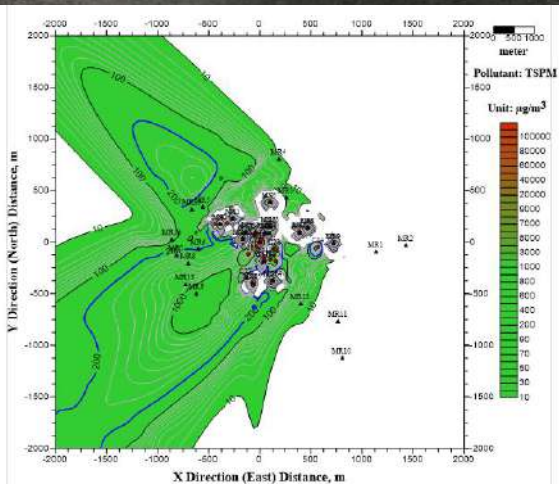
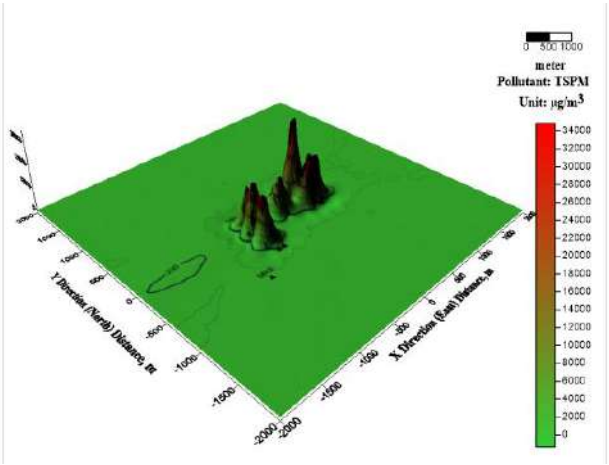
FINAL REPORT

Assessment of Dust Emissions from Stone Crushing Industry and Distance Criteria in Tamil Nadu





for

Tamil Nadu Pollution Control Board

National Environmental Engineering Research Institute
Nagpur - 440 020

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FOREWORD

Stone crushers are small scale industries in the unorganized sectors. They provide the basic material for road and building construction. They are highly labor intensive, where most of the operations are performed manually. The various unit operations involved in stone crushing namely size reduction, size classification and transfer operation have the potential to emit process and fugitive dust.

There are 3061 Stone Crushing Industries (SCIs) operating in the state of Tamil Nadu and many of these units are located nearby residential areas. Many such stone crushing operations tend to be located relatively near highways and populated areas to avoid transportation costs. This can result in dust associated health problems. The large number of stone crushers distributed all over Tamil Nadu, pose the problem of high levels of dust generation in the vicinity of the crushers and on the communities surrounding them during various operations of crushing.

With the funding from the Tamil Nadu Pollution Control Board (TNPCB), CSIR-NEERI, Chennai undertook a detailed study at Pammal, Alathur gate and Tirusulam area in the years 1997, 1998 and 2006 to assess the dust emissions from the stone crushing industries and suggested possible measures for controlling the air pollution in these areas. In continuation of the good work done by CSIR- NEERI, Chennai, in this direction, TNPCB, Chennai, approached CSIR-NEERI, Chennai, once again in 2021 to submit a detailed report on the assessment of dust concentration at Tirusulam village near Chennai city and Kodangipalayam village, Palladam taluk in Tirupur district

Most of the crusher industries in Tamil Nadu have dust suppression and containment system and hence TNPCB approached CSIR-NEERI to evaluate the adequacy of the pollution control measures and to establish siting criteria for stone crushers with respect to their distance from residential areas and highways. The findings of CSIR-NEERI are presented in this report.

The cooperation and assistance of the crusher owners at Tirusulam and Tirupur is gratefully acknowledged. Our sincere thanks are also due to the Tamil Nadu Pollution Control Board for sponsoring this work.

Nagpur
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LIST OF SYMBOLS & ABBREVIATIONS

µg	Microgram
µg/m³	Microgram per meter cube
AAQM	Ambient Air Quality Monitoring
ADOM	Acid Deposition And Oxidant Model
AERMOD	AMS/EPA Regulatory Model
am	Fore Noon
AMS	American Meteorology Society
BM	Blue Metal
CBL	Convective Boundary Layer
CPCB	Central Pollution Control Board
CSIR- NEERI	Council of Scientific and Industrial Research – National Environmental Engineering Research Institute
EPA	Environmental Protection Agency
FDM	Fugitive Dust Model
ISCDM	Industrial Source Complex Dispersion Model
ISCST3	Industrial Source Complex Short Term Model (Version 3)
Kg	Kilogram
Kg/d	Kilogram per day
Kmph	Kilometer per hour
m^3	Cubic Meter
mg	Milligram
MT	Metric Tonnes
NAAQS	National Ambient Air Quality Standard
NH	National Highway
O	Mean
O_i	Observed Concentration
P_i	Predicted Values
pm	After Noon
PM_{10}	Particulate matter less than 10 micron
$PM_{2.5}$	Particulate matter less than 2.5 micron
RPM	Respirable Particulate Matter
RSPM	Respirable Suspended Particulate Matter
SBL	Stable Boundary Layer
SCI's	Stone Crushing Industries
SCU	Stone Crushing Unit
SH	State Highway
TNPCB	Tamil Nadu Pollution Control Board
TSPM	Total Suspended Particulate Matter

Executive Summary

EXECUTIVE SUMMARY

1.0 INTRODUCTION

Stone crushers are small scale industries operating in unorganized sectors. They provide basic materials for the road and building constructions. They are labor intensive units, where most of the operations are performed manually. The various unit operations involved in stone crushing process are namely size reduction, size classification and transfer operations emit the fugitive dust.

There are 3061 Stone Crushing Industries (SCIs) operating in the state of Tamil Nadu and many of the units are located nearby residential areas. Many such stone crushing operations tend to be located relatively near highways and populated areas to avoid transportation costs. This can result in dust associated health problems. The large number of stone crushers distributed all over Tamil Nadu, pose the problem of high levels of dust generation in the vicinity of the crushers and on the communities surrounding them during various operations of crushing.

With the funding from the Tamil Nadu Pollution Control Board (TNPCB), CSIR-NEERI, Chennai undertook a detailed study at Pammal, Alathur gate and Tirusulam area in the years 1997, 1998 and 2006 to assess the dust emissions from the stone crushing industries and suggested possible measures for controlling the air pollution in these areas. In continuation of the good work done by CSIR-NEERI, Chennai, in this direction, TNPCB, Chennai, approached CSIR-NEERI, Chennai, once again in 2021 to submit a detailed report on the assessment of dust concentration at Tirusulam village near Chennai city and Kodangipalayam village, Palladam taluk in Tirupur district

Most of the crusher units in Tamil Nadu have dust suppression and containment system for Stone Crushing Industries system and hence TNPCB approached CSIR-NEERI to evaluate the adequacy of the pollution control measures and to establish siting criteria for stone crushers with respect to their distance from residential areas and highways. The findings of CSIR-NEERI are presented in this report.

1.1 OBJECTIVE OF THE STUDY

The objective of this study is to assess the dust pollution concentration and its fallout in and around the work place and in the ambient air and delineation of control measures and review of the distance criteria to arrest the dust pollution within permissible limits.

1.2 STUDY AREA

As per the objective and scope of the study, two locations were identified in the coastal and inland areas to assess the dispersion pattern of dust pollution from stone crushing industries in Tamil Nadu, considering the meteorological conditions.

The coastal study area is located in Tirusulam area at a distance of 20 km to the southwest of Chennai city. The study area covered 57 crushers, each with a daily crushing capacity of about 50 MT operating very close to each other by the side of a quarry. The extent of the area is about 10 km^2 for stone crushing operation.

A cluster of crushers consisting of 29 stone crushing industries are operating in Kodangipalayam village, Palladam taluk in Tirupur district. with daily crushing capacity varying from 50 MT to 300 MT. All the crushers are operating for six days in a week except Sunday with operating time of 6:00 am to 6:00 pm.

2.0 AMBIENT AIR QUALITY MONITORING NETWORK DESIGN

A weather station was installed near the crushing area, prior to the schedule of sampling. Wind parameters like wind direction and wind speed were measured prior to the sampling programme, so as to enable fixing up of the upwind and downwind sampling locations for the Ambient Air Quality Monitoring Programme with respect to the particulate matter. Besides the wind direction and wind speed, parameters like temperature and relative humidity were also recorded during the study period.

Before fixing ambient air quality location, preliminary survey and weather station data prior to sampling were analyzed (wind speed and wind direction) and drawn in the form of windrose diagram and used for identifying upwind and downwind locations with respect to project sites at Tirusulam, Chennai and Kodangipallayam, Tiruppur as well as fixing the air quality monitoring location considering the frequency of wind speed and wind direction, location of project site, Stone Crushing Industries, topography and surrounding villages around the project site.

3.0 SAMPLING PROGRAM AND AIR QUALITY MONITORING

Sampling programme was designed to assess the impact of dust emissions from the source on ambient air while all the crushers were in operation and also no crushing activity, only vehicle traffic/movement. This sampling programme was designed in such a way to facilitate in fixing the permissible distance from habitation and highways from the periphery of the crushing area on all sides.

Accordingly, reconnaissance survey was conducted during the period first week of September, 2021 for monitoring wind speed and wind direction for fixing air quality monitoring stations.

3.1 MICRO-METEOROLOGY

The micro-meteorological conditions at the proposed project site regulate the transport and diffusion of air pollutants released into the atmosphere. The principal meteorological variables are horizontal convective transport (average wind speed and direction), vertical convective transport (atmospheric stability, mixing height) and topography of the area. Weather station was installed at project sites (Tirusulam and Tiruppur) to monitor wind speed, wind direction, temperature and humidity on hourly basis while air quality monitoring was being carried out.

Wind Rose Diagram for Tirusulam, Chennai

The meteorological data monitored using weather station installed at Tirusulam, Chennai were analyzed and drawn on 24 hourly basis during the period (December, 2021)**.** The dominant wind directions were from North (28.57%) followed by North East (15.5%) and North West (10.4%). The wind speed class 1-5 kmph was predominant for about 44.1% of time, followed by 5-10 kmph for 30.8%, 10-15 kmph 4.1% of the study period. The calm condition (<1 kmph) was observed about 21% time of the study period. The average wind speed during the study period was 3.816 kmph.

Wind Rose Diagram for Kodangipallayam, Tiruppur

The meteorological data monitored using weather station installed at Kodangipallayam, Tiruppur were analyzed and drawn on 24 hourly basis during the period (January, 2022). The dominant wind directions were from North East (23.03%) followed by North of North East (21.6%), and South West (4.3%). The wind speed class 1-5 kmph was predominant for about 40.0% of time, followed by 5-10 kmph for 41.8%, 10-15 kmph 8.5% for the study period. The calm condition (<1 kmph) was observed about 8.5% time of the study period. The average wind speed during the study period was 5.112 kmph.

Source Emission Rates

Coastal Area: Tirusulam, Chennai

Based on the micro-meteorological condition, location, number of stone crushers and their distribution upwind and downwind directions were identified for assessing source strength of each crusher. The estimated source strength of each stone crusher working in

Tirusulam area by upwind downwind technique was estimated considering the meteorological conditions at the project site and is used for modeling dust emissions from stone crushers on the surrounding area.

The maximum source emission rate for TSPM varied from 47.66 kg/d (Ponni BM) to 905.91 kg /d (Thiruvakkari BM). The minimum source emission rate for TSPM varied from 11.22 kg/d (Rathna BM) to 79.13 kg/d (Viswanathan BM). The average source emission rate for TSPM varied from 30.94 kg/d (Rathana BM) to 467.24 kg/d (Thiruvakkarai BM) with a mean of 137.7 kg /d.

The maximum source emission rate for TSPM varied from 18.69 kg/d (Rathna BM) to 171.6 kg/d (Thiruvakkarai BM). The minimum source emission rate for RSPM varied from 4.66 kg/d (Rathna BM) to at Thiruvakkarai BM 52.42 kg/d (Thiruvakkarai BM). The average source emission rate for TSPM varied from 8.62 kg/d (J. R. Vimala BM) to 99.13 kg/d (Thiruvakkarai BM) with a mean of 29.938 kg/d.

3.3.1.2 Inland Area: Kodangipallayam, Tiruppur

The maximum source emission rate for TSPM varied from 502.35 kg/d (Palaniappa BM) to 7376.26 kg/d (Nirmal BM). The minimum source emission rate for TSPM varied from 29.38 kg/d (Sri Om Muruga BM) to 925.75 kg/d (Nirmal BM). The average source emission rate for TSPM varied from 323.09 kg/d (Palaniappa BM) to 3299.05 kg/d (Nirmal BM) with a mean of 1179.66kg/d.

The maximum source emission rate for SPM varied from 74.91kg/d (Palaniappa BM) to 1302.43kg/d (Nirmal BM) . The minimum source emission rate for RSPM varied from BM 11.47kg/d (Sri Om Muruga BM) to 200.31kg/d (Nirmal BM). The average source emission rate for TSPM varied from 46.48kg/d (Palaniappa BM) to 739.37kg/d (Nirmal BM) with a mean of 253.799kg/d.

3.2 Ambient Air Quality Monitoring

3.2.1 Coastal Area: Tirusulam, Chennai

Dust monitoring was carried out by employing an ambient air quality monitoring network consisting of 21 sampling locations, designed based on meteorology, number of Stone Crushing Industries and their spacing and cluster area. Ambient air quality monitoring (AAQM) was carried out for a month (December 2021) continuously on a 12 hourly basis (6 am - 6 pm and 6pm - 6am) and the concentrations were averaged for 24 hours to facilitate

comparison with the Indian standards. The dust concentration was calculated from the difference in the weight of the filter paper before and after the sample collection.

Dust Concentration at Source

The monitoring was carried out in two phases covering working and non-working hours to assess the impact of dust emission from stone crushing industries on the surrounding areas. During the same period micro-meteorological data were also collected at the site.

Out of 13 source air quality monitoring stations, ten were chosen in the upwind direction and three in the downwind direction. Air quality monitoring was carried out simultaneously for all the locations during the period. The 24 hourly average concentration of TSPM varied from120 µg/m^3 (Rathana BM) to 1279 µg/m^3 (Thiruvakkarai BM) with a mean of 445 µg/m^3. The minimum TSPM concentration during the study period was recorded at J.R.Vimala BM (17 µg/m^3) whereas the maximum TSPM concentration during the study period was recorded at Thriuvakkarai BM (3917 µg/m^3).

The 24 hourly average concentration of RSPM varied from 62 µg/m^3 (Rathana BM) to 357 µg/m^3 (Thiruvakkarai BM) with a mean of 139 µg/m^3. The minimum RSPM concentration during the study period was recorded at J.R.Vimala BM (6 µg/m^3) whereas the maximum RSPM concentration during the study period was recorded at Thriuvakkarai BM (1092 µg/m^3).

The 24 hourly average concentration of $PM_{2.5}$ varied from 8 µg/m^3 (Rathana BM) to 110 µg/m^3 (Karthick BM) with a mean of 34 µg/m^3. The minimum $PM_{2.5}$ concentrations during the study period was recorded at Lakshmi and Mageshwari BM (2 µg/m^3) whereas the maximum $PM_{2.5}$ concentrations during the study period was recorded at Ponni BM (263 µg/m^3).

Dust Concentration around Stone Crushing Industries

Out of 8 air quality monitoring stations, six were chosen in the upwind direction and two in the downwind direction. Air quality monitoring was carried out simultaneously for all the locations during the period. The 24 hourly average concentration of TSPM varied from 85 µg/m^3 (VST Compound) to 523 µg/m^3 (Rajiv Gandhi Nagar) with a mean of 269 µg/m^3. The minimum TSPM concentration during the study period was recorded at D.G. Star Residence (18 µg/m^3) whereas the maximum TSPM concentration during the study period was recorded at Rajiv Gandhi Nagar (1084 µg/m^3).

The 24 hourly average concentration of RSPM varied from 55µg/m^3 (VST Compound) to 209 µg/m^3 (Rajiv Gandhi Nagar) with a mean of 106 µg/m^3. The minimum RSPM concentration during the study period was recorded at Rajiv Gandhi Nagar (12 µg/m^3) whereas the maximum RSPM concentration during the study period was recorded at Rajiv Gandhi Nagar (434 µg/m^3).

The 24 hourly average concentration of $PM_{2.5}$ varied from 42 µg/m^3 (D.G. Star residence) to 123 µg/m^3 (Rajiv Gandhi Nagar) with a mean of 66 µg/m^3. The minimum $PM_{2.5}$ concentrations during the study period was recorded at Elliputhoppu street (6 µg/m^3) whereas the maximum $PM_{2.5}$ concentrations during the study period was recorded at Rajiv Gandhi Nagar (255 µg/m^3).

It was observed that during working period of 12 hours in the day time (6 am to 6 pm) TSPM concentration in ambient air was about 3 - 4 times more than that of the following 12 hours (6 pm - 6 am) in the night time during which there was no crusher activity but transportation activity was carried out. During Sundays (6 pm to 6 am) when there were no crushing and transportation activities, the TSPM concentration measured corresponds to background concentration and it was found to be 1/6 - 1/7 of measured concentration (all crushers running) for the working period of 6 am to 6 pm.

3.2.2 Inland Area: Kodangipallayam, Tiruppur

Dust monitoring was carried out by employing an ambient air quality monitoring network consisting of 30 sampling locations, designed based on meteorology, number of Stone Crushing Industries and their spacing and cluster area.

Dust Concentration at Source

The monitoring was carried out in two phases covering working and non-working hours to assess the impact of dust emission from stone crushing industries on the surrounding areas.

Out of 15 source air quality monitoring stations, eleven were chosen in the downwind direction and four in the upwind direction. Air quality monitoring was carried out simultaneously for all the locations during the period. The 24 hourly average concentration of TSPM varied from 1719 µg/m^3 (Palaniappa BM) to 18253 µg/m^3 (Santhosh BM) with a mean of 6152 µg/m^3. The minimum TSPM concentration during the study period was recorded at Sri Ganesha BM (104 µg/m^3) whereas the maximum TSPM concentration during the study period was recorded at Santhosh BM (53165 µg/m^3).

The 24 hourly average concentration of RSPM varied from 269 µg/m3 (Pallaniappa BM) to 3869 µg/m^3 (Santhosh BM) with a mean of 1417 µg/m^3. The minimum RSPM concentration during the study period was recorded at Pallaniappa BM (74 µg/m^3), whereas the maximum RSPM concentration during the study period was recorded at Santhosh BM (11117 µg/m^3).

The 24 hourly average concentration of $PM_{2.5}$ varied from 47 µg/m^3 (Pallaniappa BM) to 679 µg/m^3 (Santhosh BM) with a mean of 249 µg/m^3. The minimum $PM_{2.5}$ concentrations during the study period was recorded at Palaniappa BM (13 µg/m^3) whereas the maximum $PM_{2.5}$ concentrations during the study period was recorded at Santhsh BM (1950 µg/m^3).

Dust Concentration around Stone Crushing Industries

Out of 15 air quality monitoring stations, eleven were chosen in the downwind direction and four in the upwind direction. Air quality monitoring was carried out simultaneously for all the locations during the period. The 24 hourly average concentration of TSPM varied from 97 µg/m^3 (Sarojini Residence) to 1683 µg/m^3 (K.M Chinnaswamy Residence) with a mean of 250 µg/m^3. The minimum TSPM concentration during the study period was recorded at R. Shanmugam Residence (24 µg/m^3) whereas the maximum TSPM concentration during the study period was recorded at K.M Chinnaswamy Residence (2880 µg/m^3).

The 24 hourly average concentration of RSPM varied from 39 µg/m^3 (R. Shanmugam Residence) to 551 µg/m^3 (K.M Chinnaswamy Residence) with a mean of 93 µg/m^3. The minimum RSPM concentration during the study period was recorded at R.Shanmugam Residence (10 µg/m^3) whereas the maximum RSPM concentration during the study period was recorded at K.M Chinnaswamy Residence (1838 µg/m^3).

The 24 hourly average concentration of $PM_{2.5}$ varied from 15 µg/m^3 (Kumar Godown) to 97 µg/m^3 (K.M Chinnaswamy Residence) with a mean of 49 µg/m^3. The minimum $PM_{2.5}$ concentrations during the study period was recorded at Kumar Godown (7 µg/m^3) whereas the maximum $PM_{2.5}$ concentrations during the study period was recorded at Thirumurgan Nagar (325 µg/m^3).

It was observed that during working period of 12 hours in the day time (6 am to 6 pm) TSPM concentration in ambient air was about 3 - 4 times more than that of the following 12 hours (6 pm - 6 am) in the night time during which there was no crusher activity but transportation activity was carried out. During Sundays (6 pm to 6 am) when there were no

crushing and transportation activities, the TSPM concentration measured corresponds to background concentration and it was found to be 1/4 - 1/8 of measured concentration (all crushers running) for the working period of 6 am to 6 pm.

4.0 PARTICLE SIZE ANALYSIS

Particle Size Distribution of Source Dust

Particle size analysis was carried out for dust samples collected at the Stone Crushing Industries, and the results are presented in the form of a cumulative distribution graph. The cumulative distribution graph shows the percentage of particles (number) less than the particle size of interest and the differential distribution graph indicate the percentage of particles in the specified size range.

Coastal Area: Tirusulam, Chennai

The particle size analysis indicated the settle-able fraction of source dust at coastal area of Tirusulam, Chennai, dust particles > 10µm size are 63.4% confirms the presence of large particle nearby the source which are in settle-able nature and their settle-ability depend on the source-receptor geometry and prevalent micro-meteorological conditions and these results are used in the modelling and prediction simulation exercise for estimating the safe distance from the stone crushing industries and the habitation in addition to the monitoring results.

The respirable particulate matter (PM_{10}), which is defined as the particles with an aerodynamic diameter not greater than 10µm was found to be 36.6%, and the fine inhalable particulate matter or $PM_{2.5}$, the particles with an aerodynamic diameter $\leq$ 2.5µm was found to be 14.3%.

Inland Area: Kodangipallayam, Tiruppur

The particle size analysis settleable fraction of source dust at inland area of Kodangipallayam, Tiruppur dust articles > 10µm size are 57.8% confirms the presence of large particle nearby the source which are in settle-able nature and their settleability depend on the source-receptor geometry and prevalent micro-meteorological conditions and these results are used in the modelling for estimating the safe distance from the stone crushing industries and the habitation in addition to the monitoring results. The respirable particulate matter (PM_{10}) was found to be 42.2% and the fine inhalable particulate matter or $PM_{2.5}$ was found to be 14.6%.

Particle Size Distribution of Ambient Air Dust

Tirusulam, Chennai and Kodangipallayam, Tiruppur

The particle size distribution of ambient air dust was carried out to quantify the fraction of particles transported from the crusher to the receiver. The results of the analysis indicated, the percentage of particulate fractions $PM_{2.5}$, PM_{10}, PM_{15}, and PM_{30} are 25.3, 60.5, 72.8 and 91% respectively. The higher percentage of finer particles collected was due to the fact that the larger size particles were settling near the source and the finer particles were able to remain in the air for a much longer time. The settleable particulate matter with an aerodynamic diameter greater than 15µm that would deposit or settle near the sources is 72.8%. The differential distribution graphs show that maximum percentages (11%) of particles are in the range of 3-5µm.

5.0 PREDICTION OF FUGITIVE DUST EMISSIONS

Mathematical models are used to predict the impact of emissions on air quality. The concentrations are estimated from meteorology, source geometry and receptor location. Many models developed to describe the dispersion of pollutants from source and vary in their approach from a Gaussian line source approach to numerical solutions of conservation of pollutant mass equation.

Mathematical models are the best tools to quantitatively describe the cause effect relationship between source of pollution and different components of environment. In the present study, mathematical models were used for predictions of air quality based on Gaussian Plume Dispersion for predicting fugitive dust emissions.

5.1 Recommended Safe Distance

Based on the ambient air quality monitoring and model predicted concentration, impact zones for different crusher operating conditions were drawn. The impact zone (safe distance) was by demarcated by drawing isopleths of concentration 200 µg/m^3 for TSPM and 100 µg/m^3 for PM_{10} and 60 µg/m^3 for $PM_{2.5}$ which are the standard limit set by CPCB for 24-hour averaging period. The safe distances were estimated for both these locations using measured and predicted concentrations.

Safe Distance for Coastal Area: Tirusulam, Chennai

Prediction and Simulation by Model AERMOD

Safe distance for measured TSPM concentration varied from 200 to 900m with a mean of 667m. Safe distance for TSPM predicted concentration of AERMOD varied from

81 to 2000 m with a mean of 823m for critical case. The safe distance based on TSPM predicted concentration of AERMOD based on the period/seasonal average varied from 81 to 258 m with a mean of 774m

Safe distance for measured RSPM concentration varied from 250 to 900m with a mean of 683m. Safe distance for RSPM predicted concentration of AERMOD varied from 258 to 2000 m with a mean of 1231m for critical case. The safe distance based on RSPM predicted concentration of AERMOD based on the period/seasonal average varied from 16 to 2000 m with a mean of 769 m.

Prediction and Simulation by Model ISCST3

Safe distance for measured TSPM concentration varied from200 to 900m with a mean of 667m. Safe distance for TSPM predicted concentration of ISCST3 varied from 80 to 1500 m with a mean of 889 m for critical case. The safe distance based on TSPM predicted concentration of ISCST3 based on the period/seasonal average varied from 40 to 550 m with a mean of 288 m

Safe distance for measured RSPM concentration varied from 250 to 900m with a mean of 683m. Safe distance for RSPM predicted concentration of ISCST3 varied from 142 to 3000 m with a mean of 1643 m for critical case. The safe distance based on RSPM predicted concentration of ISCST3 based on the period/seasonal average varied from 40 to 900 m with a mean of 487 m

Safe distance for measured $PM_{2.5}$ concentration varied from 200 to 900m with a mean of 783m. The prediction for $PM_{2.5}$ is not carried out considering the prediction can be carried out only for annual basis, since our study area data covers only for a season.

Safe Distance for Inland Area, Kodangipallayam, Tiruppur

Prediction and Simulation by Model AERMOD

Safe distance for measured TSPM concentration of AERMOD varied from 700 to 1400m with a mean of 1200 m**.** Safe distance for TSPM predicted concentration of AERMOD varied from 32 to 2000m with a mean of 858m for critical case. The safe distance based on TSPM predicted concentration of AERMOD based on the period/seasonal average varied from 48 to 2000m with a mean of 742m.

Safe distance for measured RSPM concentration of AERMOD varied from 650 to 1400 m with a mean of 1167m. Safe distance for RSPM predicted concentration of AERMOD varied 65 to 2000m with a mean of 868m for critical case. The safe distance based

on RSPM predicted concentration of AERMOD based on the period/seasonal average varied from 65 to 2000m with a mean of 1157m.

Prediction and Simulation by Model ISCST3

Safe distance for measured TSPM concentration varied from 700 to 1400m with a mean of 1200m. Safe distance for TSPM predicted concentration of ISCST3 varied from 120m to 1600m with a mean of 451m for critical case. The safe distance based on TSPM predicted concentration of ISCST3 based on the period/seasonal average varied from 80 to 320m with a mean of 268m

Safe distance for measured RSPM concentration varied 650 to 1400 m with a mean of 1167m. Safe distance for RSPM predicted concentration of ISCST3 varied from 142 to 3000 m with a mean of 1643 m for critical case. The safe distance based on RSPM predicted concentration of ISCST3 based on the period/seasonal average varied from 40 to 900 m with a mean of 487 m.

Safe distance for measured $PM_{2.5}$ concentration of AERMOD varied from 650 to 1400m with a mean of 1175 m. The prediction for $PM_{2.5}$ is not carried out considering the prediction can be carried out only for annual basis, since our study area data covers only for a season.

5.2 Prediction of Impact with Control Measures

Prediction was also carried out for controlled emissions from stone crushers assuming the implementation of the suggested control measures given below which are essential for stone crushers at Tirusulam, Chennai and Kodangipallayam, Tiruppur areas to bring down the dust levels to reduce the impact of dust emissions on the surrounding residential areas.

1. Dust suppression system at the SCIs
2. Spray nozzle for regular wetting of dust
3. Pavement of road surfaces inside stone crushers area
4. Collection of fine powder below ground level and complete covering
5. Covering of loaded trucks using tarpaulins while transportation
6. Arresting re-entrainment of settled dust from surfaces
7. Construction wind breaking wall/movable nets in the prevalent wind direction
8. Planting trees at the periphery of each SCIs with a width of 5 to 10m

It is estimated that the above control measures will bring down the emissions from stone crushing industries by 50%.

Safe Distance for Coastal Tirusulam, Chennai

Prediction and Simulation by Model AERMOD

Safe distance for TSPM predicted concentration of AERMOD varied from 65 to 1750 m with a mean of 714 m for critical case. The safe distance based on TSPM predicted concentration of AERMOD based on the period/seasonal average varied from 48 to 177 m with a mean of 134m

Safe distance for RSPM predicted concentration of AERMOD varied from 65 to 2000 m with a mean of 1086 m for critical case. The safe distance based on RSPM predicted concentration of AERMOD based on the period/seasonal average varied from 97 to 177 m with a mean of 142 m.

Prediction and Simulation by Model ISCST3

Safe distance for TSPM predicted concentration of ISCST3 varied from 40 to 600m with a mean of 320 m for critical case. The safe distance based on TSPM predicted concentration of ISCST3 based on the period/seasonal average varied from 40 to 240 m with a mean of 183m

Safe distance for RSPM predicted concentration of ISCST3 varied from 80 to 1800 m with a mean of 896m for critical case. The safe distance based on RSPM predicted concentration of ISCST3 based on the period/seasonal average varied from 40 to 470 m with a mean of 273 m

Safe Distance for Inland Area, Kodangipallayam, Tiruppur

Prediction and Simulation by Model AERMOD

Safe distance for TSPM predicted concentration of AERMOD varied from 16 to 2000m with a mean of 587m for critical case. The safe distance based on TSPM predicted concentration of AERMOD based on the period/seasonal average varied from 48 to 2000m with a mean of 438m.

Safe distance for RSPM predicted concentration of AERMOD varied from 48 to 2000m with a mean of 855m for critical case. The safe distance based on RSPM predicted concentration of AERMOD based on the period/seasonal average varied from 32 to 2000m with a mean of 1145m

Prediction and Simulation by Model ISCST3

Safe distance for TSPM predicted concentration of ISCST3 varied from 120 to 320m with a mean of 257m for critical case. The safe distance based on TSPM predicted

concentration of ISCST3 based on the period/seasonal average varied from 80 to 320m with a mean of 248m

Safe distance for RSPM predicted concentration of ISCST3 varied 80 to 1590m with a mean of 452m for critical case. The safe distance based on RSPM predicted concentration of AERMOD based on the period/seasonal average varied from110 to 290m with a mean of 232m.

6.0 GREEN BELT DEVELOPMENT

Urban green belts are considered as the lungs of the city as they act as a sink for some of the harmful gases released by vehicles and industries operating in the area. Whether sprawling over a large or a smaller area, these green belts are found in all cities and play a very important role. They serve as sink for the pollutants, check the flow of dust and bring down noise pollution level.

6.1 Design of Green Belt for Stone Crushing Industries

Each stone crusher need to be environmentally improved by planting trees apart from the main road bearing incessant plying vehicles augmenting dust and noise. Hence, it is better to plant tree species, around the stone crushers and the road side also, as detailed below.

6.2 Peripheral planting to protect the nearby residential area

To minimize the impact of dust produced from the stone crushers, tall dense trees will be planted as indicated below:

Polyalthia	நெட்டிலிங்கம்
Casuarina junghuniana	தாய்லாந்து சவுக்கு
Kaya senegalensis	ஆப்பிரிக்கன் மஹோகனி
Melia dubia	மலை வேம்பு
Cassia siamia	மஞ்சக் கொன்ரை

6.3 Avenue planting

Avenue plantation shall include green belt development along the roads on both sides of the roads as indicated below:

Casuarina junghuniana	தாய்லாந்து சவுக்கு
Hibiscus tiliaceous	காட்டுப் பூவரசு
Delonix regia	மயில் கொன்றை
Samanea saman	தூங்கும் வாகை

Cassia alata	சீமை அகத்தி

6.4 Planting around crusher

To avoid dust emanating from each stone crusher, tree plantation was so designed to arrest the fugitive dust at the source itself. This includes plantation of the following species:

Delonix regia	மயில் கொன்றை
Peltophoursum	இயல் வாகை
Pongamia pinnata	புங்கன்
Cassia fistula	சரக் கொன்றை
Azadirachta indica	வேம்பு
Acacia auriculiformis	கத்தி சவுக்கு
Simaruba glauca, etc	சொர்க்க மரம்

The species chosen are such that they have profuse foliage to abate pollution and are fast growing.

6.5 Planting around Quarry

To reduce noise and dust pollution from quarrying operations the following species were identified:

1. Polyalthia longifolia	5'distance
2. Casuarina equisitifolia	5'
3. Acacia auriculiformis	8'
4. Calophyllum inophtllum	12'
5. Bassia latifolia	15'
6. Ficus benjamina	10'
7. Murraya exotica	5'
8. Nerium oleander	5'
9. Bougainvillea varieties	5'
10. Thevitia nerifolia	8'
11. Tabernae montona caronaria	8"

7.0 CONTROL MEASURES

Planning control measures at the Stone Crushing Industries (SCIs) plays an important role in the mitigation of dust particles emanating from the Stone Crushing Industries (SCIs) considering the emissions from SCIs are fugitive in emissions, not vented through proper

channel or stacks, unorganized and highly labor intensive units. For SCIs 2 standards to be followed one for the source and another for the ambient air for the delineation of safe distance from SCIs to the nearby habitation used for the formulation of the safe distance based on the results of the monitoring, modelling and simulation exercise carried out in this study.

8.1 SUMMARY AND CONCLUSIONS

The study was carried out at two identified locations in Coastal and inland areas to assess the dispersion pattern of dust pollution from stone crushing industries in Tamil Nadu, considering the distinct meteorological conditions. A brief summary of the study finding at both these locations given below.

8.1.1 Coastal Area: Tirusulam, Chennai

The findings of the study at Coastal Area: Tirusulam, Chennai are summarized below:

- In Tirusulam area, there are 57 crushing units are operating during the study period
- Dust sampling and monitoring was carried out during September - December, 2021 both at the source and in the ambient air
- During the study each crusher was operating at crushing capacity of 50 MT/day
- During the study period the predominant wind directions were from North, North West, South East and West
- Air quality monitoring network consisting of 21 sampling locations, considering meteorology, number of Stone Crushing Industries, their spacing and cluster geometry to monitor TSPM, RSPM and $PM_{2.5}$ concentrations during working, non-working and 24 hourly basis for the entire study period
- The parameters studied were TSPM, RSPM and $PM_{2.5}$ at the source and in ambient air
- The ambient air quality monitoring was carried out in the predominant upwind and downwind directions for the different distances from the source at 10, 25, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900 and 1000m
- Source strength of each stone crusher working in Tirusulam area was estimated by upwind downwind technique considering the meteorological conditions at the site
- The maximum source emission rate for TSPM varied from 47.66 kg/d (Ponni BM) to 905.91 kg /d (Thiruvakkari BM). The minimum source emission rate for TSPM varied from 11.22 kg/d (Rathna BM) to 79.13 kg/d (Viswanathan BM). The average source

emission rate for TSPM varied from 30.94 kg/d (Rathana BM) to 467.24 kg/d (Thiruvakkarai BM) with a mean of 137.7 kg /d.

- The maximum source emission rate for RSPM varied from 18.69 kg/d (Rathna BM) to 171.6 kg/d (Thiruvakkarai BM). The minimum source emission rate for RSPM varied from 4.66 kg/d (Rathna BM) to at Thiruvakkarai BM 52.42 kg/d (Thiruvakkarai BM). The average source emission rate for RSPM varied from 8.62 kg/d (J. R. Vimala BM) to 99.13 kg/d (Thiruvakkarai BM) with a mean of 29.938 kg/d.
- With no crushing activity and only vehicle traffic/movement, represented the background concentration also monitored during the study period accounted about $1/4^{th}$ to $1/3^{rd}$ of the crusher operating condition.
- The 24 hourly average concentration of TSPM varied from120 µg/m^3 (Rathana BM) to 1279 µg/m^3 (Thiruvakkarai BM) with a mean of 445 µg/m^3
- The 24 hourly average concentration of RSPM varied from 62 µg/m^3 (Rathana BM) to 357 µg/m^3 (Thiruvakkarai BM) with a mean of 139 µg/m^3
- The 24 hourly average concentration of $PM_{2.5}$ varied from 8 µg/m^3 (Rathana BM) to 110 µg/m^3 (Karthick BM) with a mean of 34 µg/m^3
- Safe distance for measured TSPM concentration varied from 200 to 900m with a mean of 667 m**.**
- Safe distance for measured RSPM concentration varied from 250 to 900 m with a mean of 683m.
- Safe distance for measured $PM_{2.5}$ concentration varied from 200 to 900m with a mean of 783 m
- Model AERMOD and ISCST3 were employed for prediction of dust emissions from stone crushing industries on the surrounding
- Prediction was carried out for modelling both concentration and deposition profiles from stone crushing industries considering source-receptor geometry, meteorological and topography of the site
- Prediction was carried for simulating period average (seasonal) as well as first 24-hour maximum concentration profile for critical case (worst case) during the entire study period
- Prediction of safe distance by AERMOD based on TSPM concentration varied from 81 to 2000m with a mean of 823m for critical case, whereas for ISCST3 the safe

distance based on the predicted TSPM concentration varied from 80 to 1500 m with a mean of 889 m for critical case

- Prediction of safe distance by AERMOD based on TSPM predicted concentration of AERMOD for period/seasonal average varied from 81 to 258m with a mean of 744m, whereas for ISCST3 the safe distance based on the predicted TSPM concentration varied from 40 to 550m with a mean of 28 m
- Prediction of safe distance by AERMOD based on RSPM predicted concentration of AERMOD varied from 258 to 2000m with a mean of 1231m for critical case, whereas for ISCST3, the safe distance based on the predicted RSPM concentration varied from 142 to 3000m with a mean of 164 m for critical case.
- Prediction of safe distance by AERMOD based on RSPM predicted concentration of AERMOD for period/seasonal average varied from 16 to 2000m with a mean of 769m, whereas for ISCST3 the safe distance based on the predicted RSPM concentration varied from 40 to 900m with a mean of 487m.

8.1.2 Inland area: Kodangipalayam, Tiruppur

The findings of the study at Inland area: Kodangipalayam, Tiruppur are summarized below:

- In Kodangipalayam, there are 29 crushing were operating during the study period
- Monitoring was carried out during January, 2022 both at source and in the ambient air
- During the study each crusher was operating at crushing capacity around 50-300 MT/day
- During the study period the predominant wind directions were from North East, North of North East and NEE
- Air quality monitoring network consisting of 30 sampling locations, considering meteorology, number of Stone Crushing Industries, their spacing and cluster geometry to monitor TSPM, RSPM and $PM_{2.5}$ concentrations during working, non-working and 24 hourly basis for the entire study period
- The parameters considered for the study are: TSPM, RSPM and $PM_{2.5}$ at the source and in ambient air
- The ambient air quality monitoring was carried out in the predominant upwind and downwind directions for the different distances from the source at 10, 25, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900 and 1000 m

- Source strength of each stone crusher working in Kodangipalayam area was estimated by upwind downwind technique considering the meteorological conditions at the site
- The maximum source emission rate for TSPM varied from 502.35 kg/d (Palaniappa BM) to 7376.26 kg/d(Nirmal BM). The minimum source emission rate for TSPM varied from 29.38 kg/d (Sri Om Muruga BM) to 925.75 kg/d (Nirmal BM). The average source emission rate for TSPM varied from 323.09 kg/d (Palaniappa BM) to 3299.05 kg/d (Nirmal BM) with a mean of 1179.66kg/d.
- The maximum source emission rate for RSPM varied from 74.91kg/d (Palaniappa BM) to 1302.43kg/d (Nirmal BM). The minimum source emission rate for RSPM varied from BM 11.47kg/d (Sri Om Muruga BM) to 200.31kg/d (Nirmal BM) . The average source emission rate for RSPM varied from 46.48kg/d (Palaniappa BM) to 739.37kg/d (Nirmal BM) with a mean of 253.799kg/d.
- With no crushing activity and only vehicle traffic/movement represented, the background concentration also monitored during the study period accounted for about $1/4^{th}$ to $1/3^{rd}$ of the crusher operating condition.
- The 24 hourly average concentration of TSPM varied from 97 $\mu g/m^3$ (Sarojini Residence) to 1683 $\mu g/m^3$ (K.M Chinnaswamy Residence) with a mean of 250 $\mu g/m^3$
- The 24 hourly average concentration of RSPM varied from 39 $\mu g/m^3$ (R. Shanmugam Residence) to 551 $\mu g/m^3$ (K.M Chinnaswamy Residence) with a mean of 93 $\mu g/m^3$
- The 24 hourly average concentration of $PM_{2.5}$ varied from 15 $\mu g/m^3$ (Kumar Godown) to 97 $\mu g/m^3$ (K.M Chinnaswamy Residence) with a mean of 49 $\mu g/m^3$
- Safe distance for measured TSPM concentration varied from 700 to 1400m with a mean of 1200 m**.**
- Safe distance for measured RSPM concentration varied from 650 to 1400 m with a mean of 1167m.
- Safe distance for measured $PM_{2.5}$ concentration varied from 650 to 1400m with a mean of 1175 m.
- Model AERMOD and ISCST3 were employed for prediction of dust emissions from stone crushing industries on the surrounding
- Prediction was cried out for modelling both concentration and deposition profiles from stone crushing industries considering source-receptor geometry, meteorological and topography of the site

- Prediction was carried for simulating period average (seasonal) as well as first 24-hour maximum concentration profile for critical case (worst case) during the entire study period
- Prediction of safe distance by AERMOD based on the TSPM predicted concentration of AERMOD varied from 32 to 2000m with a mean of 858m for critical case, whereas for ISCST3 the safe distance based on predicted TSPM concentration varied from 120m to 1600m with a mean of 451m for critical case.
- Prediction of safe distance by AERMOD based on the TSPM predicted concentration of AERMOD for period/seasonal average varied from 48 to 2000m with a mean of 742m, whereas for ISCST3 the safe distance based on predicted TSPM concentration varied from 80 to 320m with a mean of 268m.
- Prediction of safe distance by AERMOD based on the RSPM predicted concentration of AERMOD varied 65 to 2000m with a mean of 868m for critical case, whereas for ISCST3 the safe distance based on the predicted RSPM concentration varied from 80 to 3000m with a mean of 695m for critical case.
- Prediction of safe distance by AERMOD based on the RSPM predicted concentration of AERMOD for period/seasonal average varied from 65 to 2000m with a mean of 1157m, whereas for ISCST3 the predicted RSPM concentration varied from 120 to 320m with a mean of 257m.

8.2 Recommendations to Study Area

Emissions from stone processing are considered to be fugitive when the sources are not vented to a bag house or contained in an enclosure with a forced air vent or stack. Water sprinkling at dust discharge points wets the dust particles and augments settling. The other control measures for reducing dust emission should include the following good housekeeping practices:

Coastal Area: Tirusulam, Chennai

- A minimum distance of 500m with a green belt of 100m width should be provided around the periphery of the crushing area at Tirusulam.
- Raising a green belt around the crushing area to arrest the spread of particulate matter along the boundary of the crushing area on all the sides with evergreen high foliage trees like Neem, Ashoka, Coconut, Tamarind and other local trees

belonging to *cesalfinaceae* like Gul Mohar and Fire of the Forest. On the road sides also trees should be planted to arrest the dust from vehicular movement.

- Sprinkling of water should be increased to arrest the spread of dust (RSPM & TSPM) with periodical cleaning of spray nozzles
- Fine dust accumulated in the crushing area should be periodically cleared and the dumps should be covered with tarpaulins to arrest the spread of dust
- Construction of metaled road (paved) within the premises
- No more stone crushers should be allowed in this area
- The drop height should be kept at a minimum while loading and unloading
- Fine powder should be collected at the ground level and disposed off immediately
- Conveyor chutes should be provided at the discharge points
- Covering open operations to prevent dust entrainment by the blowing wind
- As an occupational safety measure all the workers should be provided with nose masks to avoid dust entering the respiratory system
- Evergreen trees like Neem, Ashoka, Tamarind and other local trees belonging to the family *cesalfinaceae* like Gul Mohar and Fire of the Forest should be planted all around the crushing area. Similarly, trees should be planted along the roads to arrest the spread of particulate arising from vehicular movement inside the area
- Roads leading to the individual crushers should be paved
- The fine powder accumulated so far should be immediately disposed off and the crushers should follow periodical disposal practice in consultation with TNPCB
- Good housekeeping by way of spraying water at the vulnerable points/locations to arrest the spread of dust particles should be practiced
- Drop height of the conveyors should be kept at the minimum
- Wind breaking wall/net should be provided all along the stone crushers adjacent to residential areas.

In-land Area: Kodangipalayam, Tiruppur

Based on the study conducted at Kodangipalayam, Tiruppur stone crushing area by operating all the crusher the following recommendations are made:

- NPC dust containment and dust suppression system should be provided
- Paving of roads should be adopted
- Fine powder should be collected at the ground level

- Conveyor chute should be provided at the discharge points
- Drop height for the conveyor operations should kept at the minimum
- The fine powder should be disposed off periodically
- Covering of fine dust with tarpaulin during storage and transport to final destination should be practiced
- The minimum distance from single crusher source should be kept as 500m with a width 10-15m green belt at the periphery of the SCIs subject to the condition of meeting the both the ambient air and source standards

8.3 Formulation of safe distance

The safe distance in this report delineated is based on 2 standards considering the source and ambient air quality standard for PM_{10} and $PM_{2.5}$.

Tirusulam, Chennai

The prediction was carried out for two cases considering the first 24-hour maximum (critical case) and period (seasonal) average basis using the measured concentrations at the site and the predicted concentration by models AERMOD and ISCST3 at the site. The data reveals that the safe distance varied from 200 to 900m for TSPM and from 250 to 950m for RSPM and from 200 to 900m for $PM_{2.5}$ for measured concentrations based monitoring results.

The safe distance based on the AERMOD model predicted concentrations for first 24-hour maximum (critical case) varied from 81 to 2000 m for TSPM and from 258 to 2000 for RSPM for the coastal area: Tirusulam, Chennai. The period (seasonal) average varied from 81 to 258 m for TSPM and from 16 to 2000 m for RSPM for the coastal area: Tirusulam, Chennai.

The safe distance based on the ISCST3 model predicted concentrations for first 24-hour maximum (critical case) varied from 80 to 1500m for TSPM and from 142 to 3000m for RSPM for the coastal area: Tirusulam, Chennai. The period (seasonal) average varied from 40 to 550 m for TSPM and from 40 to 900 m for RSPM for the coastal area: Tirusulam, Chennai.

Kodangipallayam, Tiruppur

The prediction was carried out for two cases considering the first 24-hour maximum (critical case) and period (seasonal) average basis the measured concentrations at the site and the predicted concentration by models AERMOD and ISCST3 at the site. The data reveals

that the safe distance varied from 700 to 1400 m for TSPM and from 650 to 1400m for RSPM and from 650 to 1400m for $PM_{2.5}$ for measured concentrations based monitoring results.

The safe distance based on the AERMOD model predicted concentrations for first 24-hour maximum (critical case) varied from 32 to 2000m for TSPM and from 65 to 2000m for RSPM for the inland area area: Kodangipallayam, Tiruppur. The period (seasonal) average varied from 48 to 2000m for TSPM and from 65 to 2000m for RSPM for the inland area: Kodangipallayam, Tiruppur

The safe distance based on the ISCST3 model predicted concentrations for first 24-hour maximum (critical case) varied from 120m to 1600m for TSPM and from 80 to 3000m for RSPM for the inland area area: Kodangipallayam, Tiruppur. The period (seasonal) average varied from 80 to 320m for TSPM and from 120 to320m for RSPM for the inland area: Kodangipallayam, Tiruppur

8.4 Safe distance for SCIs with Control Measures

8.4.1 Tirusulam, Chennai

The prediction was carried out for two cases considering the first 24-hour maximum (critical case) and period (seasonal) average basis.

The safe distance based on the AERMOD model predicted concentrations for first 24-hour maximum (critical case) varied from 65 to 1750 m for TSPM and from 65 to 2000 m for RSPM for the coastal area: Tirusulam, Chennai. The period (seasonal) average varied from 48 to 177 m for TSPM and from 97 to 177 m for RSPM for the coastal area: Tirusulam, Chennai.

The safe distance based on the ISCST3 model predicted concentrations for first 24-hour maximum (critical case) varied from 40 to 600m for TSPM and from 80 to 1800m for RSPM for the coastal area: Tirusulam, Chennai. The period (seasonal) average varied from 40 to 240m for TSPM and from 40 to 470 m for RSPM for the coastal area: Tirusulam, Chennai.

8.4.2 Kodangipallayam, Tiruppur

The prediction was carried out for two cases considering the first 24-hour maximum (critical case) and period (seasonal) average basis.

The safe distance based on the AERMOD model predicted concentrations for first 24-hour maximum (critical case) varied from 16 to 2000m for TSPM and from 48 to 2000m for

RSPM for the inland area area: Kodangipallayam, Tiruppur. The period (seasonal) average varied from 48 to 2000m for TSPM and from 32 to 2000m for RSPM for the inland area: Kodangipallayam, Tiruppur

The safe distance based on the ISCST3 model predicted concentrations for first 24-hour maximum (critical case) varied from 120 to 320m for TSPM and from 80 to 1590m for RSPM for the inland area area: Kodangipallayam, Tiruppur. The period (seasonal) average varied from 80 to 320m for TSPM and from 110 to 290m for RSPM for the inland area: Kodangipallayam, Tiruppur.

Considering SCIs operating conditions and working schedule and the prevalent micro-meteorological conditions, there is scope for improvement in bringing down the safe distance for SCIs. In order to achieve this the following control measures and strategies are recommended.

8.5 Distance from Stone Crusher to nearby Stone Crusher

The distance from stone crushing industry to stone crushing industry as mentioned in the TNPCB Proceeding (BP No. 4, dated 02.07.2004) not important & significant and can be withdrawn considering the following facts:

1. Be specifying inter distance between the stone crushing industries shall lead to the dispersal of stone crushing industries across in the state of Tamil Nadu resulting into spreading of dust pollutants.
2. Inter distance between stone crushing industries is not as significant and governing criteria compared to specifying distance from stone crushing industries to habitation areas (approved residences/inhabited site, educational institutions, places of public offices and religious importance, State/National Highways etc.)
3. Specifying inter distance between stone crushing industries as a limiting criteria is a way against cluster of industries, which is not preferable leading to spread and increase in the dust pollutants.

Considering the above, the minimum distance between crusher to crusher is dispensed so as to avoid mushrooming of single clusters over a larger area and paving way for favorable condition for cluster of crushers in a compact area closed to each other, thereby reducing the minimum distance between the crushers, confining the pollution levels within a smaller area so that prevention measures (control/mitigation) can be adopted more effectively.

8.6 Recommendations to Stone Crushing Industries in the State of Tamil Nadu

As per the terms of reference given in the work order issued by the TNPCB vide proceeding T1/F.4792/2019, dt 11.08.2021, the following recommendations are made for the stone crushing Industries located in the State of Tamil Nadu

- The stone crushing Industries shall provide for dust containment and dust suppression system as recommended by the National Productivity Council. They shall provide green belt of 5 to 10m width at the periphery for meeting the national ambient air quality standards in terms of PM_{10} and $PM_{2.5.}$
- The stone crushing Industries shall provide
  - (i) Evergreen trees like Neem, Ashoka, Tamarind and other local trees belonging to the family *cesalfinaceae* like Gul Mohar and Fire of the Forest may be planted all around the crushing area. Similarly, trees may be planted along the roads to arrest the spread of particulate arising from vehicular movement inside the area.
  - (ii) Good house-keeping by way of spraying water at the vulnerable points/locations to arrest the spread of dust particles should be practiced.
  - (iii) Paving of roads should be adopted.
  - (iv) Fine powder should be collected at the ground level.
  - (v) The fine powder should be disposed off periodically.
  - (vi) Conveyor chute should be provided at the discharge points.
  - (vii) Drop height for conveyor operations should be kept at the minimum.
  - (viii) Covering of fine dust with tarpaulin during storage and transport to final destination should be practiced.
  - (ix) Wind breaking structures (wall or net) preferably adjustable, moveable wind breaking nets based on the topography and the prevailing meteorological conditions shall be provided.
  - (x) Ambient air quality monitoring with respect to PM_{10} and $PM_{2.5}$ should be carried out in both the downwind and upwind directions during summer.
  - (xi) As an occupational safety measures, all the workers should be provided with nose masks to avoid dust entering the respiratory system.
- A minimum 500m safe distance is to be maintained from any National Highways or State Highways or inhabited site or educational institutions and other public offices

and places of religious importance so as to avoid influence of dust emission from the Stone Crushing Industries.

