

Air Pollutant Index (API)

Industrial Studies

1 JUNE 2018

Muhammad Syafiq Aiman Bin Surni

Location : Meeting room



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UNIVERSITI
TEKNOLOGI
MARA





OUTLINE

1. Self introduction
2. About Department of Environment NS
3. Placement of unit
4. Weekly activity
5. About API
6. Trend API reading from 2013 until 2017
7. Action should be taken



SELF INTRODUCTION

- **NAME : MUHAMMAD SYAFIQ AIMAN BIN SURNI**
- **AGE : 21**
- **HOMETOWN : SEREMBAN, NEGERI SEMBILAN**
- **INSTITUTION : UNIVERSITY TECHNOLOGY MARA (UITM)
PASIR GUDANG**
- **COURSE : DIPLOMA OF CHEMICAL ENGINEERING**



MISSION

Environmental Conservation for the Well-being
of the People.

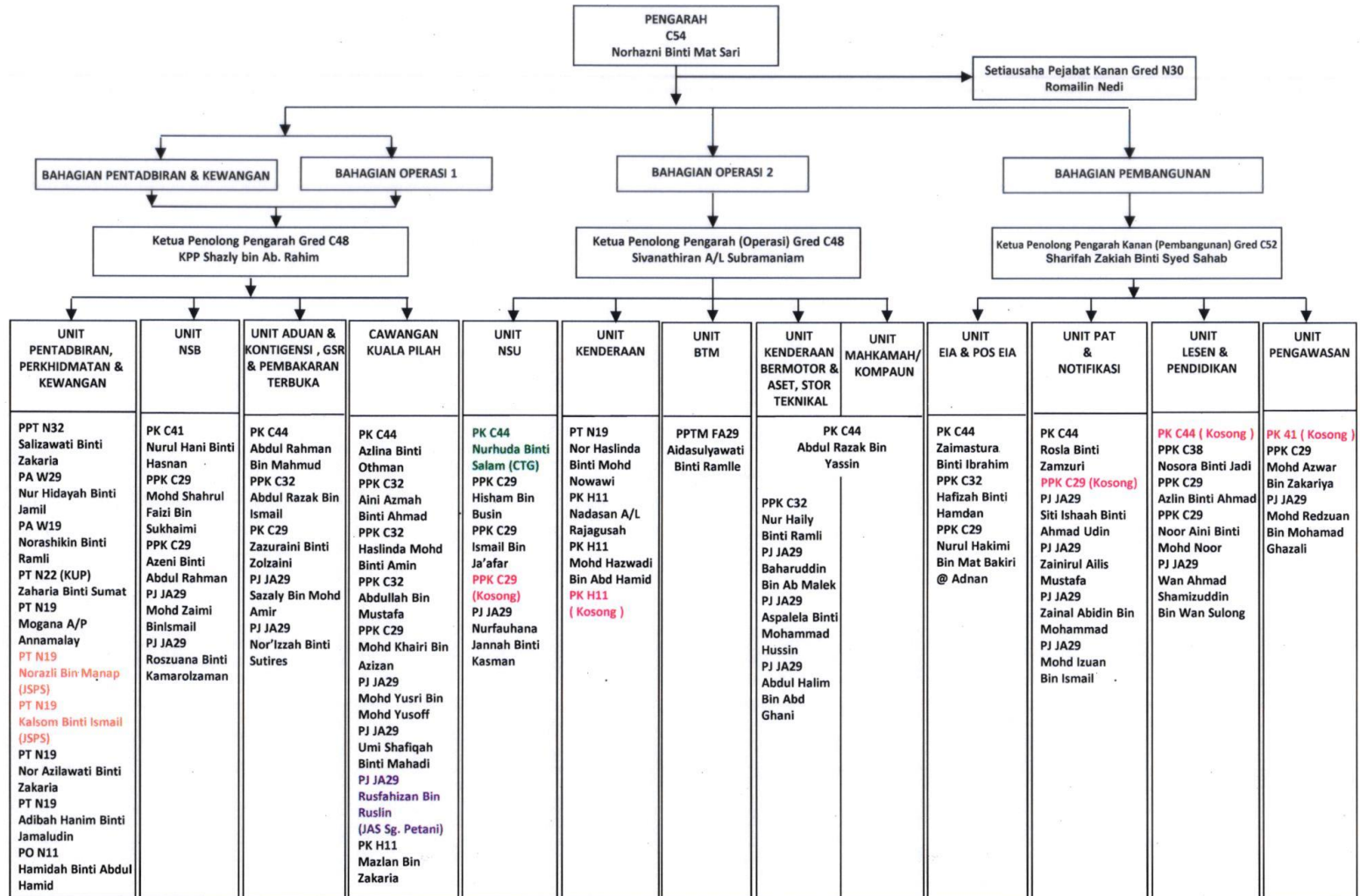


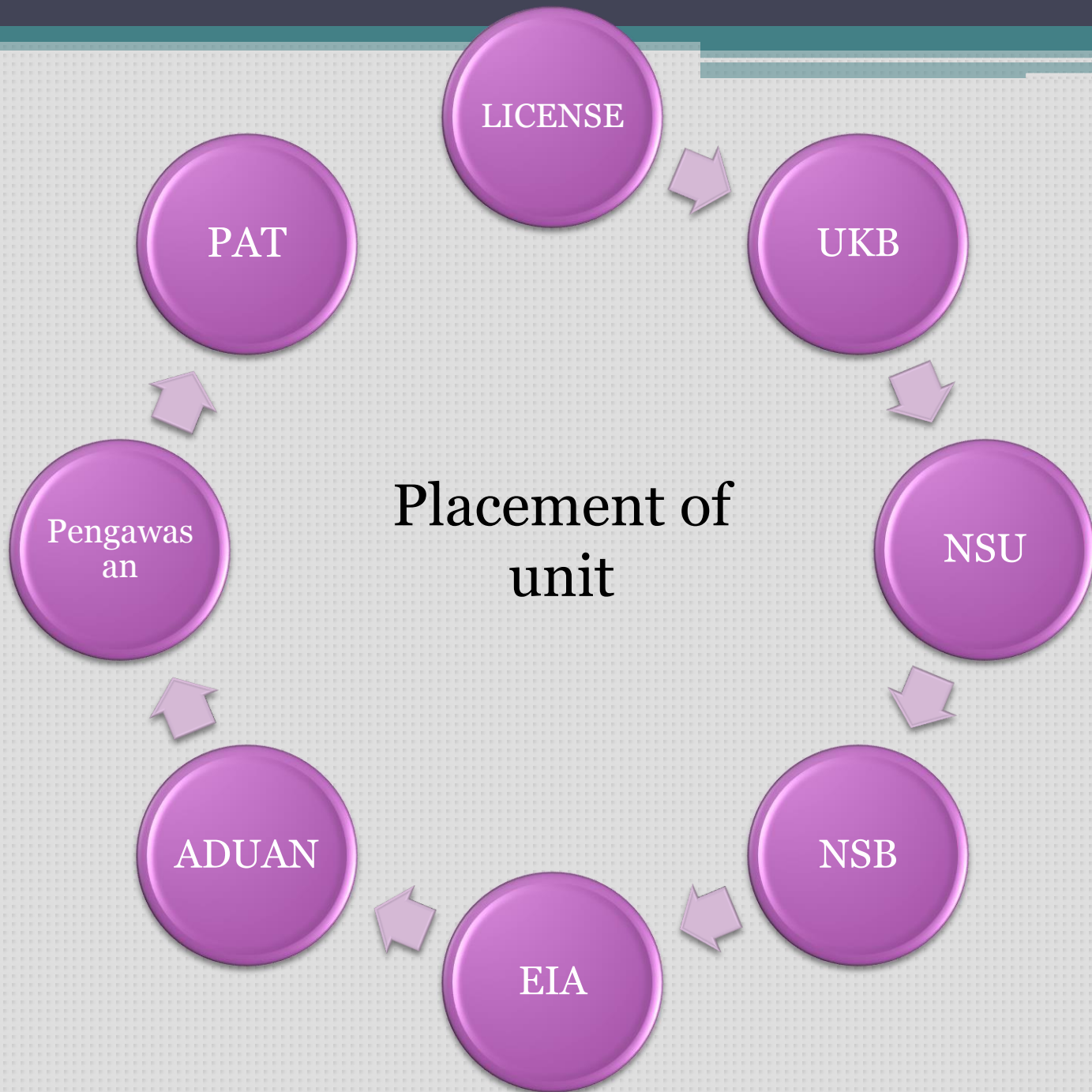
VISION

To ensure sustainable development in the
process of nation building

CARTA ORGANISASI JABATAN ALAM SEKITAR NEGERI SEMBILAN TAHUN 2018 (18 MEI 2018)

TARIKH KEMASKINI :
18 MEI 2018





LICENSE

- Giving out license to factory and promote of environmental education and awareness
- Example : RAS programme, environmental exhibition and plogging with UITM, SWM and seri pajam.

UKB

- Enforcement on workshop, motor vehicle and factory
- For example, control of smoke and gaseous emissions from motor vehicle and black smoke emission from diesel vehicles.

NSU

- About the enforcement on factory whether they comply with DOE regulation.
- Covered area Nilai, Sendayan, Mantin, Bandar Enstek and Seremban.

NSB

- About the enforcement on factory whether they comply with DOE regulation.
- Covered area Senawang, Seremban 2 and rembau

EIA

- Preliminary action which to identify, predict, evaluate and communicate information about the impacts on the environment of a proposed project.
- Decision makers consider the environmental impacts when deciding whether or not to proceed with a project.

ADUAN

- Solving the complaints on environmental issues
- Example : open burning, water pollution, noise pollution, land pollution and illegal dumping

PENGAWASAN

- Monitor air quality, marine water quality, surface water quality and ground water quality.

PAT

- Development not subjected environmental quality (prescribed activities) (EIA) order
- Site preliminary assessment of proposed project.

Week 1-3

- Supervisor (Nosora Mohd Jadi) introduce me to DOENS and placed me for every unit
- Detecting the amount of soot using probe through technomotor device at the exhaust of the lorry.
- Participate in the campaign of anti polystyrene that held at IPG Nilai.
- Determine the quality of air around the housing area by using particulate matter(pm10) device.
- Detect the sound pollution around housing area by using sound meter device.
- Visiting tanjung tuan, Port dickson for activities like climbing bukit batu putih and watching raptor with Department of Wildlife and National Park Peninsular.



