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PERMIT TO OPERATE - FUEL DISPENSING FACILITY AT THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT - OEPA NO. 1431110128 G001

02/14/95

C:EC:95-0018
FERMCO HAMILTON COUNTY
8
PTO

Fernald Environmental

FERMCO
Restoration Management Corporation P.O. Box 398704 Cincinnati, Ohio 45239-8704 (513) 738-6200

6583

February 14, 1995

Fernald Environmental Management Project
Letter No. C:EC:95-0018

Mr. Peter Sturdevant
Compliance Specialist
Hamilton County Department
of Environmental Services
Air Quality Management
1632 Central Parkway
Cincinnati, Ohio 45210

Dear Mr. Sturdevant:

PERMIT TO OPERATE - FUEL DISPENSING FACILITY AT THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT - OEPA NO. 1431110128 G001

Enclosed is a Permit to Operate Application for the FEMP Fuel Dispensing Facility. Please contact Frank Johnston of my staff at 738-8644 if you have any questions about this application.

Sincerely,

Terence D. Hagen
Director, Environmental Compliance

TDH:FLJ:flj
Attachment

c: S. M. Beckman
L. Copeland
J. C. Jenkins
F. L. Johnston
P. C. Morales
L. E. Parsons, DOE Contract Specialist
E. P. Skintik, DOE-FN
P. B. Spotts

RTS Files - Permit File
AR Files
File Record Storage Copy 102.1

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OHIO ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR A PERMIT TO OPERATE
AN AIR CONTAMINANT SOURCE

D.O.E.-Fernald Environmental Management Project
Facility Name

Mr. Stephen M. Beckman
Person to Contact

7400 Willey Road
Facility Address

Post Office Box 538704
Mailing Address

Fernald Hamilton 45030
City County Zip

Cincinnati OH 45253-8704
City State Zip

513/ 738-6502
Telephone Area Number

513/ 738-6502
Telephone

(Application no., if this is a renewal application)

4953
Std. Ind. Class. Code

1. Complete and attach any of the following appendices most appropriate to the air contaminant source. In addition, a compliance time schedule form is to be attached when applicable. Check as appropriate the following:

___Appendix A, Process
___Appendix B, Fuel-Burning Equipment
___Appendix C, Incinerator
___Appendix D, Surface Coating or Printing Operation
___Appendix E, Storage Tank
X Appendix H, Gasoline Dispensing Facility
___Appendix J, Loading Rack at Bulk Gasoline Plant or Terminal
___Appendix K, Surface Coating Line or Printing Line
___Appendix L, Solvent Metal Cleaning
___ Appendix M, Fugitive Dust Emission Sources
_____ Specify Appendix No.
___Appendix N, Rubber Tire Manufacturing
___Appendix O, Dry Cleaning Facility
___Appendix P, Landfills
___Other Appendix _____
___Compliance Time Schedule

2. Description of Source (same as used on appendix): Fuel Dispensing Facility

3. Your identification for Source (same as used on appendix): Diesel Tank - 99-X218-TNK; Gasohol Tank - 99-X219-TNK

I, being the individual specified in Rule 3745-35-02(B) of the Ohio Administrative Code, hereby apply for a Permit to Operate the air contaminant source(s) described herein. As required, the following additional documents are submitted as part of this application (describe all attachments):

Authorized Signature*
Terence D. Hagen,
Director, Environmental Compliance
Title

2/14/95
Date

*Pursuant to OAC Rule 3745-35-02(B) (Permit to Operate).
Operation of an air contaminant source without an effective permit to operate is prohibited to 3704.05 Ohio Revised Code.

ICIAL USE ONLY

No.___/___/___/___
No.___/___
tion No.___/___

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APPENDIX H

GASOLINE, DIESEL, AND/OR KEROSENE

DISPENSING FACILITY

Facility name DOE - Fernald Environmental Management Project

and address 7400 Willey Road

Fernald, OH 45030 Butler/Hamilton (county)

Complete the table below for all tanks that store gasoline, diesel, or kerosene to be dispensed into motor vehicles and/or portable containers. See item (5) for additional information on the types of vapor control systems for tank filling. Also, any tank that stores used lubricating oil is to be included in the table below.

Tank ID	Tank Capacity (gallons)	Date Installed (mo/yr)	Material Stored (gasoline) (kerosene) (diesel) (used oil)	Type of Vapor Control System for Tank Filling (Mark X in column below)				Fill Pipe Within 6 Inches of Tank Bottom? (Yes or No)
				None	VB-1	VB-2	Other	
99-X219	6,000	1/25/95	Gasohol			X		Yes
99-X218	6,000	1/25/95	Diesel	X				Yes

Provide the number of dispensing nozzles for each petroleum product.
2 gasoline 2 diesel NA kerosene

If a vapor control system is employed for gasoline motor vehicle refueling, complete item (6) and mark an "X" in this box. |_|

Provide the total gallons of petroleum product dispensed in each of the last two years (if new facility, provide estimate of maximum expected throughput for a full year).