- The minimum 1km distance between one stone crushing unit to another stone crushing unit shall be dispensed so as to avoid mushrooming of single crushers over a larger area. This will pave the way for favorable condition for cluster of crushers in a compact area close to each other, their by reducing the minimum distance between the crushers, confining the pollution levels within a smaller area so that prevention measures (control/mitigation) can be adopted more effectively.

9.1 Conclusions

- The dust generated from stone crushing activities contains a significant amount of fine inhalable matter. The effect of fine particulate matter can be disproportionately large even though it constitutes only a small fraction of the total suspended particulate matter. The presence of a high percentage of silica in the dust and the particle size distribution further suggest that the occupational environment of the workers and surrounding areas may be hazardous to human health
- Most of the stone crushers have inadequate dust control systems. Mostly all units have neither enclosures nor water spraying arrangements. As a result, the dust emissions are substantial which leads to adverse impacts on workers as well as the surrounding environment. The existing control measures such as dust containment enclosures, water spray arrangements etc. are needs to be improved along with inclusion of wind breaking structures (wall or net) and development of thick foliage trees around each crushing units, paving of the SCIs premises etc.
- The re-entrainment of settled dust from unpaved roads and surfaces is another phenomenon which seriously contributes to dust pollution in these areas which should be controlled immediately by paving the roads and surfaces inside crushing area and reducing the drop heights and covering potential fugitive dust emission sources. With these stringent control measures in practices and good housekeeping in place, it expected that a minimum distance of 500m with a green belt width of 5 to 10m, with provision for adjustable wind breathing net structures as per the prevailing local meteorological conditions at the site based on the seasons, subject to the condition of meeting both the ambient air and source standards to arrest the dust pollution in around the SCIs.

Chapter 1

Introduction

1.1 Preamble

Stone crushers are small scale industries operating in the unorganized sector. They provide the basic materials for the road and building construction. They are labor intensive units, where most of the operations are performed manually. The various unit operations involved in stone crushing process are namely size reduction, size classification and transfer operations emit the fugitive dust.

There are 3061 Stone Crushing Industries (SCIs) operating in the state of Tamil Nadu of which about 2000 units are in the residential areas (**Table 1.1**). Many such stone crushers tend to be located near populated areas to avoid transportation costs. This results in dust associated health problems among the workers and nearby residents. The large numbers of stone crushers distributed all over Tamil Nadu, pose the problem of high levels of dust generation in the vicinity of the crushers and on the communities surrounding them during various operations of crushing.

With the funding from the Tamil Nadu Pollution Control Board (TNPCB), CSIR-NEERI, Chennai undertook a detailed study at Pammal, Alathur gate and Tirusulam area in the years 1997, 1998 and 2006 to assess the dust emissions from the stone crushing industries and suggested possible measures for controlling the air pollution in these areas.

In continuation of the good work done by CSIR- NEERI, Chennai in this direction, TNPCB, Chennai invited CSIR- NEERI, Chennai again to submit a detailed project report for assessment of dust concentration from the stone crushing industries and to review the distance criteria for the new/proposed/existing stone crushers and also review the distance criteria from National Highways (NH)/State Highways and inhabited site etc. with proper pollution control measures and also to identify the notified areas in the state of Tamil Nadu and furnish a report to examine the distance criteria of 1 km from crusher to crusher of those identified notified areas for possible promotion of cluster of stone crushers in operation at the identified notified areas considering the topography, meteorological conditions, crushing capacity and pollution control measures.

1.2 Stone Crushers in the State of Tamil Nadu

River sand is an essential material for construction activities. Extensive use of river sand as fine aggregate in the construction works results in scarcity of river sand. Moreover, indiscriminate mining of sand affects the river eco system and lowers the ground water table. Therefore, the government is now encouraging the use of M-sand for construction in place of

river sand. M-sand is manufactured by crushing of blue metal jellies either in stone crushers as an extended facility or in M-sand units. In order to regulate the activities of M-sand units, the board vide B.P. No. 26 dated 30/07/2018 issued guidelines for M-sand units.

In order to meet M-sand demand, large number of stone crushers are coming-up in the state of Tamil Nadu. Considering this, TNPCB, Chennai constituted a technical committee to study the performance of existing stone crushers and give its recommendation to re-consider the distance criteria norms. The committee recommended to conduct a detailed scientific study through a reputed technical institution like CSIR-NEERI.

In view of these circumstances and considering the steep rise in the demand for river and M-sand in Tamil Nadu and with a view to assess the dust concentration and adequacy of control measures TNPCB, Chennai, invited CSIR-NEERI, Chennai to submit a detailed project report for the assessment of dust emissions from stone crushing industries and review of distance criteria distance criteria among the stone crushers and nearby by habitation and National Highways (NH) with proper pollution control measures in the state of Tamil Nadu. The distribution of Stone Crushing Industries (SCIs) in the state of Tamil Nadu is given in **Table 1.1** and its details are given in **Annexure I.**

1.3 Objective of the Study

The objective of this study is to assess the dust pollution concentration and its fallout in and around the work place and in the ambient air and delineation of control measures and review of the distance criteria to arrest the dust pollution within permissible limits.

1.4 Scope of the Study

The scope of the study shall include 5 major tasks covering the following activities:

1. Review the distance criteria between new/proposed/existing stone crushers so as to meet the source and ambient air quality standards for the stone crushing Industries
2. Review the minimum distance to be maintained from any National Highways or State Highways or inhabited site or places of public and religious importance.
3. Identify the notified areas in Tamil Nadu and furnish a report so as to examine the relaxing the distance criteria of 1km from crusher to crusher of those identified notified areas only, where the stone crushers can be permitted as clusters with adequate pollution control measures.
4. Development of dust control measures, green belt development etc. by the Stone Crushing Industries (SCIs)

5. Delineation of dust pollution control measures for Stone Crushing Industries(SCIs).

1.5 Methodology of the Study

The proposed study was carried out at two identified locations in consultation with TNPCB, Chennai viz. one location in the coastal area (Chennai region) and another location in the inland area (interior Tamil Nadu) preferable nearer to NH/SH and inhabited site to assess the dispersion pattern of the dust pollution from the stone crushing industries on their surroundings.

Considering the various factors involved in the assessment and monitoring of dust emission and concentrations from the stone crushing industries, the proposed study methodology was carried out covering the 5 major tasks as outlined in the scope of the study and the details are given below:

1. Identification of study areas (one coastal and one inland) considering the topography, stone crushers location, cluster pattern and micro-meteorological conditions of the site with inputs from TNPCB based on their daily crushing capacity
2. Monitoring of various crushing activities contributing emissions from the stone crushing industries
3. Monitoring of micro-meteorological data including local wind conditions to assess the extent of the spread of dust pollution from the stone crushing industries
4. Assessment of the total emission and emission rates from the stone crushing industries
5. Monitoring of dust concentrations at the source and in the ambient air considering the background emissions and vehicular traffic/movement in addition to emissions from the stone crushing industries
6. Estimation of particle size distribution of dust to assess the dispersal and the settlement of dust particles to various distance considering the source-receptor geometry and the prevailing micro-meteorological conditions at the site
7. Assessment of control measures employed in the stone crushing industries
8. Prediction of fugitive dust emissions from the stone crushing industries using mathematical models
9. Review the distance criteria between new/proposed/existing stone crushers so as to meet the source and ambient air quality standards for the stone crushing Industries
10. Review the minimum distance to be maintained from any National Highways or State Highways or inhabited site or places of public and religious importance

11. Identify the notified areas in Tamil Nadu and furnish a report so as to examine the relaxing of distance criteria of 1 km from crusher to crusher of those identified notified areas only where the stone crushers can be permitted as clusters with adequate pollution control measures
12. Dust control measures along with green belt development to be provided by the crushers
13. Delineation of dust pollution control measures for stone crushing industries

1.6 Study Area

As per the objective and scope of the study, two locations were identified in the coastal and inland areas to assess the dispersion pattern of dust pollution from stone crushing industries in Tamil Nadu, considering the meteorological conditions. A brief description of identified site in the coastal and inland areas in the state of Tamil Nadu is given below.

1.6.1 Coastal Area: Tirusulam, Chennai

The study area is located in Tirusulam area at a distance of 20 km to the southwest of Chennai city. The study area covered 57 crushers, each with a daily crushing capacity of about 50T operating very close to each other by the side of a quarry. The extent of the area is about 10 km^2 for stone crushing operation.

There are 57 stone crushers located in Tirusulam and Moovandar village adjacent to Chennai metropolitan city in Tambaram Taluk, Kancheepuram District each with a daily crushing capacity of about 50 MT operating very close to each other by the side of a old quarry as given in **Table 1.2**. Stone crushing and quarrying operations have been carried out in these areas since 1965. With a view to assess the dust concentration in and around stone crushing units and the adequacy of control measures, TNPCB, Chennai, approached CSIR-NEERI to carry out a detailed study for controlling the dust concentration in the Tirusulam area. The study area map is shown in **Figure 1.1**. The selected sampling locations are shown in **Figure 1.1**. The directions and distances of these Source and Residence sampling locations are reported in **Table 1.3 and 1.4**.

Table 1.1
Summary of Distribution of Stone Crushing Industries in the State of Tamil Nadu

Sr. No.	District	No. of Crushers
1.	Ariyalur	119
2.	Coimbatore North	30
3.	Coimbatore South	108
4.	Cuddalore	2
5.	Dharmapuri	28
6.	Dindigul	72
7.	Erode	3
8.	Hosur	195
9.	Karur	119
10.	Kumarapalayam	41
11.	Madurai	88
12.	Mm Nagar	330
13.	Nagercoil	69
14.	Namakkal	43
15.	Perundurai	65
16.	Pudukkottai	97
17.	Ramanathapuram	2
18.	Salem	130
19.	Sivagangai	20
20.	Sriperumbudhur	175
21.	Thanjavur	3
22.	Theni	49
23.	Thoothukudi	76
24.	Tirunelveli	137
25.	Tiruppur North	93
26.	Tiruppur South	114
27.	Tiruvallur	8
28.	Tiruvannamalai	172
29.	Trichy	70
30.	Vaniyambadi	21
31.	Vellore	149
32.	Villupuram	321
33.	Virudhunagar	112
	Total	3061

Table 1.2
Details of Stone Crushing Industries at Tirusulam, Chennai

Sr. No	Name and Address of Crushers	Consented Capacity
1.	M/s.K.Thirugnanam Blue Metals	Blue Metal Jelly of various sizes-630T/month
2.	M/s.A.Annai Blue Metals	Blue metal jelly in various sizes & MSand-700T/month
3.	M/s.Maragatham Blue Metal	Various sizes of Blue metal jelly – 710T/month
4.	M/s. Sri Lakshmi Blue Metals	Blue metal Jelly in various Sizes & M Sand – 660T/month
5.	M/s.R.V.S.Blue Metals	Blue metal Jelly in various Sizes-700T/month
6.	M/s. Lavanya Blue Metal	Blue metal Jelly in various Sizes-630T/month
7.	M/s.Saravana Blue Metals	Blue metal jelly in various sizes & MSand-610T/month
8.	M/s. S.M.T. Blue Metal	Blue metal Jelly in various Sizes-600T/month
9.	M/s. J.A.S Blue Metal	Blue metal Jelly in various Sizes-630T/month
10.	M/s.Sri Ram Blue Metals	Blue metal Jelly in various Sizes – 720T/month
11.	M/s. S.P.T. Blue Metals	Blue Metal Jelly in Various Sizes, M Sand and P Sand-630T/month
12.	M/s. Swaminathan Blue Metals	Blue metal Jelly in various Sizes-600T/month
13.	M/s.Yashwanth Blue Metal	Blue metal jelly in various sizes & MSand-700T/month
14.	M/s. Jayasakthi Blue Metal	Blue metal Jelly in various Sizes-630T/month
15.	M/s. Praveena Blue Metals	Blue metal Jelly in various Sizes-720T/month
16.	M/s. Sri Hemavarshini Blue Metal	Blue metal Jelly in various Sizes-630T/month
17.	M/s. New Mahalakshmi Blue Metal	Blue metal Jelly in various Sizes-630T/month
18.	M/s.Sri Ramajayam Blue Metal	Blue metal jelly in various sizes & MSand-600T/month
19.	M/s.Viswanathan Blue Metal	Blue Metal Jelly in Various Sizes & M Sand-720T/month
20.	M/s. Sakthi Priya Blue Metal	Blue Metal Jelly in Various Sizes-700T/month
21.	M/s. Sivakami Natesh Blue Metal	Blue metal Jelly in various Sizes-640T/month
22.	M/s. M.M.Blue Metals	Blue metal Jelly in various Sizes-650T/month
23.	M/s. Sri Kamatchi Blue Metals	Blue metal Jelly in various Sizes-620T/month
24.	M/s.Sri Rajalakshmi Blue Metal	Blue metal jelly in various sizes & MSand-700T/month
25.	M/s.G K Blue Metals	Blue metal jelly in various sizes – 620 T/Month
26.	M/s.Sri Amman Blue Metals	Blue Metal Jelly in Various Sizes-630T/month
27.	M/s. Abirami Blue Metal	Various sizes of Blue Metals-630T/month
28.	M/s. PLR Blue Metals-M Sand	Blue metal Jelly in various Sizes-600T/month
29.	M/s.Subramaniam Blue Metals	Blue metal jelly in various sizes & MSand-620T/month
30.	M/s. Sri Ramajeyam Ayya Thunai Blue Metals	Blue metal Jelly in various Sizes-700T/month
31.	M/s. Rani Blue Metals	Blue metal Jelly in various Sizes-730T/month

32.	M/s.Maheswari Blue Metal	Blue metal jelly in various sizes & MSand-620T/month
33.	M/s. V.K.S.Blue Metals	Blue metal Jelly in various Sizes-600T/month
34.	M/s.Kannadasan Blue Metalsk	Blue metal Jelly in various Sizes – 350T/month, M-Sand & P-Sand – 300T/month
35.	M/s.Annamalaiyar Blue Metal	Blue metal Jelly in various Sizes-700T/month
36.	M/s.Thiruvakarai Blue Metals	Blue metal Jelly in various Sizes-630T/month
37.	M/s.Sivakami Blue Metals	Blue metal Jelly in various Sizes-600T/month
38.	M/s. New Sivakami Blue Metals	Blue metal Jelly in various Sizes-700T/month
39.	M/s.Subam Blue Metals	Blue metal jelly in various sizes & MSand-630T/month
40.	M/s. King Blue Metals	Blue metal Jelly in various Sizes-580T/month
41.	M/s. Sri Thandumariamman Blue Metals	Blue metal Jelly in various Sizes-730T/month
42.	M/s.Sanjay Blue Metal	Blue metal jelly in various sizes & MSand-730T/month
43.	M/s.Karthik Blue Metal	Blue metal jelly in various sizes & MSand-720T/month
44.	M/s.Sri Bhuvaneswari Blue Metals	Msand – 700T/month
45.	M/s. Pachaiamman Blue Metals	Blue metal Jelly in various Sizes-630T/month
46.	M/s. J.R.Vimala Blue Metals	Blue Metal Jelly in Various Sizes & M Sand-630T/month
47.	M/s.Amman Arul Blue Metals	Blue metal jelly in various sizes & MSand-620T/month
48.	M/s.Sridharan Blue Metal	Blue Metal Jelly in various Sizes-630T/month
49.	M/s. Devi Karumariamman Blue Metals	Various Sizes of Blue metal Jelly -600T/month
50.	M/s.Siva Blue Metals	Blue metal Jelly in various Sizes-640T/month
51.	M/s.Vasudevan Blue Metal	M Sand and P Sand – 650T/month
52.	M/s. Ponnee Blue Metals	Blue metal Jelly in various Sizes-630T/month
53.	M/s. Kaladevan Blue Metal	Various sizes of Blue Metal Jelly-630T/month
54.	M/s.Mahalakshmi Blue Metals	Blue metal Jelly in various Sizes-600T/month
55.	M/s. Athilakshmi Blue Metals	Blue metal Jelly in various Sizes & MSand -630T/month
56.	M/s.DG Star Blue Metals	Blue metal jelly in various sizes & MSand-620T/month
57.	M/s. Rathinam Blue Metals	Various sizes of Blue Metals-640T/month

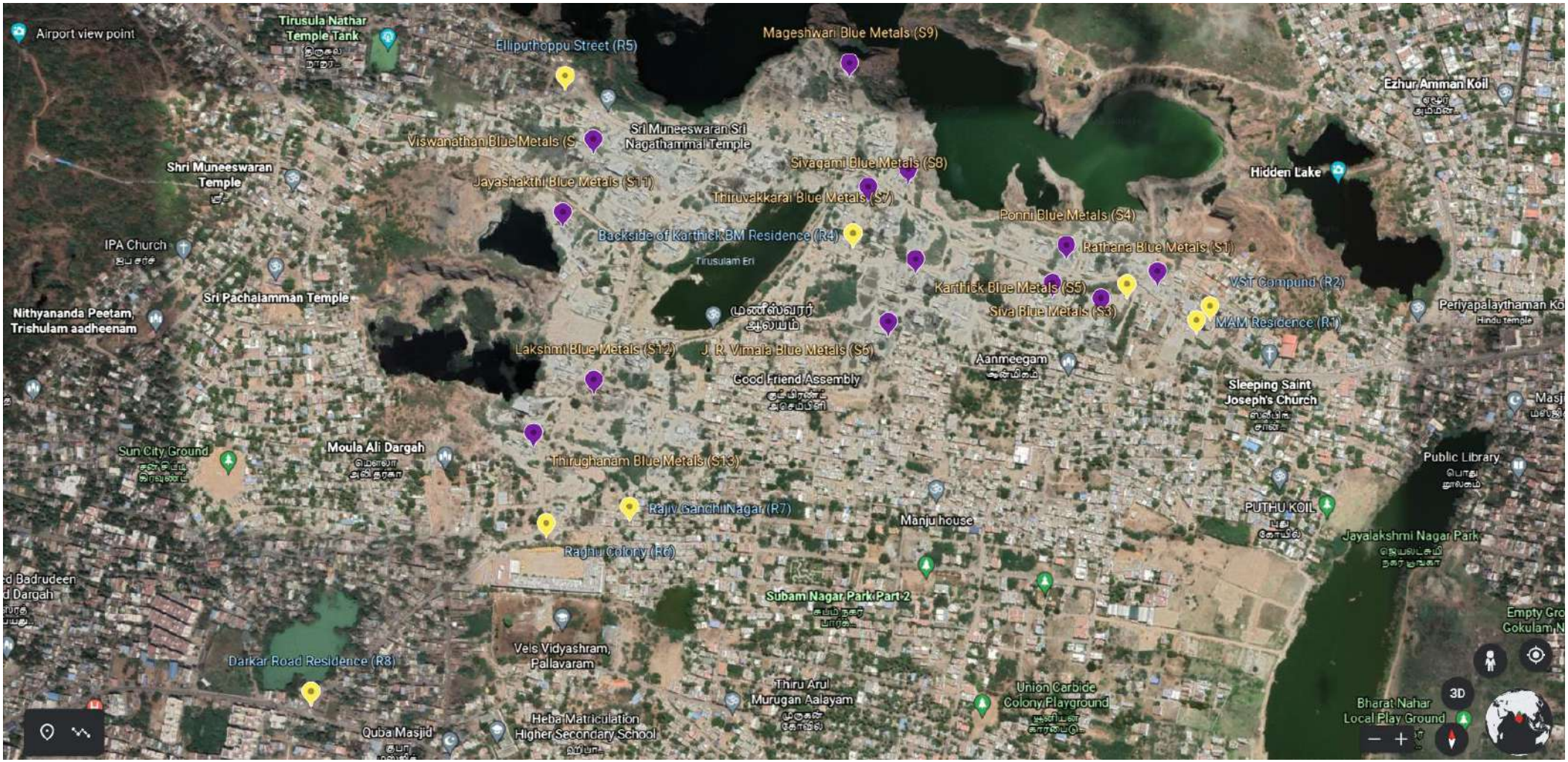


Figure 1.1: Sampling Locations of Ambient Air Quality Monitoring Station at Tirusulam, Chennai

Table 1.3
Source Sampling Locations at Tirusulam, Chennai

Source ID	Crusher Name	Crusher No.	Latitude N	Longitude E	Altitude m	Distance m	Direction
S1	Rathana BM	57	12.9686008°	80.1779115°	21.81	461.95	106.34° SE
S2	D. G. Star BM	58	12.9683698°	80.1769673°	20.18	397.16	115.75° SE
S3	Siva BM	51	12.9687709°	80.1764483°	22.20	320.86	118.21° SE
S4	Ponni BM	53	12.9690775°	80.1767642°	°21.73	317.11	106.67° SE
S5	Karthick BM	43	12.9690557°	80.1744973°	22.52	134.48	147.32° SE
S6	J. R. Vimala BM	47	12.9680878°	80.1742376°	18.75	208.54	171.5° SE
S7	Thiruvakkarai BM	36	12.9700808°	80.744272°	-0.51	64.53	56.89° NE
S8	Sivagami BM	37	12.9700193°	80.1740352°	19.51	REF	REF
S9	Mageshwari BM	32	12.9717150°	80.1737650°	-0.51	147.30	3.51° NE
S10	Viswanathan BM	19	12.9705995°	80.1702655°	26.38	230.07	279.77° NW
S11	Jayashakthi BM	14	12.9698024°	80.1694905°	27.05	477.82	264.6° SW
S12	Lakshmi BM	4	12.9673101°	80.1695964°	23.62	515.83	234.83° SW
S13	Thirughanam BM	1	12.9667579°	80.1689800°	24.32	639.55	233.73° SW

Table 1.4
Residence Sampling Locations at Tirusulam, Chennai

Residence ID	Site Name	Latitude, N	Longitude, E	Altitude m	Distance m	Direction
R1	MAM Residence	12.9681761°	80.1784749°	19.97	544.12	112.12° SE
R2	VST Compound	12.9685151°	80.1785844°	20.85	556.54	109.29° SE
R3	D. G. Star Residence	12.9685640°	80.1774662°	20.34	424.42	110.86° SE
R4	Backside of Karthick BM	12.9690816°	80.1739416°	22.49	74.05	198.42° SW
R5	Elliputhoopu Street	12.9716689°	80.1695815°	25.88	487.52	289.71° NW
R6	Raghu Colony	12.9655495°	80.1692364°	21.39	718.28	223.81° SW
R7	Rajiv Gandhi Nagar	12.9656524°	80.1700464°	20.68	611.47	216.77° SW
R8	Darkar Road	12.9631418°	80.1659376°	23.02	1150.84	227.88° SW

1.6.2 Inland Area: Kodangipallayam, Tiruppur

A cluster of crushers consisting of 29 stone crushing industries are operating in Kodangipalayam village, Palladam taluk in Tirupur district, with daily crushing capacity varying from 50 MT to 300 MT. All the crushers are operating for six days in a week except Sunday with operating time of 6:00 am to 6:00 pm. The study area map is shown in **Figure 1.2**. The selected sampling locations are shown in **Figure 1.2**. The directions and distances of these Source and Residence sampling locations are reported in **Table 1.6 and 1.7**.

Table 1.5
Details of Stone Crushing Industries at Kodangipallayam, Tiruppur.

Sr. No.	Name & Address Of The Units	Consented Capacity
1.	A.G.M.Blue Metals	1. Blue Metals Stones 11/2 - 300 t/m 2. Blue Metals Stones 3/4 - 500 t/m 3. Blue Metals Stones 1/2 - 300 t/m 4. Blue Metals Stones 1/4 - 300 t/m 5. Stone Dust - 100 t/m
2.	A.G.M Blue Metals.	Stone Jelly Of Sizes - 600 t/m
3.	K.K.V. Crusher	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 1300 t/m
4.	K.P.M. Blue Metals	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 1200 t/m
5.	Kadaieswari Metal Crusher	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 200 t/m
6.	M.S. Blue Metals	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 291 t/m
7.	Nirmal Blue Metals	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 1300 t/m
8.	Om Muruga Blue Metal	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 500 t/m
9.	Om Muruga Blue Metals	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 1200 t/m
10.	P.M.G. Stone Crusher	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 280 t/m
11.	Rajalakshmi Blue Metals	Jelly - 300 t/m
12.	S.K. Blue Metals	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 450 t/m
13.	S.V.A Blue Metals	1. 3/4" Size Of Stone Jelly - 450 t/m 2. 1/4" Size Stone Jelly - 120 t/m 3. Stone Dust - 30 t/m
14.	Santhosh Blue Metals	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 750 t/m
15.	Saravana Blue Metals	Crushed Stone Of (1 1/2", 3/4", 1/2", Inches) - 310 t/m

16.	Senthur Murugan Blue Metals	1. Stone Jelly Of Size 1/2" & 3/4" - 450 t/m 2. Stone Jelly Of Size 1/4" - 120 t/m3. Stone Dust - 30 t/m
17.	Shri Praveen And Co	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 1300 t/m
18.	Om Muruga Blue Metals	Crushed Stone Sand - 10000 t/m
19.	Sri Bagavathi Amman Stone Crusher	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 790 t/m
20.	Sri Blue Metals -Formerly Sumathi Blue Metals	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 720 t/m
21.	Sri Ganesha Blue Metals	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 650 /m
22.	Sri Guruvayurappan Blue Metals	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 1200 t/m
23.	Sri Murugan Blue Metals	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 450 t/m
24.	Sri Palaniappa Blue Metals	1. Stone Jelly Of Various Sizes - 450 t/m 2. Stone Jelly Of Various Sizes - 120 t/m 3. Stone Dust - 30 t/m
25.	Sri Rajesh Stone Crusher	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 1740 t/m
26.	Sri Saravana Blue Metals	Blue Metal Stone (1 1/2", 3/4", 1/2", Inches) - 1300 t/m
27.	Sri Vijayalakshmi Blue Metals	Blue Metal Stones - 1300 t/m
28.	Sri Vinayaka Stone Crusher	Stone Jelly Of Sizes - 600 t/m
29.	Thanganayagi Stone Crusher	Metal Jelly - 500 t/m

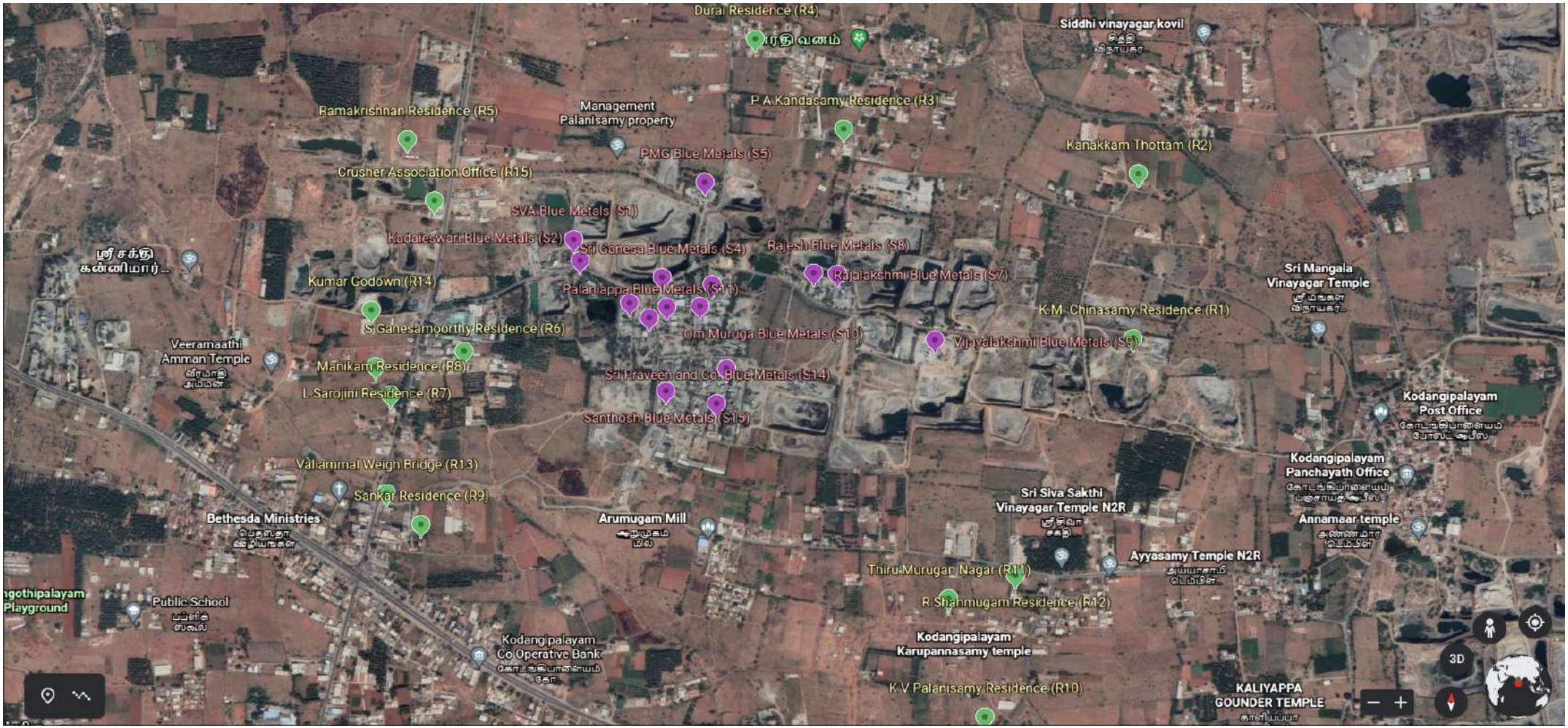


Figure 1.2: Sampling Locations of Ambient Air Quality Monitoring at Kodangipallayam, Tiruppur

Table 1.6
Source Sampling Locations at Kodangipallayam, Tiruppur

Source ID	Crusher Name	Crusher No.	Latitude N	Longitude E	Altitude m	Distance m	Direction
S1	SVA BM	167/3B	11.025688°	77.189479°	377.32	386.67	298.25° NW
S2	Kadaieswari BM	159/2C	11.024941°	77.189651°	363.54	347.29	291.38° NW
S3	Sri Murugan BM	160/2A	11.023767°	77.190795°	378.06	191.10	271.41° NW
S4	Sri Ganesha BM	143/1B	11.024768°	77.191565°	378.11	129.31	307.29° NW
S5	PMG BM		11.027042°	77.192754°	355.84	342.76	1.85° NE
S6	Vinayaga BM	143/1D	11.024454°	77.192967°	377.65	67.97	28.17° NE
S7	Rajalakshmi BM	124/3	11.024795°	77.195288°	376.01	320.92	72.52° NE
S8	Rajesh BM	115/2	11.024768°	77.195864°	372.32	384.93	73.88° NE
S9	Vijyalakshmi BM	116/3A2	11.023109°	77.198238°	365.34	635.81	98.68° SE
S10	OM Muruga BM	143/2A	11.023935°	77.191711°	378.49	91.24	268.78° SW
S11	Palaniappa BM	160/2C	11.023604°	77.191343°	378.89	140.78	255.68° SW
S12	Nirmal BM	143/2B	11.023865°	77.192537°	378.33	REF	REF
S13	Sri Saravana BM	144/1E	11.022383°	77.193163°	377.85	191.43	158.30° SE
S14	Sri Praveen BM	144/4C	11.021497°	77.193004°	378.59	276.81	170.89° SE
S15	Santhosh BM	144/2A2	11.021796°	77.191728°	378.71	258.57	200.58° SW

Table 1.7
Residence Sampling Locations at Kodangipallayam, Tiruppur

Residence ID	Site Name	Latitude, N	Longitude, E	Altitude m	Distance m	Direction
R1	K M Chinnasamy Residence	11.0225854°	77.2025440°	358.66	1157.6	94.67° SE
R2	Kanakkam Thottam	11.023°1099°	77.2052557°	377.35	1225.75	72.52° NE
R3	P A Kandasamy Residence	11.0273766°	77.1945567°	371.02	626.34	37.7° NE
R4	Durai Residence	11.0307460°	77.1939277°	369.85	759.4	11.08° NE
R5	R. Ramakrishnan Residence	11.0266082°	77.1870762°	373.64	908.9	300.77° NW
R6	S Ganesamoorthy Residence	11.0229117°	77.1866739°	375.63	643.53	258.44° SW
R7	L Sarojini Residence	11.0224139°	77.1846951°	372.61	881.84	258.86° SW
R8	Manikam Residence	11.0216885°	77.1857575°	374.24	862.64	253.1° SW
R9	Sankar Residence	11.0190076°	77.1864737°	372.35	964.82	230.43° SW
R10	K V Palanisamy Residence	11.0132899°	77.1994495°	389.95	369.7	146.65° SE
R11	Thirumurugan Nagar	11.0164980°	77.1991391°	386.84	1050.01	141.17° SE
R12	R Shanmugam Residence	11.0221704°	77.1938615°	377.35	1123.82	132.02° SE
R13	Valiammal Weigh Bridge	11.0198215°	77.1854709°	371.31	989.36	237.72° SW
R14	Kumar Godown	11.0237805°	77.1843151°	370.99	879.92	269.19° SW
R15	Crusher Office	11.0264224°	77.1861348°	372.63	767.33	292.55° NW

1.7 Process description

Stone crushing is a mechanical operation by which large size stone as mined from quarries, in size range of 200 - 300 mm, is crushed to smaller usable sizes, generally 6, 15, 25 mm. The crushed material is segregated size wise by screening and is then ready for dispatch and use in road and building construction. Quarried stone is normally delivered to the processing plant by truck and is dumped in storage pit or bunker. The stone crusher is usually a jaw crusher.

The crushed material from the jaw crusher is separated into various fractions i.e. 25mm, 15mm, 6 mm and stone dust in a rotary/vibratory screen. The oversized material is sent back to the jaw crusher for further crushing, reducing the size of the stones to below 20 mm. The different sized products are transferred from the bottom of the screen by belt conveyors to the stockpiles and further transported, usually by trucks, to the consumer.

1.8 Nature of emissions from the stone crushers

The only pollutant emission of concern from stone crushing is particulate matter. Emissions from stone processing should be considered to be fugitive as the sources are not vented to a bag house or contained in an enclosure with a forced air vent stack.

Emission points for dust release from stone crushing typically include the following:

- Loading of trucks
- Truck travel on dusty roads
- Fugitive dust loss from trucks
- Dumping into crusher
- Crushing
- Screening
- Transfer points on conveyor system
- Loading onto storage piles from conveyers
- The wind blowing dust from storage piles and conveyors

1.9 Assessment of dust emissions from Stone Crushing Industries

1.9.1 Source and ambient air quality monitoring, Tirusulam, Chennai

The study area at Tirusulam is located at a distance of 20 km to the southwest of Chennai City (**Figure 1.1**). There are 57 crushers located west of a quarry as listed in **Table 1.2**. On the basis of a reconnaissance in the first week of September, 2021, 13 stone crushing units were chosen for source sampling and 8 locations for ambient air quality monitoring.

The meteorologic data recorded at the Tirusulam site during the period (September to November, 2021) was processed further to draw in the form of wind rose diagram and used for the design of ambient air quality monitoring network. The wind roses diagram drawn on 24 hourly basis during the period of September to November, 2021 for Tirusulam site are used for the design of ambient air quality monitoring network.

The ambient air quality locations were selected considering the prevailing wind direction and speed measured at the site and also giving due consideration to the wind rose at Tirusulam site (September to November, 2021). A maximum of 16 high volume samplers for TSPM and SPM and 12 $PM_{2.5}$ samplers were employed for a month in addition to one weather station and ozone analyser at the project site

1.9.2 Source and ambient air quality monitoring, Kodangipallayam, Tiruppur

The study area at Kodangipallayam, Tiruppur is located at a distance of 25 km to the Tiruppur town (**Figure 1.2**). There are 29 crushers located adjacent to quarry as listed in **Table 1.5**. On the basis of a reconnaissance in the last week of November, 2021, 15 stone crushing units were chosen for source sampling and 15 locations for ambient air quality monitoring.

The metrological data recorded at the Kodangipallayam, Tiruppur site during the period (December, 2021 and January, 2022) was processed further to draw in the form of wind rose diagram and used for the design of ambient air quality monitoring network. The wind roses diagram drawn on 24 hourly basis during the period of December, 2021 for Kodangipallayam, Tiruppur site is used for the design of ambient air quality monitoring network

The ambient air quality locations were selected considering the prevailing wind direction and speed measured at the site and also giving due consideration to the wind rose at Kodangipallayam, Tiruppur (December, 2021). A maximum of 16 high volume samplers for TSPM and SPM and 13 $PM_{2.5}$ samplers were employed for a month in addition to one weather station and ozone analyser at the project site

1.10 Reconnaissance survey

A reconnaissance survey was conducted prior to air sampling programme to fix up upwind and downwind directions of the study area and to design ambient air quality monitoring network. A weather station consisting of a wind vane, a cup anemometer and a thermo hygrometer was stationed in an open space, one at the center of the Stone Crushing Units. For measuring wind speed, wind direction, temperature and humidity continuously (hourly) for a

period of September to December, 2021**.** The predominant wind directions were from North, West and North East.

1.11 Micro-meteorological observations

1.11.1 Coastal Area: Tirusulam, Chennai

The wind direction and wind speed were recorded on hourly basis during the study period (September to November, 2021) prior to air sampling programme and presented in the form of a wind rose diagram. The 24 hours wind rose shows that the dominant wind directions were from North (20.1 %), followed by the West of North West (11.4 %) and North West (9.84 %). The wind speed class 1-5 kmph was predominant for about 52.4 % of time, followed by 5-10 kmph for about 21.6%, 10-15 kmph for about 2.3 % for the study period. The average wind speed observed during the above period was 3.168 kmph. The photographs depicting stone crushers and their environment are given in **Annexure II**.

1.11.2 Inland Area: Kodangipallayam, Tiruppur

The wind direction and wind speed were recorded on hourly basis during the study period (December, 2021) prior to air sampling programme and presented in the form of a wind rose diagram. The 24 hours wind rose shows that the dominant wind directions were from South West (44.01 %) and followed by West (15.46 %). The wind speed class 1-5 kmph was predominant for about 61.7% of time and followed by 5-10 kmph for about 11.0 % for the study period. The calm condition (<1 kmph) was observed about 26.8 % time of the study period. The average wind speed during the study period was 2.412 kmph. The photographs depicting stone crushers and their environment are given in **Annexure III**.

Chapter 2

Materials and Methods

2.1 Ambient air quality monitoring network design

A weather station was installed near the crushing area, prior to the schedule of sampling. Wind parameters like wind direction and wind speed were measured prior to the sampling programme, so as to enable fixing up of the upwind and downwind sampling locations for the Ambient Air Quality Programme with respect to the particulate matter. Based on the pilot observations the air sampling network was designed and implemented. Data collection was continued throughout the course of the study. Besides wind direction and wind speed, parameters like temperature and relative humidity were also recorded during the study period.

Before fixing ambient air quality location preliminary survey and weather station data prior to sampling were analyzed (wind speed and wind direction) and drawn in the form of windrose diagram and the same is used for identifying upwind and downwind locations with respect to project sites at Tirusulam, Chennai and Kodangipallayam, Tiruppur as well as fixing the air quality monitoring location considering the frequency of wind speed and wind direction, location of project site, topography and surrounding villages around the project site.

2.2 Weather monitoring

A weather station consisting of wind vane, cup anemometer, and thermo-hygrometer was installed at a height of 3m in an open space on the southeastern side of the crushing area prior to the dust sampling programme. Wind speed and direction were monitored continuously for every 1 hour to determine the upwind and downwind directions for the air quality monitoring program. One-hour average values were observed for 24 hours continuously over a period of 7 days. Besides wind speed and direction, parameters such as temperature, pressure, rainfall, and humidity were also recorded.

2.3 Analysis of Micro-meteorological Data

2.3.1 Coastal Area: Tirusulam, Chennai

The metrological data recorded at the Tirusulam site during the period (September to November, 2021) was processed further to draw in the form of wind rose diagram. The wind roses diagram drawn on 24 hourly basis during the period of September to November, 2021 are presented in **Figures 2.1 to 2.4**.

The wind roses diagram drawn on 24 hourly basis during the period of September, 2021 is presented in **Figure 2.1**. The dominant wind directions were from South East (21.05 %), followed by West (19.77 %), South of South East (13.24%) and South (12.21%). The wind speed class 1-5 kmph was predominant for about 62.7 % of time, followed by 5-10 kmph for

about 21.3% and followed by 10-15 kmph for about 0.8% for the study period. The calm condition (<1 kmph) was observed about 15.21% time of the study period. The average wind speed during the study period was 3.132 kmph.

The wind roses diagram drawn on 24 hourly basis during the period of October, 2021 is presented in **Figure 2.2**. The dominant wind directions were from South East (12.87%) followed by West (11.9%), followed by North (11.5%) and South West (11.05%). The wind speed class 1-5 kmph was predominant for about 57.2 % of time followed by 5-10 kmph for about 19.3% and followed by 10-15 kmph for about 0.4% for the study period. The calm condition (<1 kmph) was observed about 23.1 % time of the study period. The average wind speed during the study period was 2.808 kmph.

The wind roses diagram drawn on 24 hourly basis during the period of November, 2021 is presented in **Figure 2.3**. The dominant wind directions were from North (21.2 %) followed by North West (15.2 %) and followed by South East (7.58%). The wind speed class 1-5 kmph was predominant for about 46.9% of time, followed by 5-10 kmph for about 18.2% and followed by 10-15 kmph for about 4.1% for the study period. The calm condition (<1 kmph) was observed about 29.6% time of the study period. The average wind speed during the study period was 3.204 kmph.

The wind roses diagram drawn on 24 hourly basis during the overall study period of September to November, 2021 is presented in **Figure 2.4**. The 24 hours wind rose shows that the dominant wind directions were from North (20.1 %), followed by the West of North West (11.4 %) and South East (7.84 %). The wind speed class 1-5 kmph was predominant for about 52.4 % of time, followed by 5-10 kmph for about 21.6 % and followed by 10-15 kmph for about 2.3 % for the study period. The average wind speed observed during the above period was 3.168 kmph.

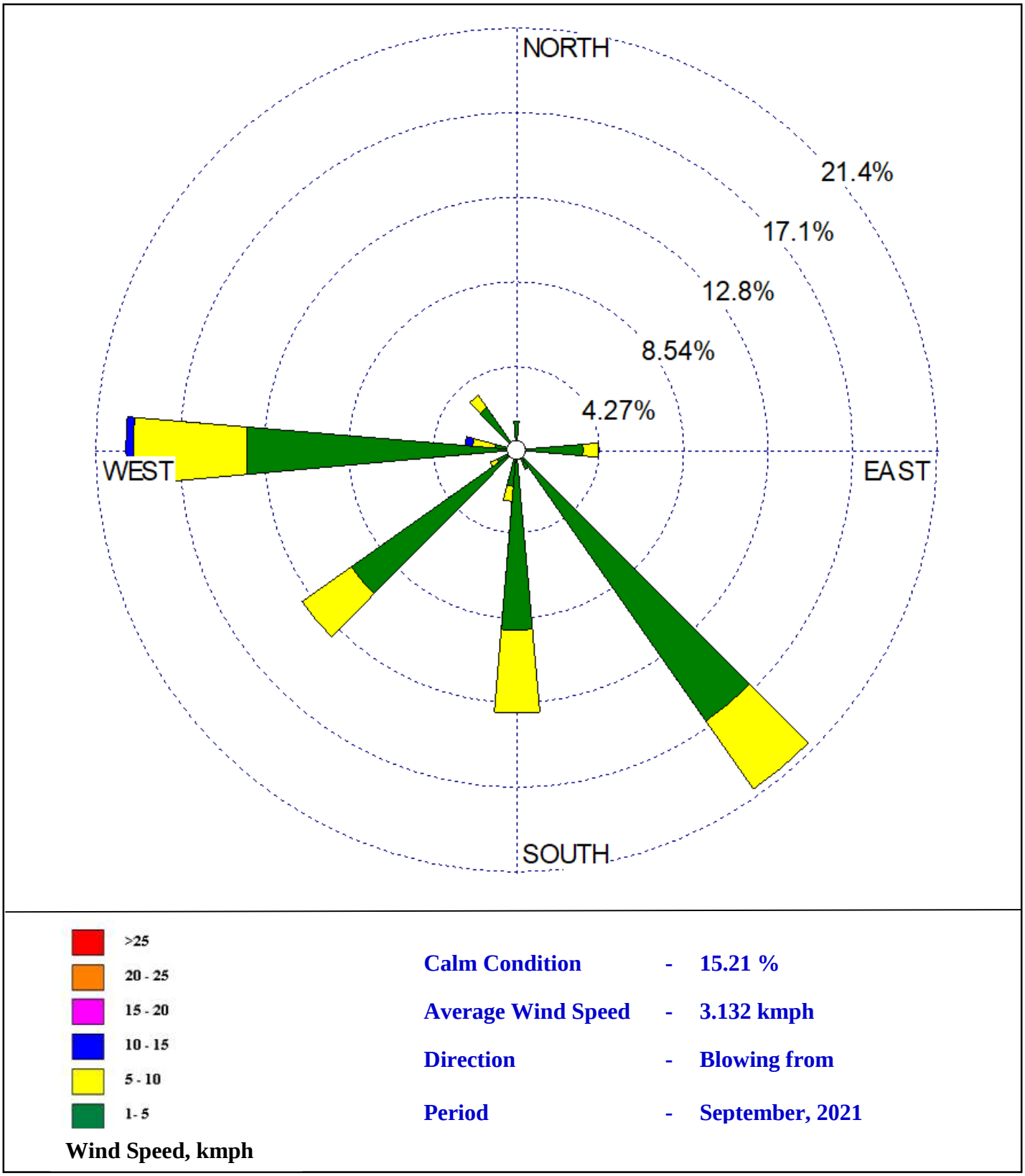


Figure 2.1 Wind Rose Diagram at Tirusulam, Chennai (September, 2021)

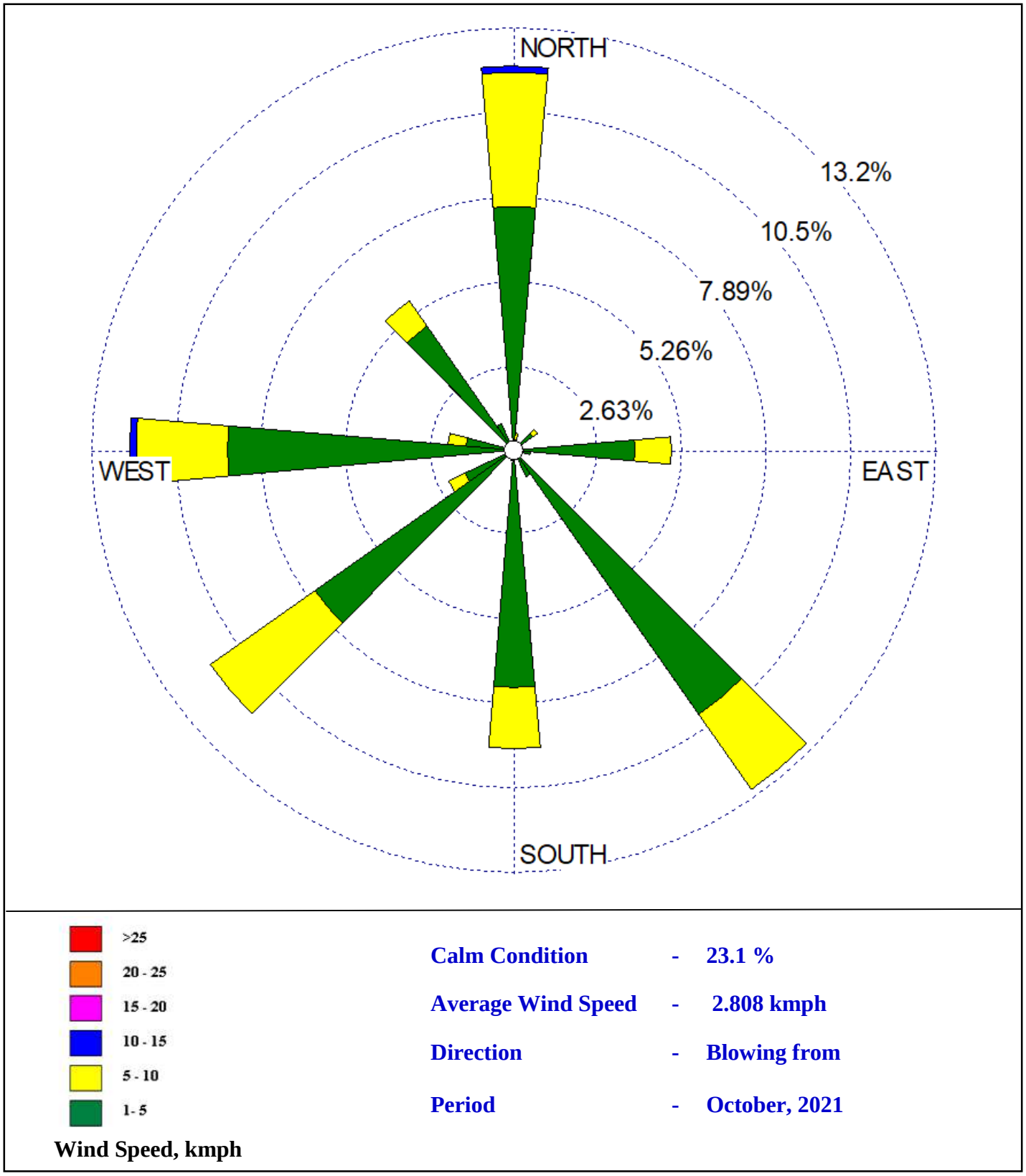


Figure 2.2 Wind Rose Diagram at Tirusulam, Chennai (October, 2021)

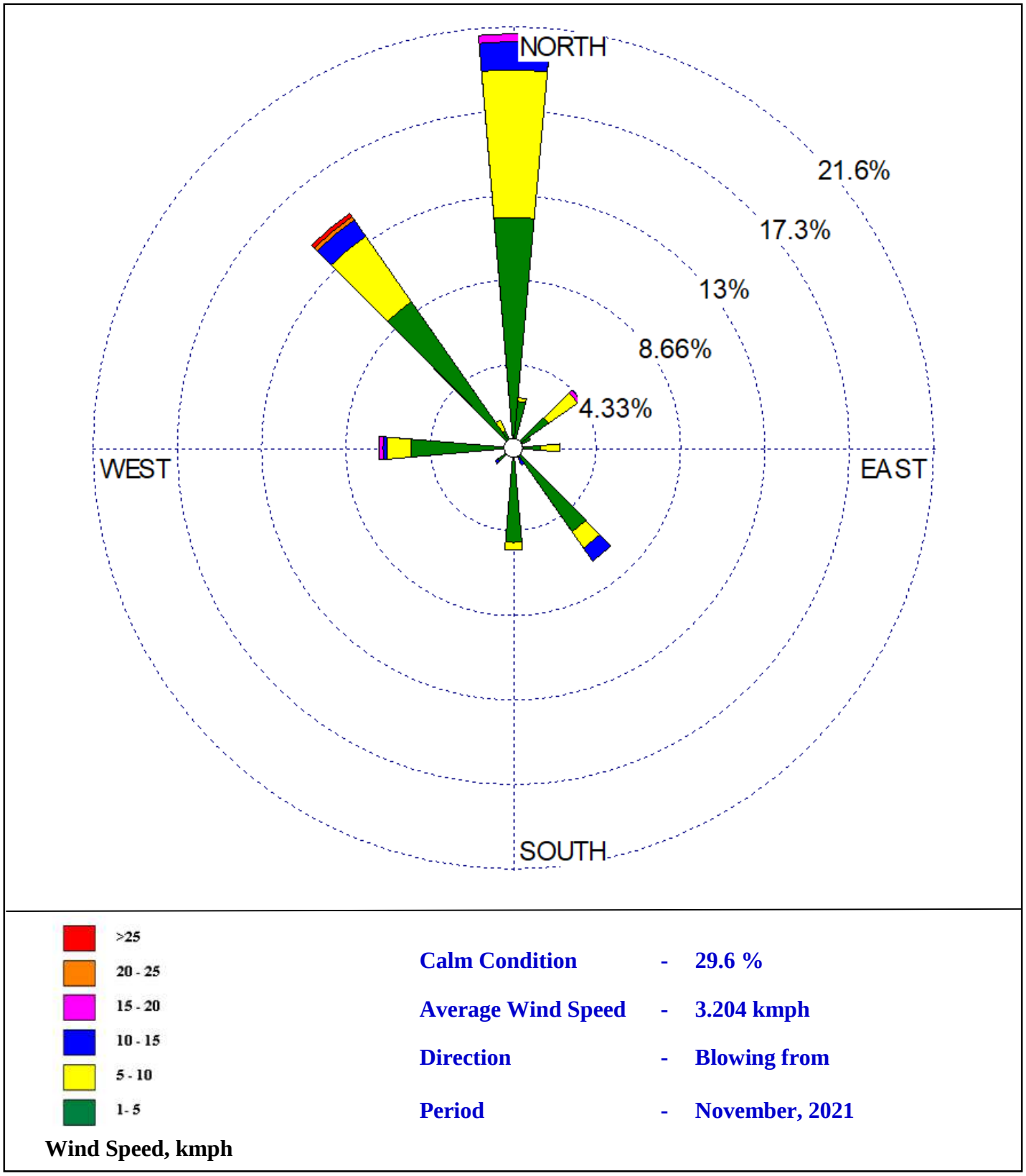


Figure 2.3 Wind Rose Diagram at Tirusulam, Chennai (November, 2021)

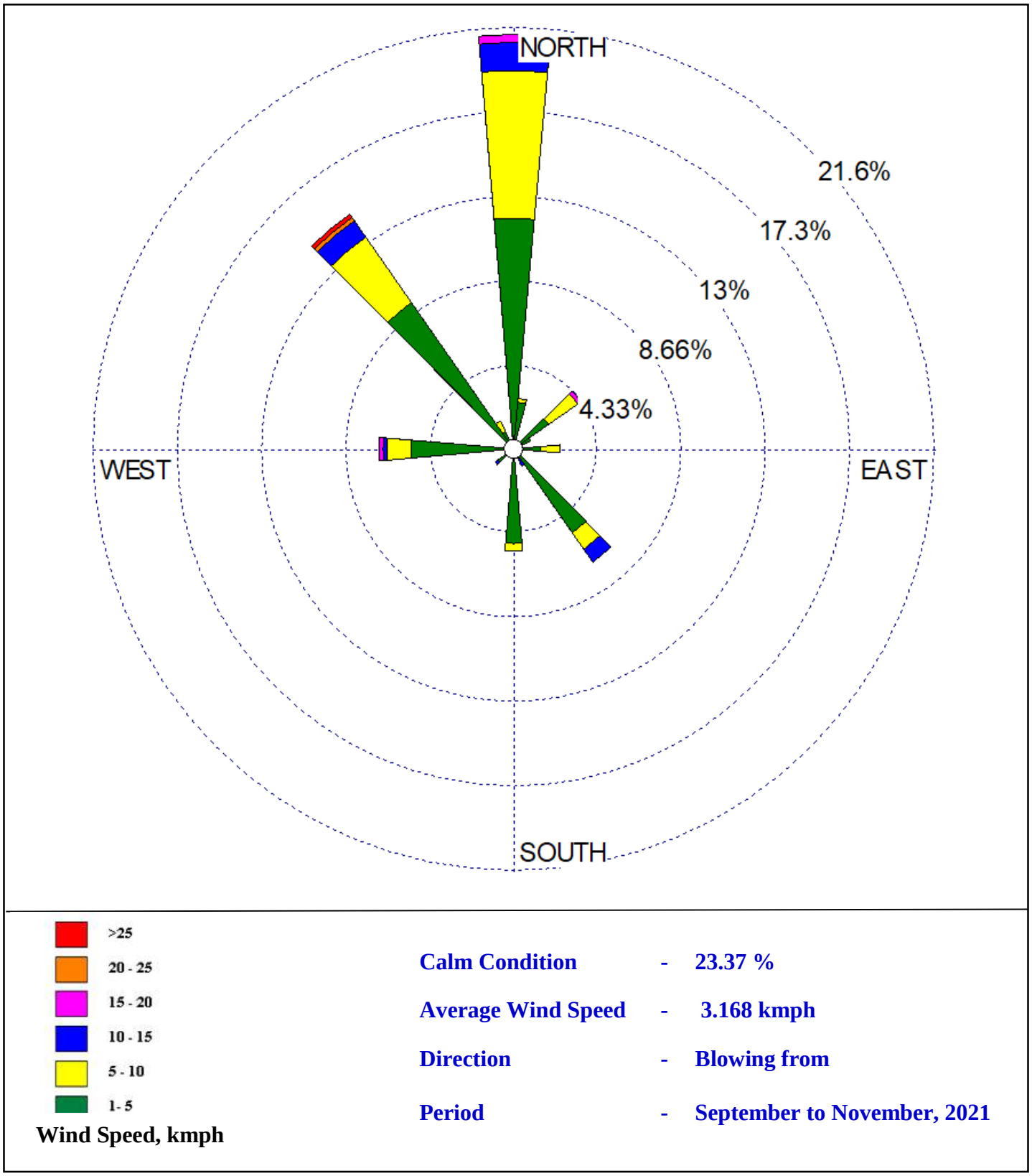


Figure 2.4 Overall Wind Rose Diagram at Tirusulam, Chennai (September to November, 2021)

2.3.2 Inland Area: Kodangipallayam, Tiruppur

The metrological data recorded at the Kodangipallayam, Tiruppur during the period (November and December, 2021) was processed further to draw in the form of wind rose diagram. The wind roses diagram drawn on 24 hourly basis during the period of December, 2021 are presented in **Figure 2.5**.

