

# Iwaki Plant/Environmental Report 2005

**Business Summary: Manufacturing of vehicle engines**

**Location: 386 Shimokawa-aza-Otsurugi, Izumi-cho, Iwaki-shi, Fukushima, Japan**

**Start of Operations: January 1994**

**Number of Employees: 650**

**ISO 14001 Certification: March 1999**

**Environmental Slogan: Creating a clean facility that is friendly to the environment and the nature in and around Iwaki**



General Manager  
Iwaki Plant  
Kenjiro Fukugami



Iwaki Plant

## Major Results in FY 2004

### Zero Emissions

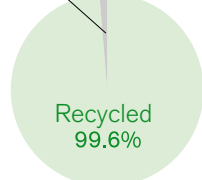
Our efforts during fiscal year 2004 included the installation of equipment that enables extraction of oil and fine powder of steel scrap from the sludge generated when honing engine cylinder block. The extracted oil can be reused in the production process. The powder of steel scrap can also be recycled into steel. As a result of these zero emission activities, we achieved a 99.6% resources recycling rate. Our new goal is to achieve a 100% resources recycling rate by establishing the management method of the casting pit sludge.



Reduced Honing Sludge

#### ● Recycling Rate (including scrap metals)

- Direct to landfill
- Incinerated externally



Amount of waste generated  
10,766 t/year

### Processing of Water-Soluble Cutting Fluid

The processing of soluble cutting fluid used to be outsourced. However it came to be able to process water on-site, by installing bio-treatment system. The system stabilizes the quality of discharged water and reduces the amount of sludge and activated carbon used.



Bio-treatment Equipment

### Employee Education

During Environment Month, we offered a study session on environmental conservation for representatives in charge of promoting zero emission activities.

To raise the employees' environmental awareness, we explained the reduction of the total waste generated and the processing cost, and we held the site tour of the processing facility of water/general waste where Nissan had consigned.



Education of Environmental Conservation

## FY 2004 Objectives and Results

Objective	Target	Result	Comment
Energy conservation	Unit per engine 1,214 MJ/engine	+ 1,202.5 MJ/engine	Achieved through the implementation of improvement efforts (400 cases) in each work area.
	Reduction in amount of heat 18,000 GJ	+ 47,400GJ	
Zero emission of waste	Direct landfill 4t/year	+ 0t/year	Made possible through innovation in recycling of oil, sludge, chemical containers, and several types of rubble and rubber.
	Externally incinerated 65 t/year	+ 46t/year	
	Incinerated on site 0t/year	+ 0t/year	
Cooperation and coexistence with local communities, local environmental protection	Implementation of "Clean Day" (beautification of area surrounding plant)	+ 7 times/year	Greening the plant and collecting litter from the public road bordering the plant.

## Communication with the Community

### “Clean Day”

We held “Clean Day” seven times throughout the year, during which all employees used their lunch break to clean up the areas surrounding the plant. Clean Day has become a well-established activity at the plant and will continue to be held every year.

### 10,000 Visitors per Year to Iwaki Plant

On March 21, we achieved our target of welcoming 10,000 visitors. Additional activities are planned to further increase the number of visitors this year. Continued efforts are also being made so that our activities converge to ensure our plant makes a strong and positive impression on all our visitors. Looking to the future, we are also aiming to improve environmental facilities that can always impress the visitors.



## Environmental Data

### Air Quality (Air Pollution Control Law and ordinances)

Unit: NOx: ppm, Soot and dust: g/m<sup>3</sup>N,  
SOx: K limit, Dioxins: mg-TEQ/m<sup>3</sup>N

Substance	Facility	Legal Limit	Measured Value
NOx	Chiller-Heater	120	74
	Aluminum furnace	100	17
	Aluminum chip melting furnace	100	38
	Multi-purpose furnace	100	41
Soot and dust	Water cooling and heating generator	0.03	<0.001
	Aluminum furnace	0.03	0.014
	Aluminum chip melting furnace	0.03	0.009
	Multi-purpose furnace	0.03	0.018
SOx	Chiller-Heater	4.5	<0.01
	Aluminum furnace	4.5	0.08
	Aluminum chip melting furnace	4.5	0.02
	Multi-purpose furnace	4.5	<0.01
Dioxins	Aluminum chip melting furnace	1	0.12

\*Measured values are the maximum measured values in FY 2004.

