted ***Mercury***	Chemical Abstract Services (CAS) Number ***7439-97-6***
Proposed Emission Rate (lb/hr) ***1.01x10^{-5}***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***3.91x10^{-5}***	Vapor Pressure (in. Hg @ °F) ***7.85x10^{-5} in Hg @ 77 °F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***200.59***
Absorptive Properties -	

Pollutant Emitted ***Nickel***	Chemical Abstract Services (CAS) Number ***7044-02-0***
Proposed Emission Rate (lb/hr) ***$8.47x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$1.12x10^{-3}$***	Vapor Pressure (in. Hg @ °F) ***0 in Hg Q 77°F***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***58.69***
Absorptive Properties -	

Pollutant Emitted ***Selenium***	Chemical Abstract Services (CAS) Number ***7782-49-2***
Proposed Emission Rate (lb/hr) ***$3.55x10^{-5}$***	Emission Source (describe) ***Process Point***
Source Classification (process point, process fugitive, area fugitive) ***Process Point***	Pollutant Class and Form (organic/inorganic - particulate/vapor) ***Inorganic/Particulate***
Concentration in Emission Stream (ppmv) ***$3.49x10^{-4}$***	Vapor Pressure (in. Hg @ °F) ***0.29 in Hg @ 807***
Solubility ***Insoluble in water***	Molecular Weight (lb/lb-mole) ***78.96***
Absorptive Properties -	

Signature of Applicant 	Date 04/03/17

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of
Health Division of Air Quality
918 E Divide Ave., 2nd Floor
Bismarck, ND 58501-1947
(701) 328-5188

PERMIT APPLICATION FOR FUEL BURNING EQUIPMENT FOR INDIRECT HEATING

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8518 (09-12)

SECTION A – FACILITY INFORMATION

Name of Firm or Organization ***Meridian Energy Group – Davis Refinery***		
Contact Person for Air Pollution Matters ***Tom Johnson***		
Title ***Vice President of Operations***	Telephone Number ***(409)795-0792***	E-mail Address ***tjohnson@meridianenergygroup.inc***
Applicant´s Name ***Tom Williams***		
Title ***VP of Planning & Permitting***	Telephone Number ***(707) 299-0182***	E-mail Address ***twilliams@meridianenergygroup.inc***
Mailing Address (Street & No.) ***2062 Business Center Drive, Suite 115***		
City ***Irvine***	State ***CA***	ZIP Code ***92612***
Facility Address (Street & No.) ***37th Street***		
City ***Belfield***	State ***ND***	ZIP Code ***58622***

County ***Billings***	Latitude (Nearest Second) ***46°52'45"N***	Longitude (Nearest Second) ***103°14'55" W***

Legal Description of Facility Site ***Property ID 07 0000 00165 000 in the SE 1/4 of Section 2, Twp 139N, Range 100W and Property ID: 07 0000 00162 000 in the NW1/4 and SW 1/4 of Section 1, Twp 139N, Range 100W***	Land Area at Facility Site ***261 Acres***	MSL Elevation at Facility ***2,685 feet***

SECTION B – EQUIPMENT

Source ID No. (From form SFN 8516) ***202-B-0201A***		Name of Manufacturer ***TBD***	
Rated Capacity/Maximum Input ***TBD***		Model Number ***TBD***	
Purpose	Space Heat _____ %	Power Generation	_____ %
	Process Heat ***100*** %	Other (Specify % if Multi Purpose)	_____ %

SECTION C – TYPE OF COMBUSTION UNIT AND FUEL FEEDING METHOD

Coal (If other solid fuel, specify here)	
☐Pulverized	☐Spreader Stoker with Fly Ash Reinjection
☐General	☐Spreader Stoker without Fly Ash Reinjection
☐Dry Bottom	☐Fluidized Bed
☐Wet Bottom with Fly Ash Reinjection	☐Cyclone
☐Wet Bottom without Fly Ash Reinjection	☐Hand-Fired
☐Other – Specify:	
Fuel Oil	Gas
☐Horizontally Fired	☐Horizontally Fired
☐Tangentially Fired	☐Tangentially Fired
☐Other – Specify:	☐Other – Specify: ***TBD***