The wind roses diagram drawn on 24 hourly basis during the period of December, 2021 is presented in **Figure 2.5**. The dominant wind directions were from South West (44.01 %) and followed by West (15.46 %). The wind speed class 1-5 kmph was predominant for about 61.7 % of time and followed by 5-10 kmph for about 11.0 % for the study period. The calm condition (<1 kmph) was observed about 26.8 % time of the study period. The average wind speed during the study period was 2.412 kmph.

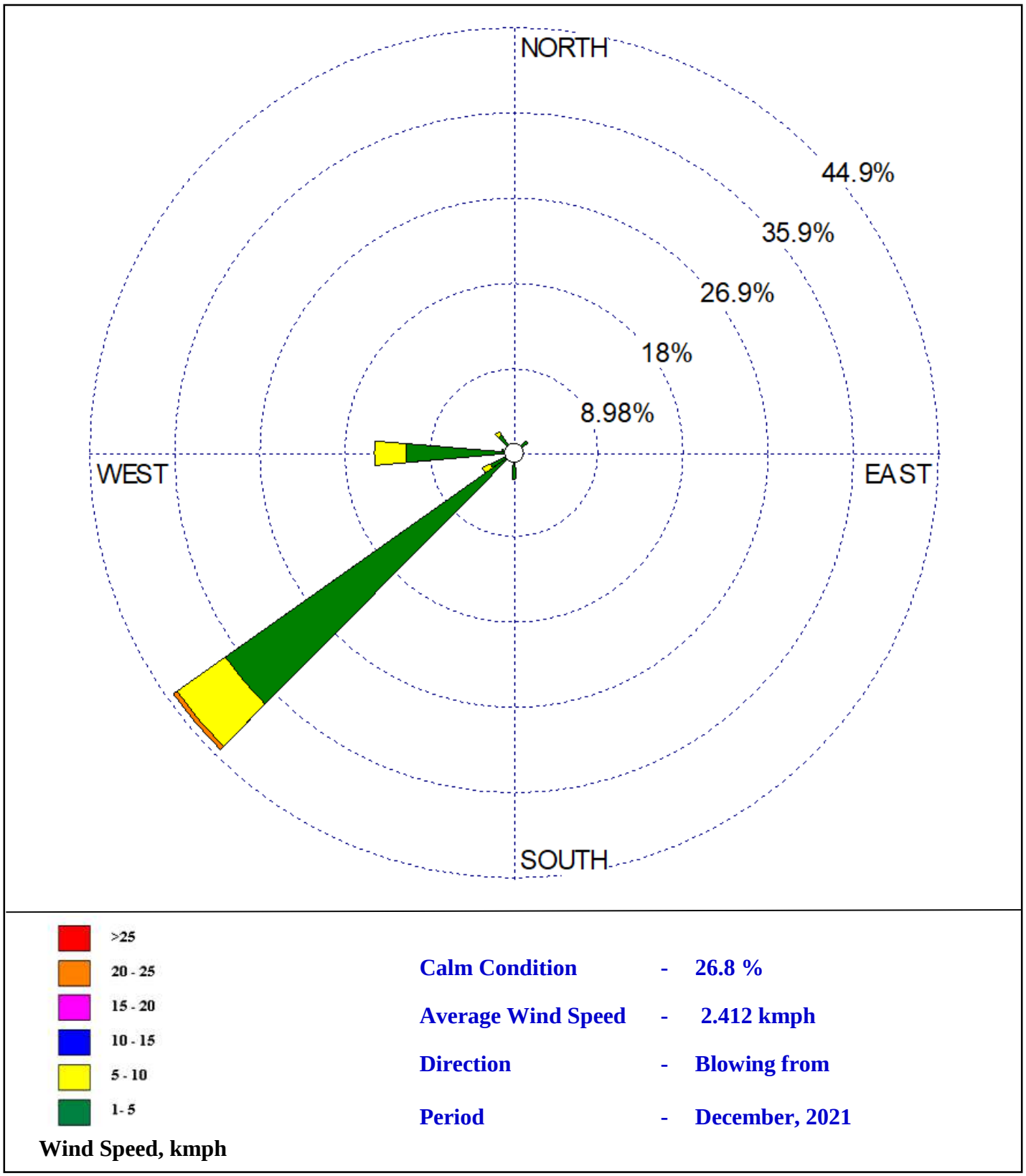


Figure 2.5 Wind Rose Diagram at Kodangipallayam, Tiruppur (December, 2021)

2.4 Ambient Air Quality Sampling and Monitoring

The dust was collected on Whatman GF/A (size 25.4 cm x 20.32 cm) glass fiber filter paper with a pore size of 1 µm using high volume samplers (Envirotech APM 460 and 430, Envirotech, New Delhi, India), operating at a flow rate of 0.8–1.0 m^3/min. The volumetric flow rate was measured using a calibrated orifice meter (attached part of APM 460 and 430 samplers). All the high volume samplers were calibrated prior to each sampling exercise using a field calibration kit consisting of a standard orifice calibrator (APM 421, Envirotech, New Delhi, India).

2.4.1 Coastal Area: Tirusulam, Chennai

Dust monitoring was carried out by employing an ambient air quality monitoring network consisting of 21 sampling locations, designed based on meteorology, number of stone crushing units, and their spacing and cluster area (**Figure 1.1**). Ambient air quality monitoring (AAQM) was carried out for 20 days continuously on a 12 hourly basis (6 am - 6 pm) and the concentrations were averaged for 24 hours to facilitate comparison with the Indian standards. The dust concentration was calculated from the difference in the weight of the filter paper before and after the sample collection.

The details of sampler used for Air quality sampling and monitoring at 21 sampling location given in **Table 2.1**. For carrying out dust air quality monitoring two samplers were deployed at different site in the field and its details are given in **Table 2.1**.

Table 2.1
Details of Samplers used for Air Quality Monitoring at Tirusulam, Chennai

Sr. No	Site	Pollutants	Make and Model (Serial No.)	Remarks
1.	Rathana BM (S1)	PM_{10}	Envirotech/APM 460 EL (164DTA29)	RSPM Sampler
2.	D. G. Star BM (S2)	PM_{10}	Envirotech/APM 460 EL (DX 224)	RSPM Sampler
3.	Siva BM (S3)	$PM_{2.5}$	Polltech (716)	Polltech
4.	Ponni BM (S4)	PM_{10}	Envirotech/APM 430 (187DTA02)	TSPM Sampler
5.	Karthick BM (S5)	PM_{10}	Envirotech/APM 415 (699 DTJ 98)	TSPM Sampler
6.	J. R. Vimala BM (S6)	PM_{10}	Envirotech/APM 460 EL (1599/8)	RSPM Sampler
		$PM_{2.5}$	Envirotech/APM 550 EL (251/4)	$PM_{2.5}$ Sampler
7.	Thiruvakkarai BM (S7)	PM_{10}	Envirotech/APM 460 EL (1598/7)	RSPM Sampler

		$PM_{2.5}$	Envirotech/APM 550 EL (29 DTA 2013)	$PM_{2.5}$ Sampler
8.	Sivagami BM (S8)	PM_{10}	Envirotech/APM 460 EL (24 DTJ)	RSPM Sampler
		$PM_{2.5}$	Envirotech/APM 550 EL (248/1)	$PM_{2.5}$ Sampler
9.	Mageshwari BM (S9)	PM_{10}	Envirotech/APM 460 EL (1582/4)	RSPM Sampler
10.	Viswanathan BM (S10)	PM_{10}	Envirotech/APM 460 EL (742 DTL)	RSPM Sampler
11.	Jayashakthi BM (S11)	PM_{10}	Envirotech/APM 460 EL (29 DTJ)	RSPM Sampler
12.	Lakshmi BM (S12)	PM_{10}	Envirotech/APM 460 EL (1581/3)	RSPM Sampler
13.	Thirughanam BM (S13)	PM_{10}	Envirotech/APM 460 EL (1142 R85 DTL)	RSPM Sampler
14.	MAM Residence (R1)	PM_{10}	Envirotech/APM 460 EL (1596/5)	RSPM Sampler
		$PM_{2.5}$	Envirotech/APM 550 EL (250/3)	$PM_{2.5}$ Sampler
15.	VST Compound (R2)	PM_{10}	Envirotech/APM 460 EL (1580/2)	RSPM Sampler
		$PM_{2.5}$	Envirotech/APM 550 EL (265/5)	$PM_{2.5}$ Sampler
16.	D. G. Star BM (R3)	PM_{10}	Envirotech/APM 460 EL (1597/6)	RSPM Sampler
		$PM_{2.5}$	Envirotech/APM 550 EL (249/2)	$PM_{2.5}$ Sampler
17.	Backside Karthick BM (R4)	$PM_{2.5}$	Envirotech/APM 550 EL (6 DTA 2013)	$PM_{2.5}$ Sampler
18.	Elliputhoopu Street (R5)	PM_{10}	Envirotech/APM 460 EL (1579/1)	RSPM Sampler
		$PM_{2.5}$	Envirotech/APM 550 EL (264/6)	$PM_{2.5}$ Sampler
19.	Raghu Colony (R6)	$PM_{2.5}$	Envirotech/APM 550 EL (DTC 2008)	Gem Sampler
20.	Rajiv Gandhi Nagar (R7)	$PM_{2.5}$	Envirotech/APM 541 EL (06-DTI- 2006)	Gem Sampler
21.	Darkar Road (R8)	$PM_{2.5}$	Envirotech/APM 550 EL (5 DTA 2013)	$PM_{2.5}$ Sampler

2.4.2 Inland Area: Kodangipallayam, Tiruppur

Dust monitoring was carried out by employing an ambient air quality monitoring network consisting of 30 sampling locations, designed based on meteorology, number of stone crushing units, and their spacing and cluster area (**Figure 1.2**). Ambient air quality monitoring (AAQM) was carried out for 20 days continuously on a 12 hourly basis (6 am - 6 pm) and the concentrations were averaged for 24 hours to facilitate comparison with the Indian standards. The dust concentration was calculated from the difference in the weight of the filter paper before and after the sample collection.

The details of sampler used for Air quality sampling and monitoring at 30 sampling location given in **Table 2.2.** For carrying out dust air quality monitoring two samplers were deployed at different site in the field and its details are given in **Table 2.2.**

Table 2.2
Details of Samplers used for Air Quality Monitoring at Kodangipallayam, Tiruppur

Sr. No	Site	Pollutants	Make and Model (Serial No.)	Remarks
1.	SVA BM (S1)	PM_{10}	Envirotech/APM 460 EL (24 DTJ)	RSPM Sampler
2.	Kadai eswari BM (S2)	PM_{10}	Envirotech/APM 460 EL (29 DTJ)	RSPM Sampler
3.	Sri Murugan BM (S3)	PM_{10}	Envirotech/APM 460 EL (164DTA29)	RSPM Sampler
4.	Sri Ganesa BM (S4)	PM_{10}	Envirotech/APM 415 (699 DTJ 98)	TSPM Sampler
5.	PMG BM (S5)	PM_{10}	Envirotech/APM 460 EL (DX 224)	RSPM Sampler
6.	Vinyaga BM (S6)	PM_{10}	Envirotech/APM 460 EL (1579/1)	RSPM Sampler
7.	Rajalakshmi BM (S7)	PM_{10}	Envirotech/APM 460 EL (742 DTL)	RSPM Sampler
8.	Rajesh BM (S8)	PM_{10}	Envirotech/APM 460 EL (1597/6)	RSPM Sampler
9.	Vijayalakshmi BM (S9)	PM_{10}	Envirotech/APM 430 (187DTA02)	TSPM Sampler
10.	Om Muruga BM (S10)	PM_{10}	Envirotech/APM 460 EL (1582/4)	RSPM Sampler
11.	Palaniappa BM (S11)	PM_{10}	Envirotech/APM 460 EL (1580/2)	RSPM Sampler
12.	Nirmal BM (S12)	PM_{10}	Envirotech/APM 460 EL (1581/3)	RSPM Sampler
13.	Sri Saravana BM (S13)	PM_{10}	Envirotech/APM 460 EL (1596/5)	RSPM Sampler

14.	Sri Praveen and Co. (S14)	PM_{10}	Envirotech/APM 460 EL (1142 R85 DTL)	RSPM Sampler
15.	Santhosh BM (S15)	PM_{10}	Envirotech/APM 460 EL (1599/8)	RSPM Sampler
16.	K M Chinasamy Residence (R1)	PM_{10}	Envirotech/APM 460 EL (1598/7)	RSPM Sampler
17.	Kanakam Thottam (R2)	$PM_{2.5}$	Envirotech/APM 541 EL (06-DTI- 2006)	Gem Sampler
18.	P A Kandasamy Residence (R3)	$PM_{2.5}$	Envirotech/APM 550 EL (DTC 2008)	Gem Sampler
19.	Durai Residence (R4)	$PM_{2.5}$	Envirotech/APM 550 EL (248/1)	$PM_{2.5}$ Sampler
20.	R Ramakrishnan Residence (R5)	$PM_{2.5}$	Envirotech/APM 550 EL (250/3)	$PM_{2.5}$ Sampler
21.	Ganesamoorthy Residence (R6)	$PM_{2.5}$	Envirotech/APM 550 EL (29 DTA 2013)	$PM_{2.5}$ Sampler
22.	L Sarojini Residence (R7)	$PM_{2.5}$	Envirotech/APM 550 EL (6 DTA 2013)	$PM_{2.5}$ Sampler
23.	Manikam Residence (R8)	$PM_{2.5}$	Envirotech/APM 550 EL (249/2)	$PM_{2.5}$ Sampler
24.	Sankar Residence (R9)	$PM_{2.5}$	Envirotech/APM 550 EL (265/5)	$PM_{2.5}$ Sampler
25.	K V Palanisamy Residence (R10)	$PM_{2.5}$	Envirotech/APM 550 EL (264/6)	$PM_{2.5}$ Sampler
26.	Thiru Murugan Nagar (R11)	$PM_{2.5}$	Envirotech/APM 550 EL (5 DTA 2013)	$PM_{2.5}$ Sampler
27.	R Shanmugam Residence (R12)	$PM_{2.5}$	Polltech (716)	$PM_{2.5}$ Sampler
28.	Valiammal weigh bridge (R13)	$PM_{2.5}$	Envirotech/APM 550 EL (251/4)	$PM_{2.5}$ Sampler
29.	Kumar Godown (R14)	PM_{10}	Envirotech/APM 550 EL	$PM_{2.5}$ Sampler
30.	Crusher Association Office (R15)	$PM_{2.5}$	Envirotech/APM 550 EL	$PM_{2.5}$ Sampler

Chapter 3

Sampling Program and Air Quality Monitoring

3.1 Preamble

Sampling programme was designed to assess the dust emissions from source and ambient air while all the crushers were in operation and also no crushing activity, only vehicle traffic/movement. This sampling programme was designed in such a way to facilitate in fixing the permissible distance from habitation and highways from the periphery of the crushing area on all sides.

Accordingly, reconnaissance survey was conducted during the period of first week of September, 2021 for monitoring wind speed and wind direction for fixing air quality monitoring stations.

3.2 Micro-meteorology

The micro-meteorological conditions at the proposed project site regulate the transport and diffusion of air pollutants released into the atmosphere. The principal meteorological variables are horizontal convective transport (average wind speed and direction), vertical convective transport (atmospheric stability, mixing height) and topography of the area. Weather station was installed at project sites (Tirusulam and Tiruppur) to monitor wind speed, wind direction, temperature and humidity on hourly basis while air quality monitoring was being carried out.

3.2.1 Windrose Diagrams for Tirusulam, Chennai

The meteorological data monitored using weather station installed at Tirusulam, Chennai were analyzed and drawn on 24 hourly basis during the period (December, 2021) is presented in **Figure 3.1.** The dominant wind directions were from North (28.57%) followed by North East (15.5%) and North West (10.4%). The wind speed class 1-5 kmph was predominant for about 44.1% of time, followed by 5-10 kmph for 30.8%, 10-15 kmph 4.1% of the study period. The calm condition (<1 kmph) was observed about 21% time of the study period. The average wind speed during the study period was 3.816 kmph.

3.2.2 Windrose Diagrams for Kodangipallayam, Tiruppur

The meteorological data monitored using weather station installed at Kodangipallayam, Tiruppur were analyzed and drawn on 24 hourly basis during the period (January, 2022) is presented in **Figure 3.2.** The dominant wind directions were from North East (23.03%) followed by North of North East (21.6%), and South West (4.3%). The wind speed class 1-5 kmph was predominant for about 40.0% of time, followed by 5-10 kmph for 41.8%, 10-15

kmph 8.5% for the study period. The calm condition (<1 kmph) was observed about 8.5% time of the study period. The average wind speed during the study period was 5.112 kmph.

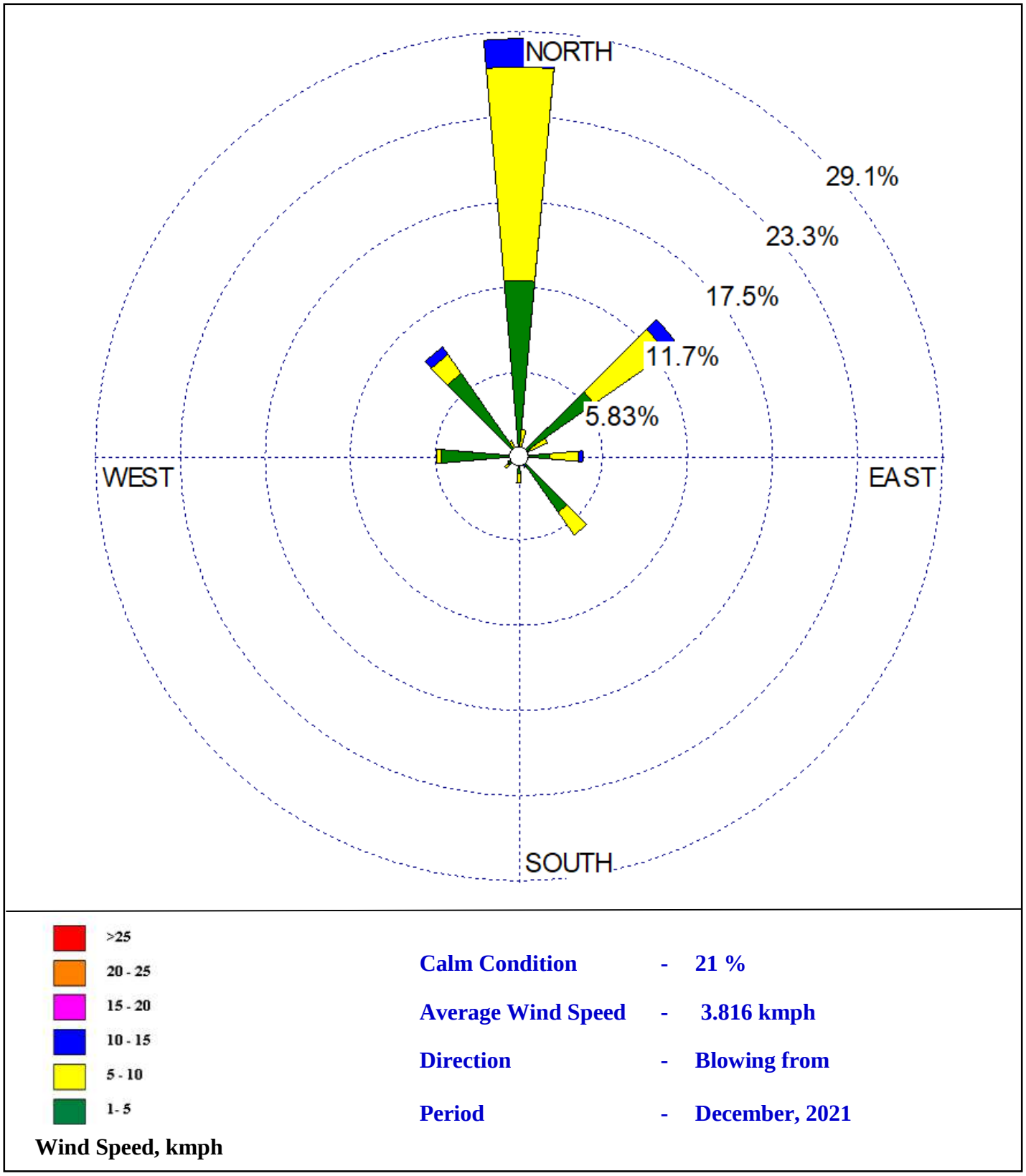


Figure 3.1 Wind Rose Diagram at Tirusulam, Chennai (December, 2021)

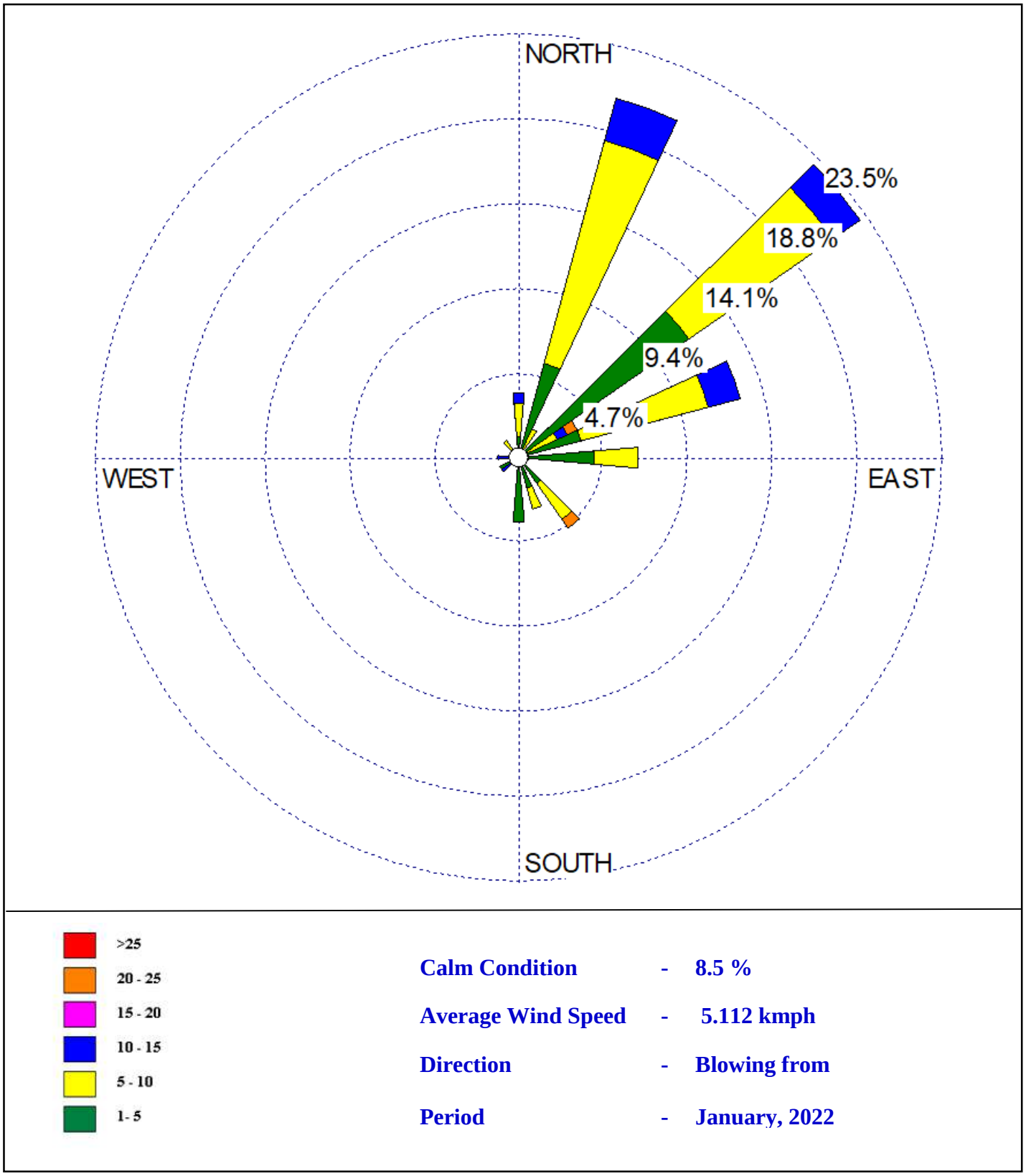


Figure 3.2 Wind Rose Diagram at Kodangipallayam, Tiruppur (January, 2022)

3.3 Estimation of Source Strength

In any air quality investigation related to fugitive dust emission determination of emission rate is the most crucial step for assessing the source strength. The source strength is the rate of dust emission from a source, e.g., g/min or mass per unit of material. This can be determined by quantifying the amount of dust immediately downwind of the source by means of simultaneous multipoint sampling over the effective cross section of fugitive emission plume.

3.3.1 Source Emission rates

3.3.1.1 Coastal Area: Tirusulam, Chennai

Based on the micro-meteorological condition, location, number of stone crushers and their distribution upwind and downwind directions were identified for assessing source strength of each crusher. The estimated source strength of each stone crusher working in Tirusulam area by upwind downwind technique was estimated considering the meteorological conditions at the project site and presented in **Table 3.1** and is used for modeling dust emissions from stone crushers on the surrounding area.

The maximum source emission rate for TSPM varied from 47.66 kg/d (Ponni BM) to 905.91 kg /d (Thiruvakkari BM). The minimum source emission rate for TSPM varied from 11.22 kg/d (Rathna BM) to 79.13 kg/d (Viswanathan BM). The average source emission rate for TSPM varied from 30.94 kg/d (Rathana BM) to 467.24 kg/d (Thiruvakkarai BM) and with a mean of 137.7 kg /d.

The maximum source emission rate for SPM varied from 18.69 kg/d (Rathna BM) to 171.6 kg/d (Thiruvakkarai BM). The minimum source emission rate for RSPM varied from 4.66 kg/d (Rathna BM) to at Thiruvakkarai BM 52.42 kg/d (Thiruvakkarai BM). The average source emission rate for TSPM varied from 8.62 kg/d (J. R. Vimala BM) to 99.13 kg/d (Thiruvakkarai BM) with a mean of 29.938 kg/d.

3.3.1.2 Inland Area: Kodangipallayam, Tiruppur

Based on the micro-meteorological condition, location, number of stone crushers and their distribution upwind and downwind directions were identified for assessing source strength of each crusher. The estimated source strength of each stone crusher working in Kodangipallayam area by upwind downwind technique was estimated considering the meteorological conditions at the project site and presented in **Table 3.2** and is used for modeling dust emissions from stone crushers on the surrounding area.

The maximum source emission rate for TSPM varied from 502.35 kg/d (Palaniappa BM) to 7376.26 kg/d(Nirmal BM). The minimum source emission rate for TSPM varied from 29.38 kg/d (Sri Om Muruga BM) to 925.75 kg/d (Nirmal BM). The average source emission rate for TSPM varied from 323.09 kg/d (Palaniappa BM) to 3299.05 kg/d (Nirmal BM) with a mean of 1179.66kg/d.

The maximum source emission rate for SPM varied from 74.91kg/d (Palaniappa BM) to 1302.43kg/d(Nirmal BM) . The minimum source emission rate for RSPM varied from BM 11.47kg/d (Sri Om Muruga BM) to 200.31kg/d (Nirmal BM) . The average source emission rate for TSPM varied from 46.48kg/d (Palaniappa BM) to 739.37kg/d (Nirmal BM) with a mean of 253.799kg/d.

Table 3.1
Source Emission Rates for Stone Crushing Industries, Tirusulam, Chennai

Sr. No	Location	Source Emission Rates					
		TSPM			RSPM		
		Minimum	Average	Maximum	Minimum	Average	Maximum
		kg/day (g/s)	kg/day (g/s)	kg/day (g/s)	kg/day (g/s)	kg/day (g/s)	kg/day (g/s)
1.	Rathana BM	11.22 (0.13)	30.94 (0.36)	59.95 (0.69)	4.66 (0.05)	10.2 (0.12)	18.69 (0.22)
2.	D. G. Star BM	43.44 (0.5)	65.65 (0.76)	82.41 (0.95)	15.88 (0.18)	25 (0.29)	37.17 (0.43)
3.	Ponni BM	18.39 (0.21)	31.61 (0.37)	47.66 (0.55)	49.2 (0.57)	86.4 (1)	148.6 (1.72)
4.	Karthick BM	23.66 (0.27)	153.39 (1.78)	255.11 (2.95)	38.9 (0.45)	87.3 (1.01)	144.3 (1.67)
5.	J. R. Vimala BM	19.25 (0.22)	60.56 (0.7)	132.02 (1.53)	5.49 (0.06)	8.62 (0.17)	25.33 (0.29)
6.	Thiruvakkarai BM	53.17 (0.62)	467.24 (5.41)	905.91 (10.49)	52.42 (0.61)	99.13 (1.15)	171.6 (1.99)
7.	Sivagami BM	76.26 (0.88)	234.24 (2.71)	339.04 (3.92)	28.55 (0.33)	47.8 (0.55)	88.82 (1.03)
8.	Mageshwari BM	33.3 (0.39)	188.75 (2.18)	454.71 (5.26)	4.69 (0.05)	23.63 (0.27)	53.6 (0.62)
9.	Viswanathan BM	79.13 (0.92)	154.1 (1.78)	266.01 (3.08)	16.14 (0.19)	29.8 (0.34)	46.6 (0.54)
10.	Jayashakthi BM	38.53 (0.45)	118.68 (1.37)	166.81 (1.93)	6.13 (0.07)	18.13 (0.21)	30.53 (0.35)
11.	Lakshmi BM	25.6 (0.3)	109.94 (1.27)	216.2 (2.5)	7.82 (0.09)	21.86 (0.25)	31.11 (0.36)
12.	Thirughanam BM	19.39 (0.22)	38.31 (0.44)	70.89 (0.82)	9.12 (0.11)	15.21 (0.180	31.99 (0.37)

Table 3.2
Source Emission Rates for Stone Crushing Industries, Kodangipallayam, Tiruppur

Sr. No	Location	Emission Rates					
		TSPM			RSPM		
		Minimum	Average	Maximum	Minimum	Average	Maximum
		kg/day (g/s)	kg/day (g/s)	kg/day (g/s)	kg/day (g/s)	kg/day (g/s)	kg/day (g/s)
1.	SVA BM	131.29 (1.52)	397.7 (4.6)	967.86 (11.2)	47.39 (0.55)	94.57 (1.09)	198.72 (2.3)
2.	Kadaieswari BM	206.66 (2.39)	749.34 (8.67)	1592.23 (18.43)	21.22 (0.25)	136.95 (1.59)	500.32 (5.79)
3.	Sri Murugan BM	342.11 (3.96)	927.15 (10.73)	1355.74 (15.69)	47.63 (0.55)	237.92 (2.75)	1104.87 (12.79)
4.	Sri Ganesha BM	179.63 (2.08)	760.89 (8.81)	1592.86 (18.44)	45.54 (0.53)	187.04 (2.16)	304.59 (3.53)
5.	PMG BM	136.82 (1.58)	539.23 (6.24)	1117.76 (12.94)	66.87 (0.77)	171.22 (1.98)	367 (4.25)
6.	Vinayaga BM	184.9 (2.14)	1469.63 (17.01)	3491.52 (40.41)	32.09 (0.37)	257.41 (2.98)	588 (6.81)
7.	Rajalakshmi BM	874.3 (10.12)	1728.86 (20.21)	2383.35 (27.59)	143.24 (1.66)	300.73 (3.48)	544.37 (6.3)
8.	Rajesh BM	730.81 (8.46)	1967.52 (22.77)	3650.98 (42.26)	163.17 (1.89)	330.66 (3.83)	575.12 (6.66)
9.	Vijyalakshmi BM	55.51 (0.64)	778.17 (9.01)	2244.34 (25.98)	46.7 (0.54)	93.3 (1.08)	187.5 (2.17)
10.	Sri OM Muruga BM	29.38 (0.34)	564.43 (6.53)	933.78 (10.81)	11.47 (0.13)	89.55 (1.04)	156.64 (1.81)
11.	Palaniappa BM	100.13 (1.16)	323.09 (3.74)	502.35 (5.81)	15.73 (0.18)	46.48 (0.54)	74.91 (0.87)
12.	Nirmal BM	925.75 (10.71)	3299.05 (38.18)	7376.26 (85.37)	200.31 (3.32)	739.37 (8.56)	1302.43 (15.07)
13.	Sri Saravana BM	91.37 (1.06)	630.81 (7.3)	1577.13 (18.25)	28.95 (0.34)	116.04 (1.34)	255.25 (2.95)
14.	Sri Praveen BM	215.98 (2.5)	496.7 (5.75)	931.62 (10.78)	52.38 (0.61)	122.51 (1.42)	212.34 (2.46)
15.	Santhosh BM	207.04 (2.4)	3062.37 (35.44)	5172.96 (59.87)	61.89 (0.72)	722.74 (8.37)	1228.14 (14.21)

3.4 Ambient Air Quality Monitoring

3.4.1 Coastal Area: Tirusulam, Chennai

Dust monitoring was carried out by employing an ambient air quality monitoring network consisting of 21 sampling locations, designed based on meteorology, number of Stone Crushing Industries and their spacing and cluster area (**Figure 1.1**). Ambient air quality monitoring (AAQM) was carried out for a month (December 2021) continuously on a 12 hourly basis (6 am - 6 pm and 6pm - 6am) and the concentrations were averaged for 24 hours to facilitate comparison with the Indian standards. The dust concentration was calculated from the difference in the weight of the filter paper before and after the sample collection.

3.4.1.1 Dust concentration at source

13 source air quality monitoring stations were employed for monitoring TSPM, RSPM and $PM_{2.5}$ and the results are presented in **Tables 3.3 to 3.11** and also plotted in the form of isopleth showing stone crusher and ambient air quality monitoring locations to delineate safe distance from the crusher to the nearby residential areas. The monitoring was carried out in two phases covering working and non-working hours to assess the impact of dust emission from stone crushing industries on the surrounding. During the same period micro-meteorological data were also collected at the site.

Out of 13 source air quality monitoring stations, ten were chosen in the upwind direction and three in the downwind direction. Air quality monitoring was carried out simultaneously for all these locations during the period. The 24 hourly average concentration of TSPM varied from120 µg/m^3 (Rathana BM) to 1279 µg/m^3 (Thiruvakkarai BM) with a mean of 445 µg/m^3 as shown in **Table 3.5**. The minimum TSPM concentration during the study period was recorded at J.R.Vimala BM (17 µg/m^3) whereas the maximum TSPM concentration during the study period was recorded at Thriuvakkarai BM (3917 µg/m^3). The measured concentration for all these locations during working, non-working and overall 24 hourly average during the study period was in given in **Tables 3.3 to 3.5.**

The 24 hourly average concentration of RSPM varied from 62 µg/m^3 (Rathana BM) to 357 µg/m^3 (Thiruvakkarai BM) with a mean of 139 µg/m^3 as shown in **Table 3.8**. The minimum RSPM concentration during the study period was recorded at J.R.Vimala BM (6 µg/m^3) whereas the maximum RSPM concentration during the study period was recorded at Thriuvakkarai BM (1092 µg/m^3). The measured concentration for all these locations during

working, non-working and overall 24 hourly average during the study period was in given in **Tables 3.6 to 3.8.**

The 24 hourly average concentration of $PM_{2.5}$ varied from 8 µg/m^3 (Rathana BM) to 110 µg/m^3 (Karthick BM) with a mean of 34 µg/m^3, as shown in **Table 3.11**. The overall average minimum $PM_{2.5}$ concentrations during the study period was recorded at Lakshmi and Mageshwari BM (2 µg/m^3) whereas the maximum $PM_{2.5}$ concentrations during the study period was recorded at Ponni BM (263 µg/m^3). The measured concentration for all these locations during working, non-working and overall 24 hourly average during the study period was in given in **Tables 3.9 to 3.11.**

3.4.1.2 Dust concentration around stone crushing Industries

Ambient dust monitoring was carried out at 8 locations around stone crushing units for monitoring TSPM, RSPM and $PM_{2.5}$ and the results are presented in **Tables 3.3 to 3.11.** At most of these locations the dust concentrations are within limits.

Out of 8 air quality monitoring stations, six were chosen in the upwind direction and two in the downwind direction. Air quality monitoring was carried out simultaneously for all these locations during the period. The 24 hourly average concentration of TSPM varied from 85 µg/m^3 (VST Compound) to 523 µg/m^3 (Rajiv Gandhi Nagar) with a mean of 269 µg/m^3 as shown in **Table 3.5**. The minimum TSPM concentration during the study period was recorded at D.G. Star Residence (18 µg/m^3) whereas the maximum TSPM concentration during the study period was recorded at Rajiv Gandhi Nagar (1084 µg/m^3). The measured concentration for all these locations during working, non-working and overall 24 hourly average during the study period given in **Tables 3.3 to 3.5.**

The 24 hourly average concentration of RSPM varied from 55 µg/m^3 (VST Compound) to 209 µg/m^3 (Rajiv Gandhi Nagar) with a mean of 106 µg/m^3 as shown in **Table 3.8**. The minimum RSPM concentration during the study period was recorded at Rajiv Gandhi Nagar (12 µg/m^3) whereas the maximum RSPM concentration during the study period was recorded at Rajiv Gandhi Nagar (434 µg/m^3). The measured concentration for all these locations during working, non-working and overall 24 hourly average during the study period was in given in **Tables 3.6 to 3.8.**

The 24 hourly average concentration of $PM_{2.5}$ varied from 42 µg/m^3 (D.G. Star residence) to 123 µg/m^3 (Rajiv Gandhi Nagar) with a mean of 66 µg/m^3, as shown in **Table 3.11**. The minimum $PM_{2.5}$ concentrations during the study period was recorded at Elliputhoppu

street (6 µg/m^3) whereas the maximum $PM_{2.5}$ concentrations during the study period was recorded at Rajiv Gandhi Nagar (255 µg/m^3). The measured concentration for all these locations during working, non-working and overall 24 hourly average during the study period given in **Tables 3.9 to 3.11.**

It was observed that during working period of 12 hours in the day time (6 am to 6 pm) TSPM concentration in ambient air was about 3 - 4 times more than that of the following 12 hours (6 pm - 6 am) in the night time during which there was no crusher activity but transportation activity was carried out. During Sundays (6 pm to 6 am) when there were no crushing and transportation activities, the TSPM concentration measured corresponds to background concentration and it was found to be 1/6 - 1/7 of measured concentration (all crushers running) for the working period of 6 am to 6 pm. The spatial distribution of measured concentration when all the crushers in operation are presented in the form of isopleths and Surfer as shown in **Figures 3.3** and **3.20**. The impact zone for the crushers in operation are also depicted in **Figures 3.3 to 3.20**.

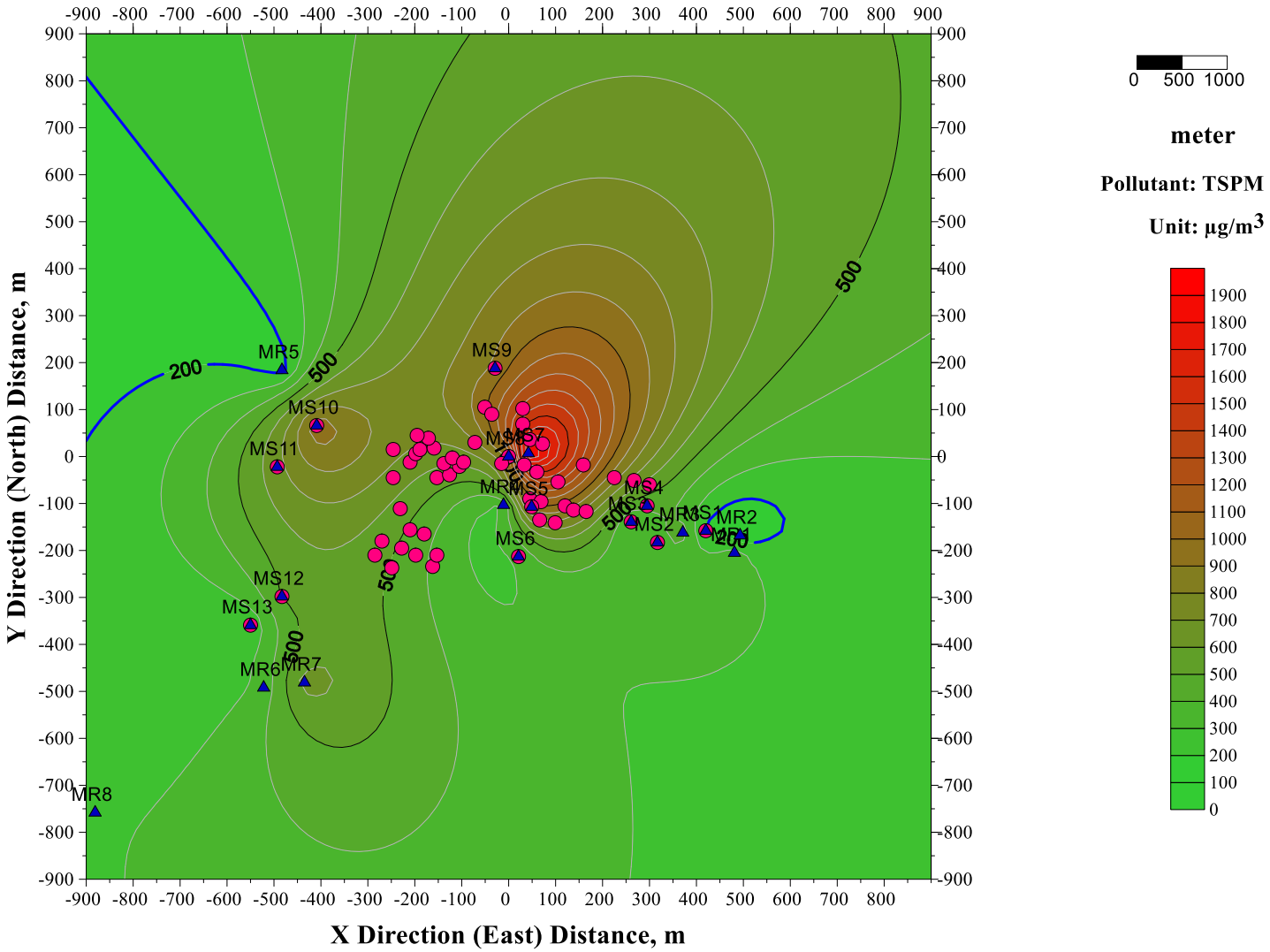


Figure 3.3: Isopleth Showing Measured TSPM Concentration: Tirusulam (Working hours: 6am to 6pm)

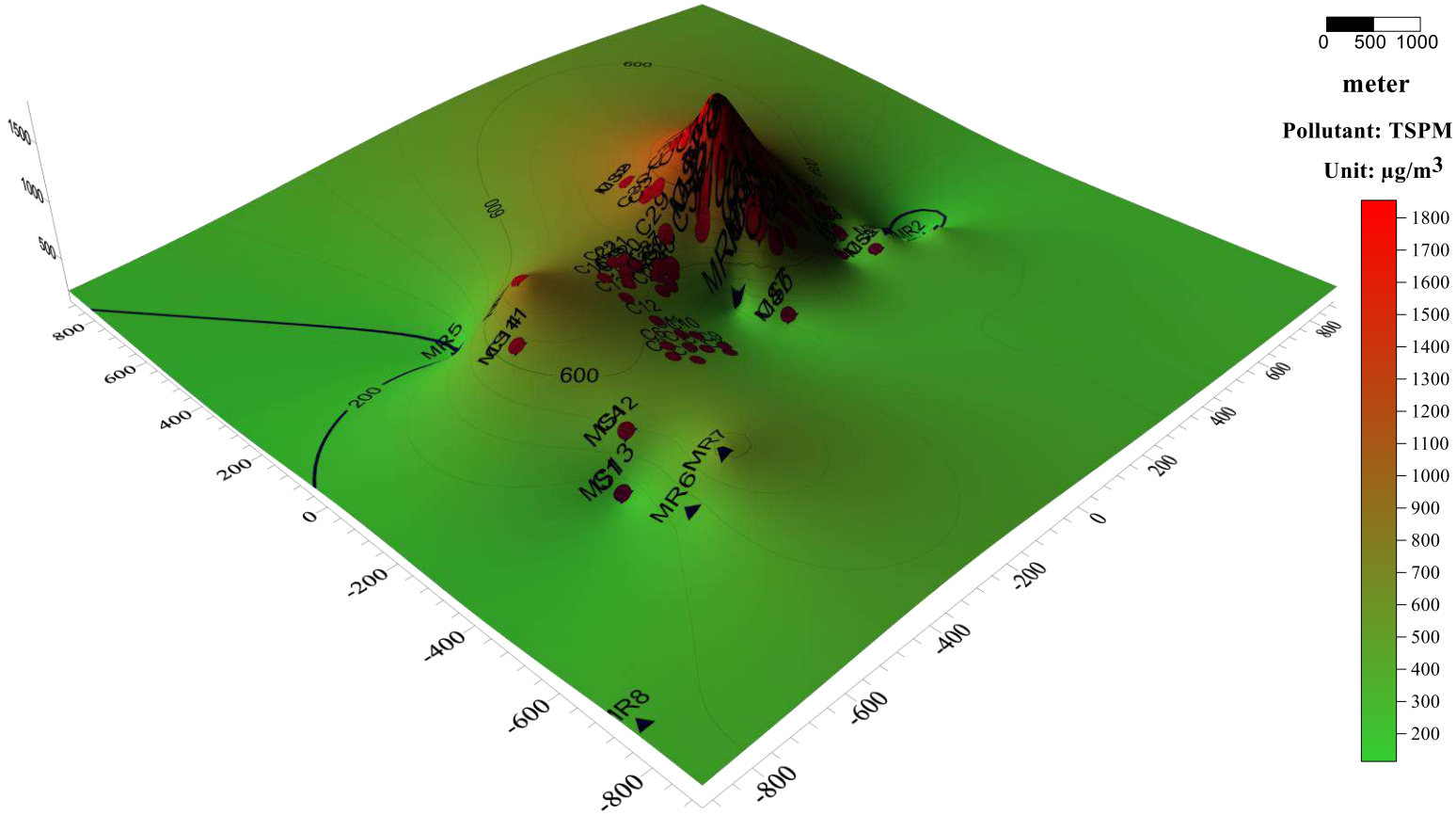


Figure 3.4: Surfer Showing Measured TSPM Concentration: Tirusulam (Working hours: 6am to 6pm)