Anti polystyrene campaign at IPG Nilai



With unit pengawasan, monitoring sound pollution and air particles within housing area



Detecting the amount of soot at sendayan with unit UKB



Climbing Bukit Batu Putih and watching raptor with Department of Wildlife and National Park Peninsular at Tanjong tuan Port Dickson

Week 4-7

- Inspect painting workshop that include spray booth, chimney, storage and labelling of SW.
- Patrolling the area around the bus station for an inspection whether the Regulation 16 is being complied in which the bus should turn off their engine when stop more than 3 minutes
- Followed NSU unit by helping the officer to collect sample of effluent from the factory for the purposes enforcement.
- Went to Department of Chemistry to deliver the industrial's effluent sample for the analysis of parameters such as BOD, pH, COD, metals and oil and grease.
- Conducting ground water sampling located at Kualiti Alam and Senawang and sent to the Department of Chemistry at Petaling Jaya for further analysis.





Collect sample of ground water at Kualiti Alam with unit pengawasan



Collect sample of factory effluent with unit NSU

Week 8-12

- Followed NSB unit to Petronas for the inspection of the schedule waste storage such as labelling in which the SW that has been stored must not exceed 180 days and the volume of the SW must be comply with the standard that has been standardized by DOE.
- Went to housing construction for the purpose of EIA enforcement to monitor their step sampling, silt trap, sediment basin and earth draining.
- Conduct a water sampling at Paroi river by determining the velocity of water, the depth of the river and sent the sample to the Department of Chemistry for further analysis.
- Visited the API station at SMK Teknik Tuanku Jaafar to learn the operating principle of the device and the way of how the sub index of API is determined.
- Went to the pydt factory located at Nilai together with NSU for an inspection of waste water treatment, storage, labelling and the list of license regulation needed by the factory to comply with.
- Went to quarry for an EIA enforcement for EIA regulation to monitor the control measure of pollution such as silt trap, dust controlling and storage.



Conduct a water sampling at Paroi river with unit enforcement



With unit EIA at quarry site and housing site for the enforcement

Mini project on AIR
POLLUTION
INDEX(API) on
2013-2017

Air pollutant index (API)

- API is an indicator for quality status of the air
- It is calculated based on the concentration of the five parameters of air pollution:
 - Sulphur dioxide, SO₂
 - Nitrogen oxide, NO_x
 - Ozone, O₃
 - Particulate matter less than 10μ (Pm10)
 - Carbon monoxide, CO
- The concentration for every parameter is being measured at every station.

Observation on three stations in Negeri Sembilan

Seremban (urban)

- Pm10
- Co
- So2
- Nox
- Ozone

Nilai (sub urban)

- Pm10
- Gas
absorption

Port dickson (sub urban)

- Pm10
- Gas
absorption

MAIN SOURCES OF AIR POLLUTION IN MALAYSIA

- ❖ Natural sources
- ❖ Open burning
- ❖ Human activity
- ❖ Smoke from vehicles
- ❖ Forest fire
- ❖ Industrial



Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk
Moderate	51 to 100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201 to 300	Health alert: everyone may experience more serious health effects
Hazardous	301 to 500	Health warnings of emergency conditions. The entire population is more likely to be affected.

TABLE 1: Air pollution index (API)

APIMS Air Pollutant Index of Malaysia

Announcement | API Table [Hourly] | FAQ

Regional Haze Situation

Region: Malaysia	17 Apr 2018	Time: 09:00	Total CAQM Stations: 65
GOOD 0-50	MODERATE 51-100	UNHEALTHY 101-200	VERY UNHEALTHY 201-300
HAZARDOUS Above 300	API Not Available		
63 Station(s)	0 Station(s)	0 Station(s)	0 Station(s)
			2 Station(s)

APIMS Air Pollutant Index of Malaysia

Announcement | API Table [Hourly] | FAQ

API Table [Hourly]

+ Choose Different Date And Time

From: 16-Apr-2018 10:00AM To: 17-Apr-2018 9:00AM

State	Location	10:00AM	11:00AM	12:00PM	1:00PM	2:00PM	3:00PM	4:00PM	5:00PM	6:00PM	7:00PM
SELANGOR	Klang	33*	33*	32*	32*	31*	31*	30*	29*	28*	
SELANGOR	Banting	26*	25*	25*	25*	24*	24*	26c	28c	27c	
NEGERI SEMBILAN	Nilai	28*	28*	28*	28*	28*	28*	28*	27*	28*	
NEGERI SEMBILAN	Seremban	12*	13*	13*	14c	18c	21c	25c	26c	27c	
NEGERI SEMBILAN	Port Dickson	21*	21*	20*	20*	20c	23c	26c	30c	29c	
MELAKA	Alor Gajah	11*	11*	11*	11*	11*	11*	11*	11*	11*	
MELAKA	Bukit Rambai	20*	21*	21*	21*	21c	24c	29c	32c	32c	