Year of 19 9 5 : (est.)	Year of 19 _ _ :
40,000 gallons of gasoline	___ gallons of gasoline
70,000 gallons of diesel	___ gallons of diesel
___ gallons of kerosene	___ gallons of kerosene

3

3105
1987

5. Vapor Control System for Tank Filling: If applicable, mark an "X" in the appropriate box and complete the data requested.

[ ] (VR-1): Vapor Balance System, Single Point. This system consists of a coaxial, concentric or tube-in-tube fill pipe designed for simultaneous loading of the storage tank and return of vapor to the delivery vessel. An adapter is needed for proper attachment to the delivery vessel's liquid/vapor connection. Identify the manufacturer and item no. of the drop tube, adapter and any fitting on the line below.

_____

[X] (VR-2): Vapor Balance System, Dual Point. This system consists of a pipe, separate from the fill pipe, designed for the return of vapor to the delivery vessel during loading of the storage tank. An adapter is needed on the vapor return pipe for proper attachment to the delivery vessel's vapor hose. Identify the manufacturer and item no. of the vapor return pipe, adapter and any fitting on the line below.

_____

[ ] (Other): Vapor Control System Other Than Vapor Balance. This system is designed to recover or reduce the emission of vapor during loading of the storage tank, but it is not a vapor balance system indicated above. Identify the manufacturer, model no. and type of vapor control system on the line below. (Additional information on this system may be requested if needed.)

_____

6. Vapor Control System for Motor Vehicle Refueling: If applicable, mark an "X" in the appropriate box and complete the data requested.

[ ] Vapor Balance System. This system requires a tight seal at the nozzle-fill pipe connection. Vapors in the motor vehicle's tank are displaced by fuel flowing into that tank and are returned to the underground storage tank via the vapor path in the nozzle, hose, and underground piping. Identify the manufacturer and model no. of this system on the line below.

_____

[ ] Vacuum Assist System. This system does not require a tight seal at the nozzle-fillpipe connection. A slight vacuum draws vapors from around the nozzle-fillpipe connection, and returns them to the underground storage tank, or a vapor processing unit. Identify the manufacturer and model no. of this system and any vapor processing unit on the line below.

_____

[ ] Hybrid System. This system requires a small amount of liquid gasoline to be pumped from the storage tank and routed (before metering) to a restricting nozzle called an aspirator. As the gasoline flows through the aspirator, a small vacuum is generated. The vacuum draws vapors from around the nozzle-fillpipe connection and returns them to the underground storage tank. Identify the manufacturer and model no. of this system on the line below.

_____

PLEASE NOTE:

Vent Pipe Restriction: A specific type of vent pipe restriction may be needed to ensure proper opertion of the vapor control system. Check with the supplier or installer of the vapor control system regarding minimum vent pipe restrictions.

Completed by Frank Johnston Date February 13, 1995

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EMISSION ESTIMATES
PERMIT TO OPERATE APPLICATION
FUEL DISPENSING FACILITY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
OEPA NO. 1431110128 6001

The FEMP Fuel Dispensing Facility (FDF) dispenses diesel and gasohol fuels. The monthly average throughput during the November 1990 - November 1992 time frame for diesel fuel was 1,466 gallons (5,828 gallons maximum) while the average monthly throughput for gasohol during the same time period was 2,247 gallons (3,384 gallons maximum). These monthly throughputs are the design and permitting basis for the proposed FDF.

The average and maximum conditions are based on the throughputs identified above. Per AP-42, Table 4.4-7, "Evaporative Emissions From Gasoline Service Station Operations" the total emissions from each source is the additive of the emissions from:

1) tank filling (balanced submerged fill for the FEMP FDF);
2) tank breathing and emptying;
3) vehicle refueling displacement losses (uncontrolled for the FEMP FDF); and
4) spillage during vehicle refueling.