### Wastewater Quality (Wastewater Pollution Control Law and other ordinances)

Unit: mg/L (except pH)

Item	Legal Limit	Measured Value		
		Maximum	Minimum	Average
pH	5.8-8.6	7.4	7.0	7.2
COD*	16	9.4	2.5	5.8
SS*	56	ND	ND	ND
Oil	5	ND	ND	ND
Zinc	4	-	-	ND
Soluble iron	10	-	-	ND
Nitrogen	60	-	-	1.2
Phosphorous	8	-	-	0.13

\*Indicates pollution prevention agreement (City of Iwaki, Nissan)

\* Measurements of items other than those listed above were below minimum quantifiable limits  
\* ND indicates below minimum quantifiable limits

### PRTR Substances

Unit: kg/year (Dioxins: mg-TEQ/year)

Substance number	Chemical substance	Amount handled	Air	Water	Waste	Landfilled by Nissan	Recycled	Chemically changed	Product
13	2,2'-azobisisobutyronitrile	27	0	0	3	0	0	0	24
16	2-Aminoethanol	11	0	1	10	0	0	0	0
24	n-alkylbenzenesulfonic acid and its salts	8	0	0	8	0	0	0	0
40	Ethyl benzene	6,891	2	0	165	0	0	6,724	0
43	Ethylene glycol	14,434	0	0	0	0	0	0	14,434
44	2-Ethoxyethanol	3	3	0	0	0	0	0	0
63	Xylene	32,858	44	0	788	0	0	32,026	0
64	Silver and its water-soluble compounds	1	0	1	0	0	0	0	0
100	Cobalt and its compounds	4	0	0	0	0	0	0	4
227	Toluene	64,408	20	0	1,545	0	0	62,843	0
231	Nickel	9	0	0	1	0	0	0	8
283	Hydrogen fluoride and its water-soluble salts	181	0	0	181	0	0	0	0
299	Benzene	2,174	1	0	52	0	0	2,121	0
304	Boron and its compounds	16	0	1	8	0	0	7	0
307	Poly (oxyethylene) = alkyl ether (alkyl C = 12 -15)	40	0	2	38	0	0	0	0
309	Poly (oxyethylene) nonyl phenyl ether	845	0	46	799	0	0	0	0
311	Manganese and its compounds	8	0	0	1	0	0	0	7
346	Molybdenum and its compounds	2	0	0	0	0	0	0	2
179	Dioxins	3	3	0	0	0	0	0	0
<b>Total</b>		<b>121,920</b>	<b>70</b>	<b>51</b>	<b>3,599</b>	<b>0</b>	<b>0</b>	<b>103,721</b>	<b>14,479</b>

\*PRTR: Pollution Release and Transfer Register. This system calculates the extent to which the production, use, and storage of chemical substances result in the release and transfer of those substances into the environment. The PRTR Law was originally enacted in July 1999 in Japan. \*According to PRTR law, raw materials that contain 0.1% or more of carcinogen (designated type 1 chemical substances) and those that contain 1% or more of other substances are measured. All are reported to the local government, but information on additional substances is included in this chart (all types of dioxin are stated). \*As the figures are rounded to the first place, the sum of air, water, waste, or buried by Nissan, recycled, chemically changed, and made into products may not necessarily be the same as the sum of the amount handled or total.

### Major Products



VQ engine (Installed in the ELGRAND and FUGA)



ELGRAND



FUGA

## Nissan Motor Co., Ltd.

[For inquiries, please contact]

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