Website for API : <http://apims.doe.gov.my/>



Mobile application on android play store and apple apps store

Trend on API status in
Negeri Sembilan
from 2013 until 2017

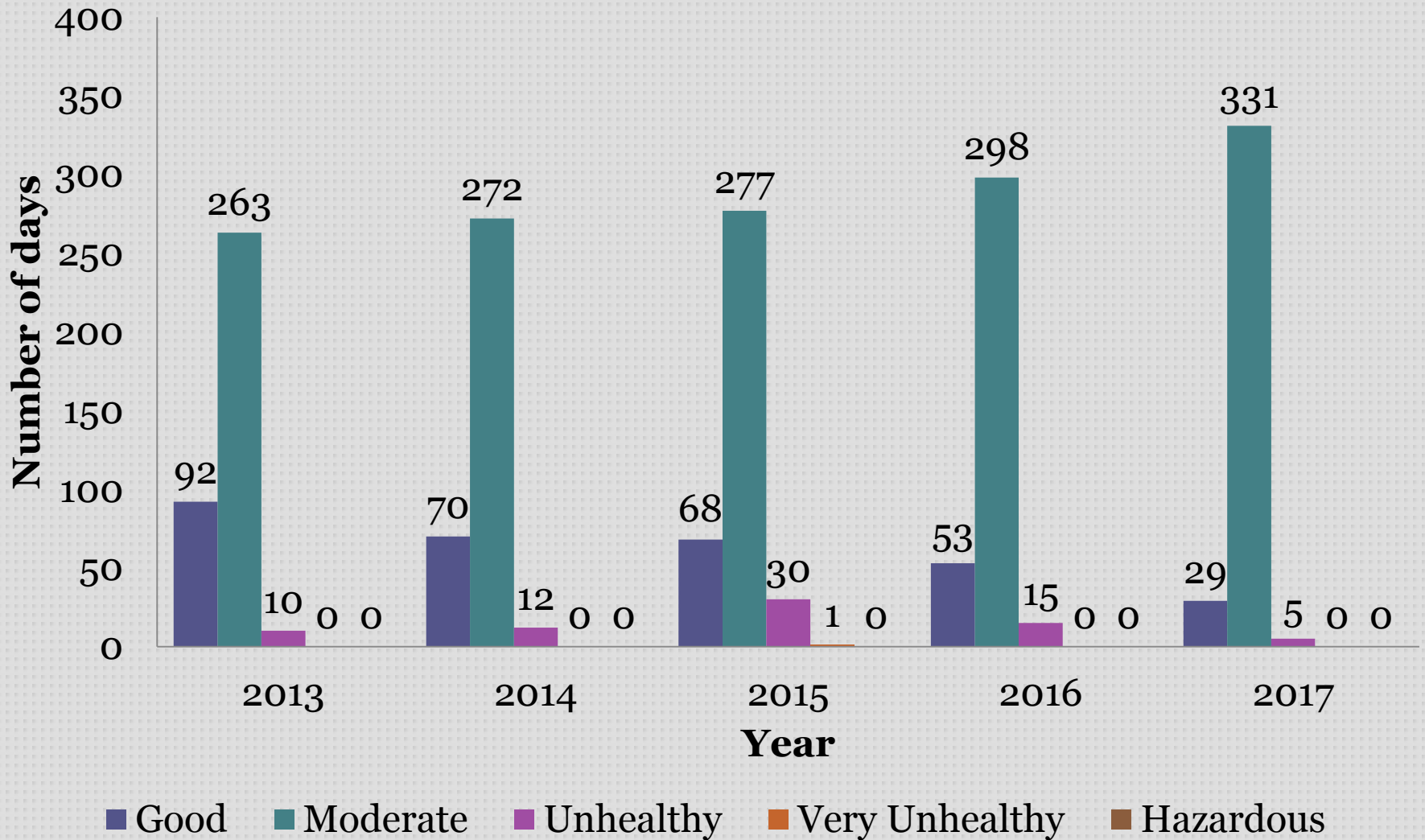


Chart 1: Yearly API readings based on number of days at Nilai station

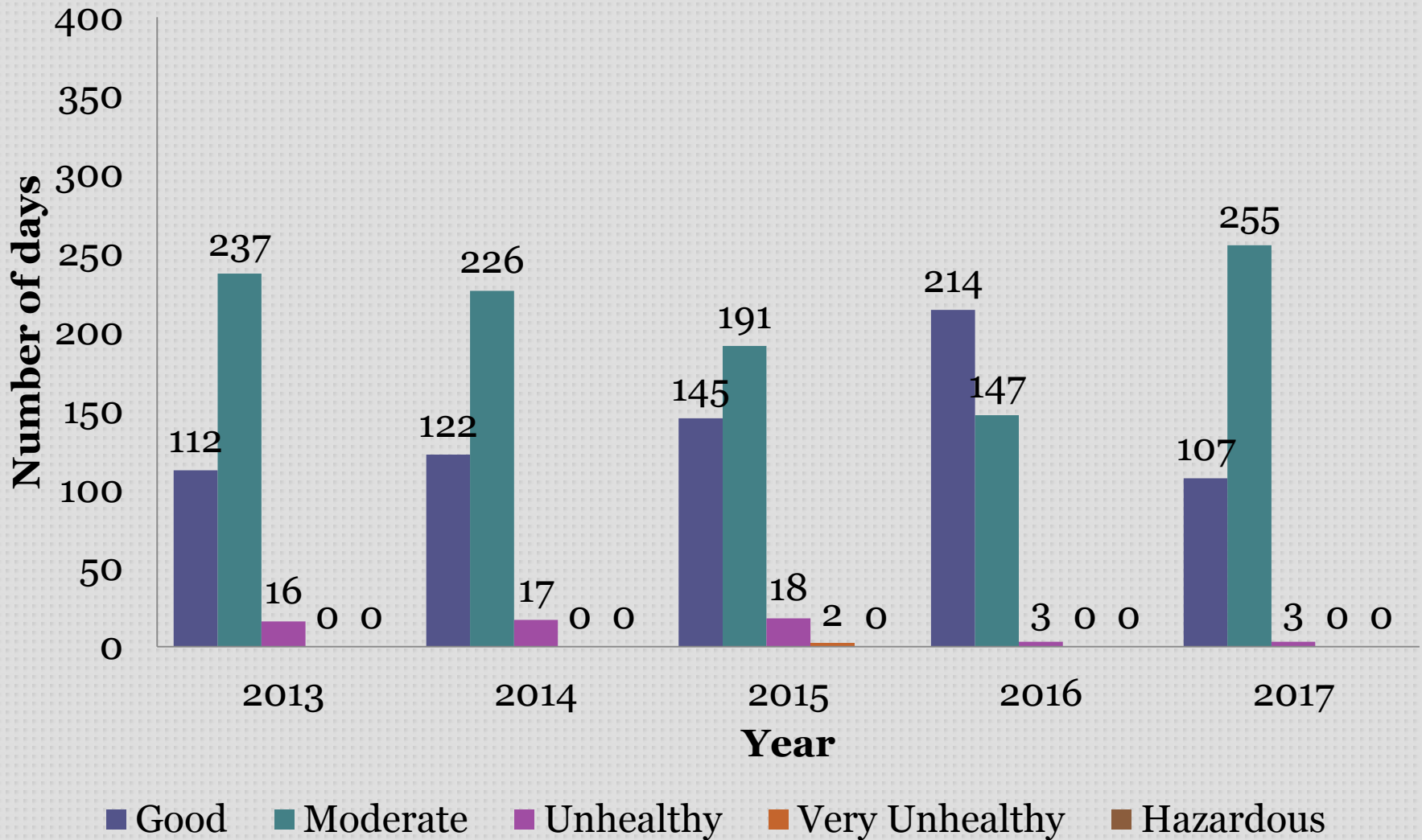


Chart 2: Yearly API readings based on number of days at Seremban station

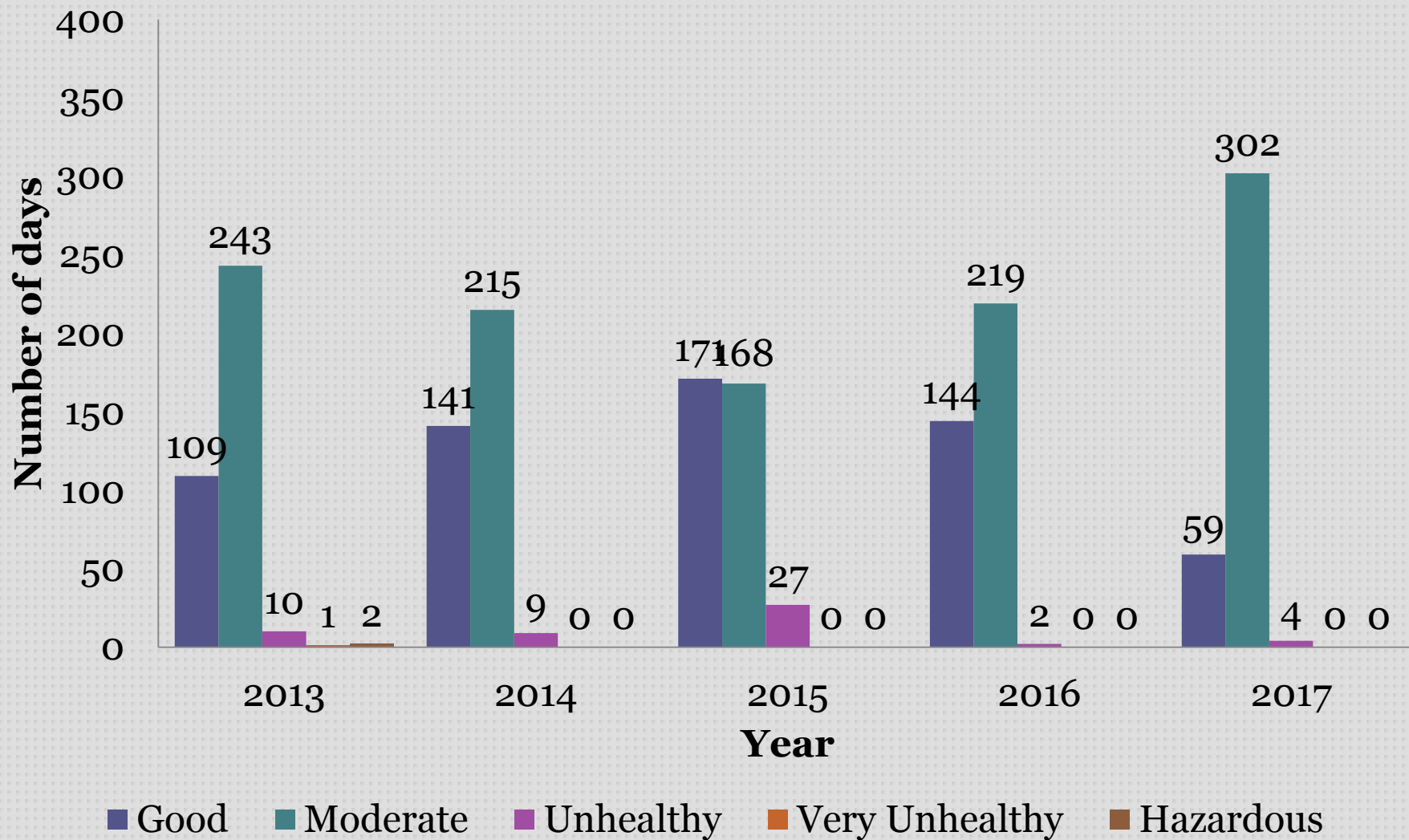