Assuming gasohol has approximately the same volatility as gasoline the controlled emissions during average and maximum conditions are:

AVERAGE: 0.04 lbs/hr (0.18 tons/yr)
MAXIMUM: 0.06 lbs/hr (0.26 tons/yr)

Uncontrolled emissions of gasohol during average and maximum conditions are:

AVERAGE: 0.08 lbs/hr (0.33 tons/yr)
MAXIMUM: 0.11 lbs/hr (0.49 tons/yr)

For diesel fuel, an approximate volatility was determined using a ratio based on information listed in AP-42 Table 4.4-5; "Total Organic Emission Factors for Petroleum Liquid Rail Tank Cars and Tank Trucks." Emission factors listed in Table 4.4-5 for gasoline and Distillate Oil No. 2 (Diesel) were compared and a consistent ratio of volatility was found to approximate 0.0028 lbs diesel to one lb gasoline per 1000 gallons. The emission factors listed in Table 4.4-7 were multiplied by 0.0028 to determine the emission factors for diesel fuel. Controlled emissions of diesel fuel during average and maximum conditions are:

AVERAGE: 0.00007 lbs/hr (0.0003 tons/yr)
MAXIMUM: 0.00029 lbs/hr (0.0013 tons/yr)

Uncontrolled emissions of diesel fuel during average and maximum conditions are:

AVERAGE: 0.08 lbs/hr (0.33 tons/yr)
MAXIMUM: 0.11 lbs/hr (0.49 tons/yr)

AP-42, TABLE 4.4-7, "EVAPORATIVE EMISSIONS FROM GASOLINE SERVICE STATION OPERATIONS"

EMISSION SOURCE	CONTROLLED EMISSION RATE (lbs/1000 gallon throughput) GASOHOL	DIESEL *
TANK FILLING (balanced submerged fill)	0.3	0.00084
TANK BREATHING & EMPTYING	1.0	0.0028
VEHICLE REFUELING LOSSES (displacement - uncontrolled)	11.0	0.0308
VEHICLE REFUELING - SPILLAGE	0.7	0.00196

Emission Estimate Equation (LBS/HR):
Q [Throughput - (gal/month)]/(30 days/month)/(24 hr/day)*[Emission Rate (lb/1000 gal)]

GASOHOL Qavg = 2247 Qmax = 3348

	AVG	MAX
TANK FILL = (LBS/HR)	0.000936	0.001395
TANK BREATH = (LBS/HR)	0.003121	0.00465
DISPLACEMENT = (LBS/HR)	0.034329	0.05115
SPILLAGE = (LBS/HR)	0.002185	0.003255
TOTAL = (LBS/HR)	0.040571	0.06045
TOTAL = (TONS/YR)	0.1777	0.264771

DIESEL Qavg = 1466 Qmax = 5828

	AVG	MAX
TANK FILL = (LBS/HR)	0.0000017	0.0000068
TANK BREATH = (LBS/HR)	0.0000057	0.0000227
DISPLACEMENT = (LBS/HR)	0.0000627	0.0002493
SPILLAGE = (LBS/HR)	0.0000040	0.0000159
TOTAL = (LBS/HR)	0.0000741	0.0002946
TOTAL = (TONS/YR)	0.0003246	0.0012905

* Diesel emission rate is 0.0028 times the emission rate for gasohol.

AP-42, TABLE 4.4-7, "EVAPORATIVE EMISSIONS FROM GASOLINE SERVICE STATION OPERATIONS"

EMISSION SOURCE	UNCONTROLLED EMISSION RATE (lbs/1000 gallon throughput) GASOHOL	DIESEL *
TANK FILLING (splash fill)	11.5	0.0322
TANK BREATHING & EMPTYING	1.0	0.0028
VEHICLE REFUELING LOSSES (displacement - uncontrolled)	11.0	0.0308
VEHICLE REFUELING - SPILLAGE	0.7	0.00196

Emission Estimate Equation (LBS/HR):
Q [Throughput - (gal/month)]/(30 days/month)/(24 hr/day)*[Emission Rate (lb/1000 gal)]

GASOHOL Qavg = 2247 Qmax = 3348	AVG	MAX
TANK FILL = (LBS/HR)	0.03589	0.053475
TANK BREATH = (LBS/HR)	0.003121	0.00465
DISPLACEMENT = (LBS/HR)	0.034329	0.05115
SPILLAGE = (LBS/HR)	0.002185	0.003255
TOTAL = (LBS/HR)	0.075524	0.11253
TOTAL = (TONS/YR)	0.330796	0.492881

DIESEL Qavg = 1466 Qmax = 5828	AVG	MAX
TANK FILL = (LBS/HR)	0.0000656	0.0002606
TANK BREATH = (LBS/HR)	0.0000057	0.0000227
DISPLACEMENT = (LBS/HR)	0.0000627	0.0002493
SPILLAGE = (LBS/HR)	0.0000040	0.0000159
TOTAL = (LBS/HR)	0.0001380	0.0005485
TOTAL = (TONS/YR)	0.0006043	0.0024023

* Diesel emission rate is 0.0028 times the emission rate for gasohol.