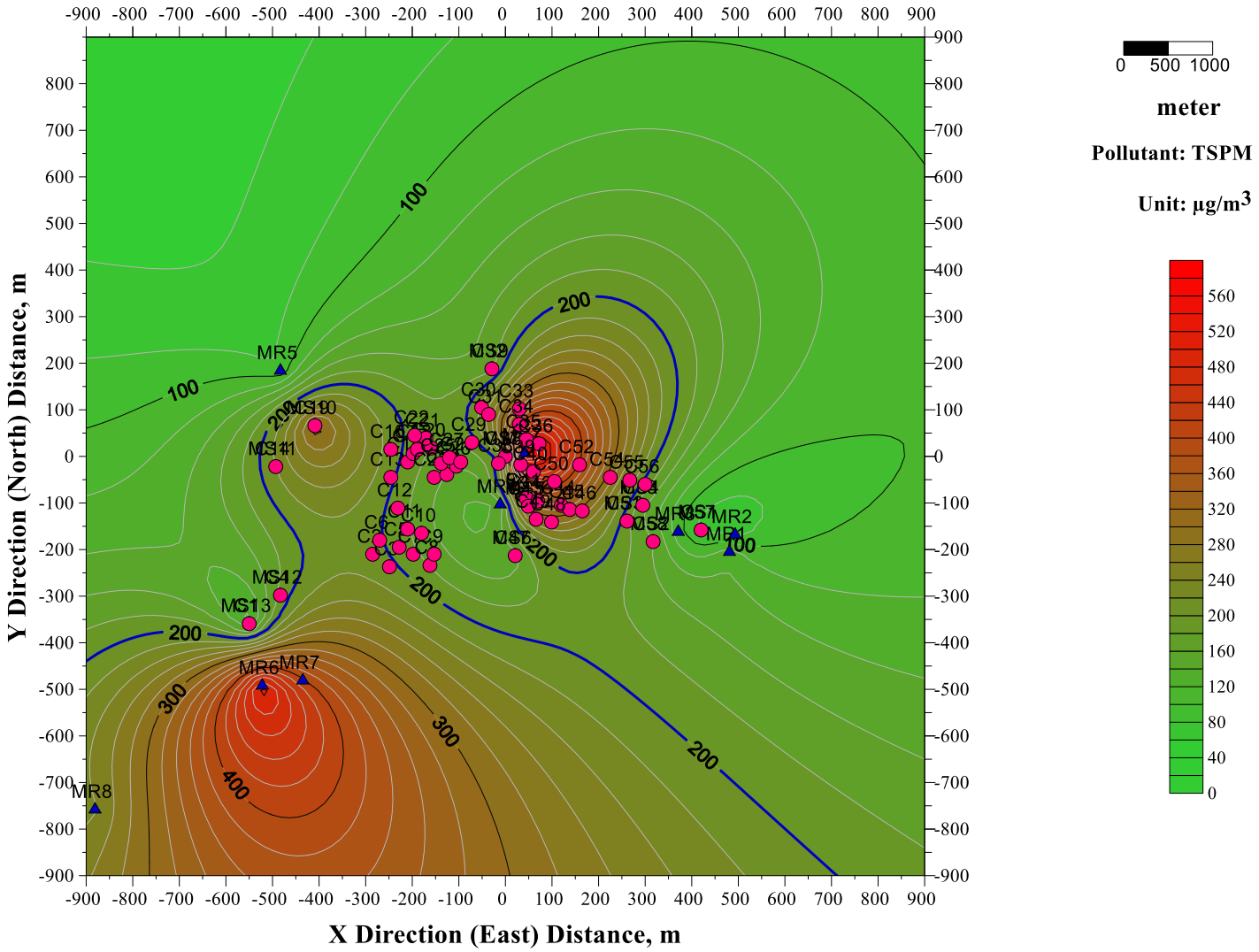


Figure 3.5: Isopleth Showing Measured TSPM Concentration: Tirusulam (Non-Working hours: 6am to 6pm)

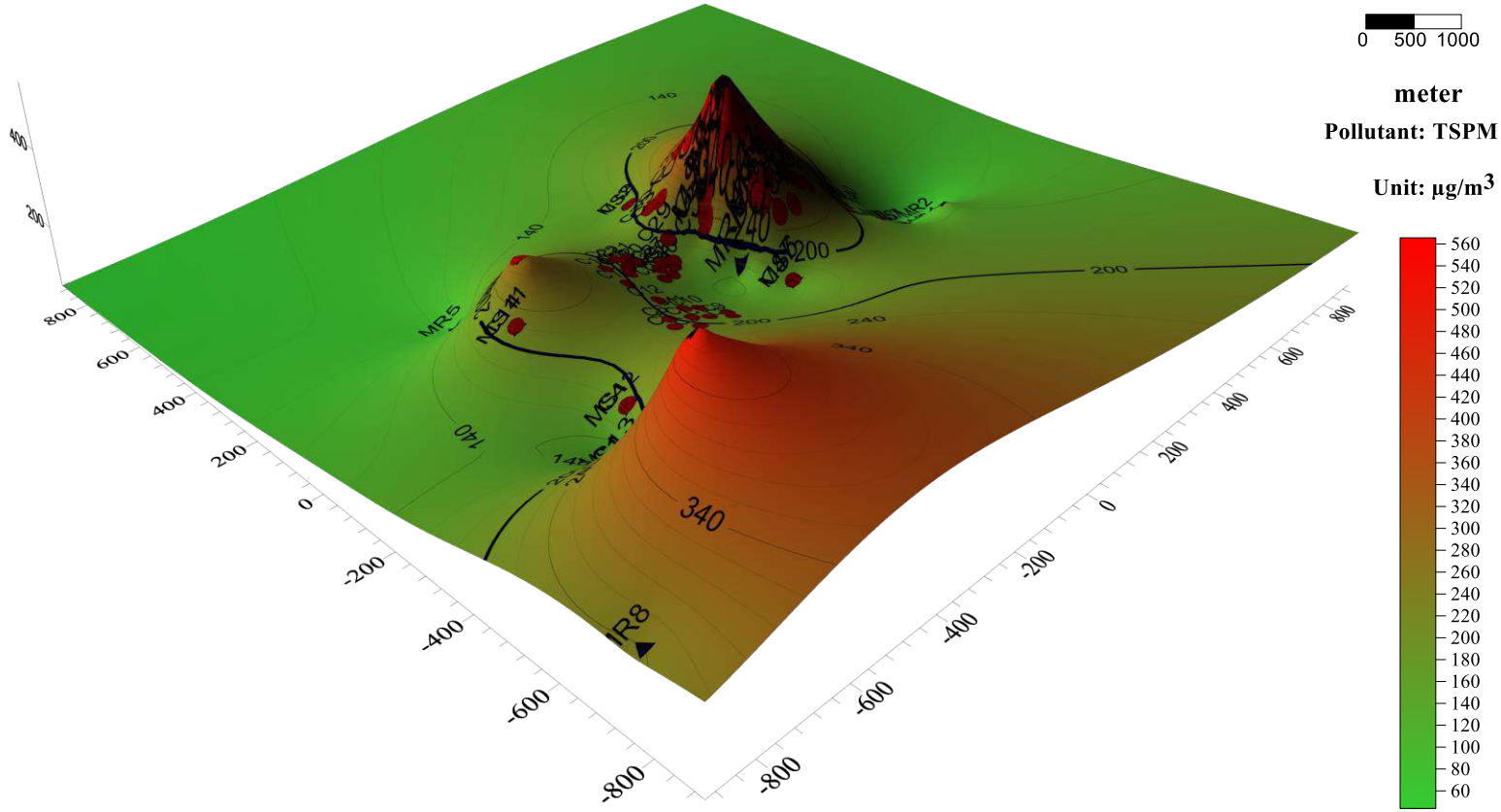


Figure 3.6: Surfer Showing Measured TSPM Concentration: Tirusulam (Non-Working hours: 6am to 6pm)

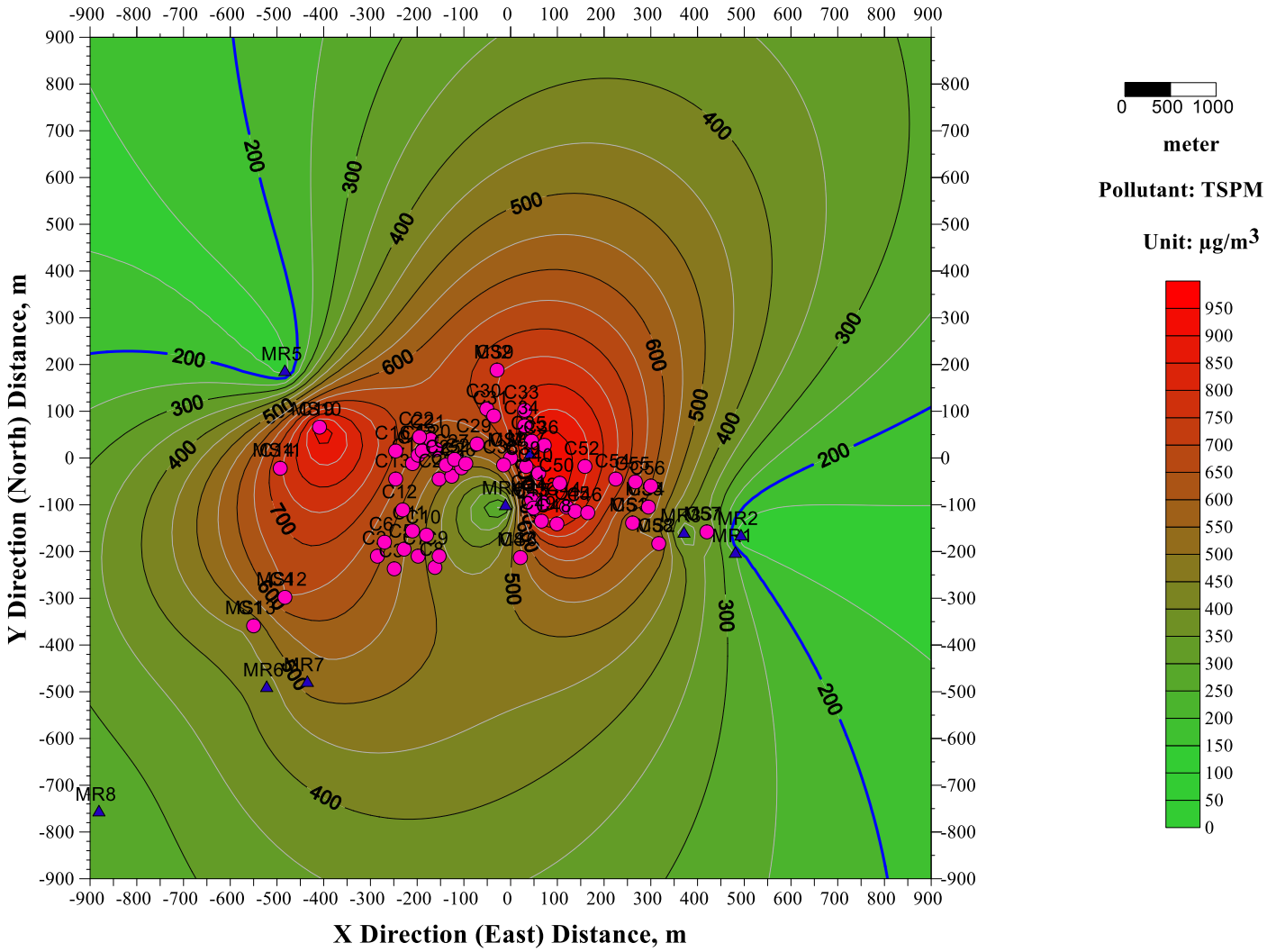


Figure 3.7: Isopleth Showing Measured TSPM Concentration: Tirusulam (24 hour Average)

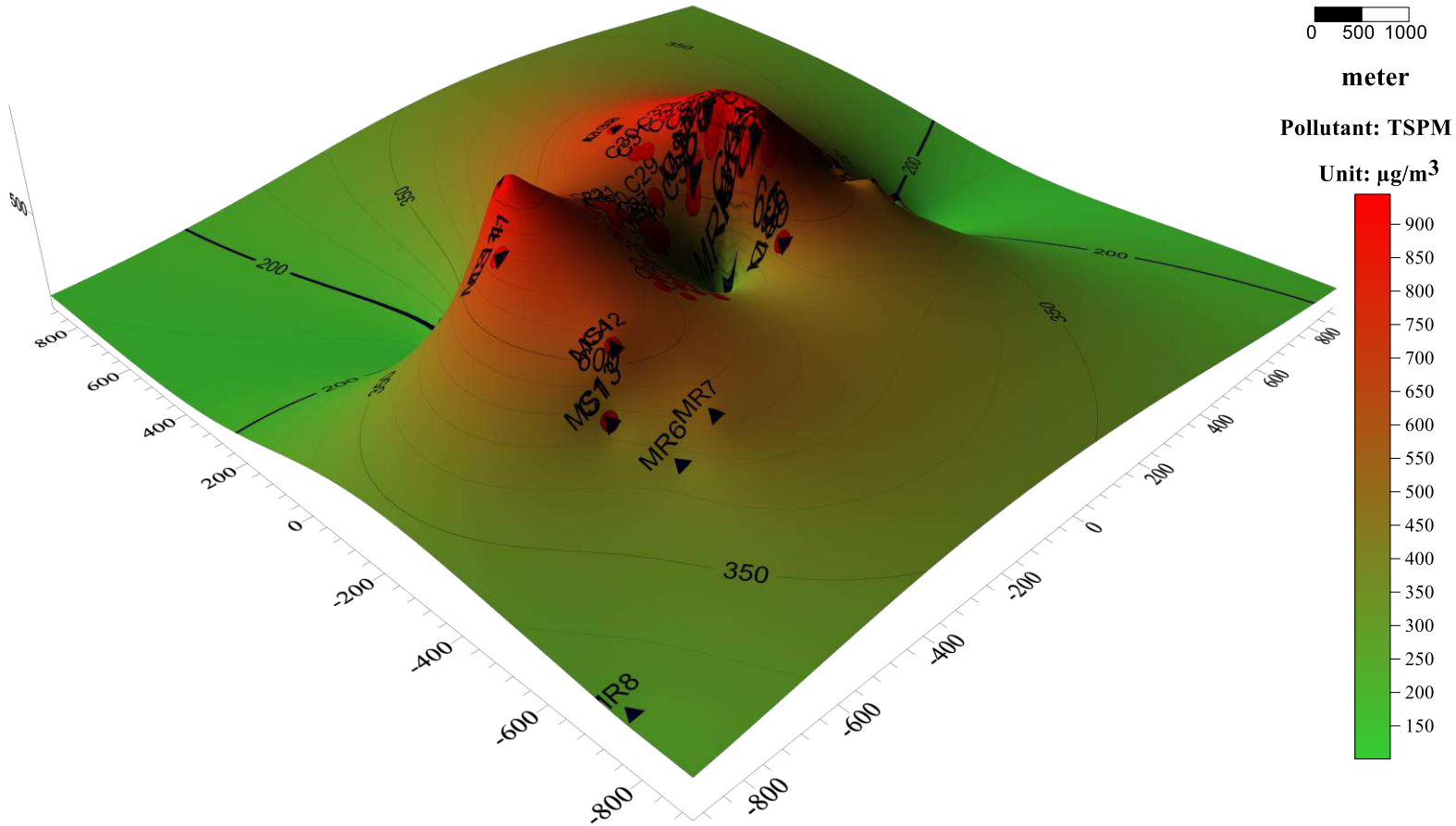


Figure 3.8: Surfer Showing Measured TSPM Concentration: Tirusulam (24 hour Average)

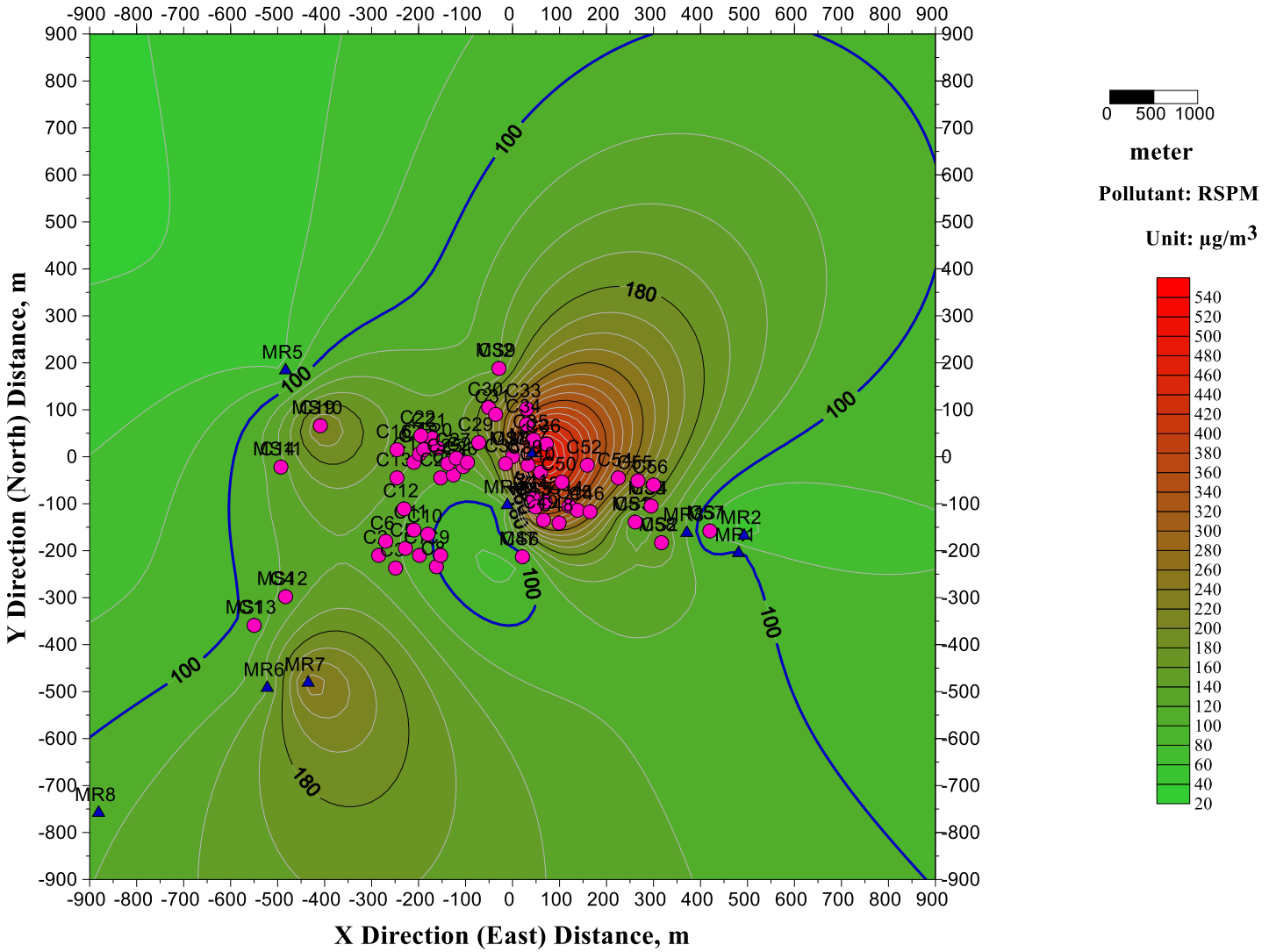


Figure 3.9: Isopleth Showing Measured RSPM Concentration: Tirusulam (Working hours: 6am to 6pm)

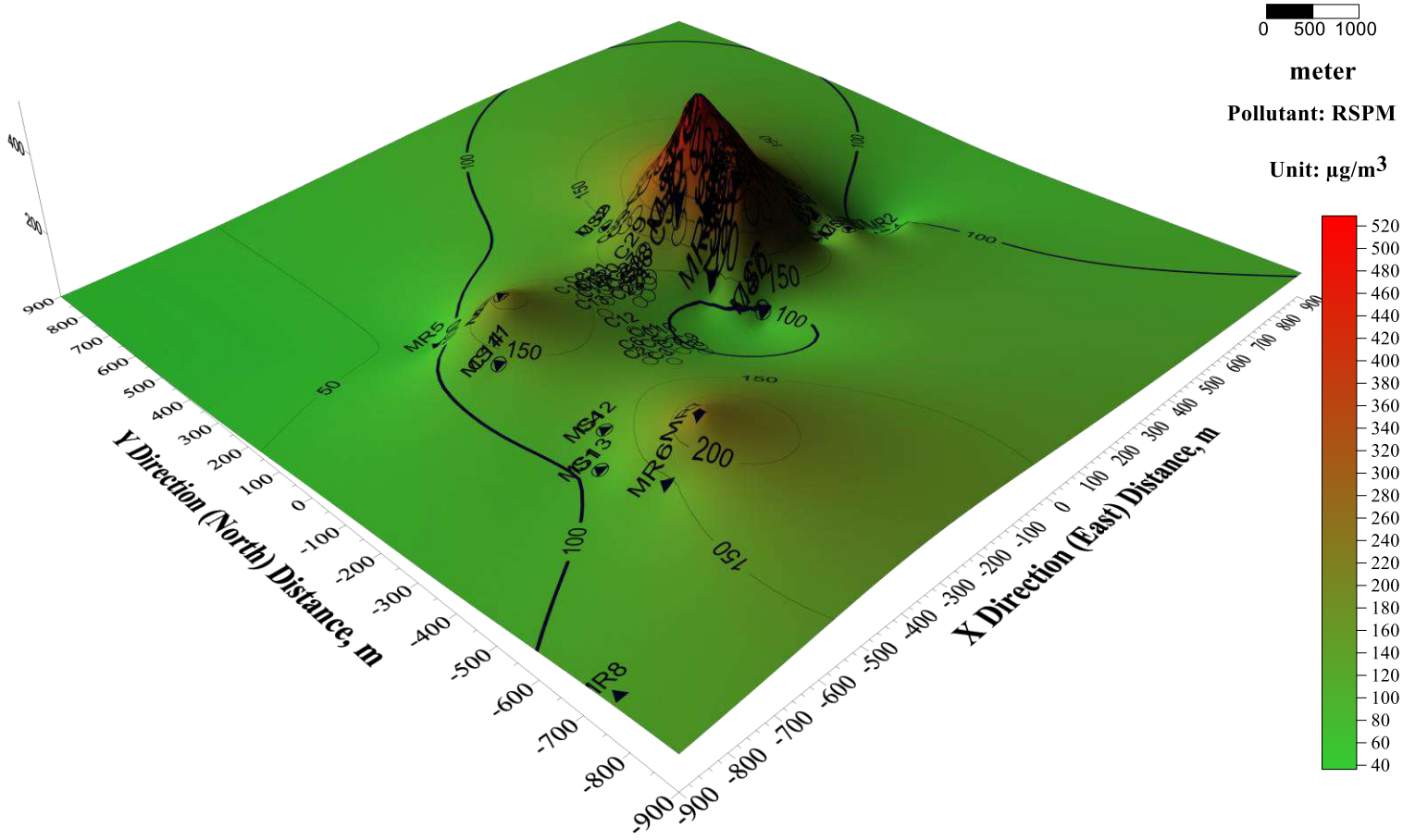


Figure 3.10: Surfer Showing Measured RSPM Concentration: Tirusulam (Working hours: 6am to 6pm)

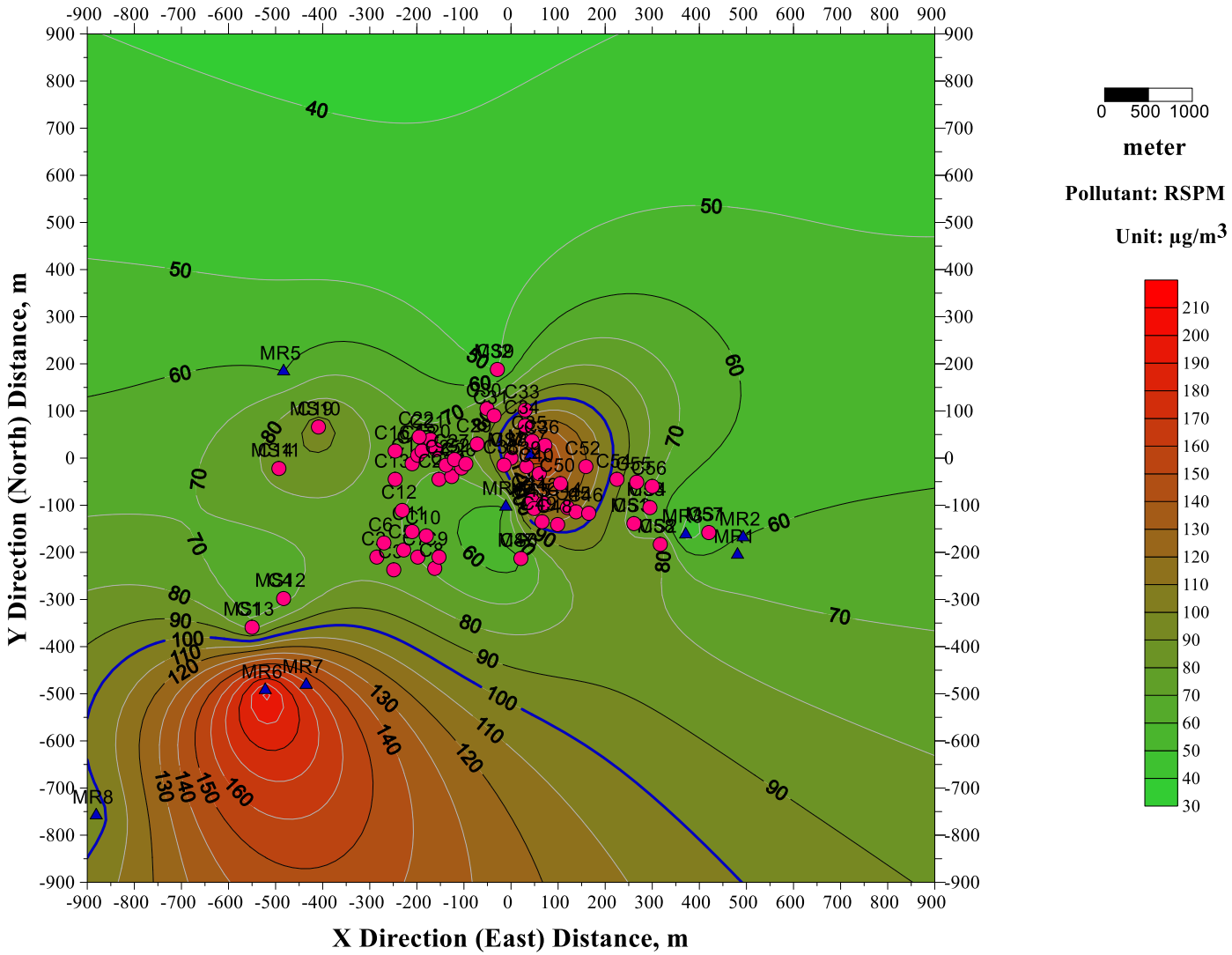


Figure 3.11: Isopleth Showing Measured RSPM Concentration: Tirusulam (Nom-Working hours: 6pm to 6am)

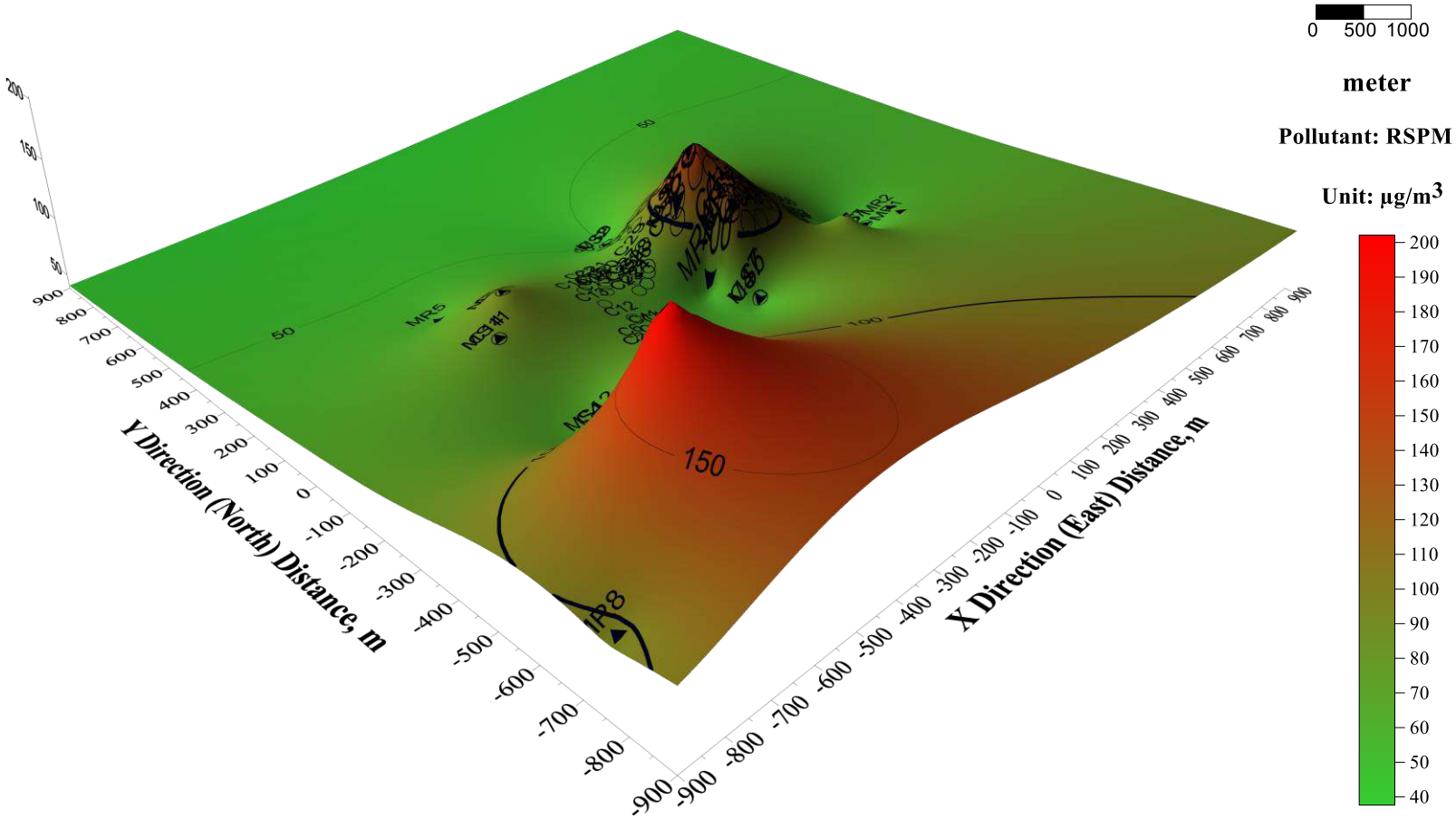


Figure 3.12: Surfer Showing Measured RSPM Concentration: Tirusulam (Nom-Working hours: 6pm to 6am)

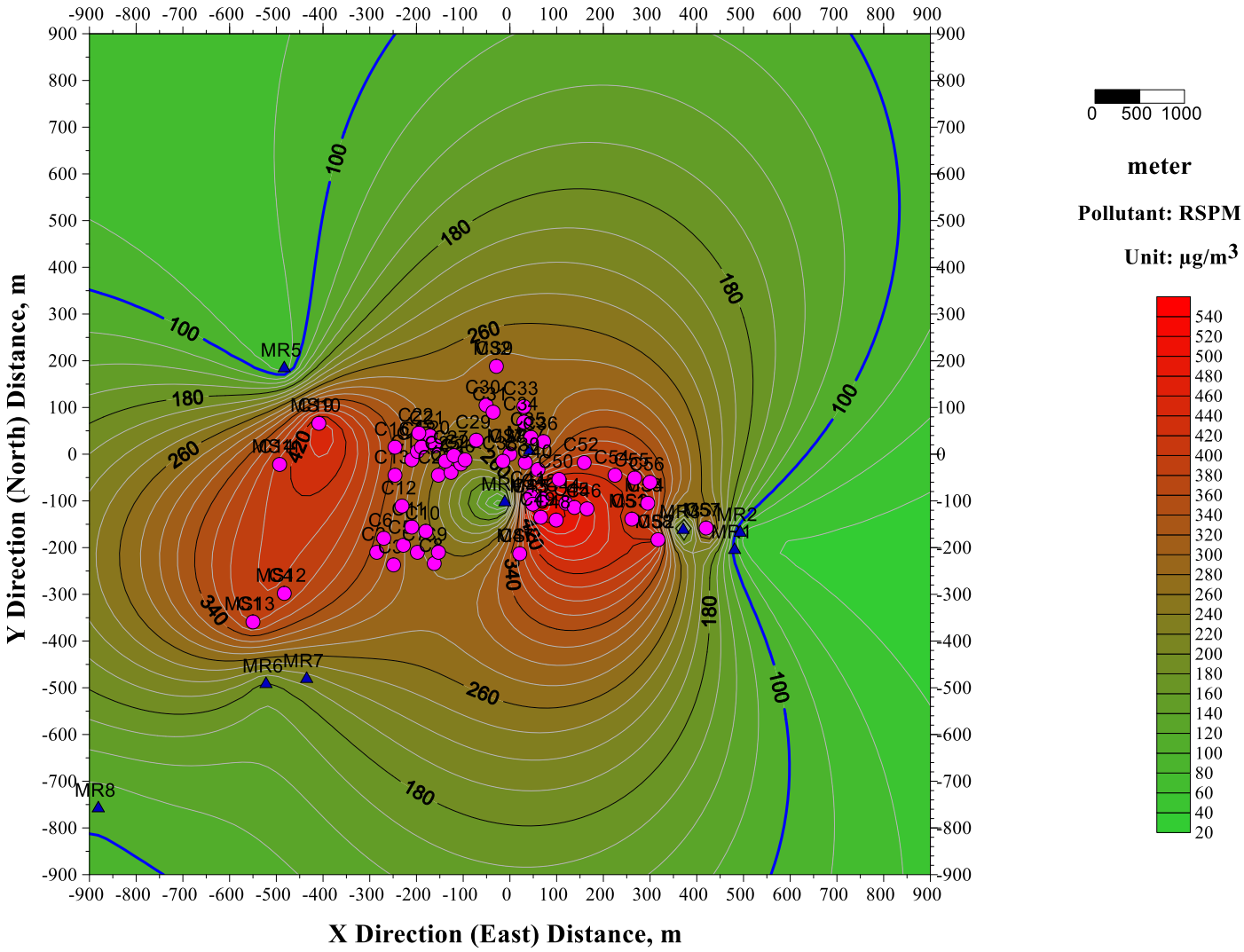


Figure 3.13: Isopleth Showing Measured RSPM Concentration: Tirusulam (24 hour Average)

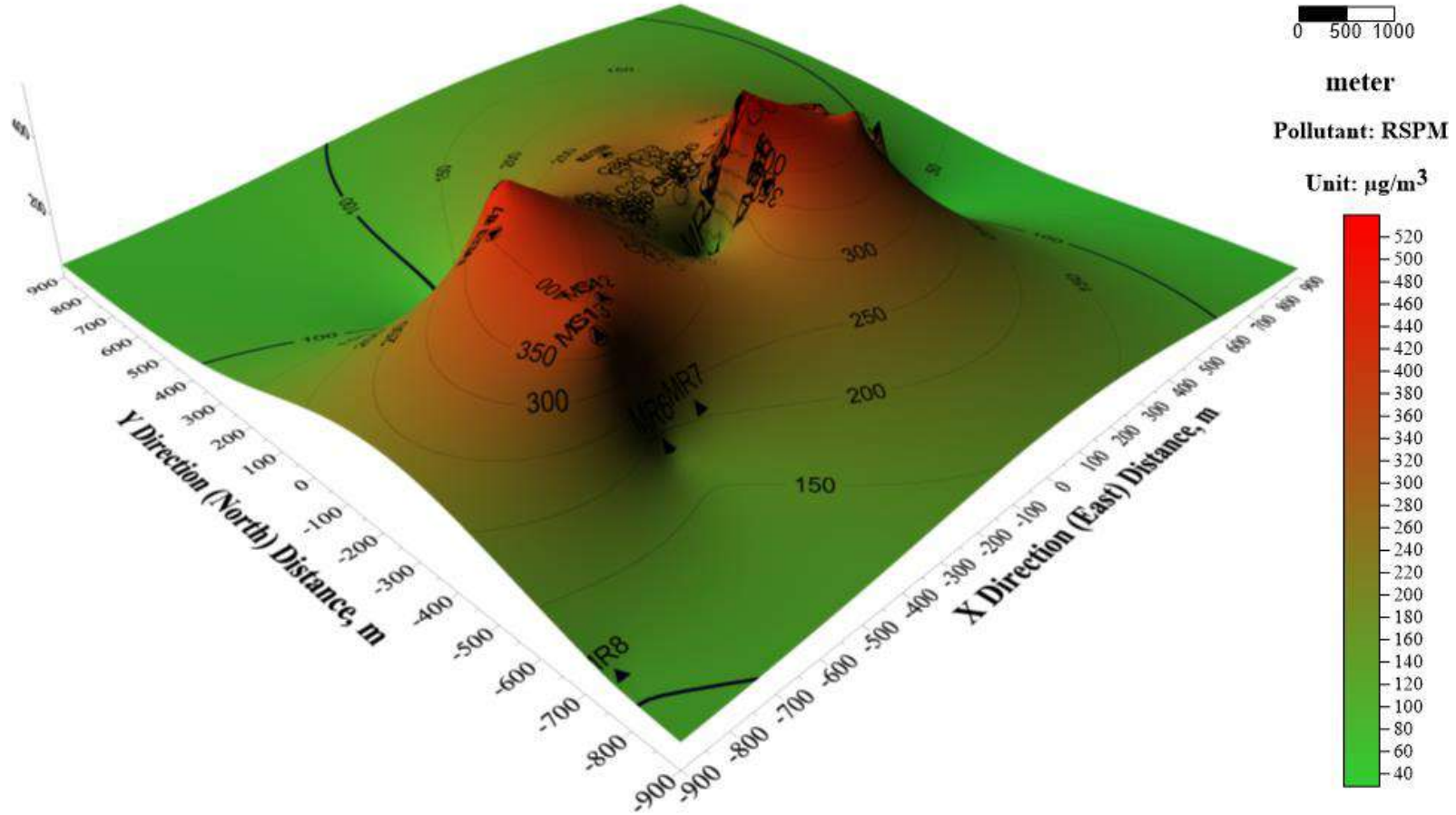


Figure 3.14 : Isopleth Showing Measured RSPM Concentration: Tirusulam (24 hour Average)

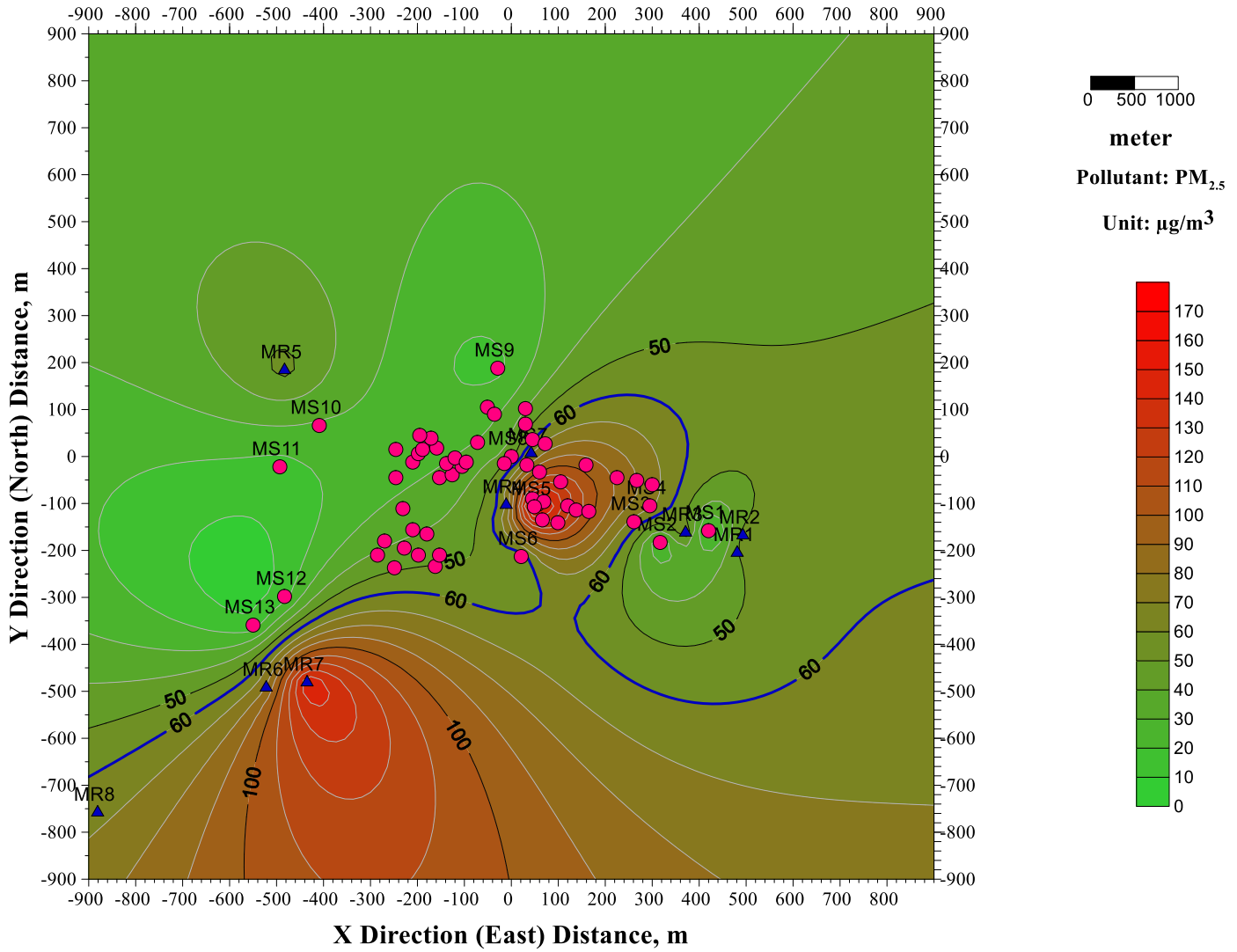


Figure 3.15: Isopleth Showing Measured $PM_{2.5}$ Concentration: Tirusulam (Working hours: 6am to 6pm)

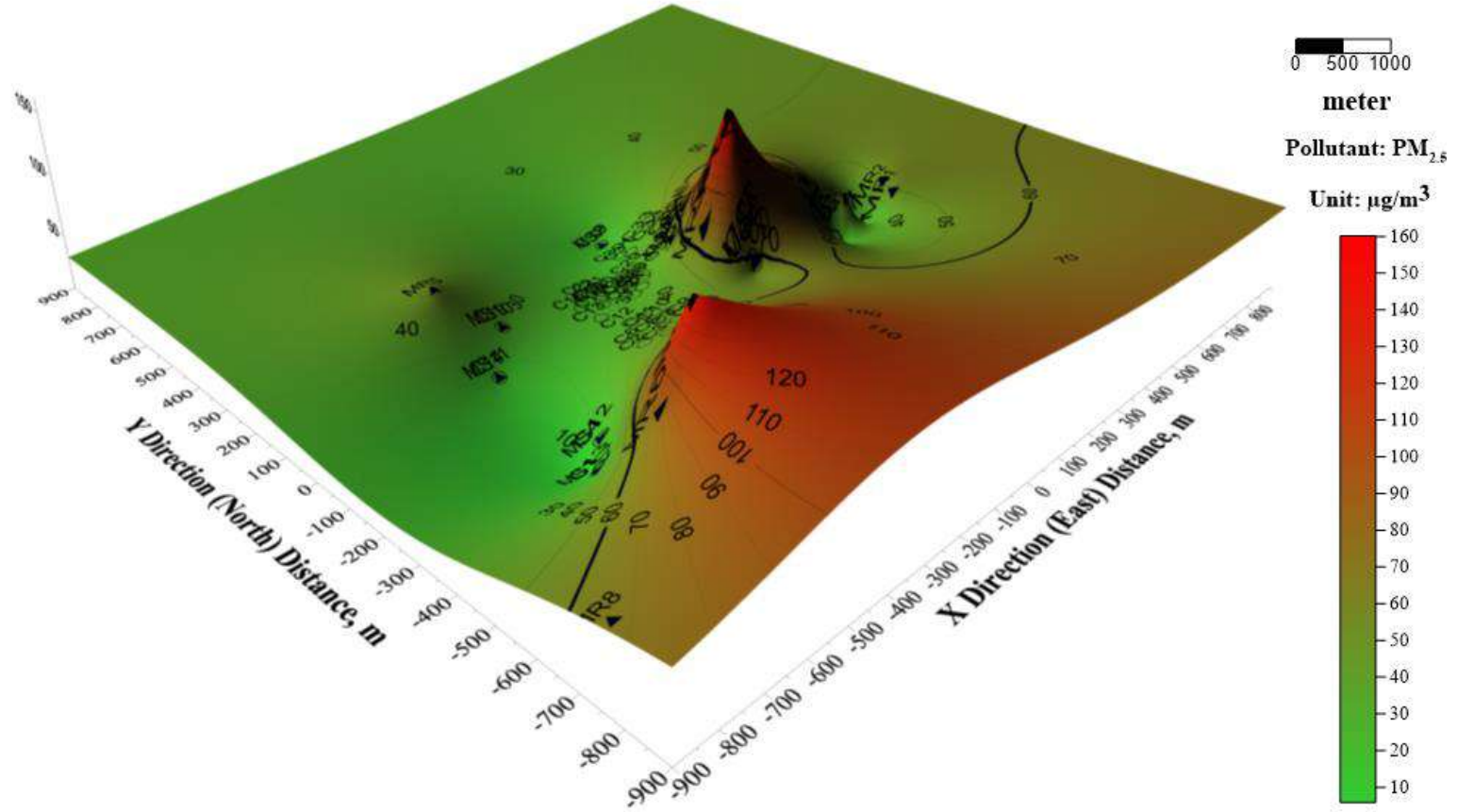


Figure 3.16: Surfer Showing Measured $PM_{2.5}$ Concentration: Tirusulam (Working hours: 6am to 6pm)

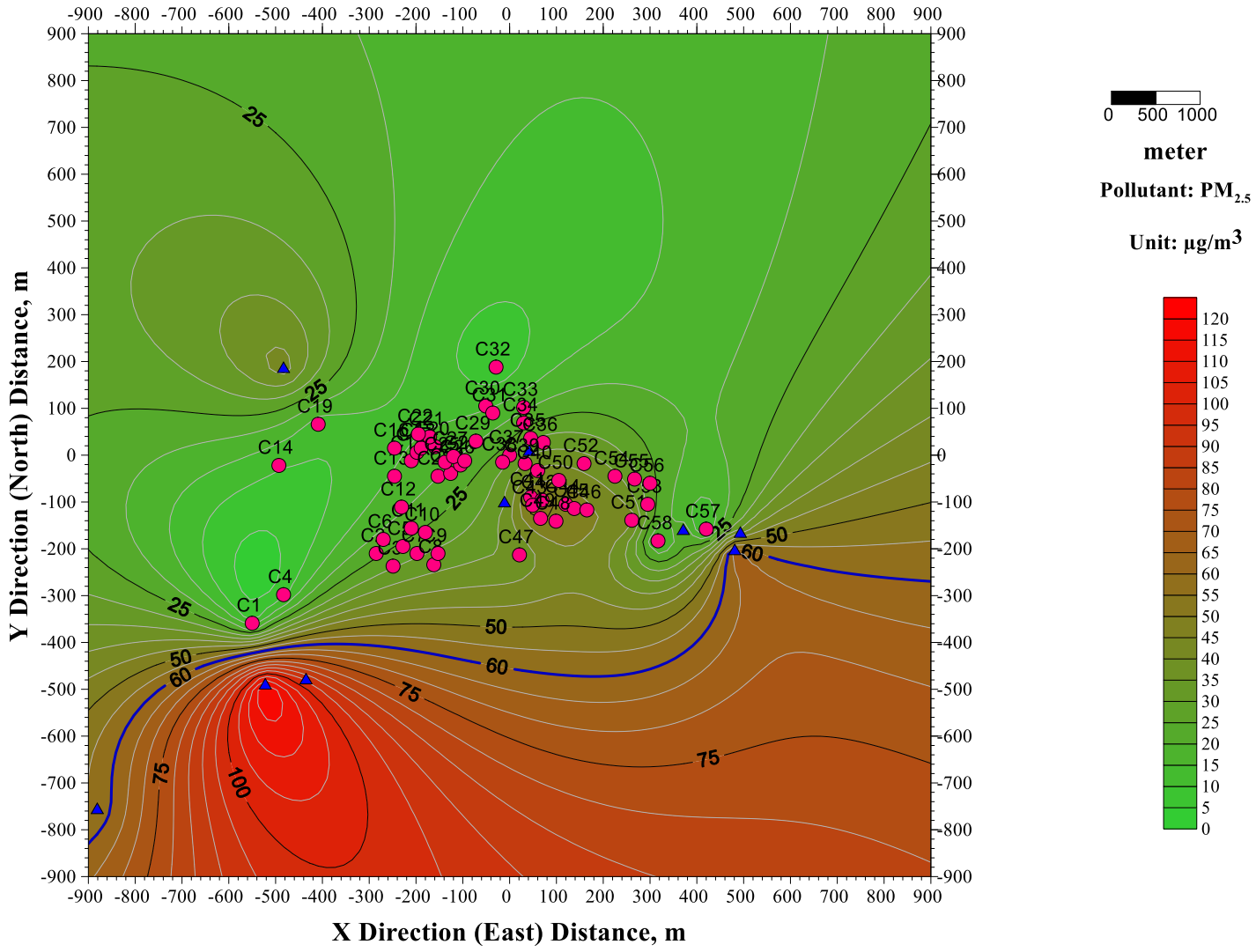


Figure 3.17: Isopleth Showing Measured $PM_{2.5}$ Concentration: Tirusulam (Non-Working hours: 6pm to 6am)

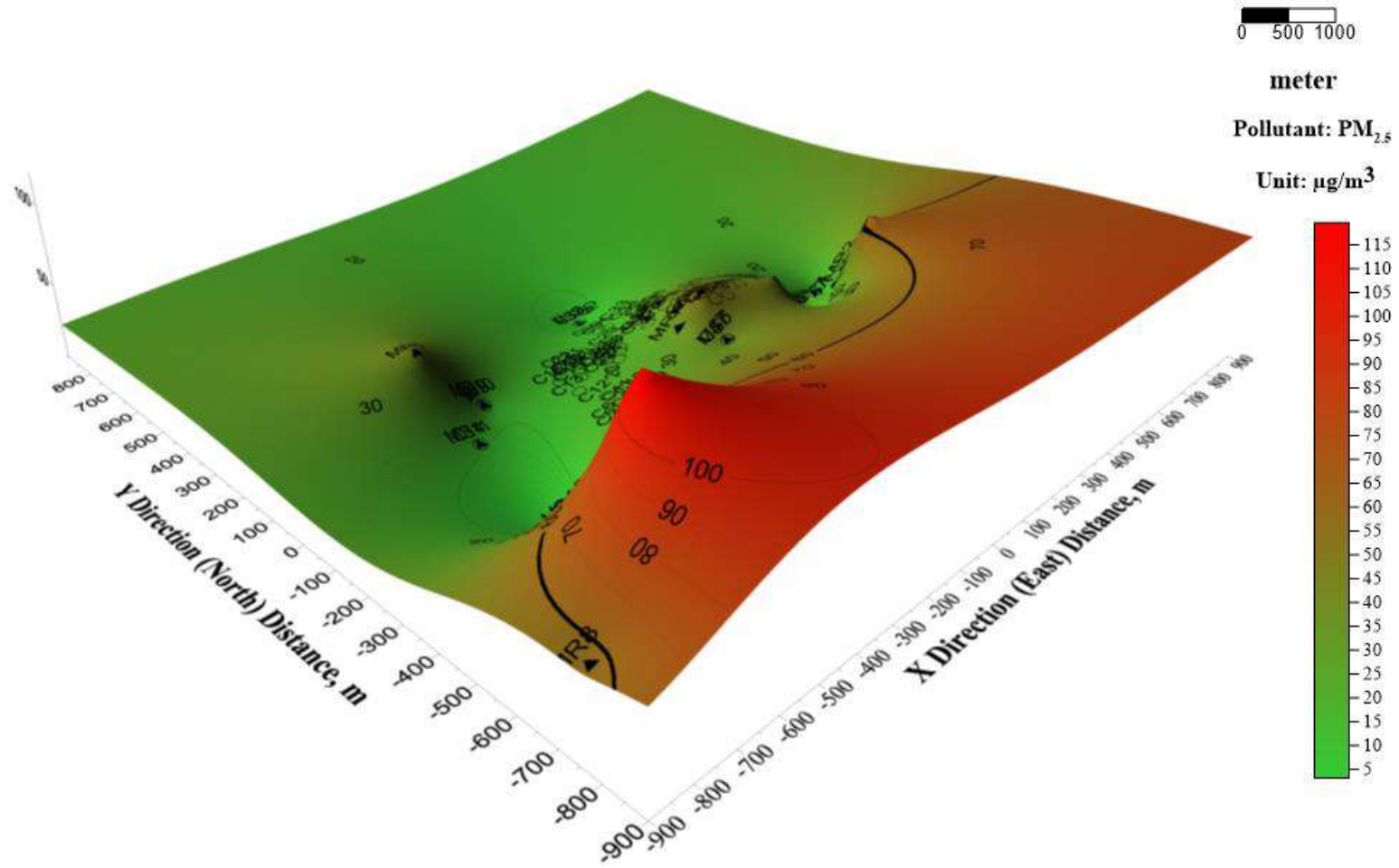


Figure 3.18: Surfer Showing Measured $PM_{2.5}$ Concentration: Tirusulam (Non-Working hours: 6pm to 6am)