Chart 3: Yearly API readings based on number of days at Port Dickson station

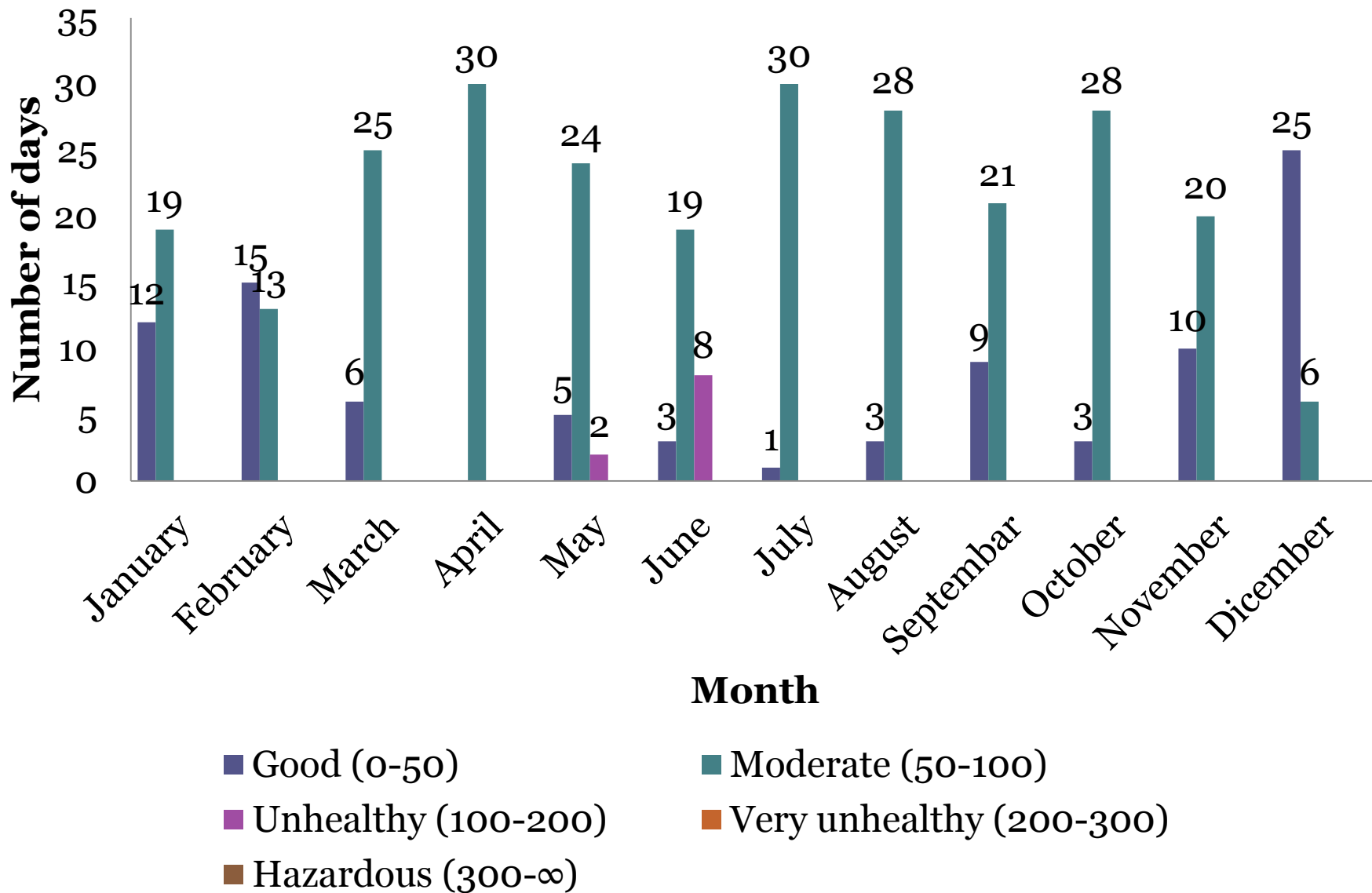


Chart 4: Monthly API readings based on number of days for Nilai coverage in 2013

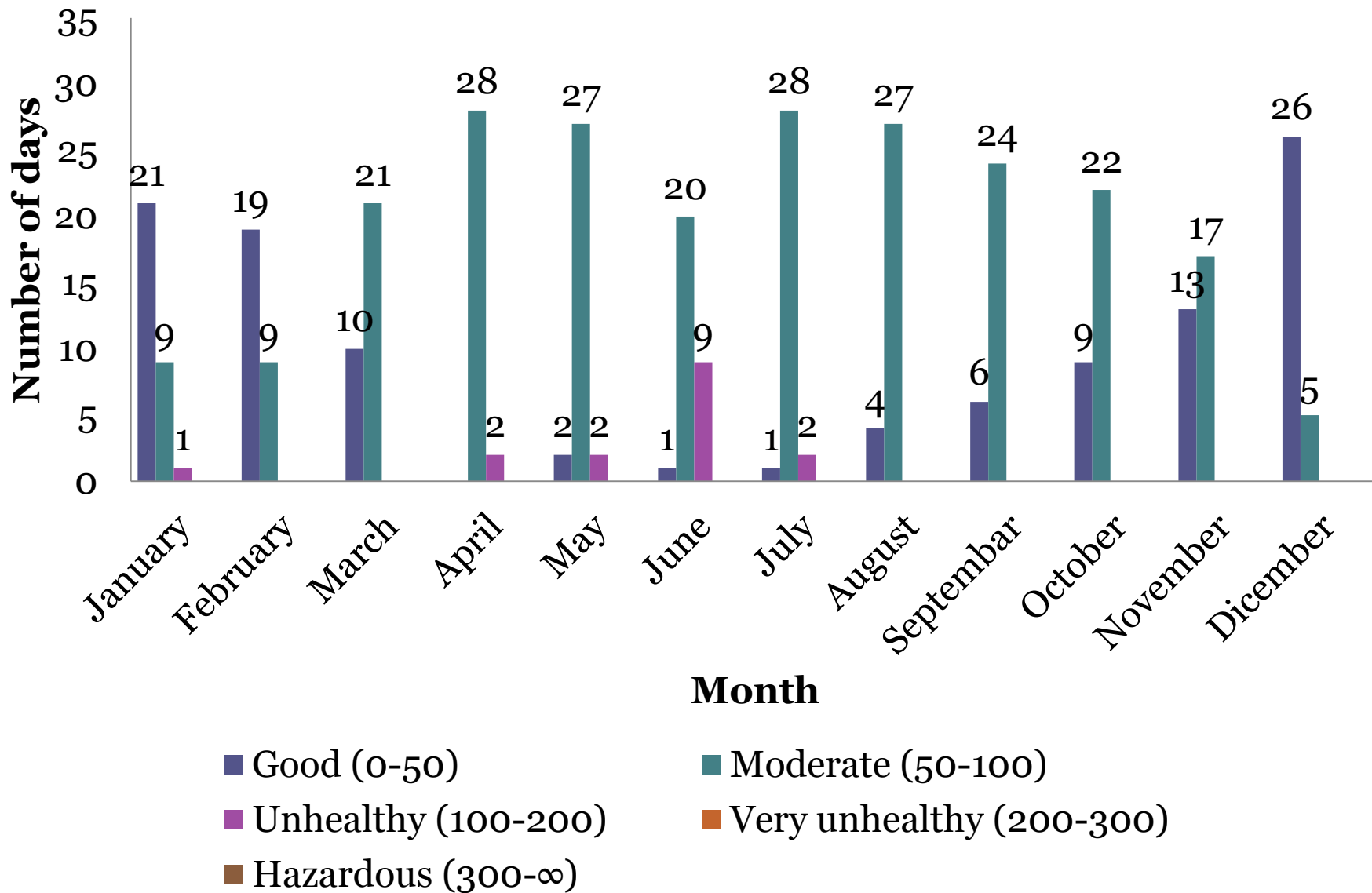


Chart 5: Monthly API readings based on number of days for Seremban coverage in 2013

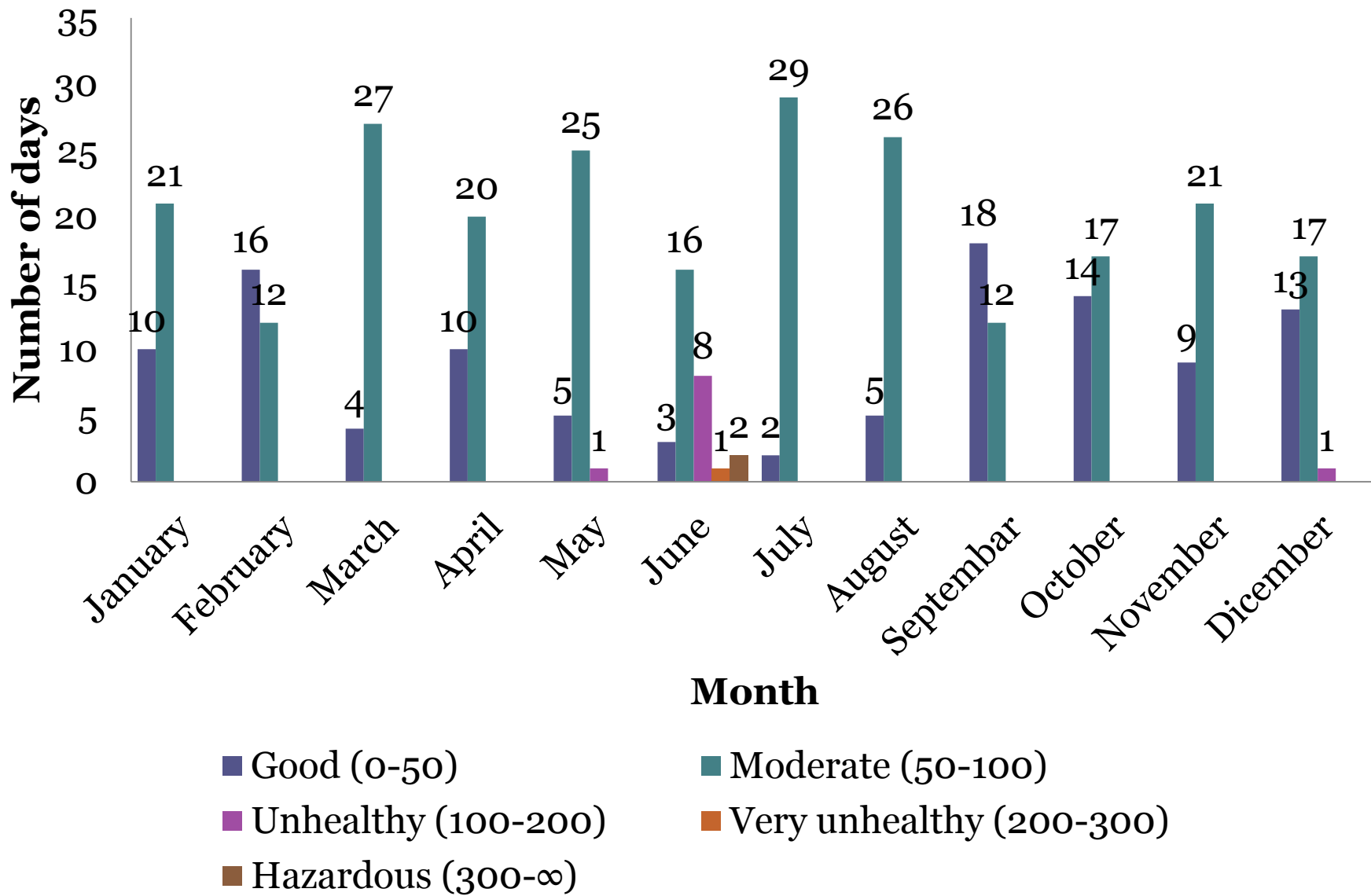


Chart 7: Monthly API readings based on number of days for Port Dickson coverage in 2013