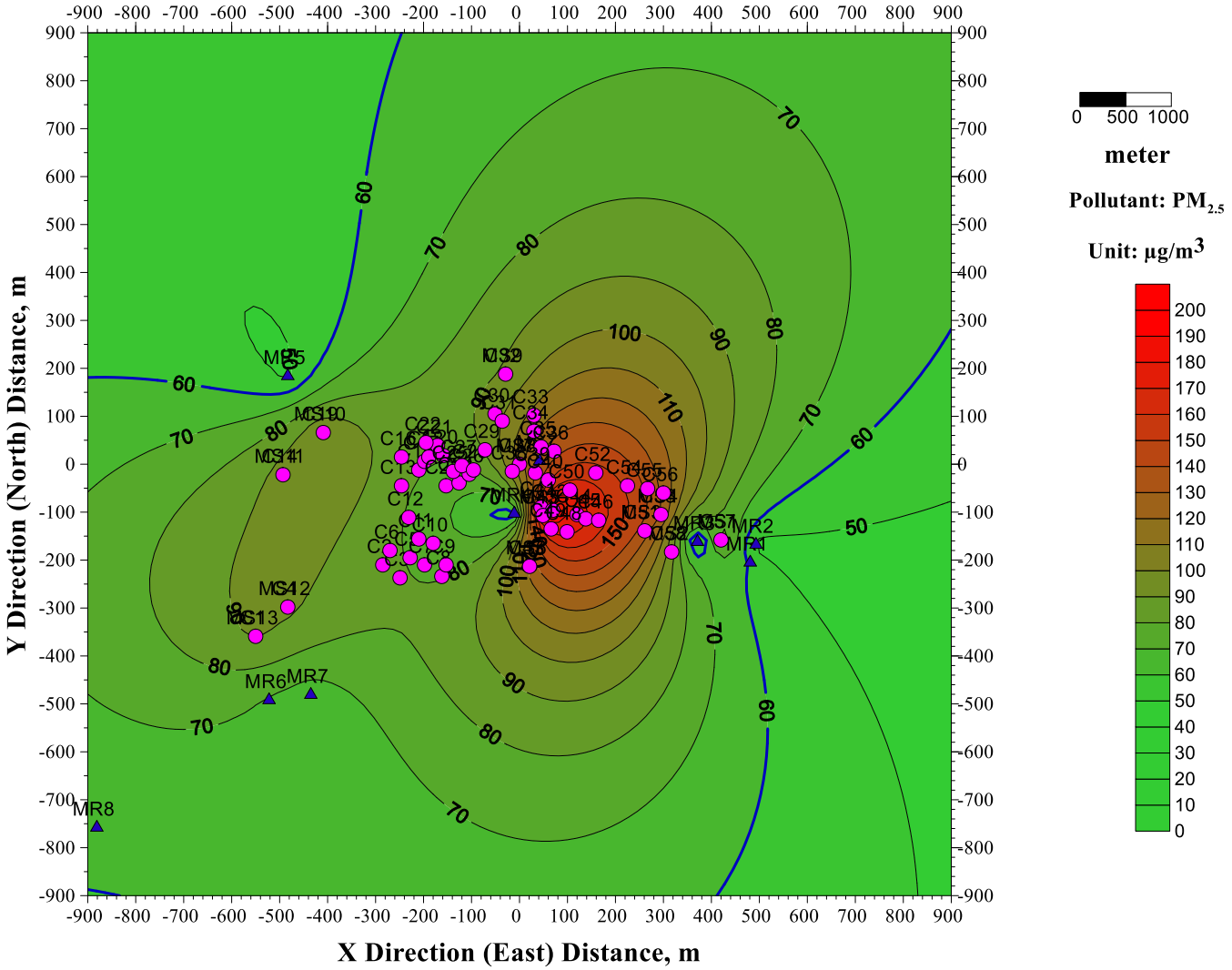


Figure 3.19: Isopleth Showing Measured $PM_{2.5}$ Concentration: Tirusulam (24 hour Average)

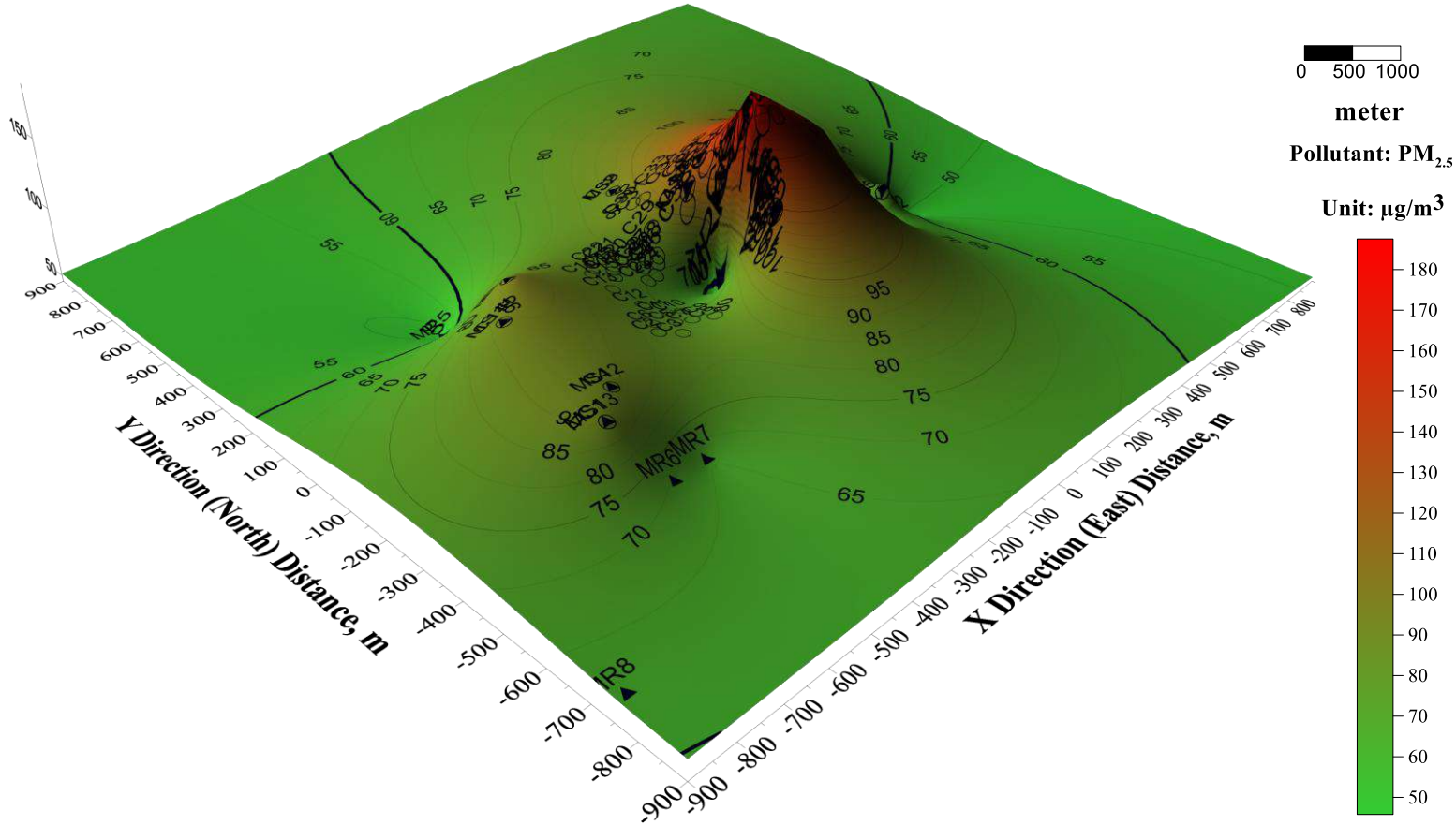


Figure 3.20: Surfer Showing Measured $PM_{2.5}$ Concentration: Tirusulam (24 hour Average)

Table 3.3
Ambient Air Quality Status at Tirusulam, Chennai for TSPM (Working Period: 6am to 6pm)

unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentiles					
						10	25	50	80	95	98
	Source Sampling										
1.	Rathana BM	46	428	169	105	68	84	162	220	391	413
2.	D. G. Star BM	79	633	368	175	107	265	388	521	613	625
3.	Siva BM	55	718	284	173	74	142	295	385	541	647
4.	Ponni BM	25	2188	425	482	99	167	311	585	1044	1730
5.	Karthick BM	75	2046	958	569	247	423	1072	1227	2009	2031
6.	J. R. Vimala BM	22	942	317	261	52	159	218	442	853	906
7.	Thiruvakkarai BM	49	6612	1960	1887	123	458	1436	2612	6182	6440
8.	Sivagami BM	109	2719	927	820	226	396	543	1765	2365	2578
9.	Mageshwari BM	44	3319	917	936	113	311	553	1619	2548	3010
10.	Viswanathan BM	196	2134	973	533	362	504	941	748	1800	2000
11.	Jayashakthi BM	144	1272	668	356	291	367	574	1056	1198	1242
12.	Lakshmi BM	29	1922	510	479	122	207	324	829	1319	1681
13.	Thirughanam BM	64	517	218	127	76	104	204	303	422	479
	Residential Sampling										
14.	MAM Residence	44	942	346	271	92	146	264	566	883	918
15.	VST Compound	30	239	103	64	32	48	87	151	217	230
16.	D. G. Star Residence	29	1327	445	387	64	179	312	779	1149	1256
17.	Backside of Karthick BM	89	888	293	204	123	151	217	380	609	777
18.	Elliputhoopu Street	36	310	163	87	57	91	177	229	300	306
19.	Raghu Colony	81	659	337	170	145	250	285	489	641	652
20.	Rajiv Gandhi Nagar	38	1369	640	360	203	465	618	898	1210	1305
21.	Darkar Road	115	468	286	123	156	200	268	397	466	467

Table 3.4
Ambient Air Quality Status at Tirusulam, Chennai for TSPM (Non-Working Period: 6pm to 6am)

unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentiles					
						10	25	50	80	95	98
	Source Sampling										
1.	Rathana BM	19	259	72	59	23	29	65	95	169	223
2.	D. G. Star BM	35	286	161	76	48	120	162	204	277	282
3.	Siva BM	38	451	186	116	48	99	172	252	393	427
4.	Ponni BM	9	841	164	186	38	65	107	225	401	665
5.	Karthick BM	26	684	312	187	81	129	326	473	570	638
6.	J. R. Vimala BM	12	450	153	104	28	98	140	205	316	396
7.	Thiruvakkarai BM	17	1383	598	441	44	227	460	986	1249	1329
8.	Sivagami BM	27	659	225	196	57	99	136	434	576	626
9.	Mageshwari BM	9	530	173	167	23	52	103	331	495	516
10.	Viswanathan BM	65	588	313	165	121	156	307	391	530	565
11.	Jayashakthi BM	50	412	220	96	102	154	227	286	369	395
12.	Lakshmi BM	11	487	188	141	49	83	143	345	407	455
13.	Thirughanam BM	33	280	113	71	39	48	110	154	226	259
	Residential Sampling										
14.	MAM Residence	17	437	129	107	35	64	101	161	346	401
15.	VST Compound	21	130	67	35	31	38	60	101	121	126
16.	D. G. Star Residence	8	384	109	96	17	48	83	170	251	331
17.	Backside of Karthick BM	47	306	147	83	65	77	128	220	306	306
18.	Elliputhoopu Street	18	178	84	48	29	46	76	126	159	170
19.	Raghu Colony	115	1432	512	318	213	328	408	683	981	1252
20.	Rajiv Gandhi Nagar	21	884	404	242	127	240	385	558	812	855
21.	Darkar Road	98	417	238	106	142	166	217	315	406	412

Table 3.5
Ambient Air Quality Status at Tirusulam, Chennai for TSPM (Overall Period)

Averaging Time: 24 hours unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentiles					
						10	25	50	80	95	98
	Source Sampling										
1.	Rathana BM	32	343	120	79	48	57	117	148	280	318
2.	D. G. Star BM	57	444	264	124	78	192	275	376	442	443
3.	Siva BM	47	587	235	143	61	123	238	319	467	539
4.	Ponni BM	17	1514	294	333	69	115	215	405	722	1197
5.	Karthick BM	51	1343	635	369	175	292	673	847	1287	1321
6.	J. R. Vimala BM	17	647	235	171	40	140	182	326	580	620
7.	Thiruvakkarai BM	33	3917	1279	1140	83	367	973	1748	3707	3833
8.	Sivagami BM	68	1612	576	499	141	248	339	1100	1504	1569
9.	Mageshwari BM	26	1829	545	534	67	184	332	959	1511	1702
10.	Viswanathan BM	131	1321	644	332	241	398	613	574	1190	1268
11.	Jayashakthi BM	97	794	444	216	197	283	423	663	779	788
12.	Lakshmi BM	20	1140	349	302	86	145	227	591	894	1041
13.	Thirughanam BM	48	312	166	92	58	78	164	255	308	310
	Residential Sampling										
14.	MAM Residence	30	689	238	185	64	111	182	366	551	634
15.	VST Compound	25	172	85	48	37	41	74	134	157	166
16.	D. G. Star Residence	18	765	277	230	41	113	199	502	703	740
17.	Backside of Karthick BM	68	574	220	138	94	115	187	287	455	526
18.	Elliputhoopu Street	27	238	124	66	42	68	122	179	234	237
19.	Raghu Colony	98	910	425	214	179	306	389	572	790	862
20.	Rajiv Gandhi Nagar	30	1084	523	299	165	349	502	728	990	1046
21.	Darkar Road	106	429	263	100	167	191	247	340	394	415

Table 3.6
Ambient Air Quality Status at Tirusulam, Chennai for RSPM (Working Period: 6am to 6pm)

unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	Rathana BM	25	133	71	133	46	46	73	97	120	128
2.	D. G. Star BM	59	306	160	306	88	88	156	215	282	296
3.	Siva BM	22	287	113	287	57	57	118	154	216	259
4.	Ponni BM	10	875	170	875	67	67	124	234	418	692
5.	Karthick BM	30	818	383	818	169	169	429	491	803	812
6.	J. R. Vimala BM	7	181	84	181	52	52	72	130	170	177
7.	Thiruvakkarai BM	39	1691	552	1691	215	215	515	717	1297	1533
8.	Sivagami BM	34	663	241	663	129	129	261	343	433	571
9.	Mageshwari BM	23	472	136	472	52	52	119	165	391	440
10.	Viswanathan BM	67	424	228	424	160	160	219	220	379	406
11.	Jayashakthi BM	43	226	131	226	77	77	137	198	221	224
12.	Lakshmi BM	19	274	125	274	78	78	112	190	234	258
13.	Thirughanam BM	30	234	106	234	70	70	88	164	218	228
	Residential Sampling										
14.	MAM Residence	27	213	100	213	63	63	83	154	184	201
15.	VST Compound	16	91	50	91	28	28	44	79	87	90
16.	D. G. Star Residence	23	299	119	299	66	66	91	180	256	282
17.	Backside of Karthick BM	36	355	117	355	60	60	87	152	244	311
18.	Elliputhoopu Street	21	101	59	101	39	39	48	92	98	100
19.	Raghu Colony	32	264	135	264	100	100	114	196	256	261
20.	Rajiv Gandhi Nagar	15	547	256	547	186	186	247	359	484	522
21.	Darkar Road	46	187	114	187	80	80	107	159	186	187

Table 3.7
Ambient Air Quality Status at Tirusulam, Chennai for RSPM (Non-Working Period: 6pm to 6am)

unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	Rathana BM	5	223	54	48	15	28	46	73	104	175
2.	D. G. Star BM	32	165	86	41	37	47	85	115	151	160
3.	Siva BM	15	180	74	46	19	40	69	101	157	171
4.	Ponni BM	4	336	66	74	15	26	43	90	160	266
5.	Karthick BM	10	274	125	75	32	52	130	189	228	255
6.	J. R. Vimala BM	5	119	58	32	18	38	56	89	106	114
7.	Thiruvakkarai BM	11	493	162	129	21	61	150	242	370	444
8.	Sivagami BM	14	511	110	108	32	55	85	131	227	398
9.	Mageshwari BM	9	171	49	41	15	21	42	68	114	148
10.	Viswanathan BM	28	181	96	43	46	67	94	145	156	171
11.	Jayashakthi BM	27	193	84	50	31	49	67	109	166	182
12.	Lakshmi BM	10	142	65	35	31	46	58	100	122	134
13.	Thirughanam BM	21	149	73	40	27	41	71	109	136	144
	Residential Sampling										
14.	MAM Residence	16	113	60	30	25	39	51	89	113	113
15.	VST Compound	20	109	60	31	22	35	53	98	105	108
16.	D. G. Star Residence	9	102	44	26	13	26	38	64	93	98
17.	Backside of Karthick BM	19	122	59	33	26	31	51	88	122	122
18.	Elliputhoopu Street	21	118	60	29	26	39	55	86	103	112
19.	Raghu Colony	46	573	205	127	85	131	163	273	392	501
20.	Rajiv Gandhi Nagar	9	354	162	97	51	96	154	223	325	342
21.	Darkar Road	39	167	95	42	57	66	87	126	163	165

Table 3.8
Ambient Air Quality Status at Tirusulam, Chennai for RSPM (Overall Period)

Averaging Time: 24 hours unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	Rathana BM	20	178	62	37	25	39	63	89	106	149
2.	D. G. Star BM	46	236	123	58	52	67	120	166	216	228
3.	Siva BM	19	235	94	57	24	49	95	128	187	216
4.	Ponni BM	7	606	118	133	27	46	86	162	289	479
5.	Karthick BM	20	537	254	147	70	117	269	339	515	528
6.	J. R. Vimala BM	6	144	71	41	21	45	62	107	140	143
7.	Thiruvakkarai BM	25	1092	357	280	48	139	337	482	833	988
8.	Sivagami BM	24	587	176	126	54	92	176	239	303	473
9.	Mageshwari BM	16	322	92	78	27	36	78	121	245	291
10.	Viswanathan BM	47	303	162	69	78	113	156	179	255	284
11.	Jayashakthi BM	35	189	107	52	39	64	112	156	185	187
12.	Lakshmi BM	14	208	95	52	45	63	85	145	178	196
13.	Thirughanam BM	26	182	90	48	33	57	83	134	168	176
	Residential Sampling										
14.	MAM Residence	22	163	80	41	33	52	66	123	149	157
15.	VST Compound	18	100	55	28	20	32	49	88	96	98
16.	D. G. Star Residence	16	195	81	50	23	46	63	120	167	184
17.	Backside of Karthick BM	27	230	88	55	38	46	75	115	182	211
18.	Elliputhoopu Street	21	106	60	28	26	39	52	86	102	104
19.	Raghu Colony	39	364	170	86	71	122	156	229	316	345
20.	Rajiv Gandhi Nagar	12	434	209	120	66	139	201	291	396	418
21.	Darkar Road	43	172	105	40	67	77	99	136	157	166

Table 3.9
Ambient Air Quality Status at Tirusulam, Chennai for $PM_{2.5}$ (Working Period: 6am to 6pm)

unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	Rathana BM	3	17	9	4	5	6	9	12	15	16
2.	D. G. Star BM	7	38	20	10	8	11	19	27	35	37
3.	Siva BM	13	169	67	41	17	34	70	91	127	152
4.	Ponni BM	4	381	74	84	17	29	54	102	182	301
5.	Karthick BM	13	356	167	99	43	74	186	213	349	353
6.	J. R. Vimala BM	18	98	52	23	25	30	55	68	95	97
7.	Thiruvakkarai BM	5	211	69	53	9	27	70	85	162	192
8.	Sivagami BM	4	164	45	43	10	16	33	73	119	146
9.	Mageshwari BM	3	59	17	15	5	6	15	21	49	55
10.	Viswanathan BM	8	53	28	13	14	20	27	86	47	51
11.	Jayashakthi BM	5	28	16	8	6	10	17	25	28	28
12.	Lakshmi BM	2	34	16	9	7	10	14	24	29	32
13.	Thirughanam BM	4	29	13	8	5	9	11	20	27	28
	Residential Sampling										
14.	MAM Residence	2	89	45	25	19	25	43	68	86	88
15.	VST Compound	20	124	55	25	22	42	53	72	87	109
16.	D. G. Star Residence	13	181	59	37	21	40	60	74	106	151
17.	Backside of Karthick BM	21	209	69	48	29	36	51	89	143	183
18.	Elliputhoopu Street	6	98	53	27	18	30	56	77	90	95
19.	Raghu Colony	19	155	79	40	34	59	67	115	151	153
20.	Rajiv Gandhi Nagar	9	322	151	85	48	110	146	211	285	307
21.	Darkar Road	27	110	67	29	37	47	63	93	110	110

Table 3.10
Ambient Air Quality Status at Tirusulam, Chennai for $PM_{2.5}$ (Non-Working Period: 6pm to 6am)

unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	Rathana BM	1	28	7	6	2	3	6	9	13	22
2.	D. G. Star BM	4	21	11	5	5	6	11	14	19	20
3.	Siva BM	9	106	44	27	11	23	41	59	92	101
4.	Ponni BM	2	146	28	32	7	11	19	39	70	116
5.	Karthick BM	5	119	54	33	14	22	57	82	99	111
6.	J. R. Vimala BM	12	78	35	18	17	20	33	44	67	74
7.	Thiruvakkarai BM	1	102	34	33	3	8	21	65	98	100
8.	Sivagami BM	2	115	28	34	4	7	11	53	100	109
9.	Mageshwari BM	1	21	6	5	2	3	5	9	14	19
10.	Viswanathan BM	4	23	12	5	6	8	12	72	19	21
11.	Jayashakthi BM	3	24	11	6	4	6	8	48	21	23
12.	Lakshmi BM	1	18	8	4	4	6	7	13	15	17
13.	Thirughanam BM	3	19	9	5	3	5	9	14	17	18
	Residential Sampling										
14.	MAM Residence	26	122	64	31	33	38	54	99	106	116
15.	VST Compound	14	85	38	19	16	24	34	56	60	75
16.	D. G. Star Residence	5	59	24	14	8	17	23	33	44	53
17.	Backside of Karthick BM	11	72	35	20	15	18	30	52	72	72
18.	Elliputhoopu Street	6	78	43	23	14	24	39	64	75	77
19.	Raghu Colony	27	337	120	75	50	77	96	161	231	295
20.	Rajiv Gandhi Nagar	5	208	95	57	30	57	91	131	191	201
21.	Darkar Road	23	98	56	25	33	39	51	74	96	97

Table 3.11
Ambient Air Quality Status at Tirusulam, Chennai for $PM_{2.5}$ (Overall Period)

Averaging Time: 24 hours unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	Rathana BM	3	22	8	5	3	5	8	11	13	19
2.	D. G. Star BM	6	30	15	7	6	8	15	21	27	29
3.	Siva BM	11	138	55	34	14	29	56	75	110	127
4.	Ponni BM	3	263	51	58	12	20	37	70	126	208
5.	Karthick BM	9	234	110	64	30	51	117	147	224	230
6.	J. R. Vimala BM	15	82	44	20	21	25	45	56	77	80
7.	Thiruvakkarai BM	3	137	51	41	6	17	45	76	128	133
8.	Sivagami BM	3	131	36	38	7	12	22	63	111	123
9.	Mageshwari BM	2	40	12	10	3	4	10	15	31	36
10.	Viswanathan BM	6	38	20	9	10	14	20	80	32	35
11.	Jayashakthi BM	4	24	13	6	5	8	14	66	23	23
12.	Lakshmi BM	2	26	12	6	6	8	11	18	22	25
13.	Thirughanam BM	3	23	11	6	4	7	10	17	21	22
	Residential Sampling										
14.	MAM Residence	22	104	55	26	28	32	52	82	98	101
15.	VST Compound	17	79	47	20	19	35	42	64	79	79
16.	D. G. Star Residence	9	120	42	25	15	28	42	52	75	102
17.	Backside of Karthick BM	16	135	52	33	22	27	44	68	107	124
18.	Elliputhoopu Street	6	88	48	25	16	27	48	70	79	84
19.	Raghu Colony	23	214	100	50	42	72	92	135	186	203
20.	Rajiv Gandhi Nagar	7	255	123	70	39	82	118	171	233	246
21.	Darkar Road	25	101	62	24	39	45	58	80	93	98

3.4.2 Inland Area: Kodangipallayam, Tiruppur

Dust monitoring was carried out by employing an ambient air quality monitoring network consisting of 30 sampling locations, designed based on meteorology, number of Stone Crushing Industries, and their spacing and cluster area (**Figure 1.2**). Ambient air quality monitoring (AAQM) was carried out for 30 days continuously on a 12 hourly basis (6 am - 6 pm) and the concentrations were averaged for 24 hours to facilitate comparison with the Indian standards. The dust concentration was calculated from the difference in the weight of the filter paper before and after the sample collection.

3.4.2.1 Dust concentration at source

Out of 15 source air quality monitoring stations were employed for monitoring TSPM, RSPM and $PM_{2.5}$ and the results are presented in **Tables 3.12 to 3.20** and also plotted in the form of isopleth showing stone crusher and ambient air quality monitoring locations to delineate safe distance from the crusher to the nearby residential areas. The monitoring was carried out in two phases covering working and non-working hours to assess the impact of dust emission from stone crushing industries on the surrounding.

Out of 15 source air quality monitoring stations, eleven were chosen in the upwind direction and four in the downwind direction. Air quality monitoring was carried out simultaneously for all these locations during the period. The 24 hourly average concentration of TSPM varied from 1719 µg/m^3 (Pallaniappa BM) to 18253 µg/m^3 (Santhosh BM) with a mean of 6152 µg/m^3 as shown in **Table 3.14**. The minimum TSPM concentration during the study period was recorded at Sri Ganesha BM (104 µg/m^3) whereas the maximum TSPM concentration during the study period was recorded at Santhosh BM (53165 µg/m^3). The measured concentration for all these locations during working, non-working and overall 24 hourly average during the study period given in **Tables 3.12 to 3.14.**

The 24 hourly average concentration of RSPM varied from 269 µg/m3 (Pallaniappa BM) to 3869 µg/m^3 (Santhosh BM) with a mean of 1417 µg/m^3, as shown in **Table 3.17**. The minimum RSPM concentration during the study period was recorded at Pallaniappa BM (74 µg/m^3), whereas the maximum RSPM concentration during the study period was recorded at Santhosh BM (11117 µg/m^3). The measured concentration for all these locations during working, non-working and overall 24 hourly average during the study period given in **Tables 3.15 to 3.17.**

The 24 hourly average concentration of $PM_{2.5}$ varied from 47 µg/m^3 (Pallaniappa BM) to 679 µg/m^3 (Santhosh BM) with a mean of 249 µg/m^3, as shown in **Table 3.20**. The minimum $PM_{2.5}$ concentrations during the study period was recorded at Palaniappa BM (13 µg/m^3) whereas the maximum $PM_{2.5}$ concentrations during the study period was recorded at Santhsh BM (1950 µg/m^3). The measured concentration for all these locations during working, non-working and overall 24 hourly average during the study period was in given in **Tables 3.18 to 3.20.**

3.4.2.2 Dust concentration around stone crushing Industries

Ambient dust monitoring was carried out at 15 locations around stone crushing units for monitoring TSPM, RSPM and $PM_{2.5}$ and the results are presented in **Tables 3.12 to 3.20.** At most of these locations the dust concentrations are within limits.

Out of 15 air quality monitoring stations, eleven were chosen in the upwind direction and four in the downwind direction. Air quality monitoring was carried out simultaneously for all the locations during the period. The 24 hourly average concentration of TSPM varied from 97 µg/m^3 (Sarojini Residence) to 1683 µg/m^3 (K.M Chinnaswamy Residence) with a mean of 250 µg/m^3, as shown in **Table 3.14**. The minimum TSPM concentration during the study period was recorded at R. Shanmugam Residence (24 µg/m^3) whereas the maximum TSPM concentration during the study period was recorded at K.M Chinnaswamy Residence (2880 µg/m^3). The measured concentration for all these locations during working, non-working and overall 24 hourly average during the study period was in given in **Tables 3.12 to 3.14.**

The 24 hourly average concentration of RSPM varied from 39 µg/m^3 (R. Shanmugam Residence) to 551 µg/m^3 (K.M Chinnaswamy Residence) with a mean of 93 µg/m^3, as shown in **Table 3.17**. The minimum RSPM concentration during the study period was recorded at R. Shanmugam Residence (10 µg/m^3) whereas the maximum RSPM concentration during the study period was recorded at K.M Chinnaswamy Residence (1838 µg/m^3). The measured concentration for all these locations during working, non-working and overall 24 hourly average during the study period was in given in **Tables 3.15 to 3.17.**

The 24 hourly average concentration of $PM_{2.5}$ varied from 15 µg/m^3 (Kumar Godown) to 97 µg/m^3 (K.M Chinnaswamy Residence) with a mean of 49 µg/m^3, as shown in **Table 3.20**. The minimum $PM_{2.5}$ concentrations during the study period was recorded at Kumar Godown (7 µg/m^3) whereas the maximum $PM_{2.5}$ concentrations during the study period was recorded at Thirumurgan Nagar (325 µg/m^3). The measured concentration for all these locations during

working, non-working and overall 24 hourly average during the study period was in given in **Tables 3.18 to 3.20.**

It was observed that during working period of 12 hours in the day time (6 am to 6 pm) TSPM concentration in ambient air was about 3 - 4 times more than that of the following 12 hours (6 pm - 6 am) in the night time during which there was no crusher activity but transportation activity was carried out. During Sundays (6 pm to 6 am) when there were no crushing and transportation activities, the TSPM concentration measured corresponds to background concentration and it was found to be 1/4 - 1/8 of measured concentration (all crushers running) for the working period of 6 am to 6 pm. The spatial distribution of measured concentration when all the crushers in operation are presented in the form of isopleths and surfer as shown in **Figures 3.21** to **3.38**. The impact zone for the crushers in operation also depicted in **Figures 3.21 to 3.38.**

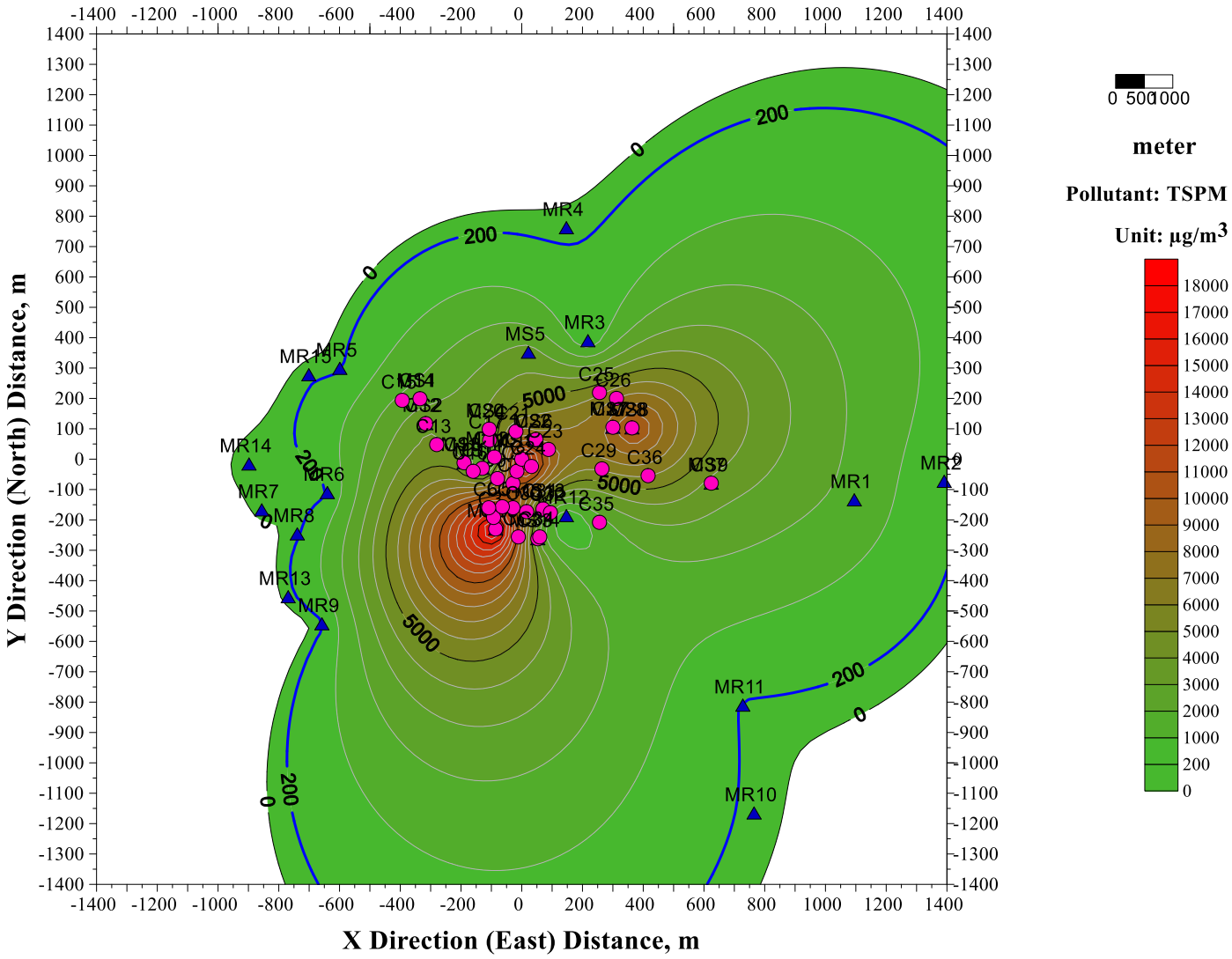


Figure 3.21: Isopleth Showing Measured TSPM Concentration: Tiruppur (Working Hours: 6am to 6pm)

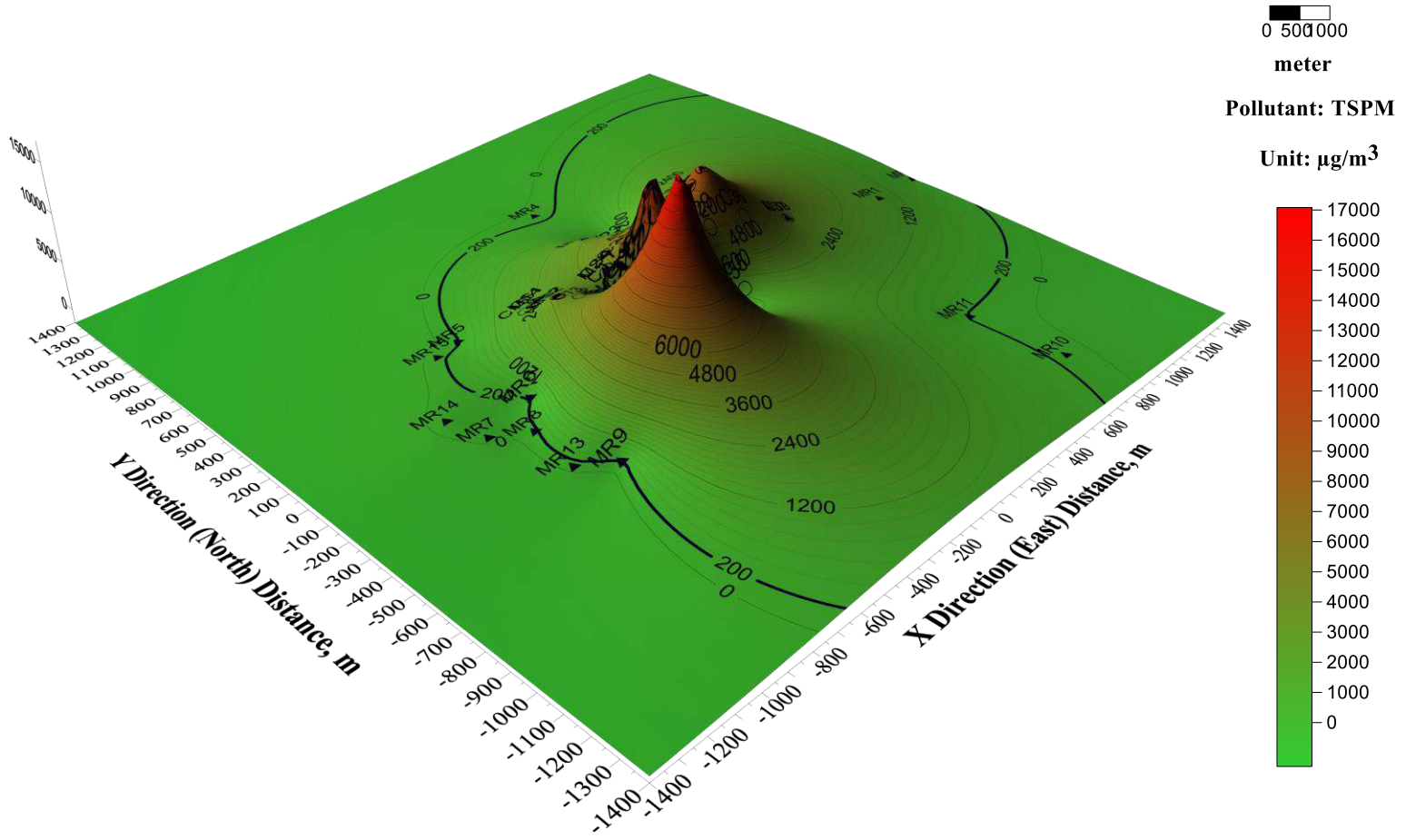


Figure 3.22: Surfer Showing Measured TSPM Concentration: Tiruppur (Working Hours: 6am to 6pm)

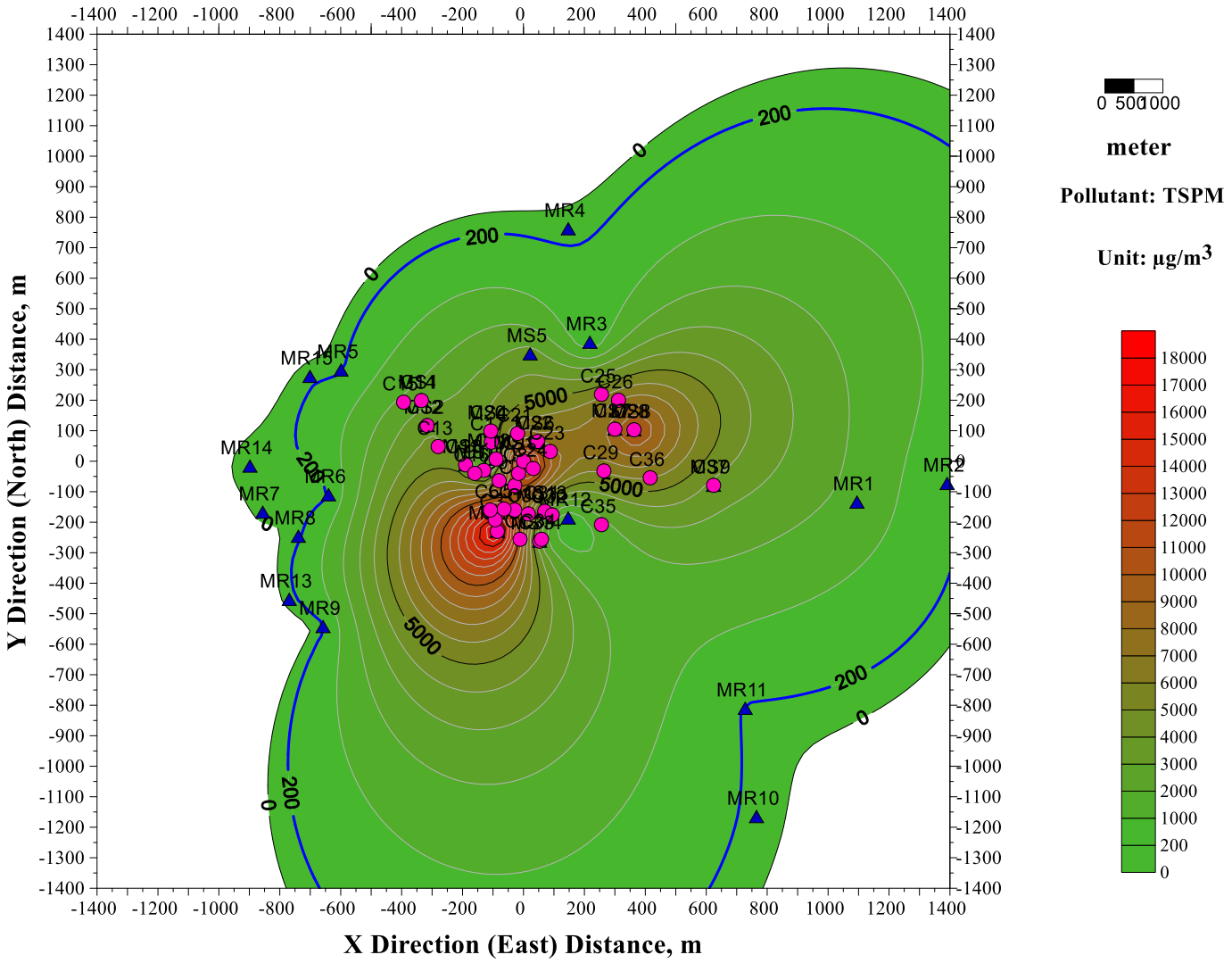


Figure 3.23: Isopleth Showing Measured TSPM Concentration: Tiruppur (Non-Working Hours: 6pm to 6pm)

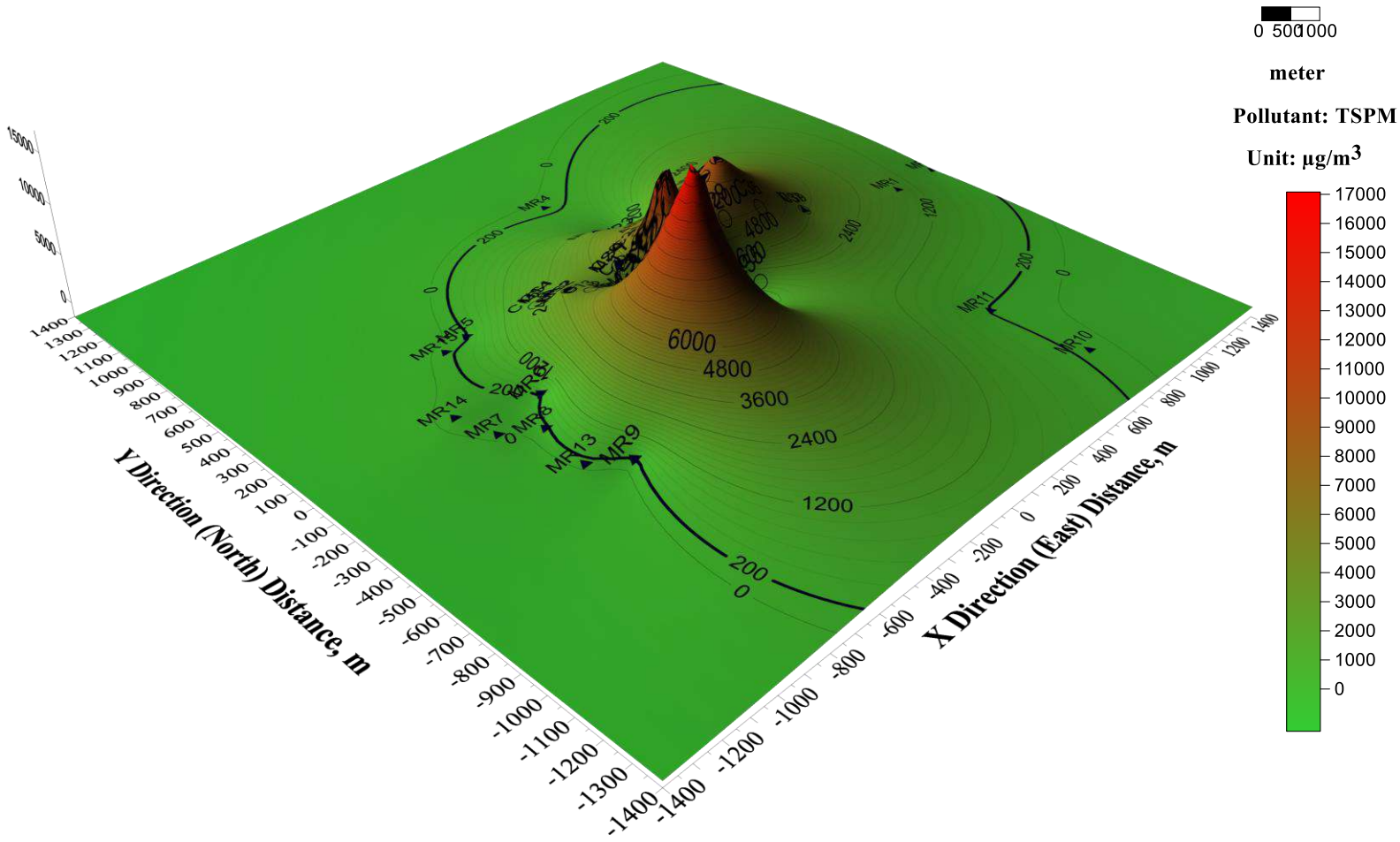


Figure 3.24: Surfer Showing Measured TSPM Concentration: Tiruppur (Non-Working Hours: 6pm to 6pm)

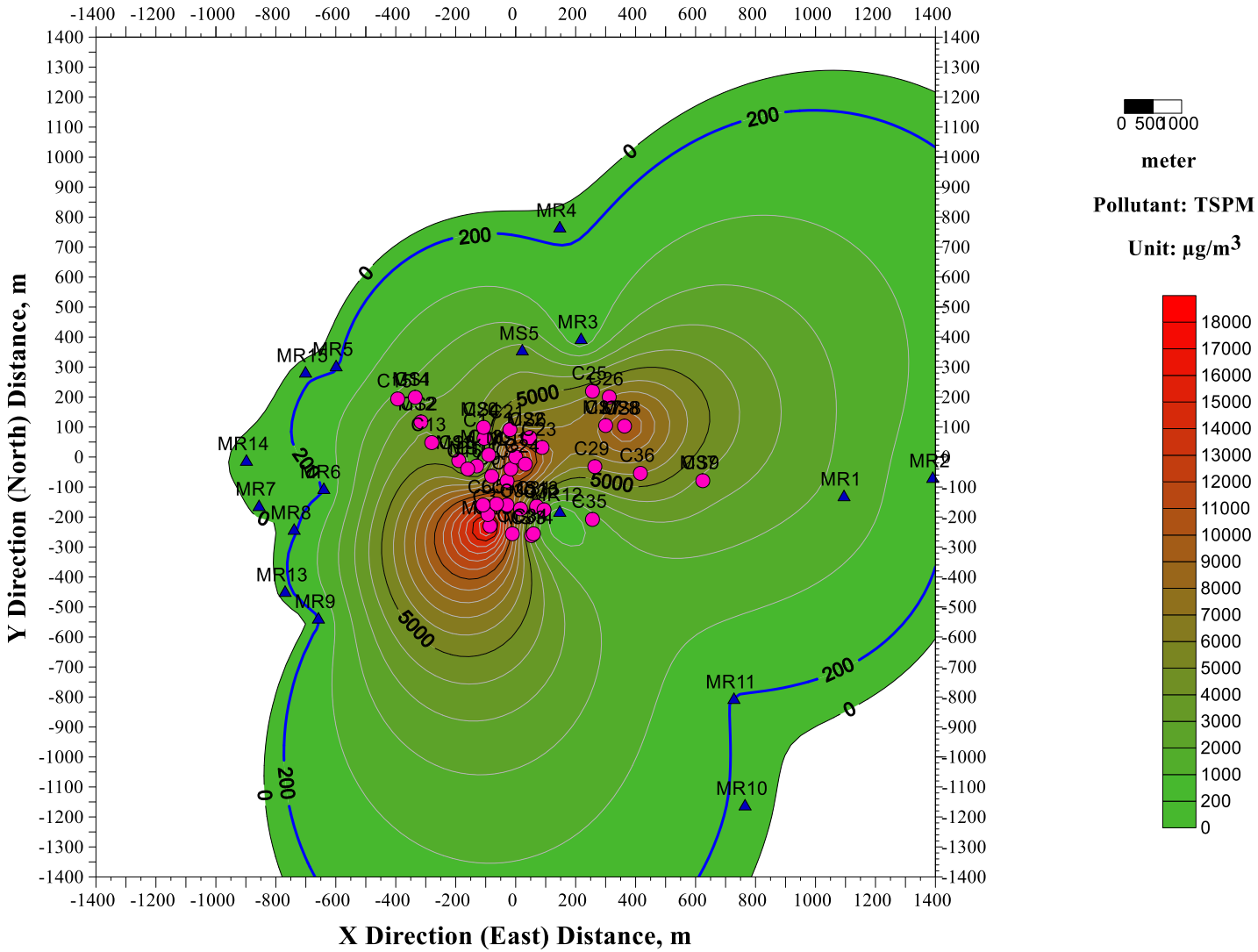


Figure 3.25: Isopleth Showing Measured TSPM Concentration: Tiruppur (24 hour Average)

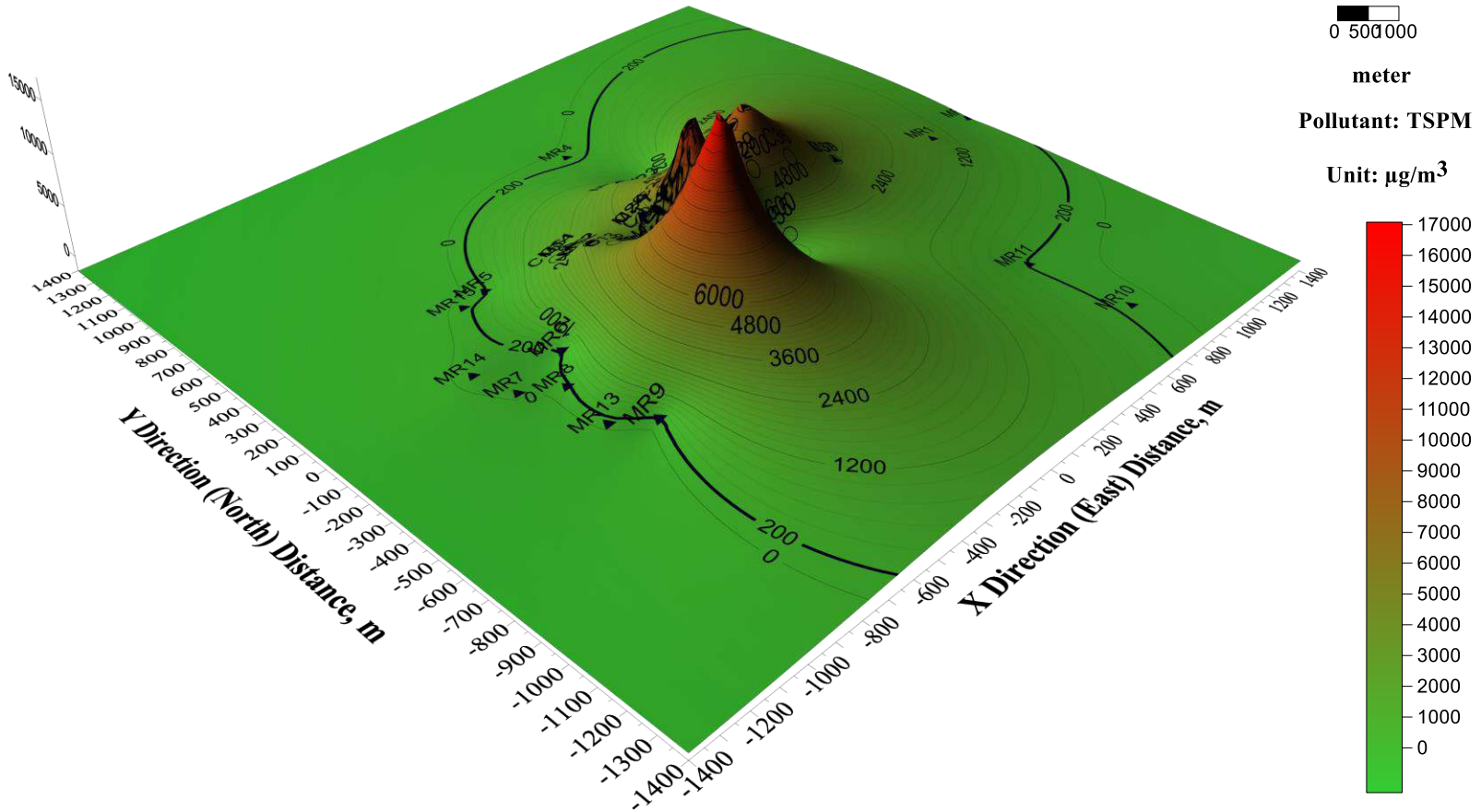


Figure 3.26: Surfer Showing Measured TSPM Concentration: Tiruppur (24 hour Average)

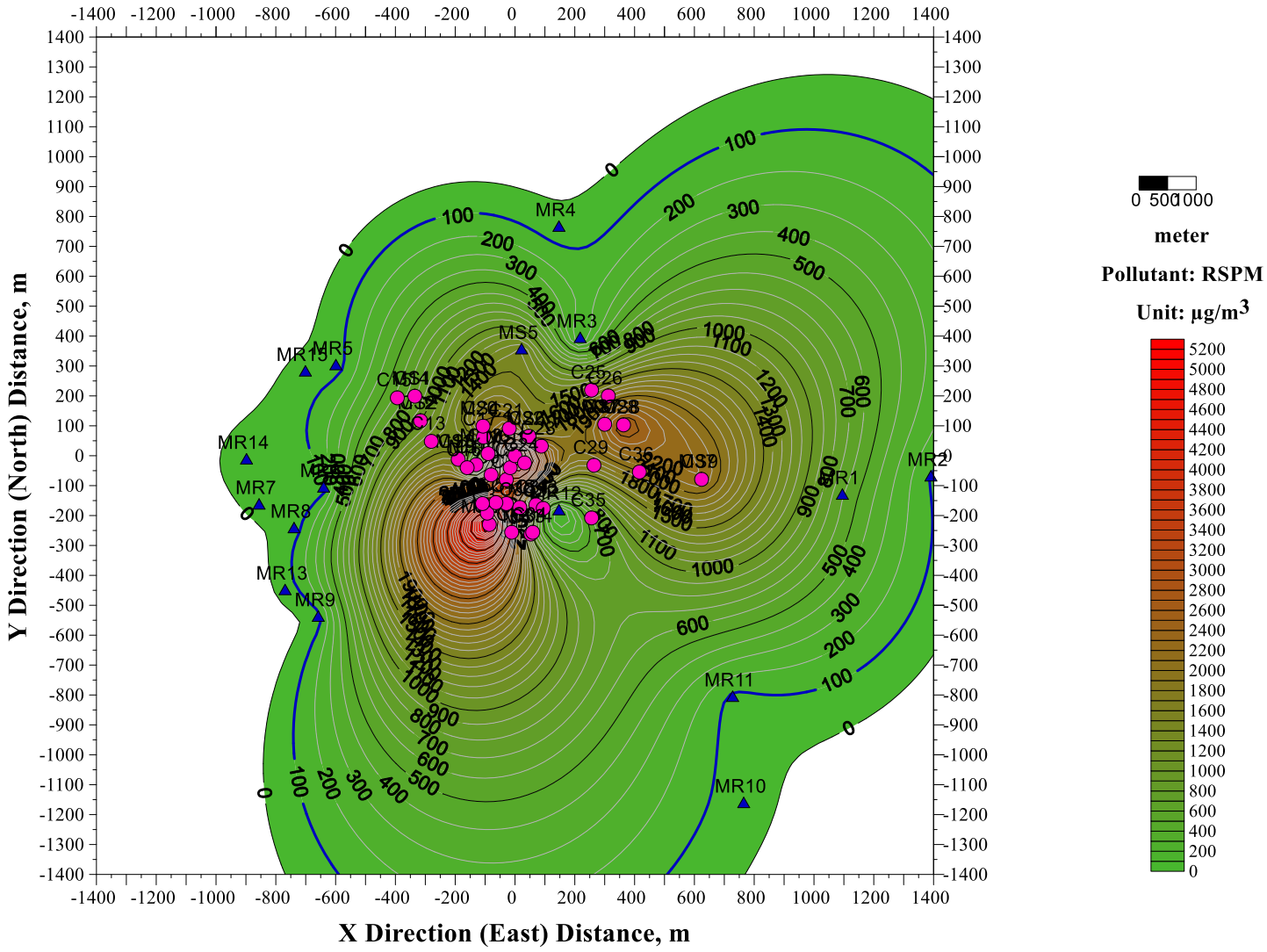


Figure 3.27: Isopleth Showing Measured RSPM Concentration: Tiruppur (Workimg hours: 6am to 6pm)

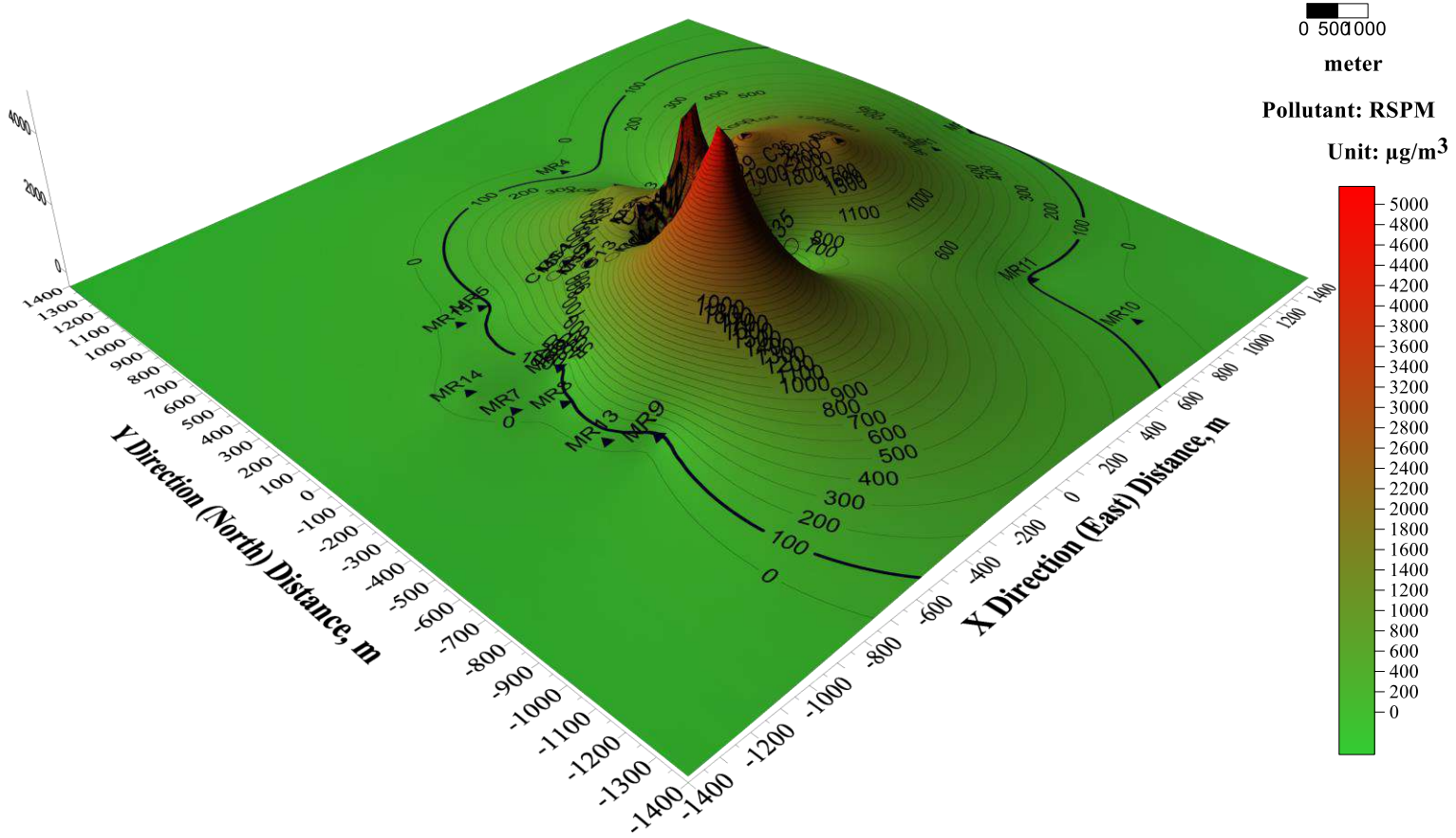


Figure 3.28: Surfer Showing Measured RSPM Concentration: Tiruppur (Workimg hours: 6am to 6pm)

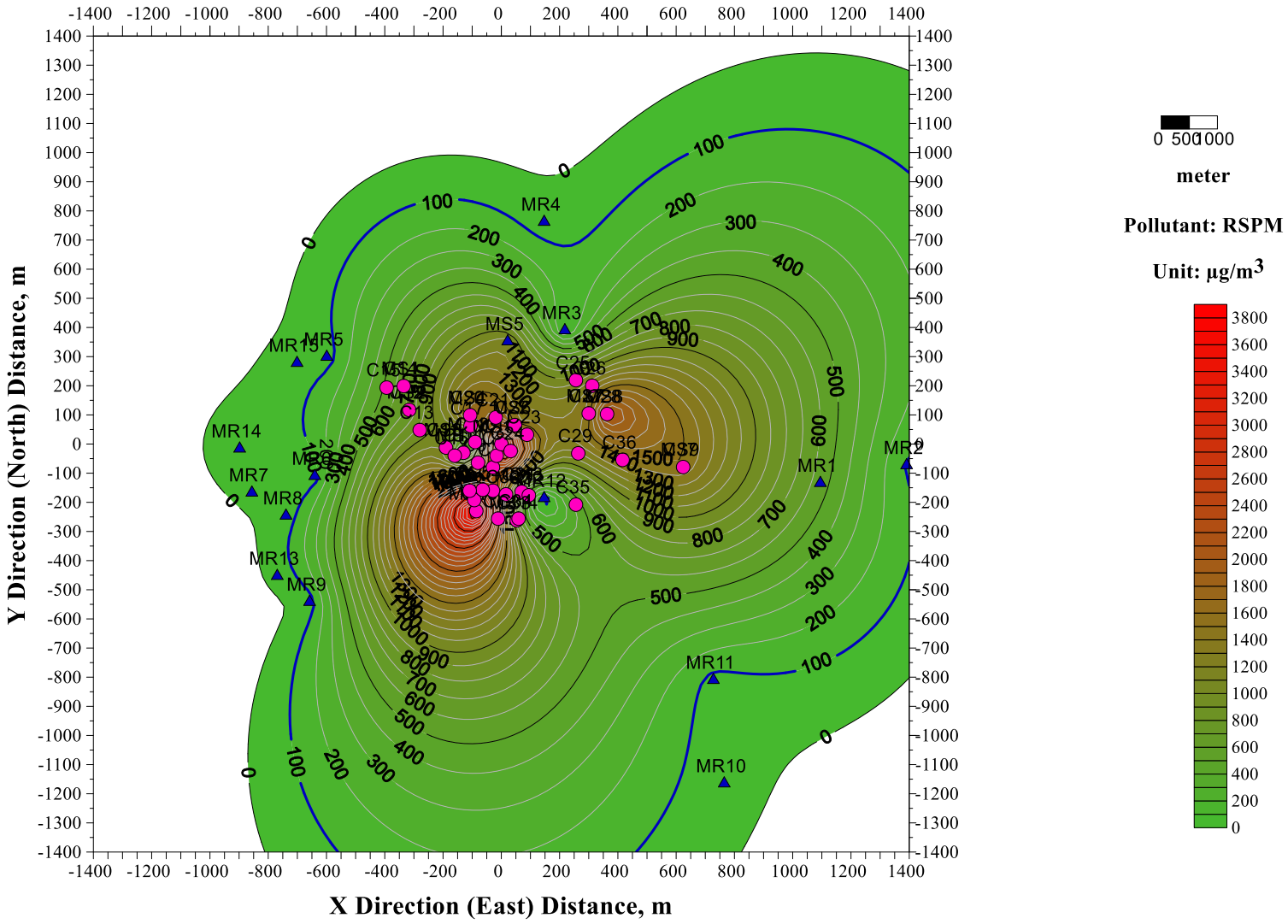


Figure 3.29: Isopleth Showing Measured RSPM Concentration: Tiruppur (Non-Workimg hours: 6pm to 6am)

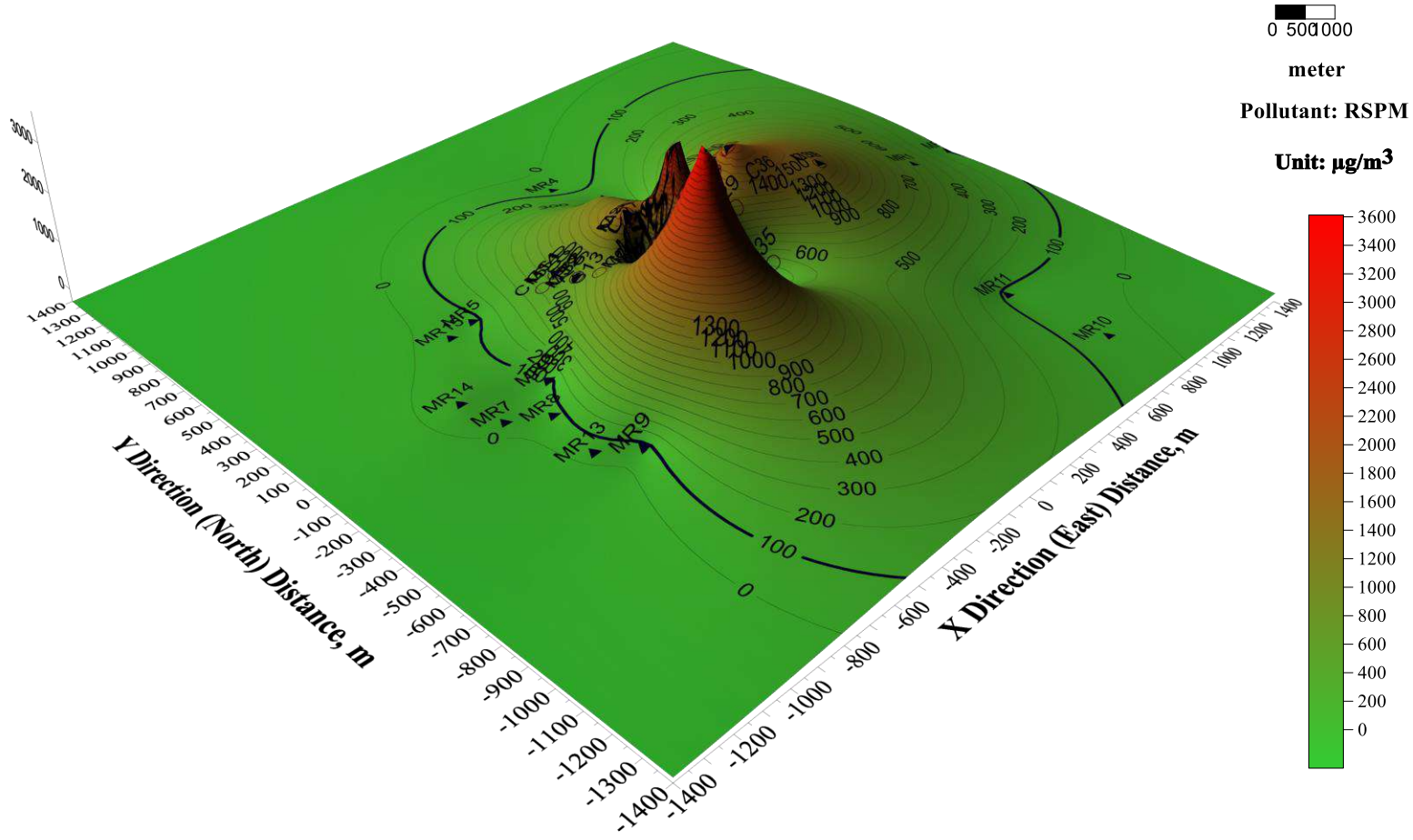


Figure 3.30: Surfer Showing Measured RSPM Concentration: Tiruppur (Non-Workimg hours: 6pm to 6am)

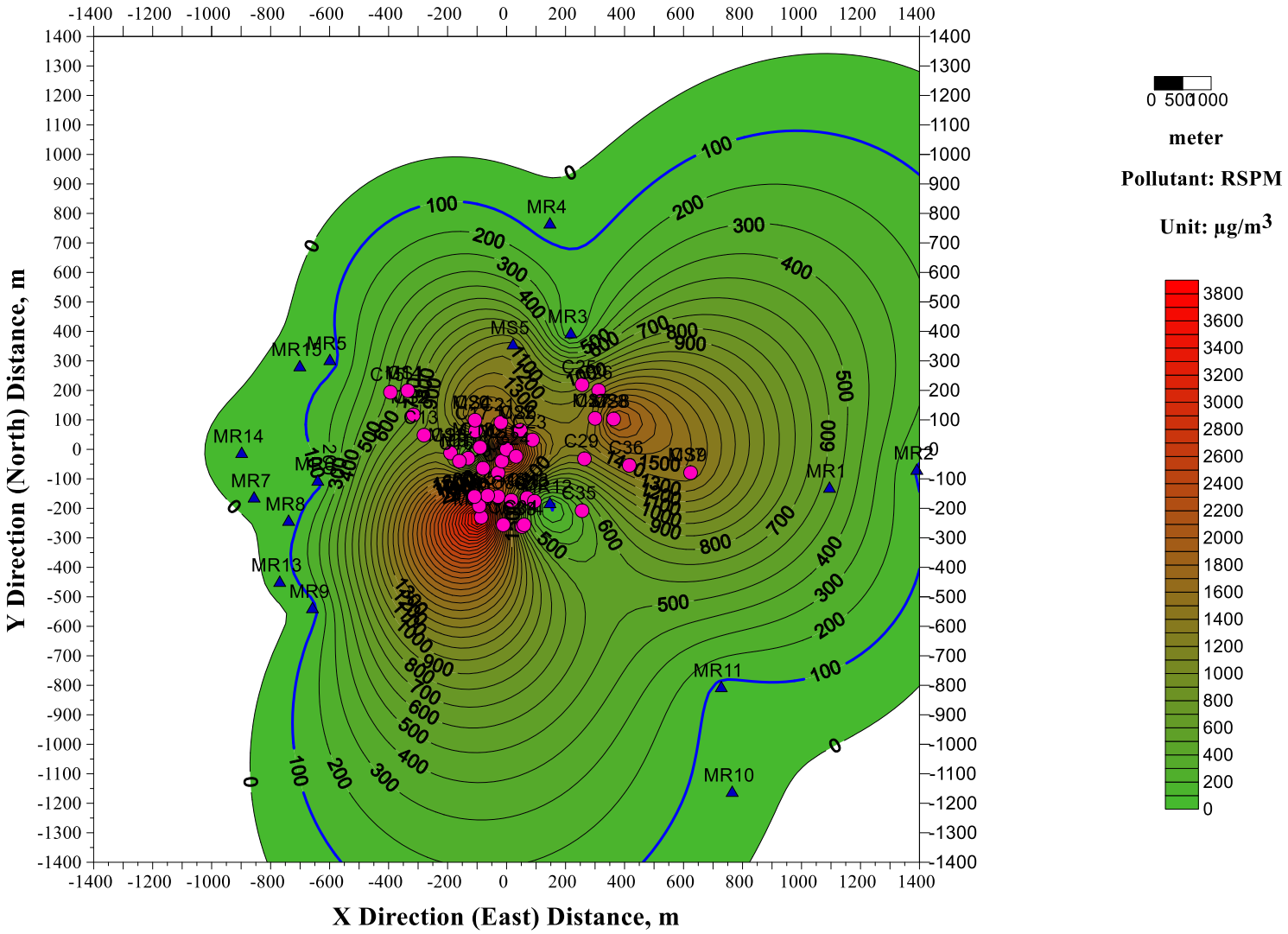


Figure 3.31: Isopleth Showing Measured RSPM Concentration: Tiruppur (24 Hour Average)

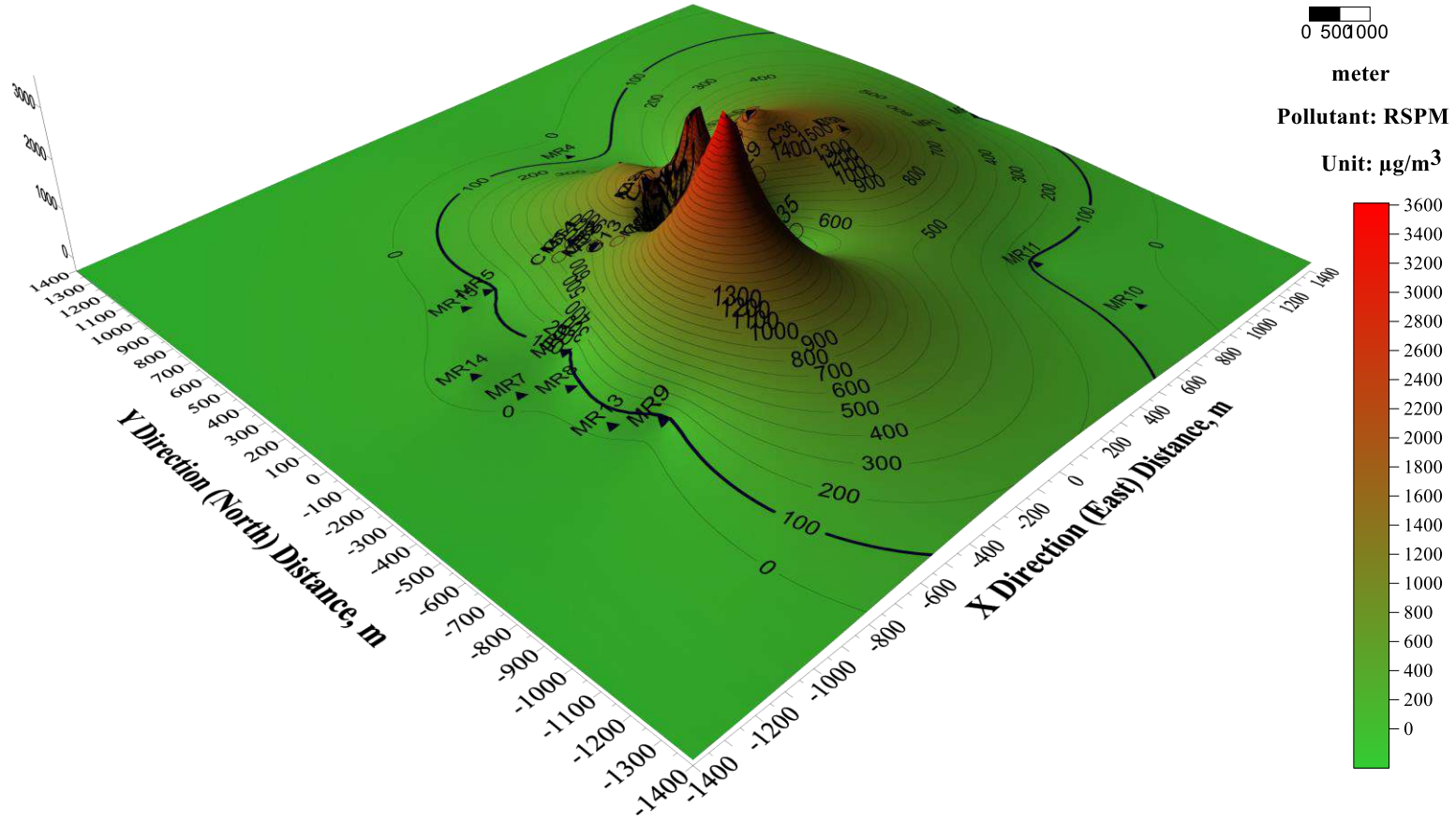


Figure 3.32: Surfer Showing Measured RSPM Concentration: Tiruppur (24 hour Average)

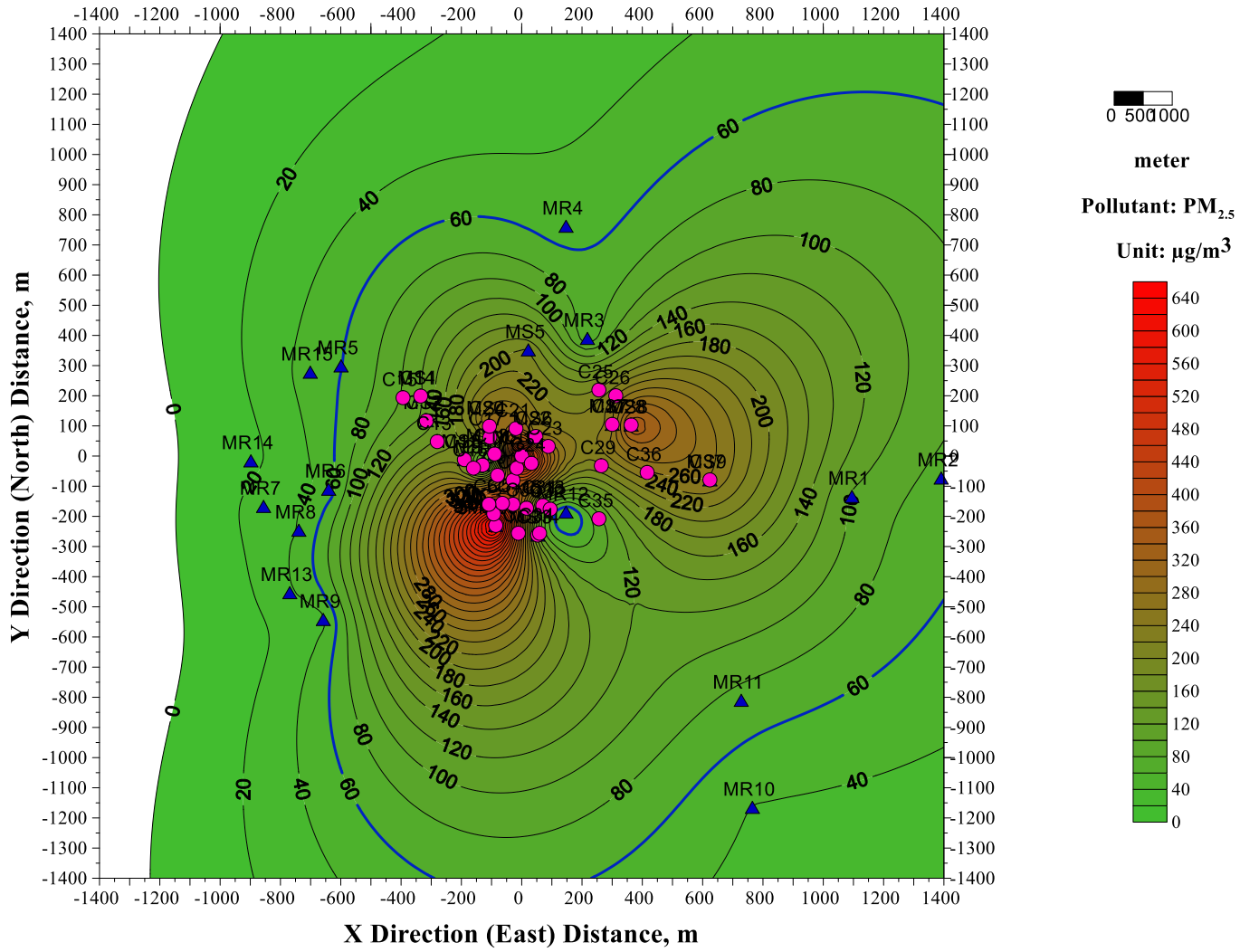


Figure 3.33: Isopleth Showing Measured $PM_{2.5}$ Concentration: Tiruppur (Working hours: 6am to 6pm)

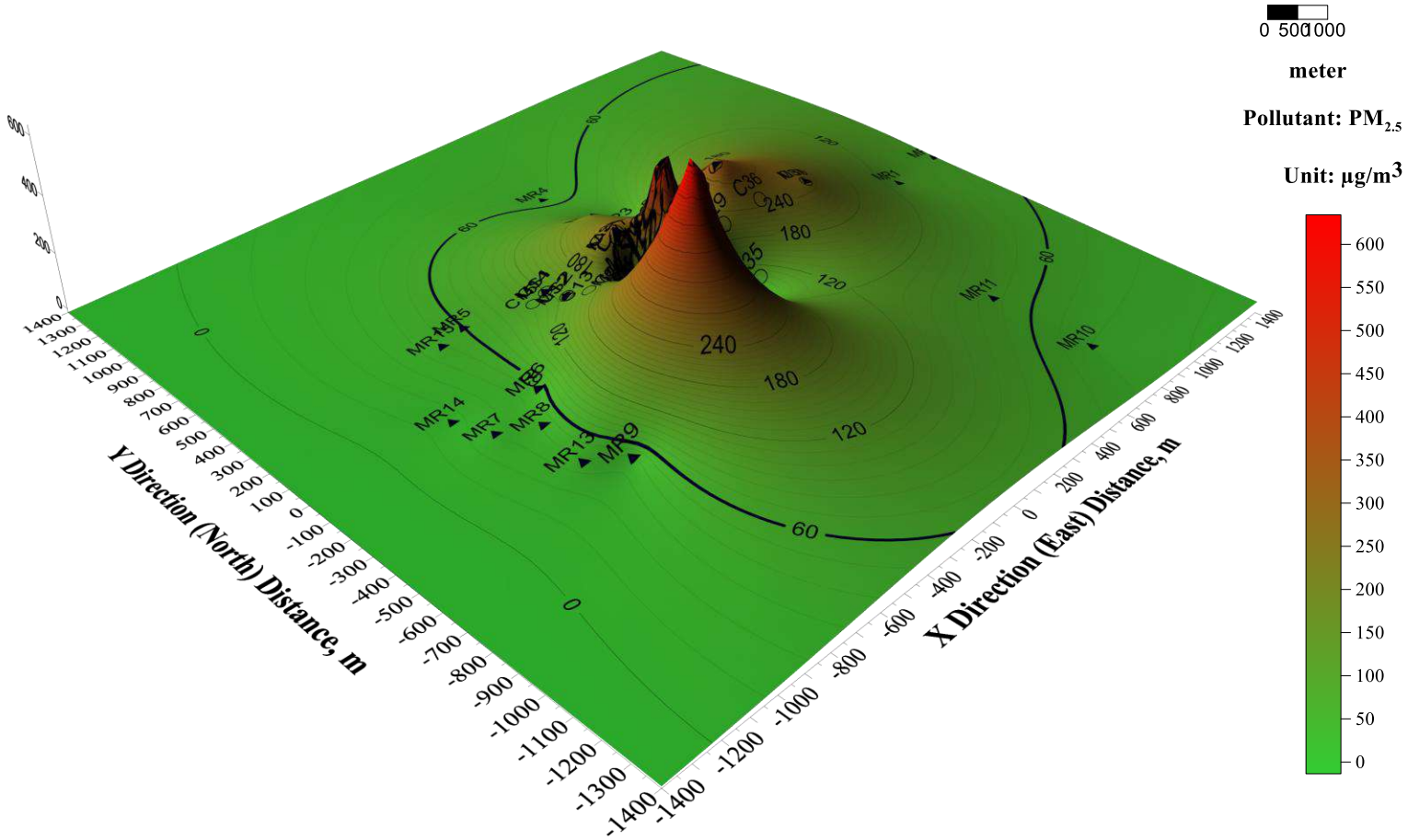


Figure 3.34: Surfer Showing Measured $PM_{2.5}$ Concentration: Tiruppur (Working hours: 6am to 6pm)

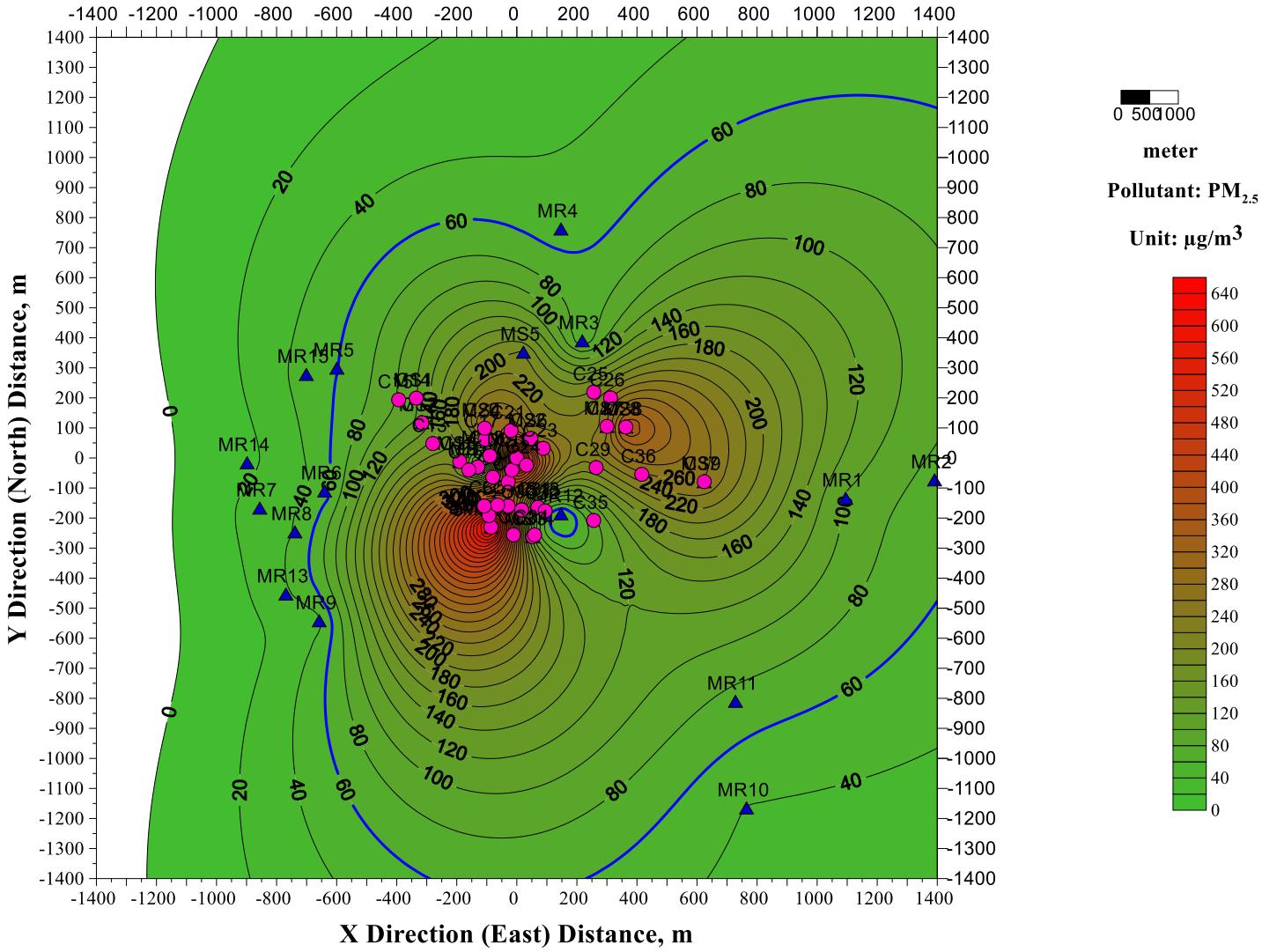


Figure 3.35: Isopleth Showing Measured $PM_{2.5}$ Concentration: Tiruppur (Non-Working hours: 6pm to 6am)

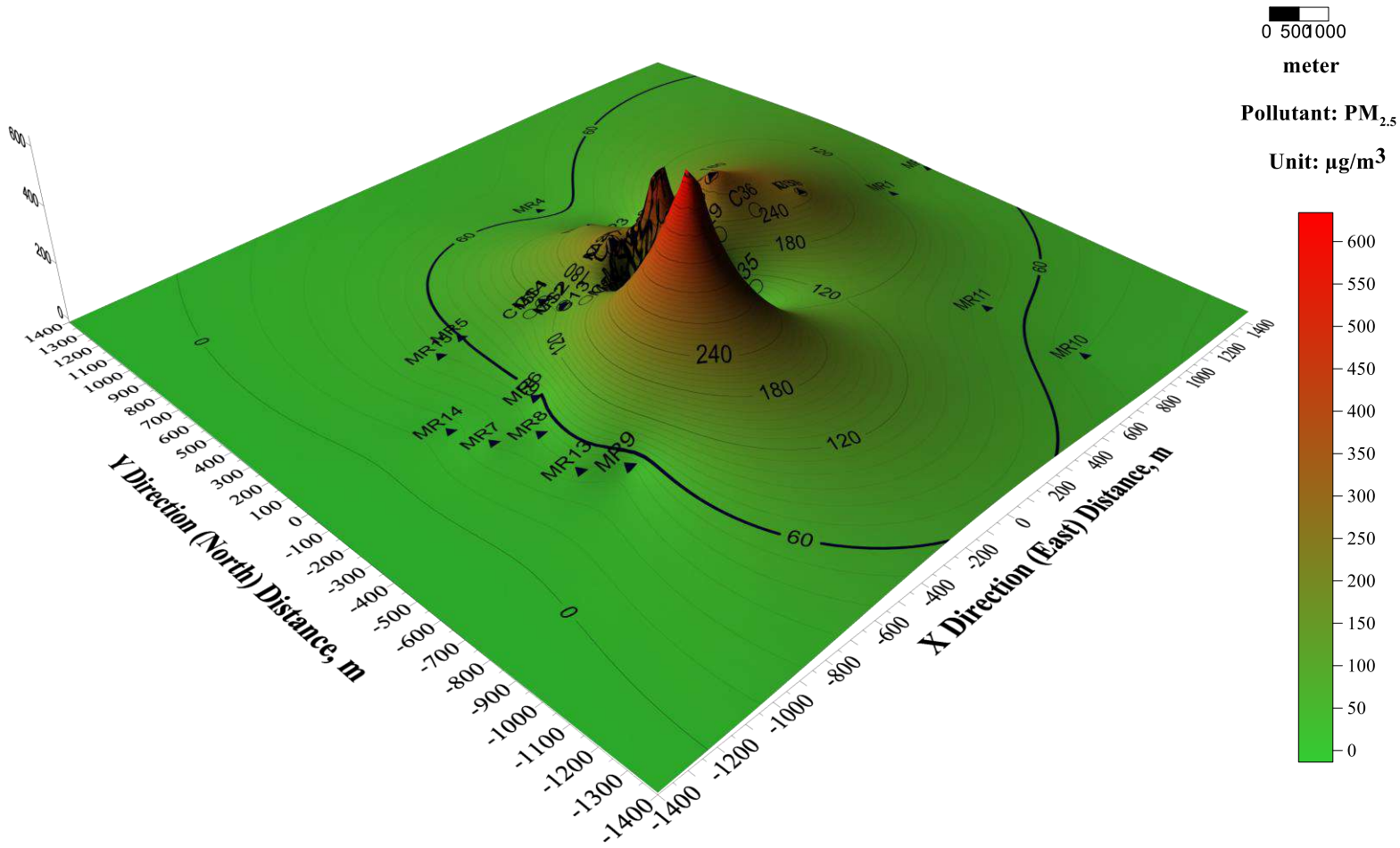


Figure 3.36: Surfer Showing Measured $PM_{2.5}$ Concentration: Tiruppur (Non-Working hours: 6pm to 6am)

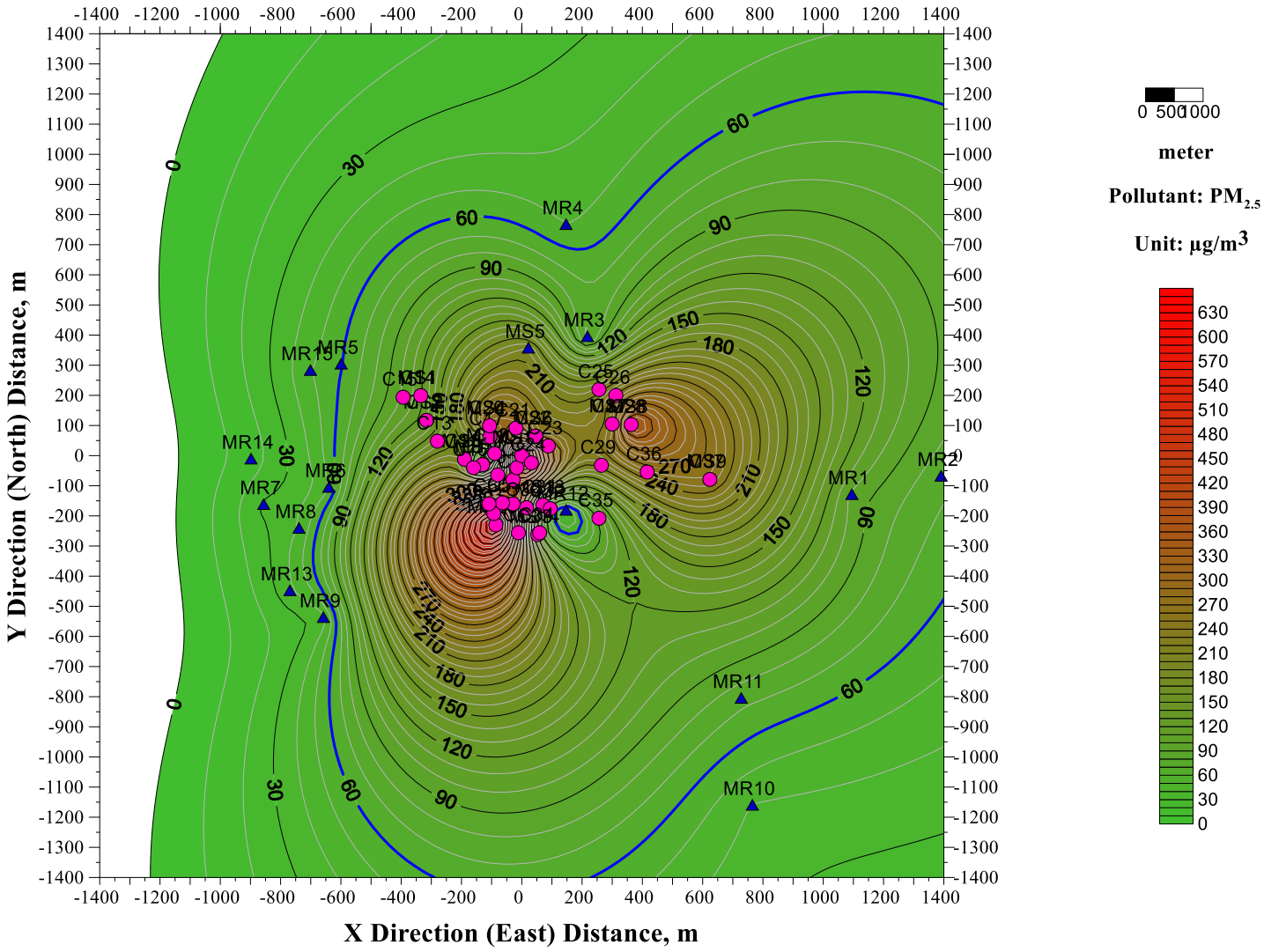


Figure 3.37: Isopleth Showing Measured $PM_{2.5}$ Concentration: Tiruppur (24 hour Average)

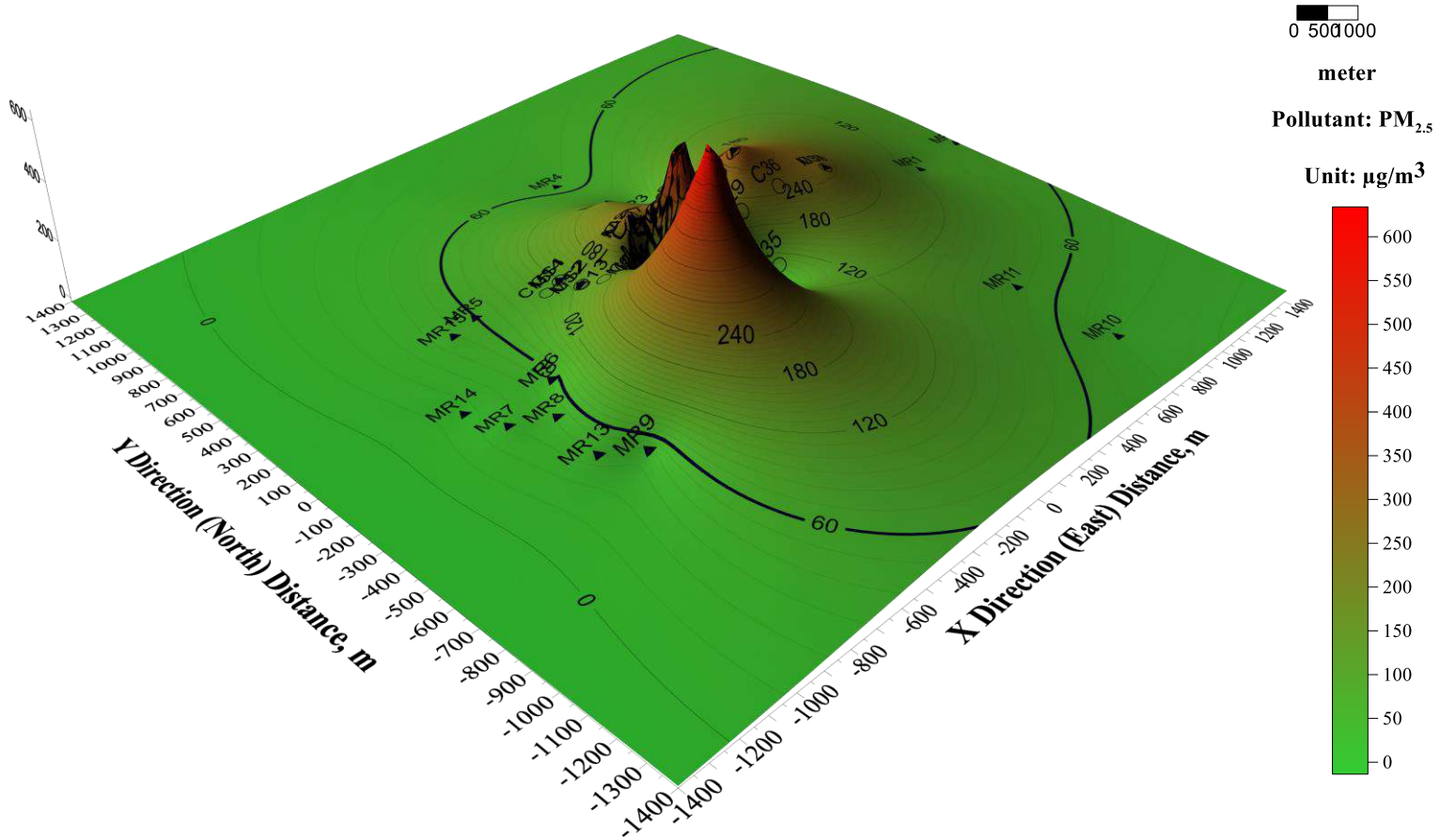


Figure 3.38: Surfer Showing Measured $PM_{2.5}$ Concentration: Tiruppur (24 hour Average)

Table 3.12
Ambient Air Quality Status at Kodangipallayam, Tiruppur for TSPM (Working Period: 6am to 6pm)

unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	SVA BM	966	9041	3074	1882	1453	1765	2964	3561	5387	7579
2.	Kadaieswari BM	778	13621	5853	2704	3219	4453	6106	7168	8597	11611
3.	Sri Murugan BM	650	12009	6810	3573	1439	4770	7376	9947	11011	11610
4.	Sri Ganesha BM	184	24107	6710	6275	1915	3221	4109	10287	17427	21435
5.	PMG BM	489	10145	5007	2945	1458	2731	4616	7408	9419	9855
6.	Vinayaga BM	692	32616	9451	9736	928	2108	5942	16038	26681	30242
7.	Rajalakshmi BM	3330	25447	13732	7395	3842	9143	12082	21942	23946	24846
8.	Rajesh BM	5969	24456	15942	5799	8179	11064	17801	20784	23209	23957
9.	Vijyalakshmi BM	594	14399	5533	3555	1273	3222	5552	6980	11365	13185
10.	OM Muruga BM	708	8928	4566	2581	1276	3067	4159	7408	8213	8642
11.	Palaniappa BM	544	4402	2617	1028	1232	2062	2684	3348	3973	4230
12.	Nirmal BM	7347	58192	24531	13665	9858	13903	23791	28526	51605	55557
13.	Sri Saravana BM	1233	10119	4840	2371	2081	3527	4653	6277	9182	9744
14.	Sri Praveen BM	1455	8703	3907	1855	1899	2381	3754	5348	6541	7838
15.	Santhosh BM	5200	47279	22349	11722	6796	17896	22304	31850	38825	43897
	Residential Sampling										
16.	K M Chinnasamy Residence	670	5013	2654	1339	879	1805	2721	3368	4780	4920
17.	Kanakkam Thottam	117	375	221	77	125	170	213	267	348	364
18.	P A Kandasamy Residence	129	306	211	59	147	153	201	258	304	305
19.	Durai Residence	54	282	122	55	82	93	111	135	208	252
20.	R. Ramakrishnan Residence	87	252	172	59	90	132	180	228	251	251
21.	S Ganesamoorthy Residence	111	228	157	32	119	133	159	174	209	220
22.	L Sarojini Residence	36	432	114	104	40	54	87	138	272	368

23.	Manikam Residence	75	240	139	43	92	114	135	165	215	230
24.	Sankar Residence	36	180	110	40	63	86	102	147	164	174
25.	K V Palanisamy Residence	69	255	126	46	80	96	119	144	201	233
26.	Thirumurugan Nagar	60	1086	248	288	102	128	171	204	725	941
27.	R Shanmugam Residence	30	360	122	81	60	84	93	158	257	319
28.	Valiammal Weigh Bridge	66	192	126	35	81	104	122	156	174	185
29.	Kumar Godown	73	344	214	98	77	135	234	304	332	339
30.	Crusher Office	87	195	144	39	101	119	147	173	189	192

Table 3.13
Ambient Air Quality Status at Kodangipallayam, Tiruppur for TSPM (Non-Working Period: 6pm to 6am)

unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	SVA BM	495	2837	3074	756	559	814	1376	2206	2437	2677
2.	Kadaieswari BM	233	4344	5853	1019	757	1179	1504	2092	3672	4075
3.	Sri Murugan BM	110	4395	6810	1035	241	435	1176	1382	2387	3592
4.	Sri Ganesha BM	24	8872	6710	2254	190	271	383	1928	4864	7269
5.	PMG BM	152	3734	5007	1175	256	741	2019	2516	3677	3711
6.	Vinayaga BM	274	16517	9451	4902	367	562	1094	6719	12573	14939
7.	Rajalakshmi BM	475	4020	13732	969	539	1232	1773	2208	3454	3794
8.	Rajesh BM	1651	17679	15942	4433	2119	2508	2773	6822	13149	15867
9.	Vijyalakshmi BM	286	4024	5533	975	476	733	913	1681	2984	3608
10.	OM Muruga BM	147	1851	4566	420	303	366	763	919	1293	1628
11.	Palaniappa BM	145	4184	2617	976	231	356	557	793	1984	3304
12.	Nirmal BM	1953	9969	24531	2804	2468	3424	5012	8641	9719	9869
13.	Sri Saravana BM	259	1938	4840	417	435	668	923	1094	1563	1788
14.	Sri Praveen BM	473	4403	3907	1014	617	776	975	1448	3192	3919
15.	Santhosh BM	2636	83396	22349	21109	3684	5671	9412	12334	41304	66559
	Residential Sampling										
16.	K M Chinnasamy Residence	141	2571	2654	683	165	256	383	575	1659	2206
17.	Kanakkam Thottam	123	366	221	73	131	164	222	260	339	355
18.	P A Kandasamy Residence	105	255	211	43	123	149	180	202	249	252
19.	Durai Residence	60	942	122	242	90	93	110	138	506	768
20.	R. Ramakrishnan Residence	99	417	172	86	129	132	171	210	323	379
21.	S Ganesamoorthy Residence	75	282	157	54	90	108	131	141	228	260
22.	L Sarojini Residence	12	201	114	58	30	39	63	130	173	190

23.	Manikam Residence	57	141	139	24	70	99	108	121	135	138
24.	Sankar Residence	30	162	110	39	44	71	102	127	158	160
25.	K V Palanisamy Residence	57	153	126	33	63	87	111	145	149	151
26.	Thirumurugan Nagar	48	864	248	228	90	104	123	207	578	749
27.	R Shanmugam Residence	18	216	122	50	26	44	65	98	152	190
28.	Valiammal Weigh Bridge	54	168	126	32	67	89	93	134	153	162
29.	Kumar Godown	52	245	214	73	55	89	158	220	241	243
30.	Crusher Office	72	138	144	27	74	83	111	128	135	137

Table 3.14
Ambient Air Quality Status at Tirusulam, Chennai for TSPM (Overall Period)

Averaging Time: 24 hours unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	SVA BM	730	9041	2475	1892	1131	1447	2209	2665	4654	7286
2.	Kadaieswari BM	506	7450	3948	1759	2227	2895	3948	4635	7363	7415
3.	Sri Murugan BM	380	9947	4241	2478	842	2790	4976	5840	7130	8820
4.	Sri Ganesha BM	104	13627	4167	4142	1194	1770	2129	6267	12843	13313
5.	PMG BM	333	6899	3431	1995	1479	1892	3015	4972	6691	6816
6.	Vinayaga BM	483	32616	7580	8599	681	1700	5022	10140	23399	28929
7.	Rajalakshmi BM	1902	22034	8384	5268	2195	5209	7157	12016	15716	19507
8.	Rajesh BM	3810	17740	10601	3979	5356	8122	11152	14178	16037	17059
9.	Vijyalakshmi BM	616	10353	3695	2727	809	2020	3464	4274	9497	10011
10.	OM Muruga BM	428	5389	2750	1441	955	1763	2790	4231	4629	5085
11.	Palaniappa BM	345	3396	1719	701	923	1443	1751	1952	2709	3121
12.	Nirmal BM	4650	33535	15232	7280	7235	9500	15057	18860	27786	31236
13.	Sri Saravana BM	1054	5311	2966	1246	1347	2379	2832	3839	5030	5199
14.	Sri Praveen BM	964	8703	2837	1870	1258	1733	2489	3303	6009	7625
15.	Santhosh BM	3918	53165	18253	12454	9330	10955	13989	21437	39355	47641
	Residential Sampling										
16.	K M Chinnasamy Residence	405	2880	1683	747	535	1368	1767	2149	2697	2807
17.	Kanakkam Thottam	123	372	221	71	132	178	213	255	343	360
18.	P A Kandasamy Residence	117	276	193	46	141	161	189	234	263	271
19.	Durai Residence	57	525	150	124	91	98	113	137	355	457
20.	R. Ramakrishnan Residence	90	279	178	56	97	152	176	226	253	268
21.	S Ganesamoorthy Residence	102	240	146	33	111	134	146	157	187	219
22.	L Sarojini Residence	33	288	97	71	36	48	78	140	209	256