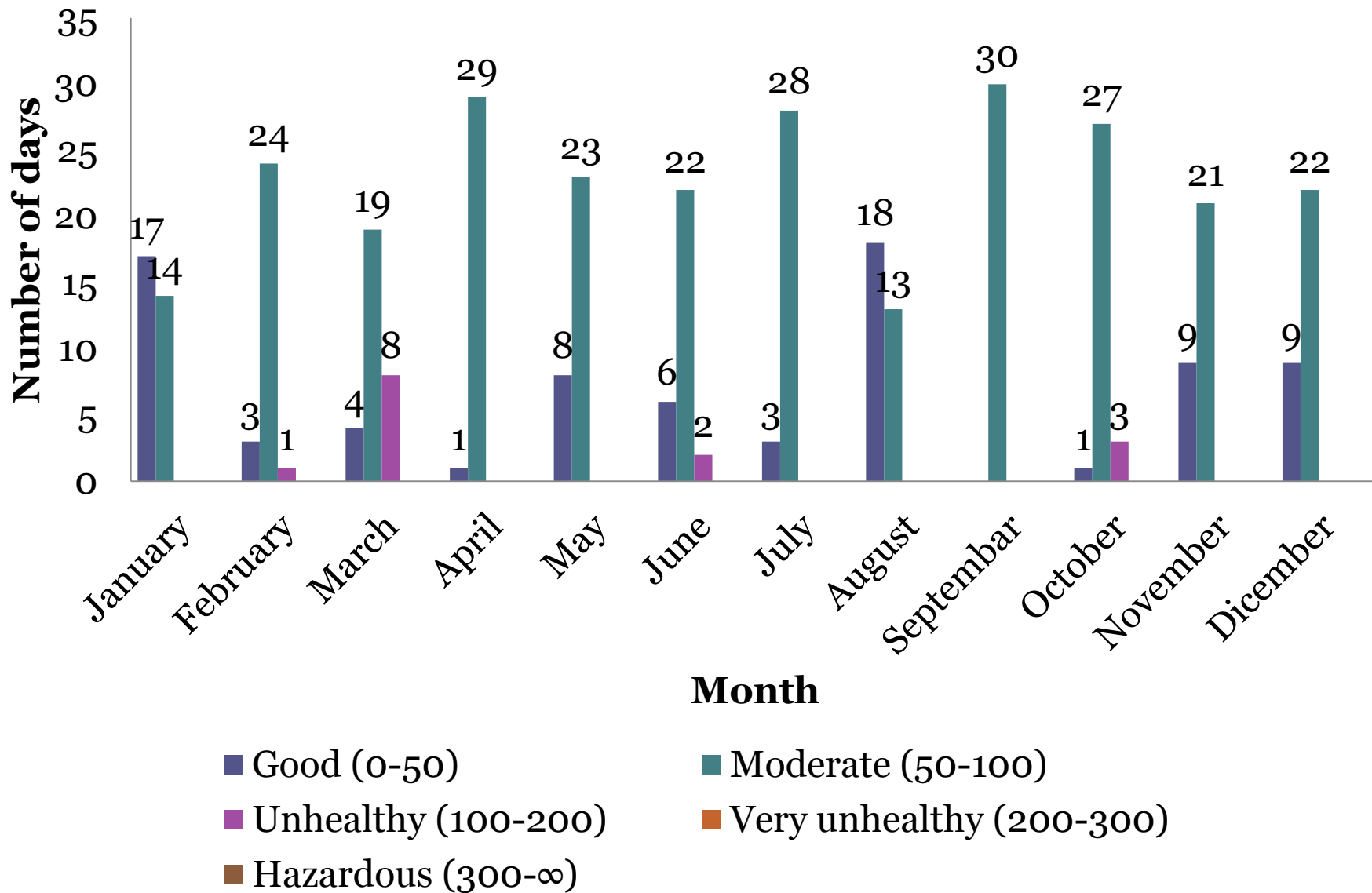


Chart 6: Monthly API readings based on number of days for Nilai coverage in 2014

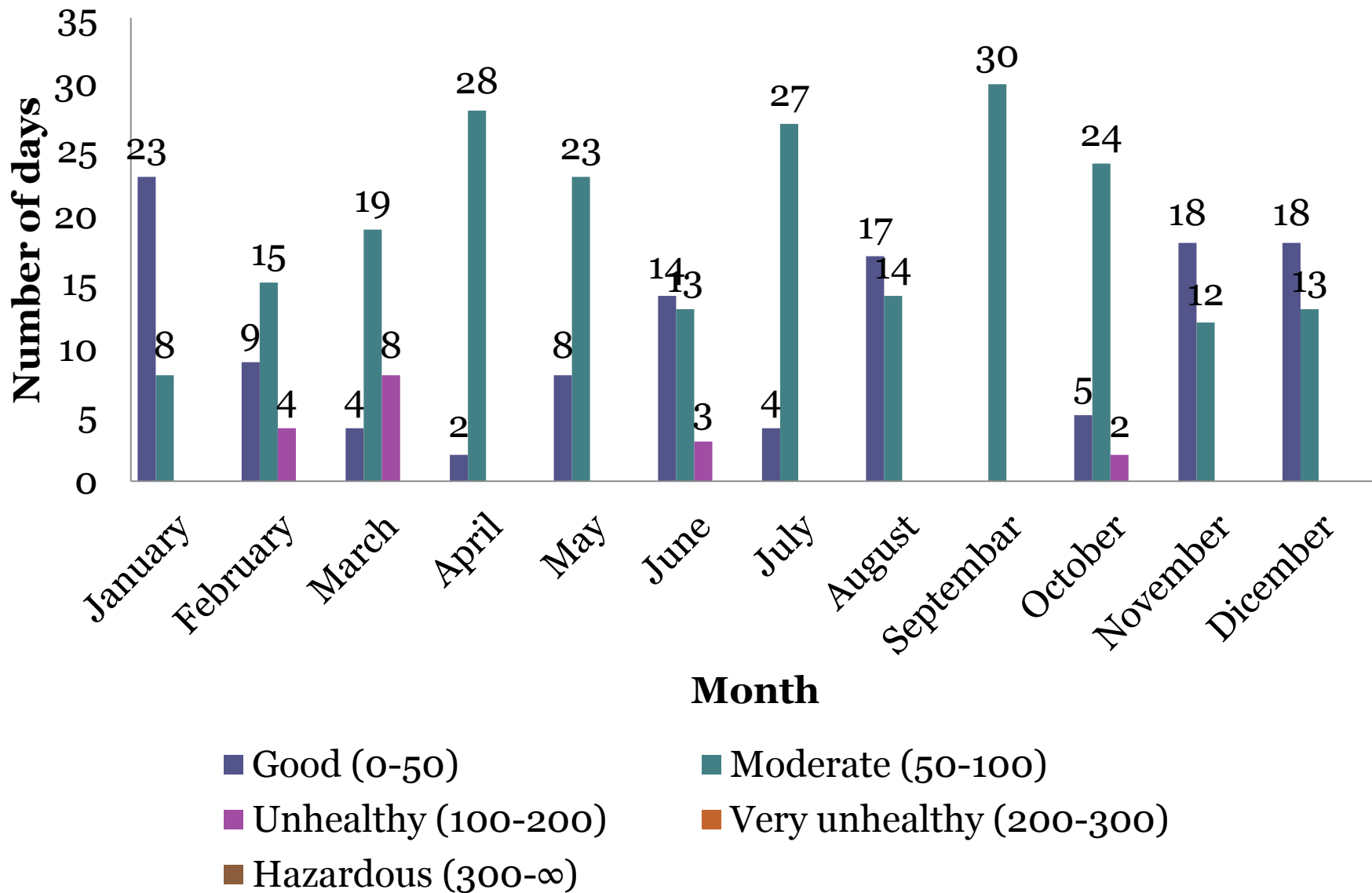


Chart 8: Monthly API readings based on number of days for Seremban coverage in 2014

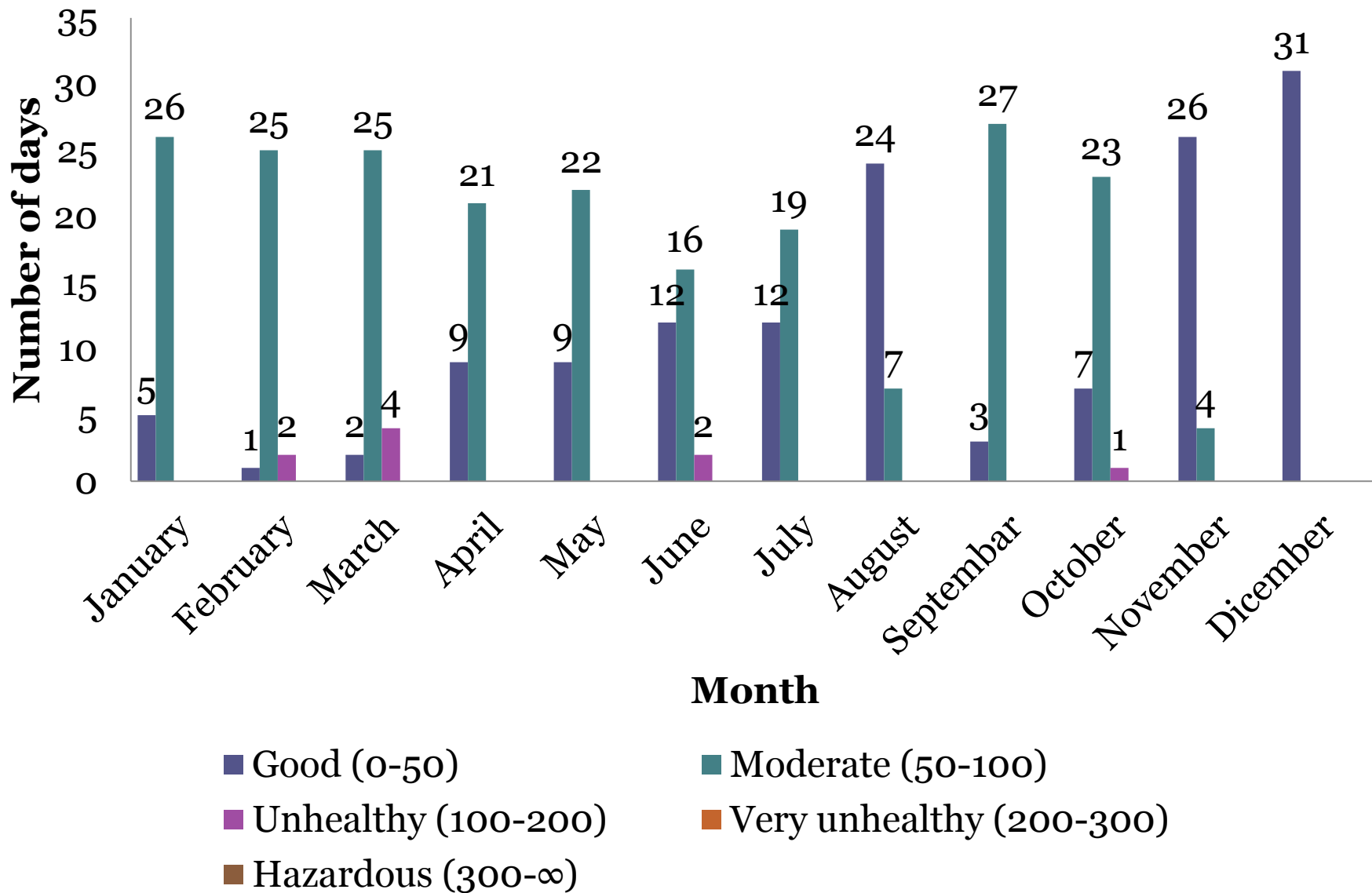


Chart 9: Monthly API readings based on number of days for Port Dickson coverage in 2014

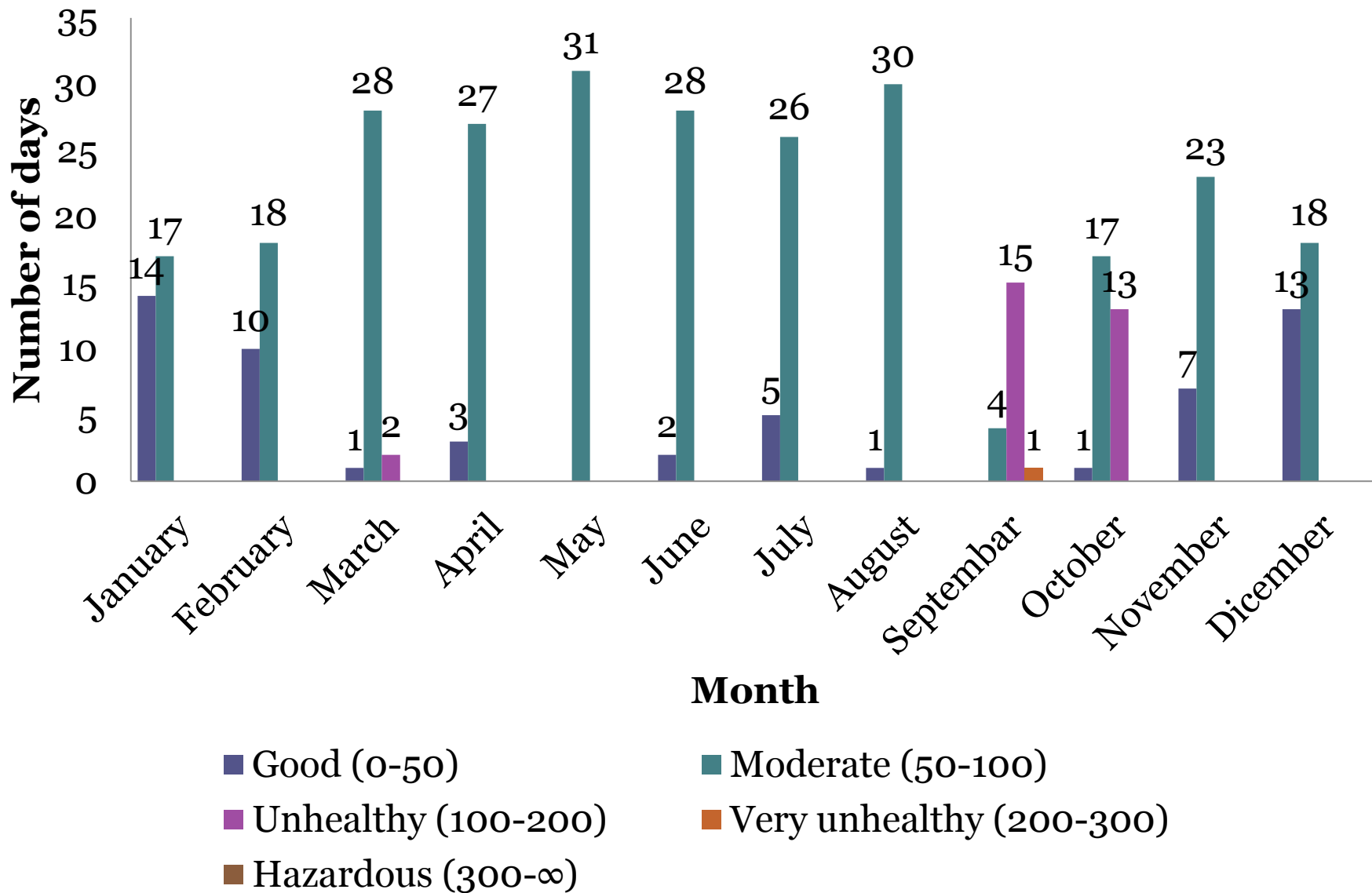


Chart 10: Monthly API readings based on number of days for Nilai coverage in 2015