23.	Manikam Residence	66	180	124	31	81	108	126	144	176	178
24.	Sankar Residence	33	171	103	36	59	84	110	126	158	166
25.	K V Palanisamy Residence	63	201	118	35	81	101	113	144	176	191
26.	Thirumurugan Nagar	54	975	219	248	103	110	144	191	619	832
27.	R Shanmugam Residence	24	288	98	63	47	68	81	124	198	252
28.	Valiammal Weigh Bridge	60	162	115	29	78	100	120	132	162	162
29.	Kumar Godown	62	294	184	81	66	121	203	236	274	286
30.	Crusher Office	80	161	125	32	88	101	129	155	159	160

Table 3.15
Ambient Air Quality Status at Tirusulam, Chennai for RSPM (Working Period: 6am to 6pm)

unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	SVA BM	286	1856	777	364	464	591	708	932	1385	1668
2.	Kadaieswari BM	198	4280	987	970	364	537	653	1029	2694	3645
3.	Sri Murugan BM	258	7401	1594	1643	560	935	1296	1471	3869	5988
4.	Sri Ganesha BM	1180	3002	2052	839	1235	1318	1935	2861	2967	2988
5.	PMG BM	373	2991	1426	814	546	918	1220	2179	2885	2948
6.	Vinayaga BM	158	5493	1674	1612	229	424	832	2967	4294	5013
7.	Rajalakshmi BM	516	3713	2280	1139	622	1479	2447	3522	3681	3700
8.	Rajesh BM	1048	4229	2687	989	1380	1852	2914	3442	3965	4123
9.	Vijyalakshmi BM	238	5760	2213	1422	509	1289	2221	2792	4546	5274
10.	OM Muruga BM	204	1956	781	474	263	421	686	1148	1494	1771
11.	Palaniappa BM	111	756	402	178	158	272	438	524	638	709
12.	Nirmal BM	1375	11449	5667	2392	2753	4923	5737	6458	9405	10632
13.	Sri Saravana BM	305	1638	927	383	570	680	822	1280	1607	1626
14.	Sri Praveen BM	319	1970	966	507	398	600	908	1284	1818	1909
15.	Santhosh BM	1021	11847	5525	3009	1900	4263	5012	7951	10154	11170
	Residential Sampling										
16.	K M Chinnasamy Residence	129	1838	602	429	261	419	537	646	1269	1611
17.	Kanakkam Thottam	47	150	88	31	50	68	85	107	139	146
18.	P A Kandasamy Residence	52	122	84	24	59	61	80	103	122	122
19.	Durai Residence	22	113	49	22	33	37	44	54	83	101
20.	R. Ramakrishnan Residence	35	101	69	24	36	53	72	91	100	101
21.	S Ganesamoorthy Residence	44	91	63	13	47	53	64	70	83	88
22.	L Sarojini Residence	14	173	45	41	16	22	35	55	109	147

23.	Manikam Residence	30	96	56	17	37	46	54	66	86	92
24.	Sankar Residence	14	72	44	16	25	35	41	59	66	69
25.	K V Palanisamy Residence	28	102	50	19	32	38	47	58	80	93
26.	Thirumurugan Nagar	24	434	99	115	41	51	68	82	290	377
27.	R Shanmugam Residence	12	144	49	32	24	34	37	63	103	128
28.	Valiammal Weigh Bridge	26	77	50	14	32	41	49	62	70	74
29.	Kumar Godown	42	201	85	46	48	56	71	103	158	184
30.	Crusher Office	8	142	60	51	12	17	52	94	127	136

Table 3.16
Ambient Air Quality Status at Tirusulam, Chennai for RSPM (Non-Working Period: 6pm to 6am)

unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	SVA BM	181	966	474	254	209	282	396	694	935	954
2.	Kadaieswari BM	137	1474	468	355	181	233	320	614	1039	1300
3.	Sri Murugan BM	71	2835	484	695	90	149	246	469	1572	2330
4.	Sri Ganesha BM	541	1823	942	546	554	573	648	1265	1684	1767
5.	PMG BM	120	2732	792	717	195	223	610	1028	2071	2468
6.	Vinayaga BM	72	2742	907	928	104	206	300	1706	2467	2632
7.	Rajalakshmi BM	81	718	354	211	97	174	412	483	695	709
8.	Rajesh BM	420	7629	1448	1793	467	611	998	1652	3852	6118
9.	Vijyalakshmi BM	114	1610	516	390	190	293	365	672	1194	1443
10.	OM Muruga BM	58	559	201	130	76	117	186	250	434	509
11.	Palaniappa BM	36	229	132	57	55	100	120	186	207	220
12.	Nirmal BM	269	1870	1095	453	530	862	1068	1398	1802	1843
13.	Sri Saravana BM	80	497	244	142	100	159	201	382	490	494
14.	Sri Praveen BM	140	1669	450	420	147	180	290	634	1155	1463
15.	Santhosh BM	187	10387	2213	2624	430	888	1655	2654	6063	8658
	Residential Sampling										
16.	K M Chinnasamy Residence	55	2548	378	726	75	102	130	249	1464	2114
17.	Kanakkam Thottam	49	146	87	29	52	65	89	104	135	142
18.	P A Kandasamy Residence	42	102	70	17	49	59	72	81	99	101
19.	Durai Residence	24	377	71	97	36	37	44	55	203	307
20.	R. Ramakrishnan Residence	40	167	74	34	52	53	68	84	129	152
21.	S Ganesamoorthy Residence	30	113	55	22	36	43	52	56	91	104
22.	L Sarojini Residence	5	80	31	23	12	16	25	52	69	76

23.	Manikam Residence	23	56	42	10	28	40	43	48	54	55
24.	Sankar Residence	12	65	39	16	18	28	41	51	63	64
25.	K V Palanisamy Residence	23	61	44	13	25	35	44	58	60	61
26.	Thirumurugan Nagar	19	346	83	91	36	41	49	83	231	300
27.	R Shanmugam Residence	7	86	30	20	10	17	26	39	61	76
28.	Valiammal Weigh Bridge	22	67	41	13	27	35	37	54	61	65
29.	Kumar Godown	43	168	87	43	48	51	77	112	156	163
30.	Crusher Office	29	55	42	11	30	33	44	51	54	55

Table 3.17
Ambient Air Quality Status at Tirusulam, Chennai for RSPM (Overall Period)

Averaging Time: 24 hours unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	SVA BM	233	1856	667	376	422	478	521	806	1273	1623
2.	Kadaieswari BM	198	2279	719	517	275	463	551	880	1598	2007
3.	Sri Murugan BM	165	3986	1068	934	357	560	879	1447	2512	3397
4.	Sri Ganesha BM	104	3238	1698	716	930	1202	1853	2116	2587	2978
5.	PMG BM	295	2211	1152	605	429	596	1175	1788	1914	2092
6.	Vinayaga BM	136	5493	1447	1429	208	356	1230	2253	3819	4823
7.	Rajalakshmi BM	299	3522	1416	851	360	843	1433	2083	2526	3124
8.	Rajesh BM	811	5321	2102	1027	1077	1515	2114	2413	3301	4513
9.	Vijyalakshmi BM	246	4141	1478	1091	323	808	1385	1710	3799	4004
10.	OM Muruga BM	131	1257	507	286	201	309	457	698	899	1114
11.	Palaniappa BM	74	492	269	107	134	206	280	352	405	457
12.	Nirmal BM	822	6660	3519	1486	1646	2939	3446	4440	5805	6318
13.	Sri Saravana BM	192	946	596	208	379	476	569	737	916	934
14.	Sri Praveen BM	229	1819	749	482	287	429	682	987	1780	1803
15.	Santhosh BM	696	11117	3869	2525	2160	2695	3103	4920	7695	9748
	Residential Sampling										
16.	K M Chinnasamy Residence	92	1838	551	545	186	274	357	561	1661	1767
17.	Kanakkam Thottam	49	149	88	28	53	71	85	102	137	144
18.	P A Kandasamy Residence	47	110	77	18	56	64	76	94	105	108
19.	Durai Residence	23	210	60	50	36	39	45	55	142	183
20.	R. Ramakrishnan Residence	36	112	71	22	39	61	70	90	101	107
21.	S Ganesamoorthy Residence	41	96	59	13	44	54	58	63	75	88
22.	L Sarojini Residence	13	115	39	28	14	19	31	56	84	103

23.	Manikam Residence	26	72	49	13	32	43	50	58	70	71
24.	Sankar Residence	13	68	41	14	23	34	44	50	63	66
25.	K V Palanisamy Residence	25	80	47	14	32	41	45	58	71	76
26.	Thirumurugan Nagar	22	390	88	99	41	44	58	77	247	333
27.	R Shanmugam Residence	10	115	39	25	19	27	32	50	79	101
28.	Valiammal Weigh Bridge	24	65	46	12	31	40	48	53	65	65
29.	Kumar Godown	42	144	86	37	48	53	83	114	140	143
30.	Crusher Office	32	64	50	13	35	40	52	62	64	64

Table 3.18
Ambient Air Quality Status at Tirusulam, Chennai for $PM_{2.5}$ (Working Period: 6am to 6pm)

unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	SVA BM	50	326	136	64	81	104	124	164	243	293
2.	Kadaieswari BM	35	751	173	170	64	94	115	181	473	640
3.	Sri Murugan BM	45	1298	280	288	98	164	227	258	679	1051
4.	Sri Ganesha BM	207	527	360	147	217	231	339	502	520	524
5.	PMG BM	65	525	250	143	96	161	214	382	506	517
6.	Vinayaga BM	28	964	294	283	40	74	146	521	753	880
7.	Rajalakshmi BM	91	651	400	200	109	259	429	618	646	649
8.	Rajesh BM	184	676	452	163	240	304	500	598	637	660
9.	Vijyalakshmi BM	42	1010	388	249	89	226	390	490	798	925
10.	OM Muruga BM	36	343	137	83	46	74	120	201	262	311
11.	Palaniappa BM	19	133	70	31	28	48	77	92	112	124
12.	Nirmal BM	241	2009	994	420	483	864	1006	1133	1650	1865
13.	Sri Saravana BM	54	287	163	67	100	119	144	225	282	285
14.	Sri Praveen BM	56	346	169	89	70	105	159	225	319	335
15.	Santhosh BM	179	2078	969	528	333	748	879	1395	1781	1960
	Residential Sampling										
16.	K M Chinnasamy Residence	23	322	106	75	46	74	94	113	223	283
17.	Kanakkam Thottam	39	125	74	26	42	57	71	89	116	121
18.	P A Kandasamy Residence	43	102	70	20	49	51	67	86	101	102
19.	Durai Residence	18	94	41	18	27	31	37	45	69	84
20.	R. Ramakrishnan Residence	29	84	57	20	30	44	60	76	84	84
21.	S Ganesamoorthy Residence	37	76	52	11	40	44	53	58	70	73
22.	L Sarojini Residence	12	144	38	35	13	18	29	46	91	123

23.	Manikam Residence	25	80	46	14	31	38	45	55	72	77
24.	Sankar Residence	12	60	37	13	21	29	34	49	55	58
25.	K V Palanisamy Residence	23	85	42	15	27	32	40	48	67	78
26.	Thirumurugan Nagar	20	362	83	96	34	43	57	68	242	314
27.	R Shanmugam Residence	10	120	41	27	20	28	31	53	86	106
28.	Valiammal Weigh Bridge	22	64	42	12	27	35	41	52	58	62
29.	Kumar Godown	7	35	15	8	8	10	12	18	28	32
30.	Crusher Office	29	65	48	13	34	40	49	58	63	64

Table 3.19
Ambient Air Quality Status at Tirusulam, Chennai for $PM_{2.5}$ (non-Working Period: 6pm to 6am)

unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	SVA BM	32	169	83	45	37	49	69	122	164	167
2.	Kadaieswari BM	24	259	82	62	32	41	56	108	182	228
3.	Sri Murugan BM	12	497	85	122	16	26	43	82	276	409
4.	Sri Ganesha BM	95	320	165	96	97	101	114	222	295	310
5.	PMG BM	21	479	139	126	34	39	107	180	363	433
6.	Vinayaga BM	13	481	159	163	18	36	53	299	433	462
7.	Rajalakshmi BM	14	126	62	37	17	30	72	85	122	124
8.	Rajesh BM	74	1338	254	315	82	107	175	290	676	1073
9.	Vijyalakshmi BM	20	282	91	68	33	51	64	118	209	253
10.	OM Muruga BM	10	98	35	23	13	21	33	44	76	89
11.	Palaniappa BM	6	40	23	10	10	18	21	33	36	39
12.	Nirmal BM	47	328	192	79	93	151	187	245	316	323
13.	Sri Saravana BM	14	87	43	25	18	28	35	67	86	87
14.	Sri Praveen BM	25	293	79	74	26	31	51	111	203	257
15.	Santhosh BM	33	1822	388	460	75	156	290	466	1064	1519
	Residential Sampling										
16.	K M Chinnasamy Residence	10	447	66	127	13	18	23	44	257	371
17.	Kanakkam Thottam	41	122	73	24	44	55	74	87	113	118
18.	P A Kandasamy Residence	35	85	59	14	41	50	60	67	83	84
19.	Durai Residence	20	314	59	81	30	31	37	46	169	256
20.	R. Ramakrishnan Residence	33	139	61	29	43	44	57	70	108	126
21.	S Ganesamoorthy Residence	25	94	46	18	30	36	44	47	76	87
22.	L Sarojini Residence	4	67	26	19	10	13	21	43	58	63

23.	Manikam Residence	19	47	35	8	23	33	36	40	45	46
24.	Sankar Residence	10	54	32	13	15	24	34	42	53	53
25.	K V Palanisamy Residence	19	51	37	11	21	29	37	48	50	50
26.	Thirumurugan Nagar	16	288	69	76	30	35	41	69	193	250
27.	R Shanmugam Residence	6	72	25	17	9	15	22	33	51	63
28.	Valiammal Weigh Bridge	18	56	34	11	22	30	31	45	51	54
29.	Kumar Godown	8	29	15	8	8	9	14	20	27	29
30.	Crusher Office	24	46	35	9	25	28	37	43	45	46

Table 3.20
Ambient Air Quality Status at Tirusulam, Chennai for $PM_{2.5}$ (Overall Period)

Averaging Time: 24 hours unit: µg/m^3

Sr. No	Sampling Site Name	Min	Max	Average	SD	Percentile					
						10	25	50	80	95	98
	Source Sampling										
1.	SVA BM	41	326	117	66	74	84	91	141	223	285
2.	Kadaieswari BM	35	400	126	91	48	81	97	154	280	352
3.	Sri Murugan BM	29	699	187	164	63	98	154	254	441	596
4.	Sri Ganesha BM	18	568	298	126	163	211	325	371	454	522
5.	PMG BM	52	388	202	106	75	105	206	314	336	367
6.	Vinayaga BM	24	964	254	251	36	62	216	395	670	846
7.	Rajalakshmi BM	52	618	248	149	63	148	251	365	443	548
8.	Rajesh BM	142	934	369	180	189	266	371	423	579	792
9.	Vijyalakshmi BM	43	727	259	191	57	142	243	300	666	703
10.	OM Muruga BM	23	221	89	50	35	54	80	122	158	195
11.	Palaniappa BM	13	86	47	19	24	36	49	62	71	80
12.	Nirmal BM	144	1168	617	261	289	516	605	779	1018	1108
13.	Sri Saravana BM	34	166	105	37	66	84	100	129	161	164
14.	Sri Praveen BM	40	319	131	85	50	75	120	173	312	316
15.	Santhosh BM	122	1950	679	443	379	473	544	863	1350	1710
	Residential Sampling										
16.	K M Chinnasamy Residence	16	322	97	96	33	48	63	98	291	310
17.	Kanakkam Thottam	41	124	74	24	44	59	71	85	114	120
18.	P A Kandasamy Residence	39	92	64	15	47	54	63	78	88	90
19.	Durai Residence	19	175	50	41	30	33	38	46	118	152
20.	R. Ramakrishnan Residence	30	93	59	19	32	51	59	75	84	89
21.	S Ganesamoorthy Residence	34	80	49	11	37	45	49	52	62	73
22.	L Sarojini Residence	11	96	32	24	12	16	26	47	70	85

23.	Manikam Residence	22	60	41	10	27	36	42	48	59	59
24.	Sankar Residence	11	57	34	12	20	28	37	42	53	55
25.	K V Palanisamy Residence	21	67	39	12	27	34	38	48	59	64
26.	Thirumurugan Nagar	18	325	73	83	34	37	48	64	206	277
27.	R Shanmugam Residence	8	96	33	21	16	23	27	41	66	84
28.	Valiammal Weigh Bridge	20	54	38	10	26	33	40	44	54	54
29.	Kumar Godown	7	25	15	7	8	9	14	20	25	25
30.	Crusher Office	27	54	42	11	29	34	43	52	53	53

3.5 Dust Fall Measurement

The size distribution of particulate matter in air determines its potential for adverse effects on health and visibility. The aerodynamic size of the particle dictates whether it falls rapidly to the ground or remains suspended to enter the human respiratory system. Again, depending upon size and chemical nature, the particle may be filtered out in the upper nasal system, settle in the trachea bronchial system; penetrate into the alveoli suspended to be expired.

Atmospheric particle size distribution shows multimodal pattern in a large part due to the mechanism of their generation. The modes are usually grouped into two broad classifications for air pollution purposes namely, fine and coarse. Fine particles are considered to be those smaller than 2.5 µm in diameter. The fine (respirable) particles can penetrate into the pulmonary region of the respiratory system. Coarse particles are principally formed by mechanical, grinding or other dispersive forces. Their size ranges more than 10 µm in diameter, depending upon the dispersive forces and atmospheric conditions. The fine stage has an upper cut-off particle point of 2.5 µm, the coarse (inhalable) stage has an upper cut-off particle point of either 10 or 15 µm depending upon design. Present tendencies are to standardize on the 10 µm cut-off point as the respirable particulates.

Dust particles emitted from a given source are dispersed into the atmosphere where the small particles settle under gravity at near distance from the source. Particles larger than 30 µm are usually deposited within short distance from the source and small particles of size in the range of 10 - 15 µm stays for a longer time in the atmosphere. Particle size analysis plays an important role in the characterization of dust emission from the stone crushing operation and estimation of percentage of air borne particle which is transported over longer distance from the source causing environmental health effects. The most important particle properties related to atmospheric transport are size, shape and size distribution. Physical properties such as density and moisture also play an important role in the transport.

Emphasis is usually given to dust emission in the inhalable size range (< 10 µm). Fine inhalable dust particles ≤ 2.5 µm enter human respiratory system causing more damage than that of coarse inhalable particles of the size range 2.5 to 10 µm. Hence, it is necessary to carry out particle size analysis for the size distribution of suspended particulates.

Particle size analysis was carried out by using CILAS 1180 model Particle Size Analyzer using laser diffraction. Of the many particle size measuring methods, laser diffraction

technique has distinctive features such as simplified operation, excellent repeatability and short measuring time. The result of measurements is printed out automatically within 3 minutes after the measurement is started.

3.5.1 Results of Dust Fall Measurement

The dust emanating from stone crushing industries are varying in size and its distance of spread depends upon the particle size and micro-meteorological conditions at the project site. The settle-able and non settle-able fraction place an important role while modelling this fraction since larger dust particle settle nearby whereas smaller particle stay longer in the atmosphere depending upon meteorological conditions at the project site.

In order to assess the settle-able and non settle-able fraction of dust particles emanating from stone crushing industries dust fall measurement study was planned and carried out at Tirusulam, Chennai and Kodangipallayam, Tiruppur and the results of dust fall measurements are presented in **Table 3.21 and 3.22.**

Table 3.21
Dust Fall Measurement Results: Tirusulam, Chennai

Sr. No	Location	Dust Fall Concentration ($\mu g/m^2s$)	Dust Fall Concentration (g/m^2d)
1.	Rathana BM	7.931	0.685
2.	D.G.Star BM	3.945	0.341
3.	Aathi Lakshmi BM	1.779	0.154
4.	Siva BM	4.977	0.430
5.	Mahalakshmi BM	45.402	3.923
6.	Ponni BM	9.393	0.812
7.	Vasudevan BM	29.889	2.582
8.	Karthick BM	219.600	18.973
9.	AAT BM	61.329	5.299
10.	J. R. Vimala BM	30.850	2.665
11.	King BM	184.550	15.945
12.	Thiruvakkarai BM	11.241	0.971
13.	Sivagami BM	7.144	0.617
14.	Maheswari BM	139.833	12.082
15.	Jayashakthi BM	4.684	0.405
16.	Lakshmi BM	10.131	0.875
17.	Thirughyanam BM	15.354	1.327

Table 3.22
Dust Fall Measurement Results: Kodangipallayam, Tiruppur

Sr. No	Stone Crusher	Dust Fall Concentration	
		($\mu g/m^2/s$)	($g/m^2/d$)
1.	SVA Blue Metals	14.416	1.245
2.	Kadaieswari BM	23.423	2.024
3.	Sri Muruga BM	79.976	6.910
4.	Sri Ganesa BM	17.469	1.509
5.	PMG Crusher	33.582	2.901
6.	Vinayaga BM	23.141	1.999
7.	Rajalakshmi BM	66.044	5.706
8.	Rajesh BM	15.678	1.355
9.	Vijayalakshmi BM	35.481	3.066
10.	Om Muruga BM	38.052	3.288
11.	Nirmal BM	35.488	3.066
12.	Sri Praveen and Co. BM	24.023	2.076
13.	Santhosh BM	86.098	7.439

3.6 Micro-meteorology (Temperature and Humidity)

3.6.1 Coastal Area: Tirusulam, Chennai

The hourly variation of Temperature and humidity in ambient air recorded during the study period (September to December, 2021) at Tirusulam, Chennai are presented in the form of graphs in **Figures 3.39 To 3.42.**

The average temperature recorded during the period of September, 2021 **(Figure 3.39)** varied in the range of 30.77 - 33.22℃. The maximum value of temperature (℃) varied in the range of 32.45 - 36.43 and the minimum value of temperature (℃) varied in the range of 29.02 - 31.67. The average humidity (%) varied in the range of 62 -73. The maximum value of humidity (%) varied in the range of 67-79 and the minimum value of humidity (%) varied in the range of 50 - 60.

The average temperature recorded during the period October, 2021 **(Figure 3.40)** varied in the range of 28 - 32℃. The maximum value of temperature (℃) varied in the range of 30 - 34 and the minimum value of temperature (℃) varied in the range of 27 - 31. The average humidity (%) varied in the range of 64 -79. The maximum value of humidity (%) varied in the range of 70 - 83 and the minimum value of humidity (%) varied in the range of 57 - 74.

The average temperature recorded during the period of November, 2021 **(Figure 3.41)** varied in the range of 26.10 - 28℃. The maximum value of temperature (℃) varied in the range of 32.45 - 36.43 and the minimum value of temperature (℃) varied in the range of 26.10 - 28.45. The average humidity (%) varied in the range of 71-88. The maximum value of humidity (%) varied in the range of 79-89 and the minimum value of humidity (%) varied in the range of 65 - 85.

The average temperature recorded during the period of December, 2021 **(Figure 3.42)** varied in the range of 27-30.58℃. The maximum value of temperature (℃) varied in the range of 27-32.07 and the minimum value of temperature (℃) varied in the range of 24- 28.70. The average humidity (%) varied in the range of 61 -78. The maximum value of humidity (%) varied in the range of 65-78 and the minimum value of humidity (%) varied in the range of 61-66.

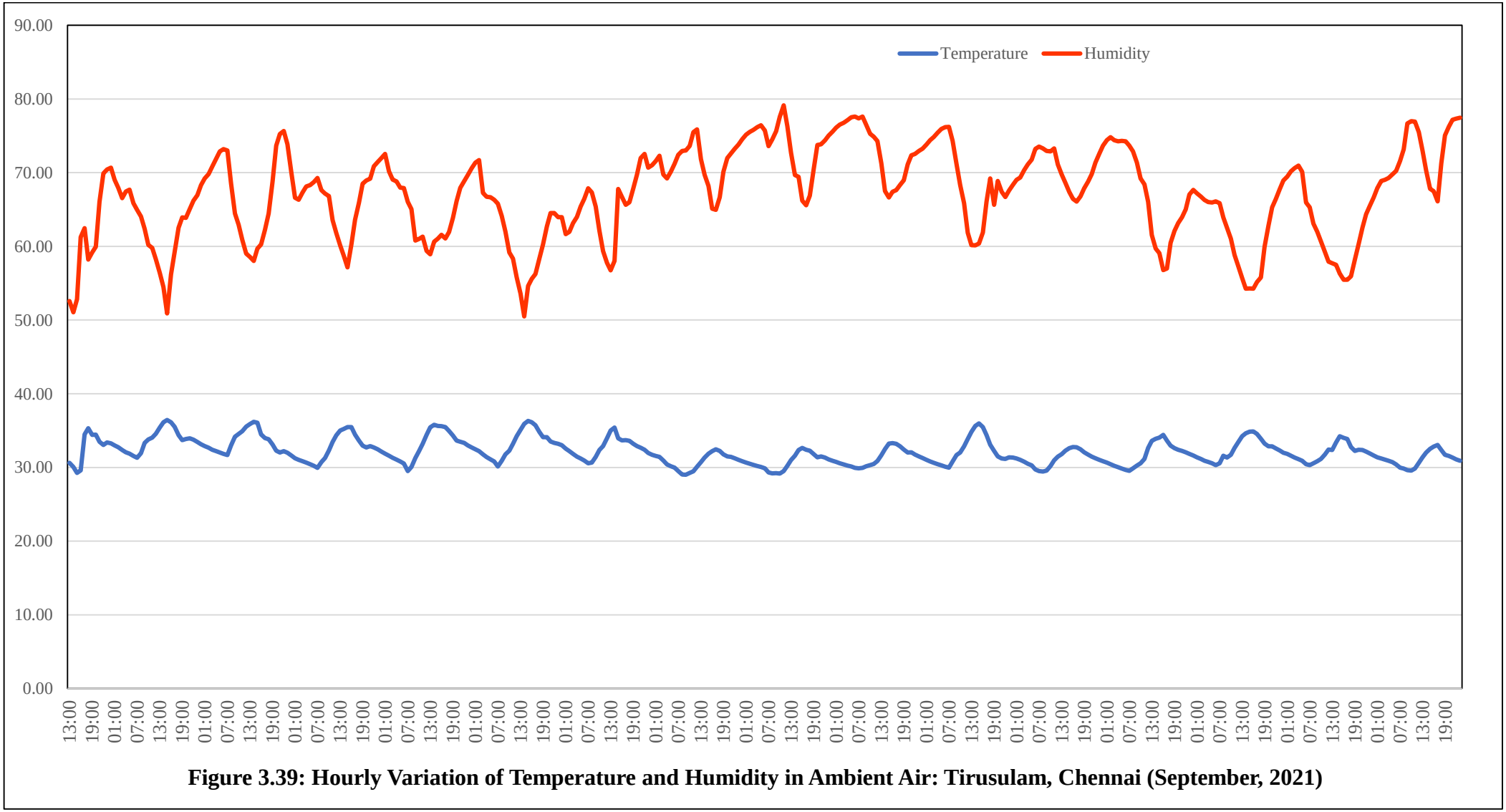


Figure 3.39: Hourly Variation of Temperature and Humidity in Ambient Air: Tirusulam, Chennai (September, 2021)

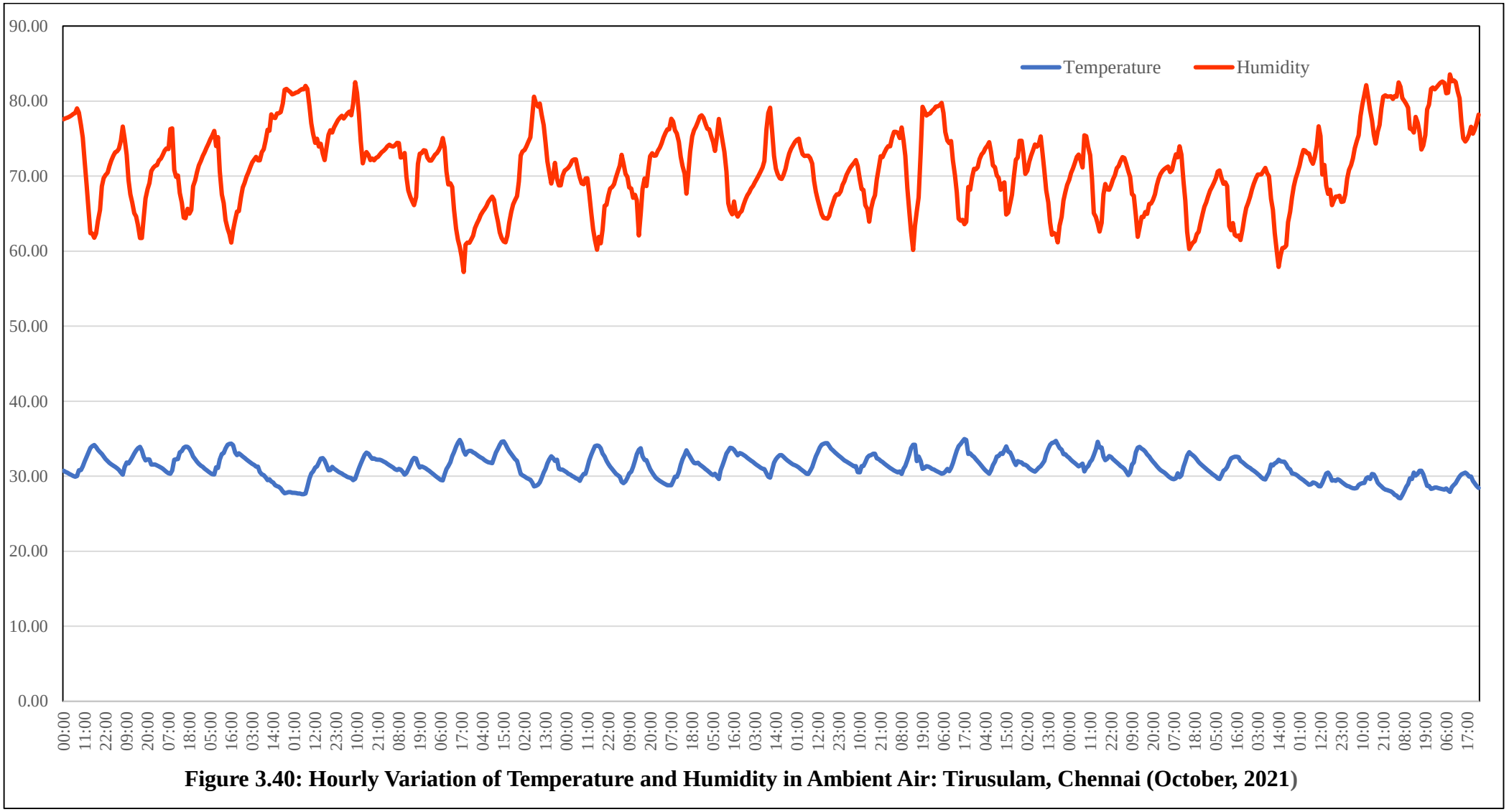


Figure 3.40: Hourly Variation of Temperature and Humidity in Ambient Air: Tirusulam, Chennai (October, 2021)

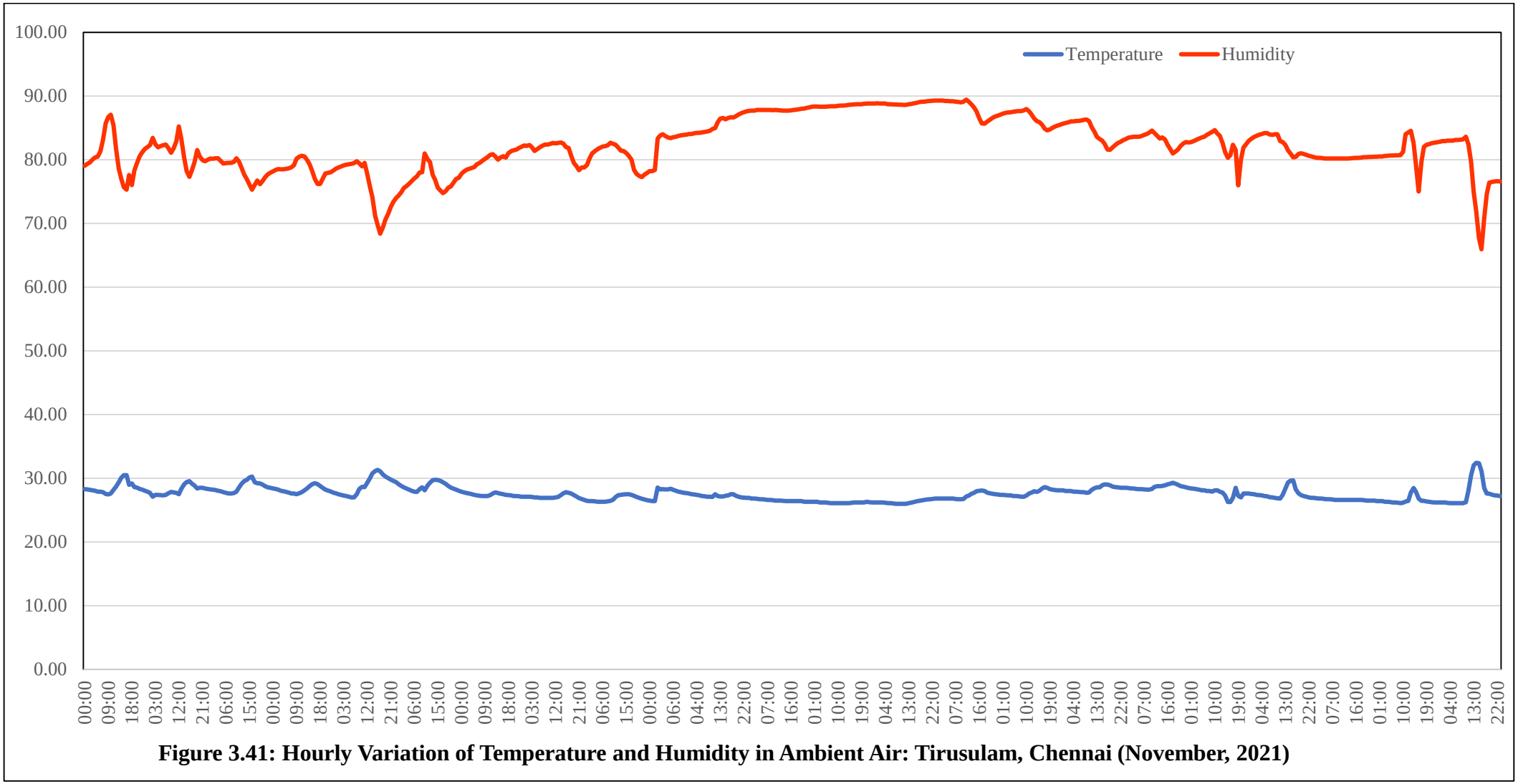


Figure 3.41: Hourly Variation of Temperature and Humidity in Ambient Air: Tirusulam, Chennai (November, 2021)

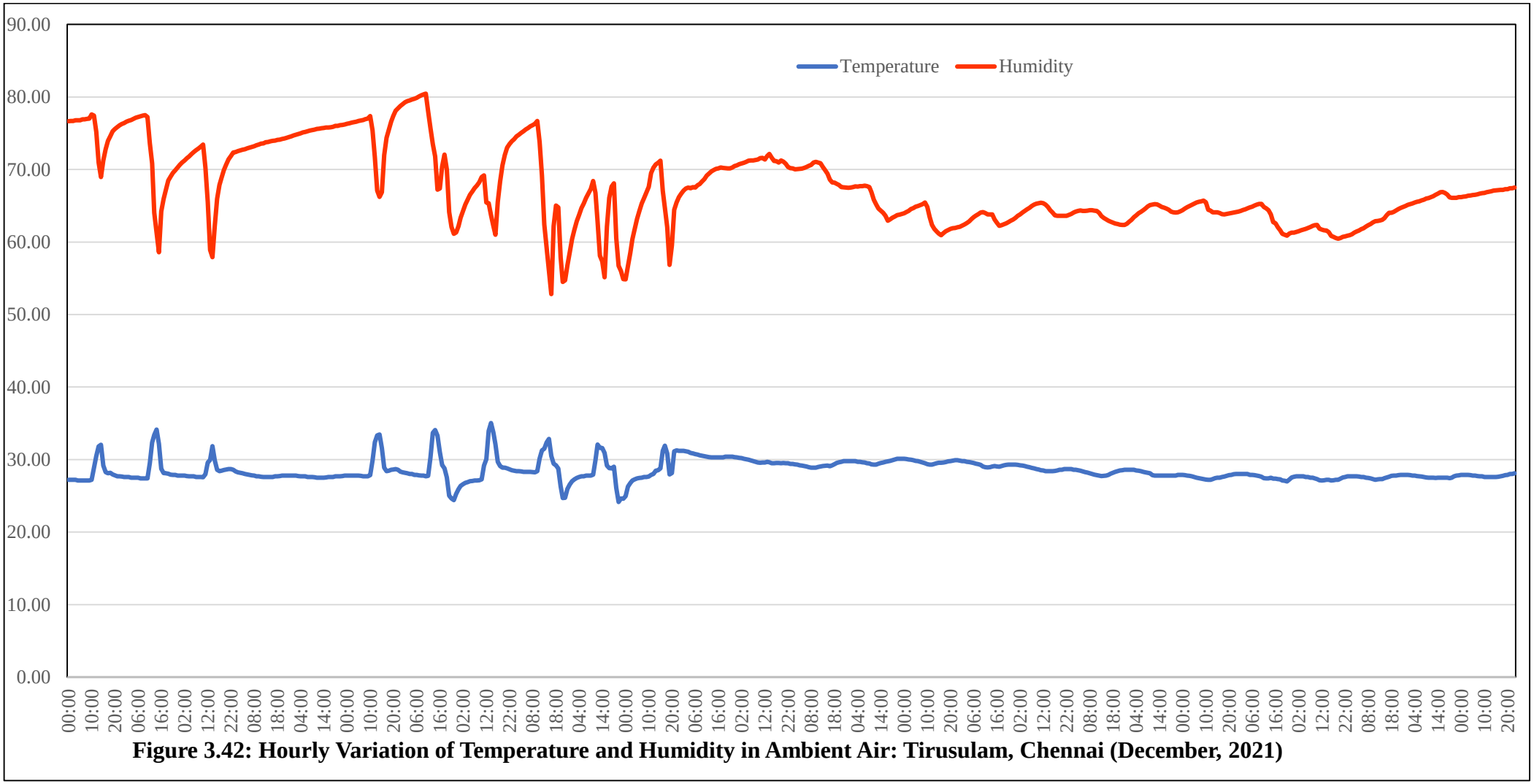


Figure 3.42: Hourly Variation of Temperature and Humidity in Ambient Air: Tirusulam, Chennai (December, 2021)

3.6.2 Inland Area: Kodangipallayam, Tiruppur

The hourly variation of Temperature and humidity in ambient air recorded during the study period (December, 2021 to January, 2022) at Kodangipallayam, Tiruppur are presented in the form of graphs in **Figures 3.43 To 3.44.**

The average temperature recorded during the study period of December, 2021 **(Figure 3.43)** varied in the range of 26.6-27.5℃. The maximum value of temperature (℃) varied 27.5-34.2 and the minimum value of temperature (℃) varied in the range of 24 - 29. The average humidity (%) varied in the range of 58-64. The maximum value of humidity (%) varied in the range of 63-67 and the minimum value of humidity (%) varied from 52-63.

The average temperature recorded during the study period of January, 2022 **(Figure 3.44)** varied in the range of 26-7℃. The maximum value of temperature (℃) varied in the range of 26 - 28 and the minimum value of temperature (℃) varied in the range of 25-27. The average humidity (%) varied in the range of 59-64. The maximum value of humidity (%) varied from 55-67 and the minimum value of humidity (%) varied from 57-69.

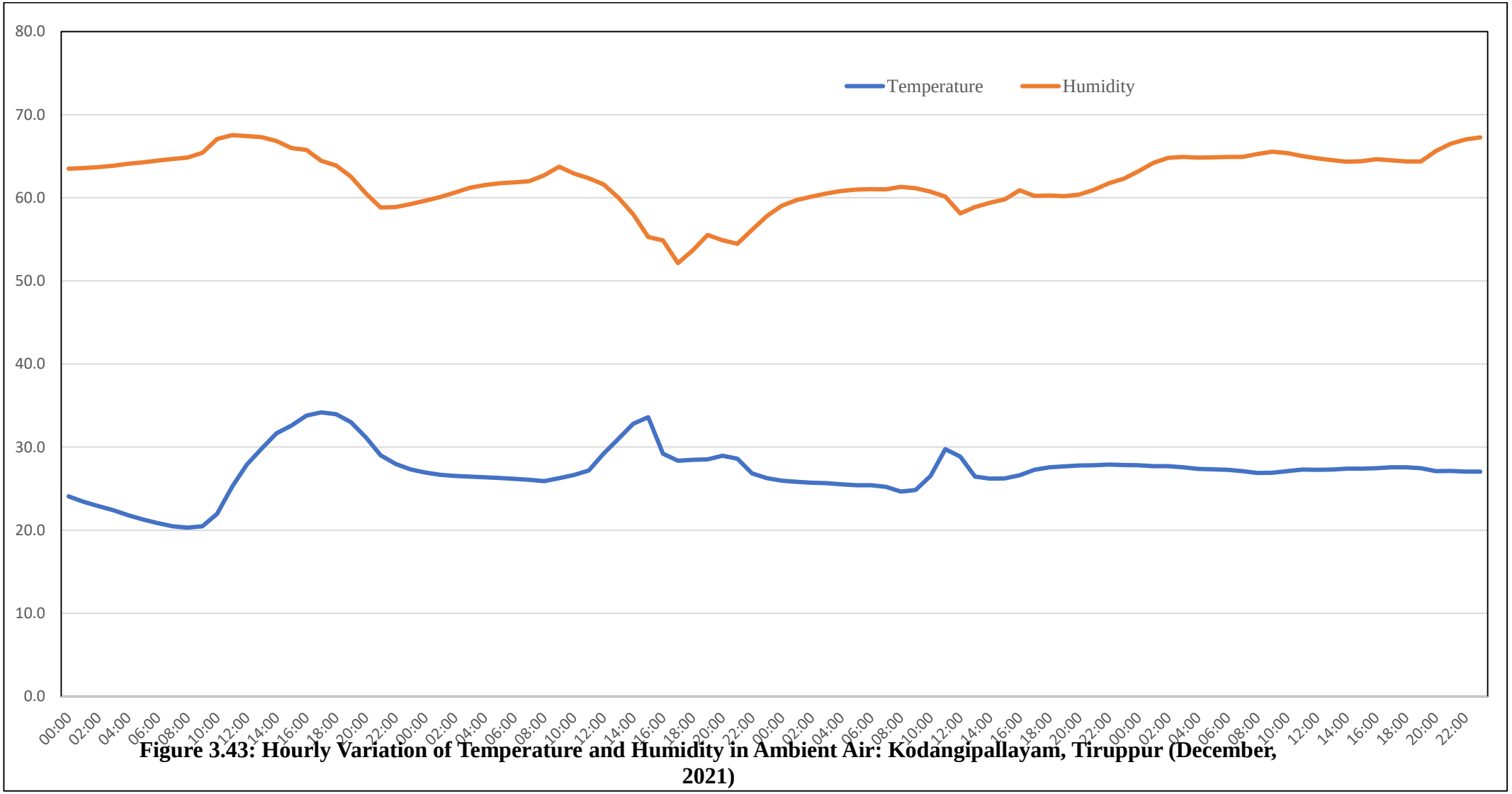


Figure 3.43: Hourly Variation of Temperature and Humidity in Ambient Air: Kodangipallayam, Tiruppur (December, 2021)

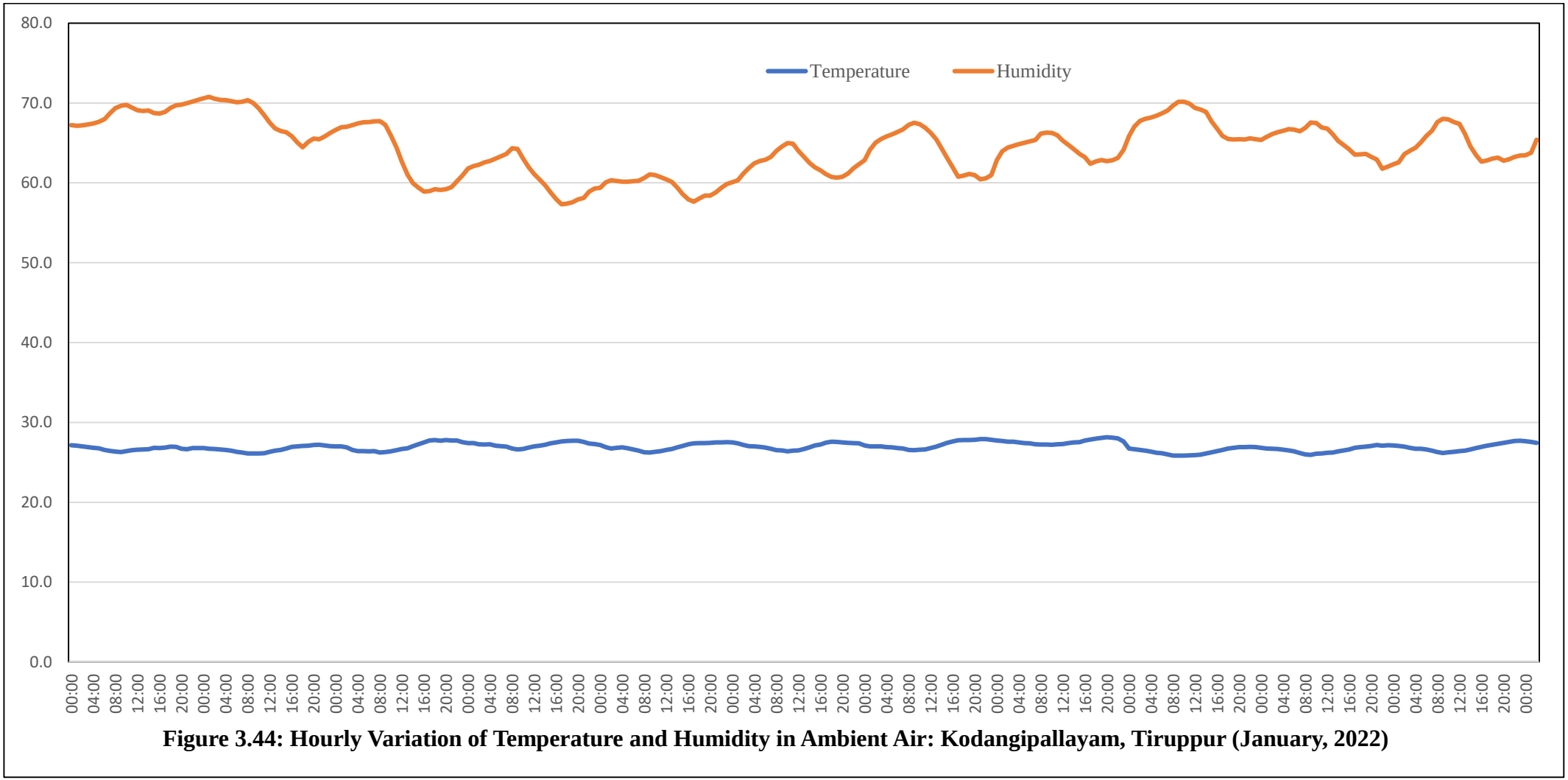


Figure 3.44: Hourly Variation of Temperature and Humidity in Ambient Air: Kodangipallayam, Tiruppur (January, 2022)

3.7 Recommended Safe Distance based on Monitoring Results

Based on the ambient air quality monitoring results concentration, impact zones for different crusher operating conditions were drawn. The impact zone (safe distance) was demarcated by drawing isopleths and surfers **(Figures 3.3 to 3.38)** of concentration 200 µg/m^3 for TSPM, 100 µg/m^3 for PM_{10} and 60 µg/m^3 for $PM_{2.5}$ which are the standard limit set by CPCB for 24-hour averaging time. The average safe distances were estimated for both Tirusulam, Chennai and Kodangipallayam, Tiruppur Project site for cluster of crushers using measured concentrations. The impacts zone drawn using measured concentration at selected ambient air quality monitoring locations are given in **Table 3.23**.

3.7.1 Safe distance for Coastal Area: Tirusulam, Chennai

Safe distance for measured TSPM concentration varied from 200 to 900m with a mean of 667 m**. (Table 3.23)**

Safe distance for measured RSPM concentration varied from 250 to 900 m with a mean of 683m. (**Tables 3.23)**

Safe distance for measured $PM_{2.5}$ concentration varied from 200 to 900m with a mean of 783 m. **(Table 3.23)**

3.7.2 Safe distance for Inland Area: Kodangipallayam, Tiruppur

Safe distance for measured TSPM concentration varied from 700 to 1400m with a mean of 1200 m**. (Table 3.23)**

Safe distance for measured RSPM concentration varied from 650 to 1400 m with a mean of 1167m. (**Tables 3.23)**

Safe distance for measured $PM_{2.5}$ concentration varied from 650 to 1400m with a mean of 1175 m. **(Table 3.23)**

Table 3.23
Safe Distance for Cluster of Crushers at Tirusulam, Chennai and Kodangipallyam, Tiruppur

Pollutant	Maximum			Minimum			North		East		South		West		Average
	Dir, degree	Dist, m	crusher no	Dir, degree	Dist, m	crusher no	Dist, m	crusher no	Dist, M	crusher no	Dist, m	crusher no	Dist, m	crusher no	m
Coastal Area:Tirusulam, Chennai															
TSPM	S,N,W,	>900	C47,C32,C14	E	200	C57	>900	C32	200	C57	>900	C47	>900	C14	667
RSPM	S,N,W	>900	C47,C32,C14	E	250	C57	>900	C32	250	C57	>900	C47	>900	C14	683
PM2.5	S,N,W	>900	C47,C32,C14	E	200	C57	>900	C32	>900	C57	>900	C47	>900	C14	783
Inland Area:Kodangipallayam, Tiruppur															
TSPM	E,S	>1400	C37,C1	NW	700	C15	1300	C25	>1400	C37	>1400	C1	1000	C15	1200
RSPM	S,E	>1400	C37,C1	NW	650	C15	1400	C25	>1400	C37	>1400	C1	750	C15	1167
PM2.5	E,S	>1400	C37,C1	W	650	C15	1550	C25	>1400	C37	>1400	C1	650	C15	1175

Chapter 4

Particle Size Analysis

4.1 Preamble

The size distribution of particulate matter in air determines its potential for adverse effects on health and visibility. The aerodynamic size of the particle determines whether it falls to the ground or remains suspended to enter the human respiratory system. Again, depending upon the size and chemical nature, the particle may be filtered out in the upper nasal system, settle in the trachea bronchial system; penetrate into the alveoli suspended to be expired.

Atmospheric particle size distribution shows multimodal pattern in a large part due to the mechanism of their generation. The modes are usually grouped into two broad classifications for air pollution purposes namely, fine and coarse. Fine particles are considered to be those smaller than 2.5µm in diameter. The fine (respirable) particles can penetrate into the pulmonary region of the respiratory system. Coarse particles are principally formed by mechanical, grinding or other dispersive forces. Their size ranges more than 10µm in diameter, depending upon the dispersive forces and atmospheric conditions. The fine stage has an upper cut-off particle point of 2.5 µm, the coarse (inhalable) stage has an upper cut-off particle point of either 10 or 15µm depending upon design. Present tendencies are to standardize on the 10µm cut-off point as the respirable particulates.

Dust particles emitted from a given source are dispersed into the atmosphere where the small particles settle under gravity at near distance from the source. Particles larger than 30µm are usually deposited within short distance from the source and small particles of size in the range of 10 - 15µm stays for a longer time in the atmosphere. Particle size analysis plays an important role in the characterization of dust emission from the stone crushing operation and estimation of percentage of air borne particle which is transported over longer distance from the source causing environmental health effects. The most important particle properties related to atmospheric transport are size, shape and size distribution. Physical properties such as density and moisture also play an important role in the transport.

Emphasis is usually given to dust emission in the inhalable size range (< 10 µm). Fine inhalable dust particles ≤ 2.5µm enter human respiratory system causing more damage than that of coarse inhalable particles of the size range 2.5 to 10µm. Hence, it is necessary to carry out particle size analysis for the size distribution of suspended particulates.