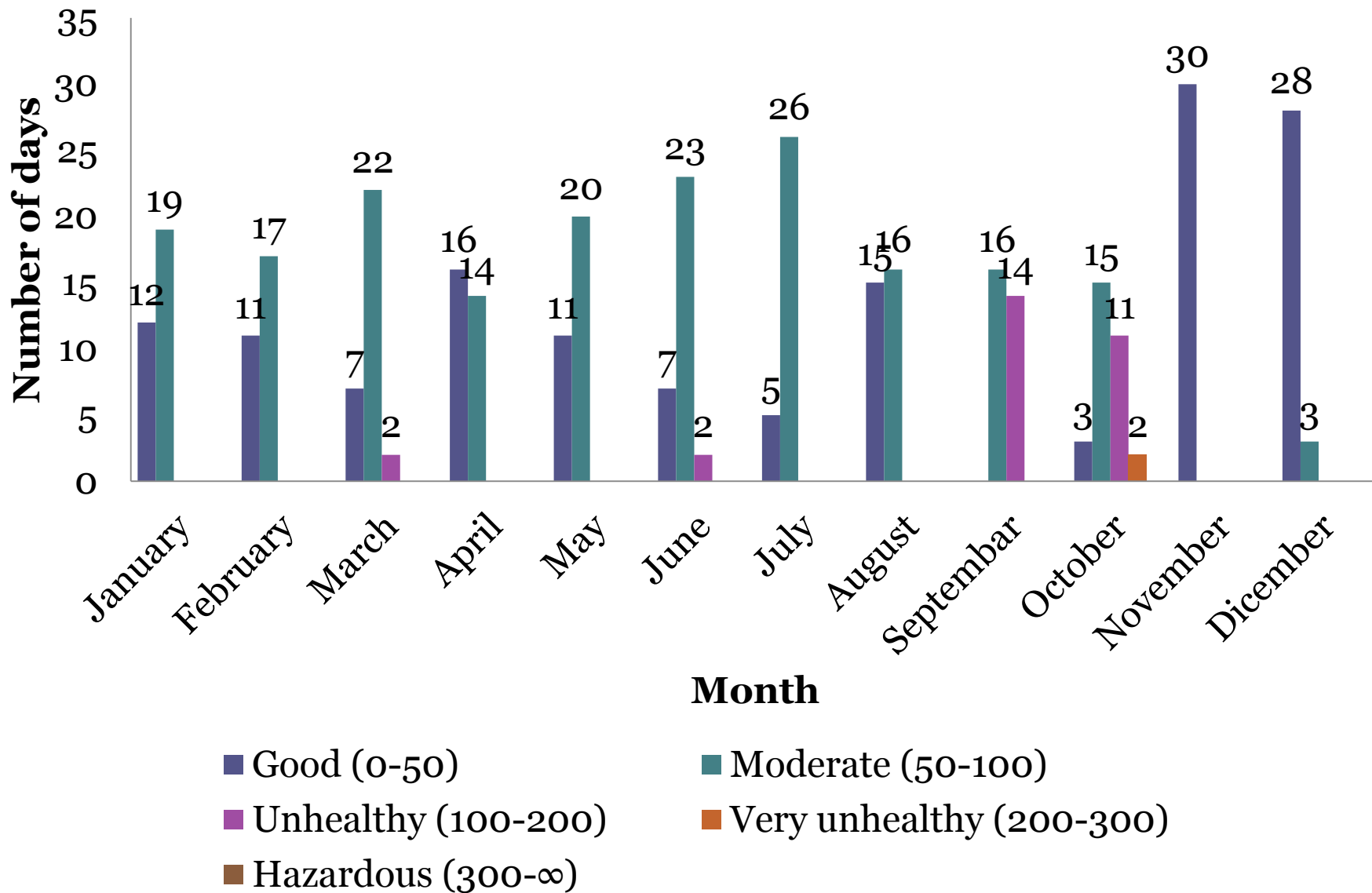


Chart 11: Monthly API readings based on number of days for Seremban coverage in 2015

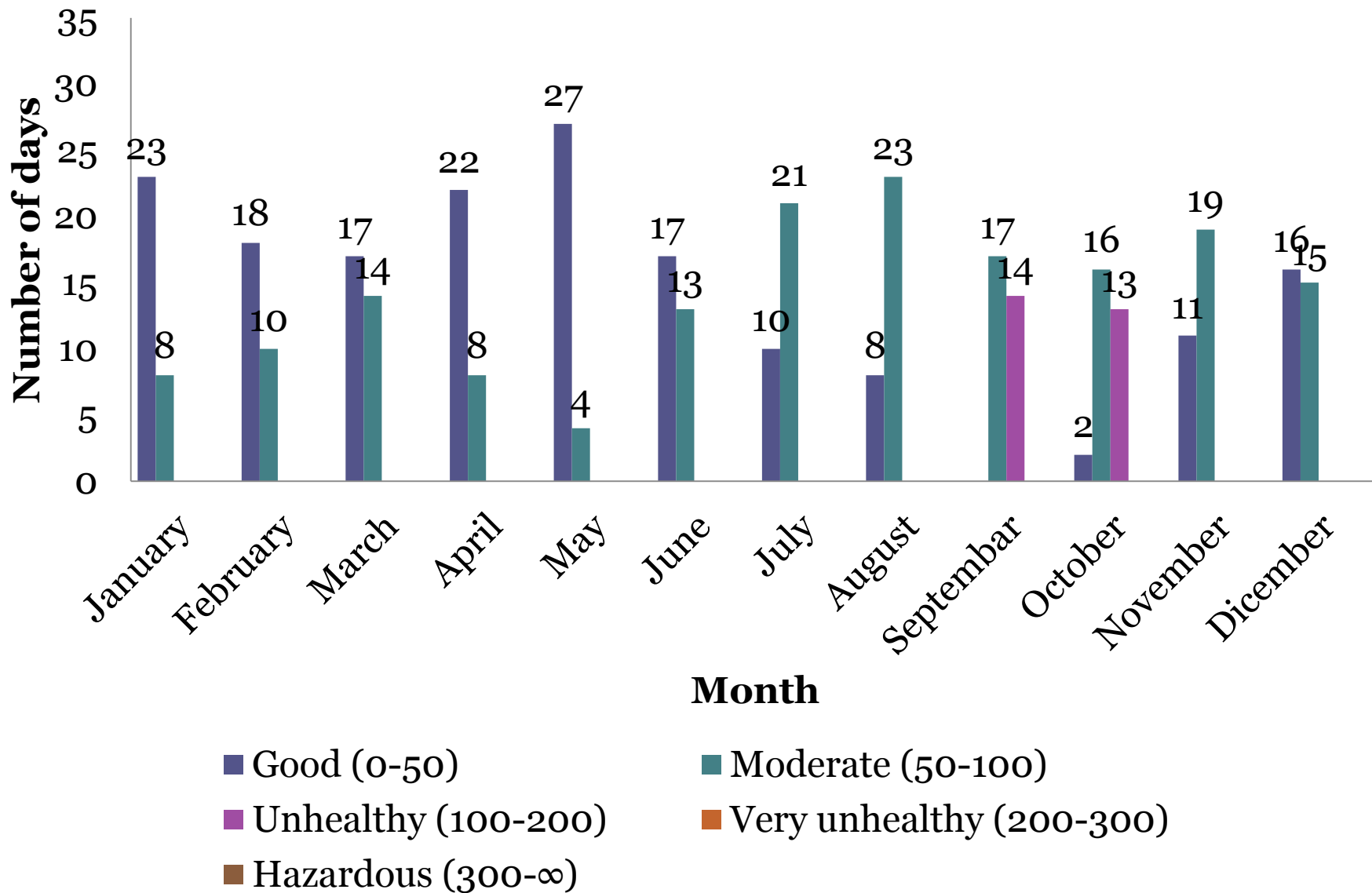


Chart 12: Monthly API readings based on number of days for Port Dickson coverage in 2015

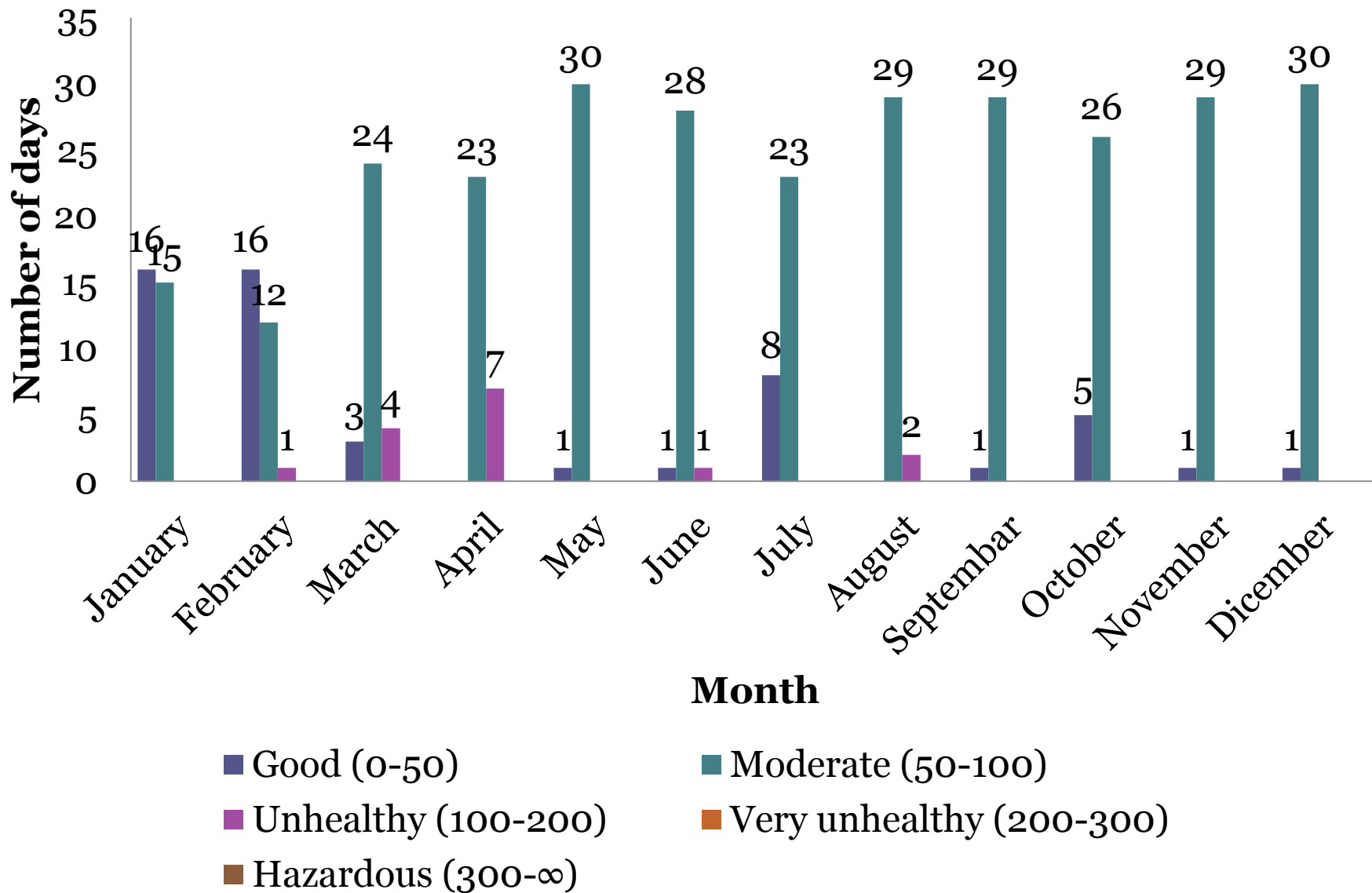


Chart 13: Monthly API readings based on number of days for Nilai coverage in 2016

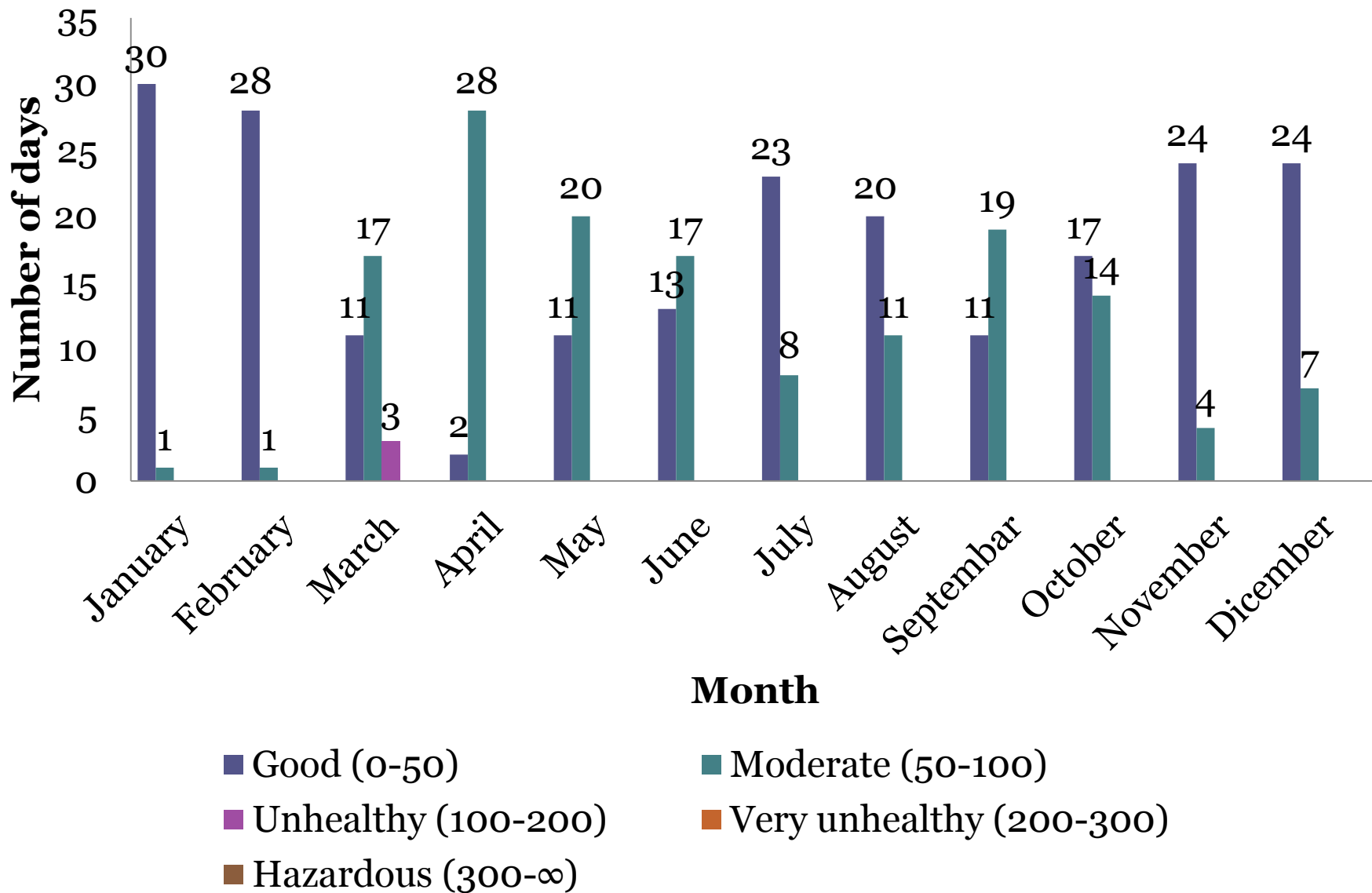


Chart 14: Monthly API readings based on number of days for Seremban coverage in 2016

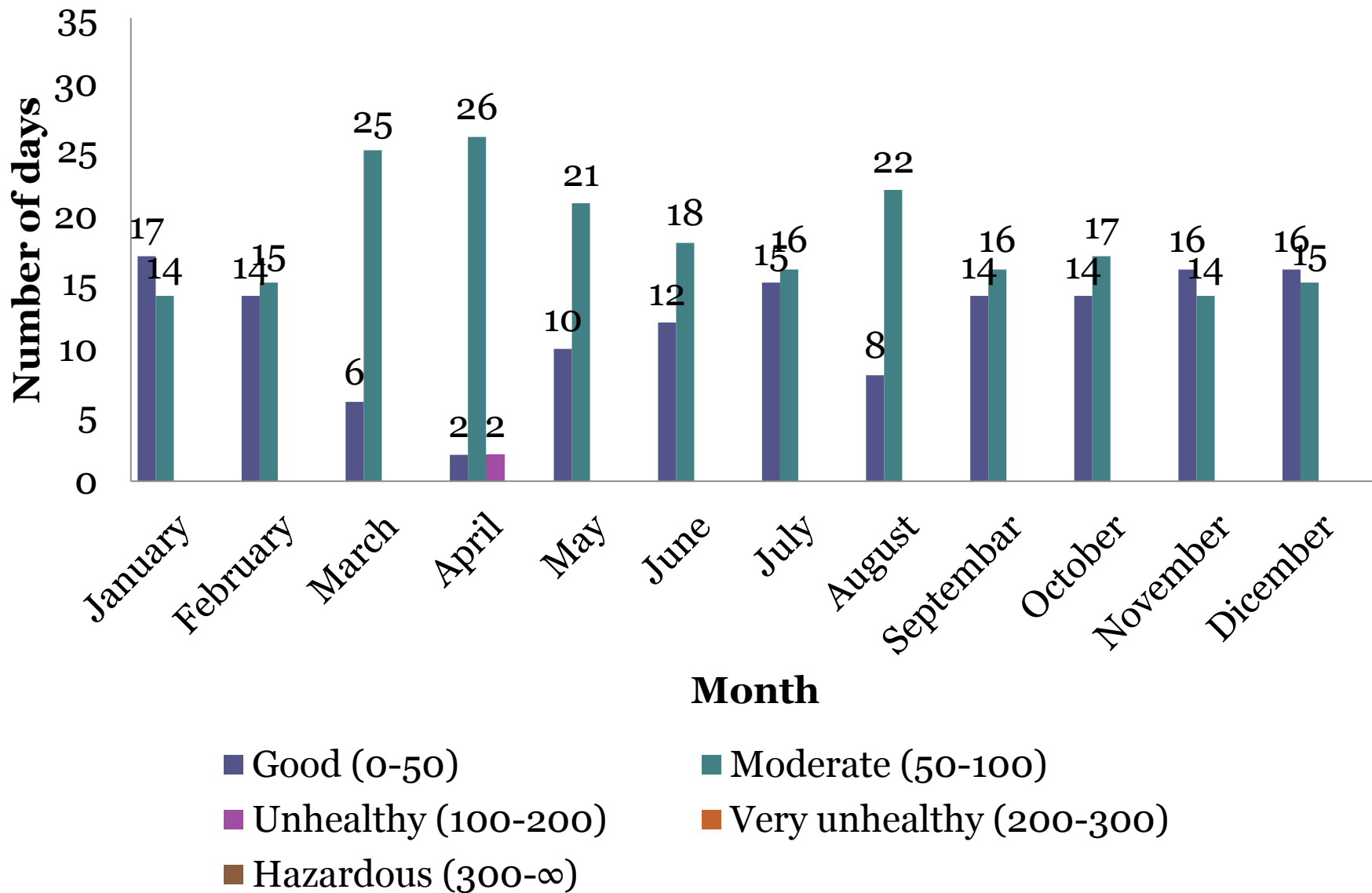


Chart 15: Monthly API readings based on number of days for Port Dickson coverage in 2016

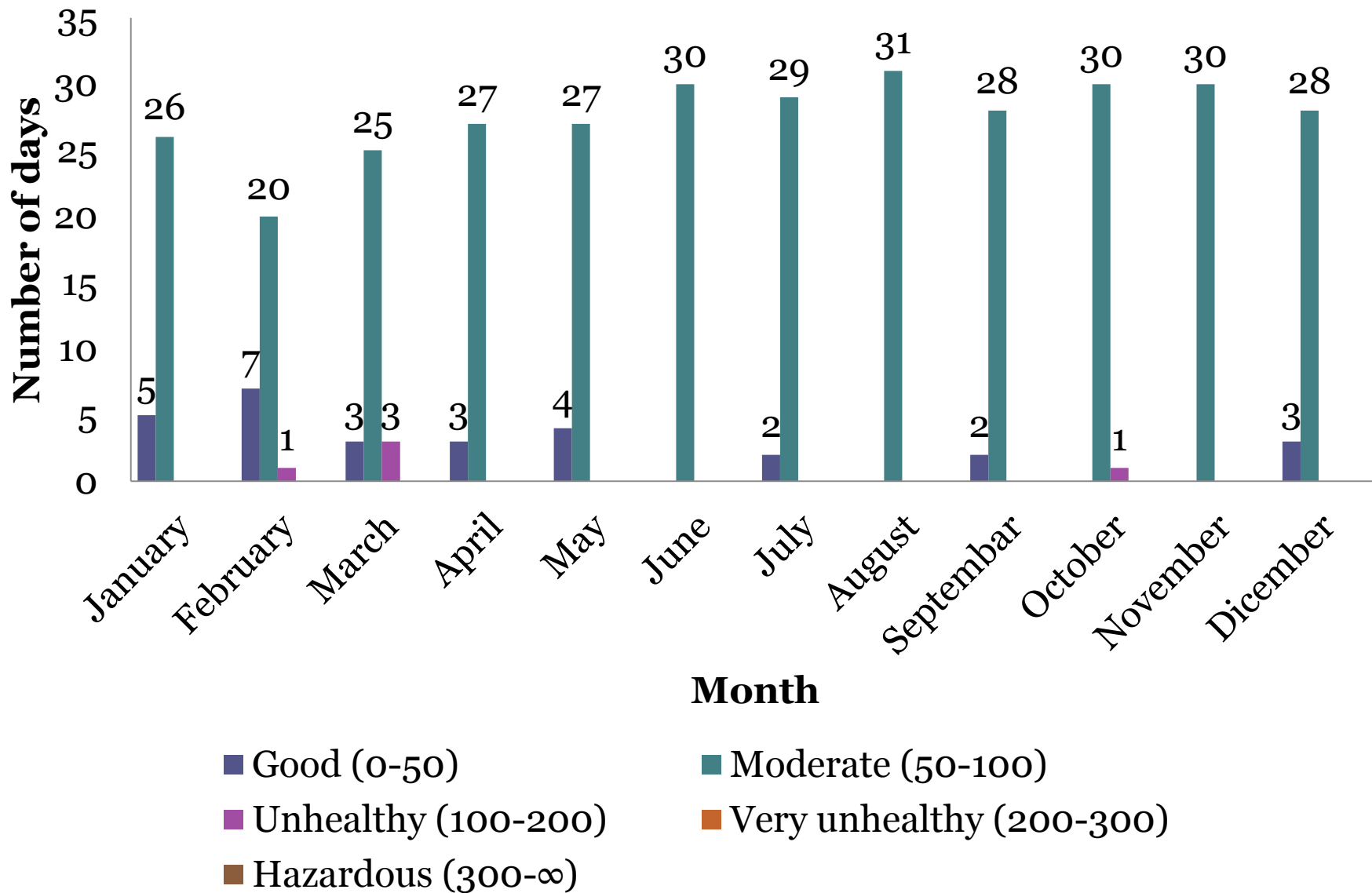


Chart 16: Monthly API readings based on number of days for Nilai coverage in 2017

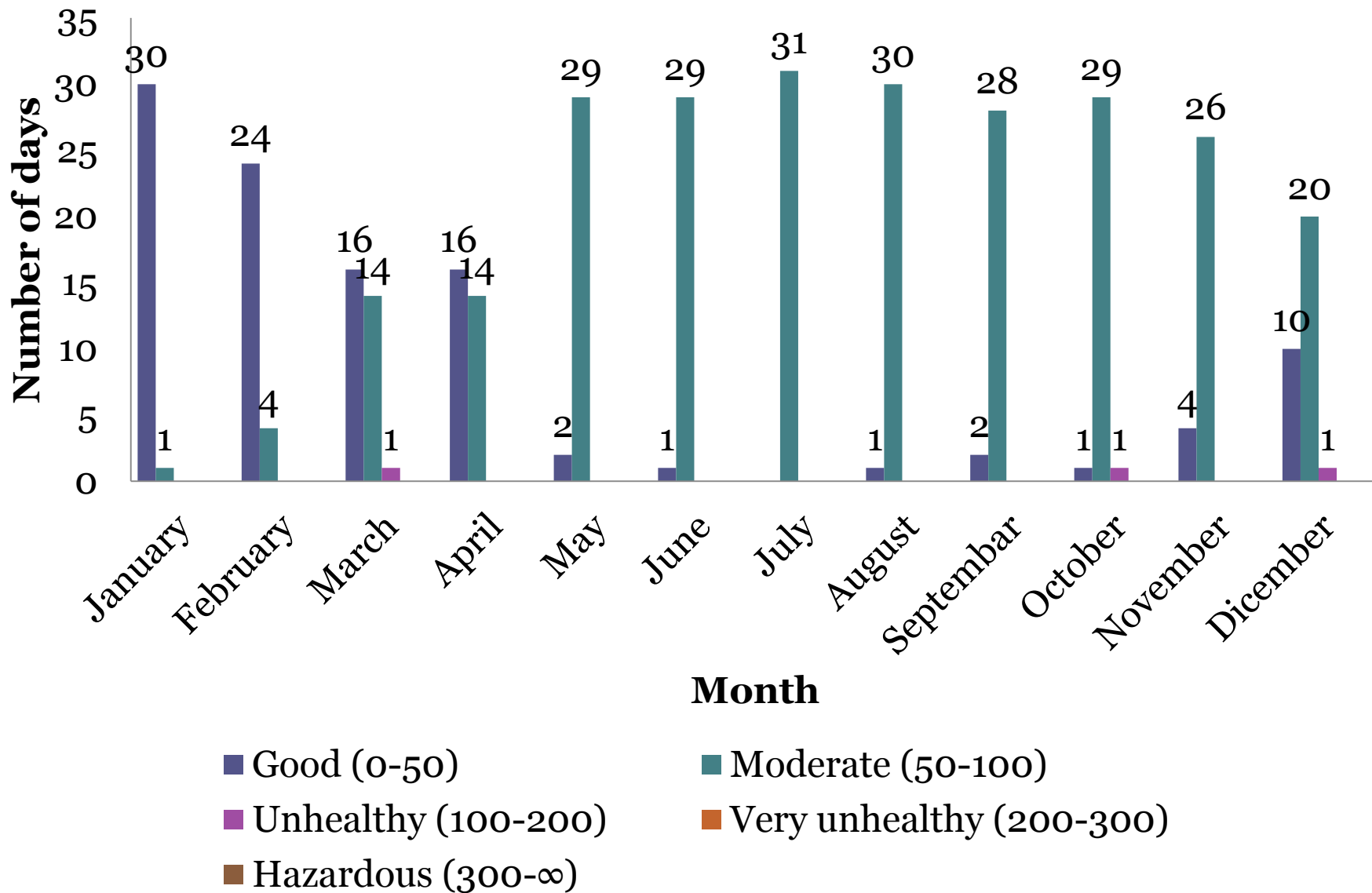


Chart 17: Monthly API readings based on number of days for Seremban coverage in 2017

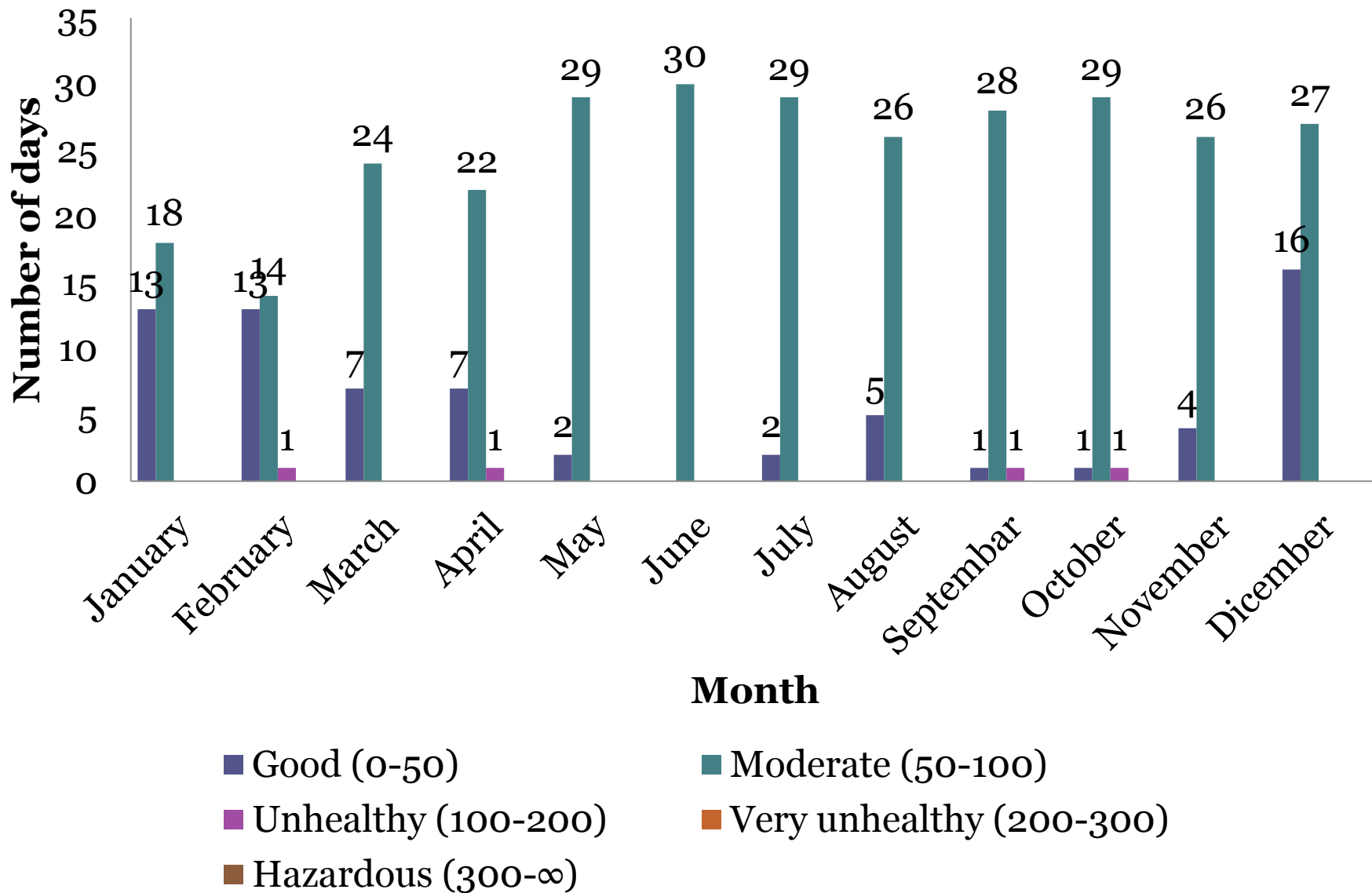


Chart 18: Monthly API readings based on number of days for Port Dickson coverage in 2017



API station at SMK Teknik Tuanku Ja'afar, Seremban



View from inside of API station



View of the top API station

API is calculated based on the observation of automatic air quality monitoring station

Needed one hour cycle for complete data

The reading is taken for every hour in one day

Actions People Should Be Taken When The Particle Pollution Is High



Avoid exercising outdoor
for long periods of time

Postpone outdoor
recreational activities

Avoid sources of particle
such as candle, smoking,
open burning and etc.

Actions People Should Be Taken To Reduce Particle Pollution

Carpool

Avoid idling car engines for long periods of time

Walking

Use public transport

Actions Government Should Be Taken When The
Particle Pollution Is High

Lays out
contingency plans

Closing school
if API reaches
hazardous
level

Protecting
citizens

Thank you