Particle size analysis was carried out by using CILAS 1180 model Particle Size Analyzer using laser diffraction. Of the many particle size measuring methods, laser diffraction technique has distinctive features such as simplified operation, excellent repeatability and short

measuring time. The result of measurements is printed out automatically within 3 minutes after the measurement is started.

4.2 Particle size distribution of source dust

Particle size analysis was carried out for dust samples collected at the Stone Crushing Industries, and the results are presented in the form of a cumulative distribution graph. The cumulative distribution graph shows the percentage of particles (number) less than the particle size of interest and the differential distribution graph indicate the percentage of particles in the specified size range.

4.2.1 Coastal Area: Tirusulam, Chennai

The particle size analysis indicated the settleable fraction of source dust at coastal area of Tirusulam, Chennai, dust particles > 10µm size are 63.4% confirms the presence of large particle nearby the source which are in settleable nature and their settleability depend on the source-receptor geometry and prevalent micro-meteorological conditions and these results are used in the modelling and prediction simulation exercise for estimating the safe distance from the stone crushing industries and the habitation in addition to the monitoring results.

The respirable particulate matter (PM_{10}), which is defined as the particles with an aerodynamic diameter not greater than 10µm was found to be 36.6%, and the fine inhalable particulate matter or $PM_{2.5}$, the particles with an aerodynamic diameter ≤ 2.5µm was found to be 14.3%.as shown in **Table 4.1** and **Figure 4.1**.

4.2.2 Inland Area: Kodangipallayam, Tiruppur

The particle size analysis settleable fraction of source dust at inland area of Kodangipallayam, Tiruppur dust articles > 10µm size are 57.8% confirms the presence of large particle nearby the source which are in settleable nature and their settleability depend on the source-receptor geometry and prevalent micro-meteorological conditions and these results are used in the modelling and the prediction simulation exercise for estimating the safe distance from the stone crushing industries and the habitation in addition to the monitoring results.

The respirable particulate matter (PM_{10}) was found to be 42.2% and the fine inhalable particulate matter or $PM_{2.5}$ was found to be 14.6%. The fine inhalable particulate concentration ($PM_{2.5}$) near the source is presented in **Table 4.2** and **Figure 4.2.**

4.3 Particle size distribution of ambient air dust

4.3.1 Tirusulam, Chennai and Kodangipallayam, Tiruppur

The particle size distribution of ambient air dust was carried out to quantify the fraction of particles transported from the crusher to the receiver. The results of the analysis are given in **Table 4.3** and **Figure 4.3**, they indicate that the percentage of particulate fractions $PM_{2.5}$, PM_{10}, PM_{15}, and PM_{30} are 25.3, 60.5, 72.8 and 91% respectively. The higher percentage of finer particles collected was due to the fact that the larger size particles were settling near the source and the finer particles were able to remain in the air for a much longer time. The settleable particulate matter with an aerodynamic diameter greater than 15µm that would deposit or settle near the sources is 72.8%. The differential distribution graphs show that maximum percentages (11%) of particles are in the range of 3-5µm (**Figure 4.3**).

Table 4.1
Particle size analysis at source: Tirusulam, Chennai

Sr. No.	Diameter, x µm	Cumulative, Q_3 %	Differential, q_3 %
1.	0.04	0.10	0.03
2.	0.07	0.40	0.05
3.	0.10	0.66	0.07
4.	0.20	1.95	0.18
5.	0.30	3.63	0.39
6.	0.40	4.51	0.29
7.	0.50	4.72	0.09
8.	0.60	4.82	0.05
9.	0.70	4.97	0.09
10.	0.80	5.25	0.20
11.	0.90	5.59	0.27
12.	1.00	5.97	0.34
13.	1.10	6.39	0.42
14.	1.20	6.83	0.48
15.	1.30	7.29	0.54
16.	1.40	7.78	0.63
17.	1.60	8.81	0.73
18.	1.80	9.90	0.88
19.	2.00	11.00	0.99
20.	2.20	12.11	1.10
21.	2.40	13.20	1.19
22.	2.60	14.25	1.24
23.	3.00	16.19	1.28
24.	4.00	20.16	1.31
25.	5.00	23.43	1.39
26.	6.00	26.41	1.55
27.	6.50	27.84	1.69
28.	7.00	29.23	1.78
29.	7.50	30.58	1.85
30.	8.00	31.87	1.89
31.	8.50	33.10	1.92
32.	9.00	34.29	1.97
33..	10.00	36.55	2.03
34.	11.00	38.71	2.15

35.	12.00	40.79	2.26
36.	13.00	42.84	2.43
37.	14.00	44.86	2.58
38.	15.00	46.87	2.76
39.	16.00	48.89	2.97
40.	17.00	50.90	3.14
41.	18.00	52.88	3.28
42.	19.00	54.86	3.47
43.	20.00	56.79	3.56
44.	22.00	60.51	3.70
45.	25.00	65.62	3.79
46.	28.00	70.23	3.85
47.	32.00	75.80	3.95
48.	36.00	80.74	3.97
49.	38.00	82.98	3.92
50.	40.00	85.04	3.80
51.	45.00	89.49	3.58
52.	50.00	92.96	3.12
53.	53.00	94.61	2.68
54.	56.00	95.95	2.31
55.	63.00	98.07	1.71
56.	71.00	99.32	0.99
57.	75.00	99.62	0.52
58.	80.00	99.84	0.32
59.	85.00	99.95	0.17
60.	90.00	100.00	0.08
61.	95.00	100.00	0.00

Table 4.2
Particle size analysis at source: Kodangipallayam, Tiruppur

Sr. No.	Diameter, x µm	Cumulative Q_3 %	Differential q_3 %
1.	0.04	0.08	0.03
2.	0.07	0.25	0.03
3.	0.10	0.39	0.04
4.	0.20	0.81	0.06
5.	0.30	1.27	0.11
6.	0.40	1.69	0.14
7.	0.50	2.09	0.17
8.	0.60	2.53	0.23
9.	0.70	3.04	0.31
10.	0.80	3.63	0.42
11.	0.90	4.25	0.50
12.	1.00	4.89	0.57
13.	1.10	5.53	0.63
14.	1.20	6.18	0.70
15.	1.30	6.83	0.76
16.	1.40	7.48	0.83
17.	1.60	8.75	0.90
18.	1.80	10.00	1.00
19.	2.00	11.21	1.08
20.	2.20	12.39	1.17
21.	2.40	13.54	1.24
22.	2.60	14.65	1.31
23.	3.00	16.78	1.40
24.	4.00	21.61	1.58
25.	5.00	25.81	1.77
26.	6.00	29.57	1.94
27.	6.50	31.32	2.06
28.	7.00	33.00	2.13
29.	7.50	34.63	2.22
30.	8.00	36.21	2.30
31.	8.50	37.75	2.39
32.	9.00	39.25	2.47
33.	10.00	42.15	2.59
34.	11.00	44.91	2.73
35.	12.00	47.56	2.87
36.	13.00	50.09	2.98
37.	14.00	52.51	3.07
38.	15.00	54.82	3.15
39.	16.00	57.03	3.22
40.	17.00	59.14	3.28

41.	18.00	61.17	3.34
42.	19.00	63.11	3.38
43.	20.00	64.97	3.41
44.	22.00	68.47	3.46
45.	25.00	73.20	3.48
46.	28.00	77.46	3.54
47.	32.00	82.60	3.62
48.	36.00	87.10	3.60
49.	38.00	89.07	3.43
50.	40.00	90.84	3.25
51.	45.00	94.44	2.88
52.	50.00	96.93	2.23
53..	53.00	97.97	1.68
54.	56.00	98.75	1.33
55.	63.00	99.68	0.74
56.	71.00	100.00	0.25
57.	75.00	100.00	0.00

Table 4.3
Particle size analysis in ambient air: Tirusulam area and Kodangipallayam, Tiruppur

Sr. No.	Diameter (x) µm	Cumulative (Q_3) %	Differential (q_3) %
1.	0.04	0.02	0.01
2.	0.07	0.21	0.03
3.	0.10	0.44	0.06
4.	0.2	1.30	0.12
5.	0.3	2.21	0.22
6.	0.4	2.98	0.26
7.	0.5	3.68	0.31
8.	0.6	4.48	0.43
9.	0.7	5.43	0.61
10.	0.8	6.56	0.83
11.	0.9	7.79	1.03
12.	1.0	9.07	1.20
13.	1.1	10.40	1.38
14.	1.2	11.73	1.51
15.	1.3	13.03	1.60
16.	1.4	14.28	1.66
17.	1.6	16.62	1.73
18.	1.8	18.72	1.76
19.	2.0	20.61	1.77
20.	2.2	22.30	1.75
21.	2.4	23.85	1.76
22.	2.6	25.31	1.80
23.	3.0	28.50	1.89
24.	4.0	34.47	2.20
25.	5.0	40.36	2.60
26.	6.0	45.51	2.79
27.	6.5	47.80	2.82
28.	7.0	49.94	2.85
29.	7.5	51.95	2.87
30.	8.0	53.85	2.90
31.	8.5	55.64	2.91
32.	9.0	57.34	2.93
33.	10.0	60.49	2.95
34.	11.0	63.37	2.98
35.	12.0	66.00	2.98
36.	13.0	68.45	3.02
37.	14.0	70.72	3.02
38.	15.0	72.84	3.03
39.	16.0	74.83	3.04
40.	17.0	76.68	3.01

41.	18.0	78.39	2.95
42.	19.0	79.98	2.90
43.	20.0	81.43	2.79
44.	22.0	83.95	2.61
45.	25	86.82	2.22
46.	28	88.90	1.81
47.	32	90.99	1.54
48.	36	92.64	1.38
49.	38	93.36	1.31
50.	40	94.03	1.29
51.	45	95.52	1.25
52.	50	96.79	1.19
53.	53	97.43	1.08
54.	56	97.98	0.99
55.	63	98.95	0.81
56.	71	99.59	0.53
57.	75	99.76	0.31
58.	80	99.89	0.20
59.	85	99.96	0.11
60.	90	100.00	0.07
61.	95	100.00	0.00

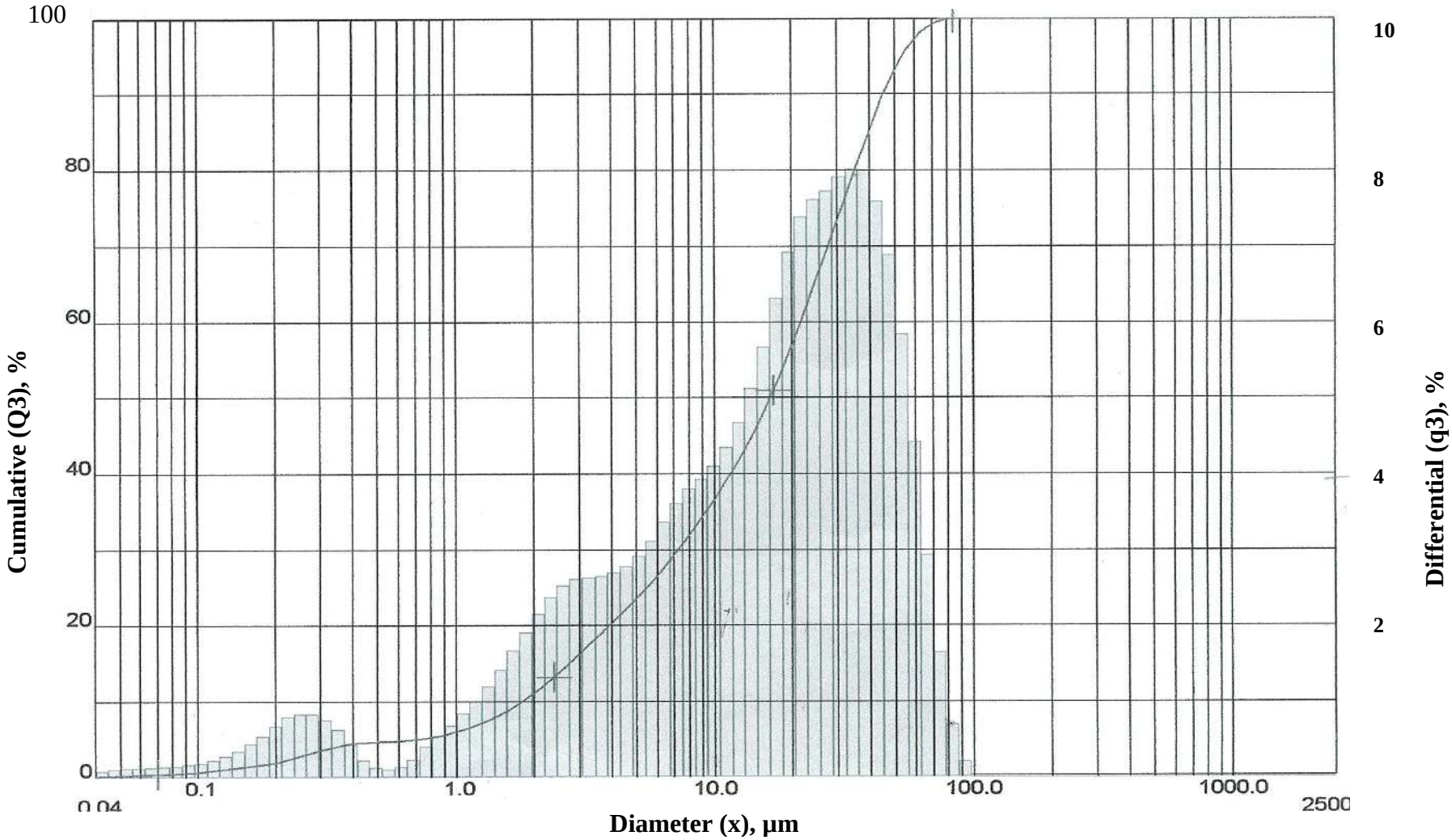


Figure 4.1: Cumulative and Differential Distribution graph for the Source (Tirusulam, Chennai)

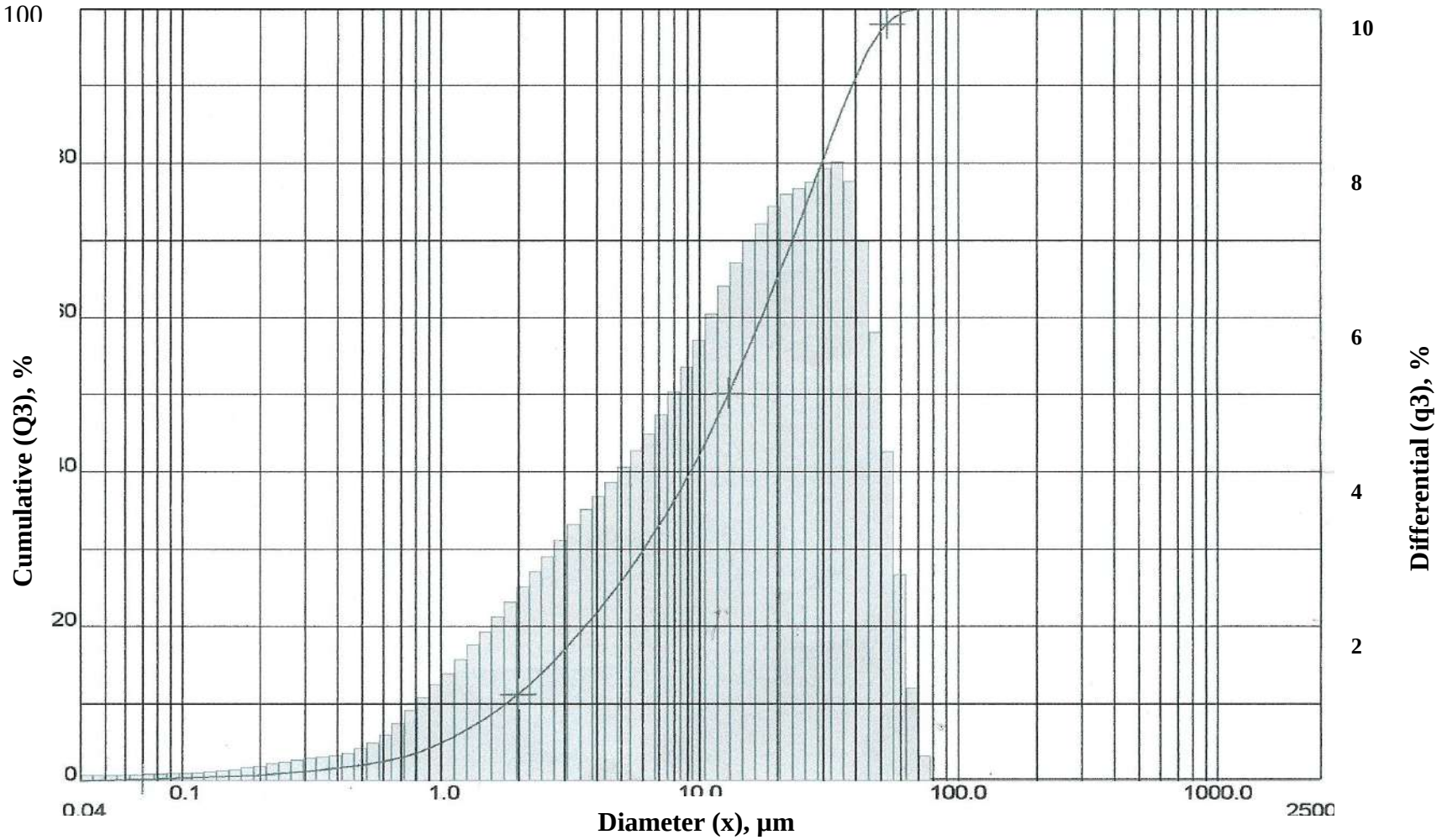


Figure. 4.2: Cumulative and Differential Distribution Graph for the Source (Kodangipallayam, Tiruppur)

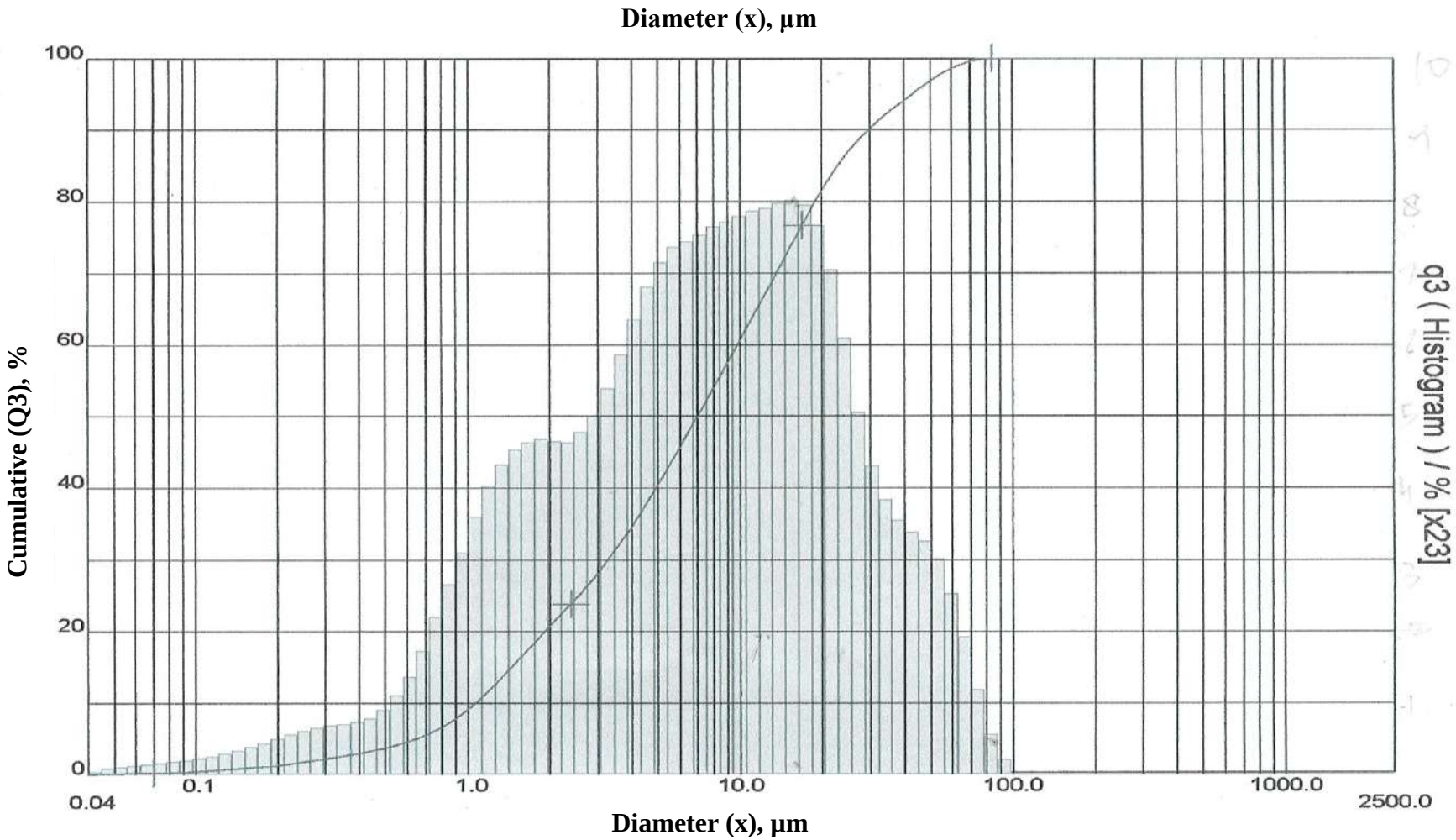


Figure 4.3: Cumulative and Differential Distribution graph for Ambient Air:Trisulam area and Kodangipallayam, Tiruppur

Chapter 5

Prediction of Fugitive Dust Emissions

5.1 Preamble

Prediction of impacts is an important component in environmental impact assessment process. Several techniques and methodologies are in vogue for predicting the impacts. Such predictions are superimposed over the baseline (pre-project) status of environmental quality to derive the ultimate (post-project) scenario of environmental conditions.

Mathematical models are used to predict the impact of emissions on air quality. The concentrations are estimated from meteorology, source geometry and receptor location. Many models are developed to describe the dispersion of pollutants from source and vary in their approach from a Gaussian line source approach to numerical solutions of conservation of pollutant mass equation.

Mathematical models are the best tools to quantitatively describe the cause effect relationship between source of pollution and different components of environment. In the present study, 3 mathematical models were used for predictions of air quality based on Gaussian Plume Dispersion viz., FDM, ISCST3 and AERMOD developed for predicting fugitive dust emissions.

Pollutants which are generated from open sources exposed to the air and are not discharged into the atmosphere in a confined flow stream are termed as fugitive dust. The deposition of dust particles is considered as the main mechanism by which air borne pollution is removed from the atmosphere. Dust particles emitted from a given source are dispersed in the atmosphere where the small particles stay in suspension for a long time while the larger particles settle towards the earth under gravity at near distance from the source.

For a given rate of deposition, the concentration will be proportional to the wind speed. As a result, the rate of deposition of small particles is inversely proportional to wind speed and directly proportional to particle settling velocities. Hence, the settling velocity of large particles dominates movement by diffusion, and the maximum deposition takes place near a source. Further, the location of maximum deposition of large particles moves nearer towards the source as the wind speed decreases. The maximum deposition rates increase more rapidly as the wind speed falls and increase of particle settling velocity is more for larger particles than for smaller particles.

However, particles larger than 20µm are usually deposited at their settling velocities within short distance from the source for a wide range of wind speed.

The deposition of dust is known to be one of the adverse effects that is associated with dust emission. Investigations of fugitive dust necessitate measuring deposition rates in order to produce clear evidence about the impact of particulate pollution. One of the main objectives of

fugitive dust investigation is to quantify the emission of particulates and relate emission to the process rates. Emphasis is usually focused on emission factors of dust in inhalable size range, < 10 µm and aerodynamic diameter.

The size of dust particle is an important parameter. The measurements of particle size distribution for dust polluting sources are necessary for the following reasons:

1. To complete the characteristic information about a given source.
2. To permit assessment of potential health and environmental effect of different sources.
3. To obtain a complete quantification and better selection and design of control methods and devices.

5.2 Estimation of source strength

One major uncertainty in any air quality investigation centering on fugitive dust is the emission rate. The source strength is the rate of dust emission from a source, e.g. g/min or mass per unit of material. This can be determined by quantifying the amount of dust immediately downwind of the source by means of simultaneous multipoint sampling over the effective cross section of fugitive emission plume.

5.3 Model for fugitive dust prediction

Stone crushing operations are major sources of fugitive dust and have been the subject of great concern in the state of Tamil Nadu. Modeling stone crusher emissions is an intricate issue, since emissions are highly fugitive in nature. Hence, the selected models must be able to integrate the complex changes of fugitive dust emissions in the modeling procedures. The primary use of the model is for the computation of the concentrations and deposition rates resulting from stone crushing operations where fugitive dust is a concern. The model contains no plume rise algorithm and is thus not aimed at handling significant buoyant forces. It was recognized from the start that ultimate acceptance of the model would hinge on its ability to accurately predict concentrations from the fugitive dust sources.

5.4 Technical description of the models tested

5.4.1 FDM

Fugitive Dust model (FDM) is designed especially for computation of the impacts of fugitive dust sources. FDM model is a computerized air quality model specifically designed for computing concentration and deposition impacts from fugitive dust sources. The model incorporates a detailed deposition routine based on the equation of Ermak (1997). The model calculates concentration and deposition values for each of the receptor locations.

The source may be point, line or area sources. The model is generally based on the well-known Gaussian plume formulation for computing concentration and was specifically designed

to incorporate an improved gradient-transfer deposition algorithm. Emission for each source is apportioned by the user into a series of particle size classes. The gravitational and deposition velocities are calculated by FDM for each class. Concentration and deposition are computed at all selected receptor locations. The model is designed to work with pre-processed meteorological data or with card-image of meteorological data either hourly or in Stability Array (STAR) format.

FDM employs an advanced gradient-transfer particle deposition algorithm. Gravitational settling velocity and deposition velocity are calculated by FDM for each of up to 20 user-specified particle size classes. The source can be of three types: points, lines or areas. The line source and area source algorithms are based on algorithms in the CALINE3 Model (California Department of Transportation, 1979). Emission from all sources may be divided into maximum of 20 particle size classes. One of the unique characteristics of fugitive dust is that often emission rates are a function of wind speed. The FDM has the capability to directly compute the effect of wind speed on emission rate.

FDM more accurately represents the behavior of particles in the atmosphere. The major advantage of the FDM is the ability to more accurately represent deposition. At receptors very close to the source less deposition occurs. One of the major advantages of the FDM approach is the avoidance of these large over predictions. The improved prediction occurs due to the superior deposition algorithm in the FDM and accurately represents the behavior of particles in the atmosphere. Hence, FDM model was selected for the prediction exercise.

5.4.2 ISCST3 model

Industrial Source Complex Short Term (ISCST3, version 3) model provides options to model emissions from a wide range of sources. The basis of the model is the straight-line, steady-state Gaussian plume equation and used with some modifications to model simple point source emissions from stacks, emissions from stacks that experience the effects of aerodynamic downwash due to nearby buildings, isolated vents, multiple vents, storage piles, conveyor belts, and the like. Emission sources are categorized into four basic types of sources, i.e., point sources, volume sources, area sources and open pit sources. The volume source option and the area source option may also be used to simulate line sources.

ISCST3 model accepts hourly meteorological data records to define the conditions for plume rise, transport, diffusion and deposition. The model estimates the concentration or deposition value for each source and receptor combination for each hour of input meteorology, and calculates user-selected short-term averages. For deposition values, either the dry deposition flux, the wet deposition flux, or the total deposition flux can be estimated.

The ISCST3 models are based on revisions to the algorithms contained in the ISCST2 models. The ISCST3 models include several new features. A revised area source algorithm and revised dry deposition algorithms incorporated in the models. The ISCST3 models also include an algorithm for modeling impacts of particulate emissions from open pit sources, such as surface coal mines. The Short Term model includes a new wet deposition algorithm and also incorporates the COMPLEX1 screening model algorithms for use with complex and intermediate terrain.

5.4.3 AERMOD

With the exception of treating pollutant deposition, AERMOD serves as a complete replacement for ISC3. AERMOD is a steady-state plume model. In the stable boundary layer (SBL), it assumes the concentration distribution to be Gaussian in both the vertical and horizontal. In the convective boundary layer (CBL), the horizontal distribution is also assumed to be Gaussian, but the vertical distribution is described with a bi-Gaussian probability density function (pdf). Additionally, in the CBL, AERMOD treats "plume lofting," whereby a portion of plume mass, released from a buoyant source, rises to and remains near the top of the boundary layer before becoming mixed into the CBL. For sources in both the CBL and the SBL, AERMOD treats the enhancement of lateral dispersion resulting from plume meander. Using a relatively simple approach, AERMOD incorporates current concepts about flow and dispersion in complex terrain. Where appropriate the plume is modeled as either impacting and/or following the terrain. This approach designed to be physically realistic and simple to implement while avoiding the need to distinguish among simple, intermediate and complex terrain, as required by other regulatory models. As a result, AERMOD removes the need for defining complex terrain regimes. All terrain is handled in a consistent and continuous manner while considering the dividing streamline concept. One of the major improvements that AERMOD brings to applied dispersion modeling is its ability to characterize the PBL through both surface and mixed layer scaling.

5.5 Treatment of deposition

In these models the deposition was considered through two parameters viz., gravitational settling velocity and deposition velocity. The gravitational settling velocity accounts for removal of particulate matter from the atmosphere due to gravity. Since only the larger particles have significant mass to overcome turbulent eddies, this mechanism is significant only for the larger size ranges. The deposition velocity accounts for removal of particulate matter which is in contact with the surface and allows it to be removed by impaction velocity which is significantly different from the gravitational settling velocity, while for larger

particles they are roughly the same. Each particle size class is treated separately by the model. The result for different particle size classes is summed at the end to develop a total suspended particulate concentration. Alternatively, the model can compute the deposition rate.

5.6 Averaging period

FDM, ISCST3 and AERMOD are capable of predicting average concentrations of both TSPM and particulate matter < 10μm for a variety of averaging times. The prediction was carried out for 24-hour averaging period; since National Ambient Air Quality Standards (NAAQS) are for 24 hours for TSPM and PM_{10} concentrations. Comparison of model algorithm for FDM, ISCST3 and AERMOD is given **Table 5.1**.

5.7 Data requirements of models

5.7.1 FDM

The FDM model requires information on the hourly values for wind speed, wind direction, temperature, atmospheric stability and mixing height. The input file of FDM contains three types of information:

1. Source data including the geometric information on source locations, sizes and orientations, the emission information and the release heights
2. Particle size distribution
3. Meteorological data
4. Receptor locations - the locations at which concentrations and depositions are to be calculated

The center co-ordinates and dimensions in the x and y directions, rotation angle and emission rates are required for area sources. Area source need not be square, but rather can be rectangular, up to an aspect ratio of 1 to 5 (ratio of width to length). Area source with the length greater than five times the width must be divided in a series of area sources, or modeled as a line source. The model divides the area source into a series of line sources perpendicular to the wind direction. The model computes concentrations from the area sources by first rotating the coordinate system so that, the receptor and the x - axis are aligned with the wind direction. The area source is divided into a series of line sources oriented perpendicular to the wind direction.

Table 5.1

Comparison of model algorithm for FDM, ISCST3 and AERMOD

Parameter	FDM	ISCST3	AERMOD
Plume Rise	The line source and area source algorithms are based on algorithms in CALINE3 Model (California Department of Transportation, 1979)	Uses Briggs equations with stack-top wind speed and vertical temperature gradient	In stable conditions, uses Briggs equations with winds and temperature gradient at stack top and half-way to final plume rise; in convective conditions, plume rise is superposed on the displacements by random convective velocities
Meteorological data input	One level of data	One level of data	An arbitrarily large number of data levels can be accommodated
Profiling meteorological data	Only wind speed is profiled	Only wind speed is profiled	AERMOD creates profiles of wind, temperature, and turbulence, using all available measurement levels
Use of meteorological data in plume dispersion	Based on algorithms in the CALINE3Model (California Department of Transportation, 1979)	Stack-top variables for all downwind distances	Variables measured throughout the plume depth (averaged from plume centerline to 2.15 σ_z below centerline; changes with downwind distance)
Plume dispersion: general treatment	Vertical dispersion based on the methodology developed by Pasquill and draxler and horizontal dispersion based on Turner. The basic model incorporates a detailed deposition routine based on the equations of Ermak (1977)	Gaussian treatment in horizontal and vertical Directions	Gaussian treatment in horizontal and in vertical for stable conditions; non-Gaussian probability density function in vertical for unstable conditions
Urban treatment	There is no such option	Urban option either on or off; no other specification available; all sources must be modeled either rural or urban	Population is specified, so treatment can consider a variety of urban conditions; sources can individually be modeled rural or urban
Characterization of modeling domain surface characteristics	Choice of stability class, surface roughness length and mixing height	Choice of rural or urban	Selection by direction and month of roughness length, albedo, and Bowen ratio, providing user flexibility to vary surface characteristics
Boundary layer parameters	Wind speed, mixing height, and stability class	Wind speed, mixing height, and stability class	Friction velocity, Monin-Obukhov length, convective velocity scale, mechanical and convective mixing height, sensible heat flux

Parameter	FDM	ISCST3	AERMOD
Mixed layer height	The model generally insensitive to values of mixing height	Holzworth scheme; uses interpolation based upon maximum afternoon mixing height	Has convective and mechanical mixed layer height; convective height based upon hourly accumulation of sensible heat flux
Plume dispersion: plume growth rates	Based upon 6 discrete stability classes only (using the classification scheme of Turner, 1970)	Based upon 6 discrete stability classes only; dispersion curves (Pasquill- Gifford) are based upon surface release experiments e.g., Prairie Grass	Uses profiles of vertical and horizontal turbulence (from measurements and/or PBL theory); variable with height; uses continuous growth functions rather than a discrete (stability-based) formulation
Plume interaction with mixing lid: convective conditions	If plume center-line is above lid, a zero ground-level concentration is assumed	If plume center-line is above lid, a zero ground-level concentration is assumed	Three plume components are considered: a "direct" plume that is advected to the ground in a downdraft, an "indirect" plume caught in an updraft that reaches the lid and eventually is brought to the ground, and a plume that penetrates the mixing lid and disperses more slowly in the stable layer aloft (and which can re-enter the mixed layer and disperse to the ground)
Plume interaction with mixing lid: stable conditions	The mixing lid is ignored (assumed to be infinitely high)	The mixing lid is ignored (assumed to be infinitely high)	A mechanically mixed layer near the ground is considered. Plume reflection from an elevated lid is considered.
Building downwash	cannot include terrain features, and the model can be used only for local scale predictions	Combination of Huber-Snyder and Scire-Schulman algorithms; many discontinuities use default wind profile exponents use default vertical potential temperature gradients	New PRIME downwash algorithm Installed calculate wind profiles (not an option) calculate vertical potential temperature gradients (not an option)

5.7.2 ISCST3 model

There are two basic types of inputs that are needed to run the ISCST3 models. They are (1) The main input run stream file, (2) The meteorological data file. The run stream setup file contains the selected modeling options, as well as source location and parameter data, receptor locations; meteorological data file specifications, and output options. The ISCT3 models offer various options for file formats of the meteorological data. A third type of input may also be used by the models when implementing the dry deposition and depletion algorithm. The user may optionally specify a file of gridded terrain elevations that are used to integrate the amount of plume material that has been depleted through dry deposition processes along the path of the plume from the source to the receptor. The user also has the option of specifying a separate file of hourly emission rates for the ISCST3 model.

The input run stream file contains the user-specified options for running the ISCST3 model, includes the source parameter data and source group information, defines the receptor locations, specifies the location and parameters regarding the meteorological data and specifies the output options. The input meteorological data is read into the models from a separate data file.

5.7.3 AERMOD

One of the basic inputs to AERMOD is the run stream setup file which contains the selected modeling options, as well as source location and parameter data, receptor locations, meteorological data file specifications, and output options. Another basic type of input data needed to run the model is the meteorological data. AERMOD requires two types of meteorological data. One file consists of surface scalar parameters, and the other file consists of vertical profiles of meteorological data. AERMOD constructs vertical profiles of required meteorological variables based on measurements and extrapolations of those measurements using similarity (scaling) relationships. Vertical profiles of wind speed, wind direction, turbulence, temperature, and temperature gradient are estimated using all available meteorological observations. AERMOD is designed to run with a minimum of observed meteorological parameters. AERMOD requires only a single surface measurement of wind speed, wind direction and ambient temperature. Like ISC3, AERMOD also needs observed cloud cover.

5.8 Data used for model prediction

Modeling was carried out to assess the contribution from the stone crushers on the surrounding areas for both locations coastal area, Tirusulam, Chennai and inland area, Kodangipallayam, Tiruppur.

Prediction was carried out for simulating critical (worst case) and normal scenario for both these places. The input data requirement for the FDM, ISCST3 and AERMOD can be broadly classified into the following categories:

1. Emission rate
2. Particle size distribution of dust (Particle diameter and their fraction)
3. Meteorology
4. Source -receptor geometry
5. Treatment for deposition (surface roughness, Monin-obukhov length, friction velocity, precipitation, heat flux, convective velocity scale, bowen ratio, albedo etc.)
6. Scavenging effect (for ISCST3 and AERMOD models)

Input data structure of FDM, ISCST3, and AERMOD model used for fugitive dust prediction is given in **Table 5.2**.

Table 5.2
Input data structure of FDM, ISCST3 and AERMOD used for fugitive dust prediction

Data	FDM	ISCST3	AERMOD
Input option	Area source, plotter file option, long-term output option, period average, concentration and deposition, number of sources, receptor particle class, hourly meteorological data, length of time, surface roughness height, scaling factor and density of particulate matter	Area source, terrain nature urban option, concentration and deposition (wet or dry deposition), toxic nature, decay coefficient, particle diameter, particle density, mass fraction, flagpole option, scavenging coefficient for liquid and ice	Area source, terrain nature, urban option, concentration and deposition (wet or dry deposition), toxics, particle diameter, particle density, flagpole option
Diameter of the particle	Twenty class	Twenty class	Twenty class
Mass fraction of the particle	Twenty class	Twenty class	Twenty class
Particle density	Single class	Twenty class	Twenty class
Receptor coordinates	x, y, z coordinates in meter (Only irregular rectangular coordinates)	x, y, z coordinates in meter (combination of irregular spaced rectangular and polar coordinates)	x, y, z coordinates in meter (combination of irregular spaced rectangular and polar coordinates)
Source coordinates	x, y, z coordinates in meter Only irregular rectangular coordinates)	x, y, z coordinates in meter (combination of irregular spaced rectangular and polar coordinates)	x, y, z coordinates in meter(combination of irregular spaced rectangular and polar coordinates)
	height of emission, source width	height of emission, source width	height of emission, source width
Emission rate	Unit of emission rate g/m^2.sec	Unit of emission rate g/m^2.sec	unit of emission rate g/m^2.sec
Meteorological data	Wind speed, wind direction stability class , mixing height, ambient temperature	Wind speed, wind direction stability class, mixing height, ambient temperature <u>Additional data as compared to FDM</u> precipitation rate, precipitation code, surface roughness length convective velocity,	Wind speed, wind direction stability class, mixing height, ambient temperature <u>Additional data as compared to FDM</u> Precipitation rate, precipitation code, surface roughness length convective velocity <u>Additional data as compared to ISCST3</u>

			convective velocity scale, mechanical and convective mixing height, sensible heat flux, albedo, and Bowen ratio, atmospheric pressure, friction velocity, monin-obukhov, humidity
Level of meteorological data	Single internal/external Meteorological data file.	Single external file SURFILE	Two external file SURFILE and PROFILE
Out put option	Plotter file option, top 50 table for long term averages period average concentration in $\mu g/m^3$ and deposition rate in $\mu g/m^2.s$	Tables of period averages by receptor, highest short term values by receptor and overall maximum short term values, external file(s) of threshold violations	Tables of period averages by receptor overall maximum short term values external file(s) of threshold violations file(s) of high values for plotting

5.8.1 Source Emission rate

Based on the micro-meteorological condition, location, number of stone crushers and their distribution upwind and downwind directions were identified for assessing source strength of each crusher. The estimated source strength of each stone crusher working in Tirusulam area and Kodangipallayam, Tiruppur areas by upwind downwind technique are estimated given in **Tables 3.1 and 3.2**. The average of TSPM emission rates are 4.778 g/s for Tirusulam, Chennai and 13.4 g/s for Kodangipallayam, Tiruppur, whereas the average of RSPM emission rates are 1.15 g/s for Tirusulam, Chennai and 2.52 g/s for Kodangipallayam, Tiruppur are used for modeling dust emissions from stone crushers on the surrounding area at these locations.

5.8.2 Particle size distribution of dust

Particle size distributions of dust emitted from stone crushers were estimated using particle size analyzer viz. CILAS 1180 model Particle Size Analyzer using laser diffraction. Particle size distributions used in the modeling consisted of 20 separate particle size classes: <0.2, 0.2 - 0.5, 0.5 - 0.7, 0.7 - 1, 1 - 1.3, 1.3 -1.6, 1.6 - 2, 2 - 2.4, 2.4 - 3, 3 - 5, 5 - 7.5, 7.5 - 10, 10 - 12, 12 - 15, 15 - 17, 17 - 20, 20 - 25, 25 - 32, 32 - 50, 50 - 90µm. The modeling was carried out for both TSPM and PM_{10} for both the location for Tirusulam, Chennai and Kodangipallayam, Tiruppur.

5.8.3 Meteorology

The degree to which air pollutants emitted from various sources concentrate in a particular area depends largely on meteorological conditions. Atmospheric conditions play a major role in evaluating the intensity of air pollution. Even though the total discharge of pollutants into the atmosphere in a given area remains the same, the degree of air pollution may vary widely because of difference in meteorological conditions. As a result, the air pollution status in any air shed is governed by its meteorological conditions which play a crucial role. Meteorological factors that govern the transportation and dispersion of pollutants are: atmospheric stability or temperature profile, atmospheric dynamics or wind profiles, mixing depth (and ventilation coefficient), topographical effects. The wind and temperature structure of the atmosphere together would give an indication of atmosphere characteristics besides the height and amount of cloud cover. The ability of the atmosphere to resist vertical motions is called atmospheric stability and depends on the vertical profile of the atmosphere.

5.8.3.1 Weather station

One weather station was employed for the continuous measurement of surface meteorological data at the site. The weather station was kept at about 3m above ground level with free exposure to atmosphere. Also temperature, pressure and humidity were recorded simultaneously using the weather station and handy thermo-hygrograph. The meteorological data recording was carried out to measure wind speed, wind direction, temperature, humidity and pressure continuously for 24 hours during the period (November, 2021 to January, 2022). These data were processed and used for modeling of Fugitive dust emissions from stone crushers.

5.8.4 Source-receptor geometry

Dispersion of particulate material is not only dependent on the source strength, location, wind speed and atmospheric stability but also depends on the geometry of the source-receptor. Dense grid of 50m × 50m near source and in the down wind direction was selected and a coarse grid of 200m × 200m was selected in the upwind direction and locations away from the stone crushers. In general, the source receptor distances were of the order of 50 meters or more.

5.8.5 Treatment for deposition

ISCST3 dry deposition model, which is used to calculate the amount of material deposited (i.e., the deposition flux) at the surface from a particle plume through dry deposition processes. The Short Term dry deposition model is based on a dry deposition algorithm contained in the Acid Deposition and Oxidant Model (ADOM).

Dry deposition depends mainly on deposition velocities. A resistance method is used to calculate the deposition velocity. The general approach used in the resistance methods for estimating deposition velocity is to include explicit parameterizations of the effects of Brownian motion, inertial impact and gravitational settling. The large settling velocities; the deposition velocity approaches the settling velocity. In addition to the mass mean diameters (microns), particle densities (g/cm^3) and the mass fractions for each particle size category being modeled, the dry deposition model also requires surface roughness length (cm), friction velocity (m/s), and Monin-Obukhov length (m). In ISCST3 wet deposition model scavenging ratio used to predict wet deposition of particulate matter. A scavenging ratio approach used to model the deposition of gases and particles through wet removal. In this approach, the flux of material to the surface through wet deposition is the product of a scavenging ratio times the concentration, integrated. The wet deposition algorithm requires precipitation type (liquid or solid) and precipitation rate.

5.8.6 Scavenging Effect

Scavenging effect is used to measure wet deposition of the gaseous and particulate matter. The scavenging effect measured in terms of scavenging coefficient. The scavenging coefficient depends on the characteristics of the pollutant (e.g., solubility and reactivity for gases, size distribution for particles) as well as the nature of the precipitation (e.g., liquid or frozen). The scavenging coefficient is the function of particle size. A scavenging ratio approach is used to model the deposition of gases and particles through wet removal. In this approach, the flux of material to the surface through wet deposition is the product of a scavenging ratio times the concentration. The scavenging ratio is computed from a scavenging coefficient and a precipitation rate. The scavenging coefficient has units$(s\text{-}mm/hr)^{-1}$.

5.9 Prediction and Simulation by Model AERMOD and ISCST3

5.9.1 Prediction of Concentration Profile

The model was processed with emission rates, meteorological data and geometry of the source and receptors. For fugitive dust impacts, results are found very insensitive to values used for mixing height because the emissions are released at or near the ground and the impacts are generally very close to the source. As a result, the emissions have little opportunity to mix vertically to the height of the mixing layer. Model predictions were computed using daily emission data and on-site meteorology from stone crushing operations at coastal area, Tirusulam, Chennai and inland area, Kodangipallayam, Tiruppur.

The input data used for model predictions for various sampling conditions are given in **Tables 5.3 and 5.4**. The predicted concentrations for both the conditions of first 24-hour maximum (critical case) during the monitoring period and also for the entire duration of monitoring period (seasonal average) using AERMOD and ISCST3 are presented in the form of isopleths and surfers as shown in **Figures 5.1 to 5.16** and **Figures 5.17 to 5.32** respectively, for both the coastal area, Tirusulam, Chennai and inland area, Kodangipallayam, Tiruppur. The first 24-hour maximum (critical case) during the monitoring period portrays the worst case simulation whereas period average (seasonal average) prediction portrays the normal case simulation. These two simulation aim to estimate the impact of dust emission from SCIs on the surrounding for two extreme ends of impacts with worst case portraying the severe impact during the monitoring period on 24 hourly average basis whereas the normal case portrays period average (seasonal average) covering all 24-hour average (day average) for the entire monitoring period.

Table 5.3
Meteorological data used for models for prediction: Tirusulam, Chennai (December, 2021)

Sr. No.	Hour	Wind Direction (degree)	Wind Speed (m/s)	Temp. (ºC)	Humidity (%)
1.	0 - 1	135	1.00	33	70
2.	1 - 2	135	1.00	33	62
3.	2 - 3	135	1.11	32	62
4.	3 - 4	135	1.42	32	63
5.	4 - 5	135	1.94	31	64
6.	5 - 6	135	1.67	31	65
7.	6 - 7	135	1.00	31	66
8.	7 - 8	135	1.00	31	68
9.	8 - 9	180	1.00	31	67
10.	9 - 10	270	1.19	31	65
11.	10 - 11	270	1.11	32	62
12.	11 - 12	270	1.11	33	59
13.	12 - 13	315	1.22	34	58
14.	13 - 14	270	1.50	35	57
15.	14 - 15	315	1.22	35	58
16.	15 - 16	135	1.22	34	68
17.	16 - 17	90	1.75	34	67
18.	17 - 18	135	1.00	34	66
19.	18 - 19	90	1.19	34	66
20.	19 - 20	90	1.44	33	68
21.	20 - 21	135	1.08	33	70
22.	21 - 22	135	1.00	33	72
23.	22 - 23	135	1.00	32	73
24.	23 - 24	180	0.86	32	71

Table 5.4
Meteorological data used for models for prediction: Kodangipallayam, Tiruppur (January, 2022)

Sr. No.	Hour	Wind Direction (degree)	Wind Speed (m/s)	Temp. (º C)	Humidity (%)
1.	0 - 1	23	1.7	26	64
2.	1 - 2	23	1.7	26	64
3.	2 - 3	23	1.7	26	64
4.	3 - 4	23	1.7	26	64
5.	4 - 5	23	1.7	26	64
6.	5 - 6	23	1.7	25	64
7.	6 - 7	23	1.7	25	64
8.	7 - 8	23	1.7	25	65
9.	8 - 9	23	1.7	25	65
10.	9 - 10	23	1.7	25	65
11.	10 - 11	23	1.7	27	67
12.	11 - 12	68	1.8	30	68
13.	12 - 13	68	1.9	29	67
14.	13 - 14	68	2.0	26	67
15.	14 - 15	23	2.1	26	67
16.	15 - 16	23	2.0	26	66
17.	16 - 17	68	1.8	27	66
18.	17 - 18	68	1.9	27	64
19.	18 - 19	45	1.6	28	64
20.	19 - 20	23	1.3	28	63
21.	20 - 21	23	1.3	28	61
22.	21 - 22	23	1.3	28	59
23.	22 - 23	23	1.3	28	59
24.	23 - 24	23	1.3	28	59

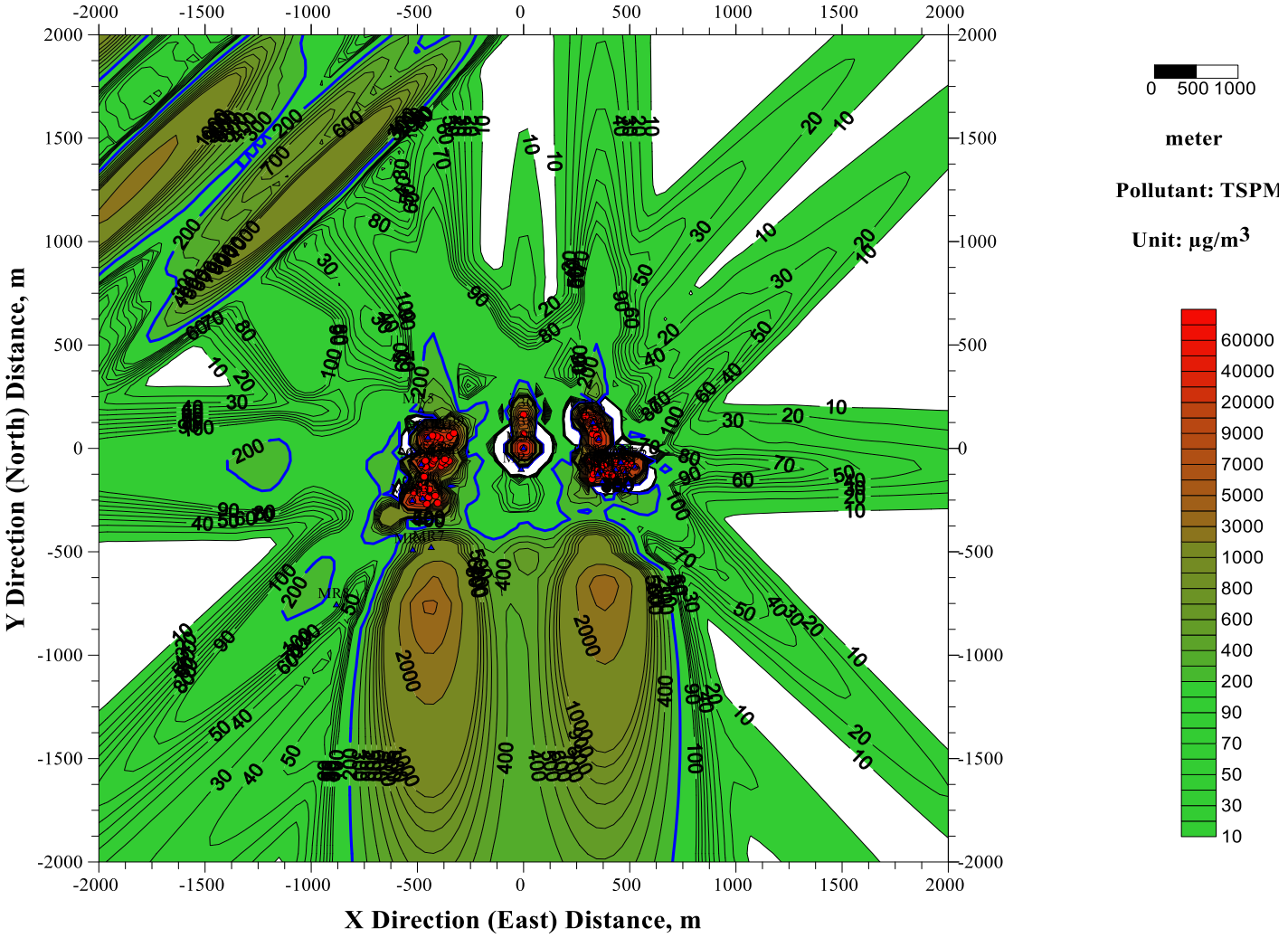


Figure 5.1: Isopleth Showing AERMOD Predicted TSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario)

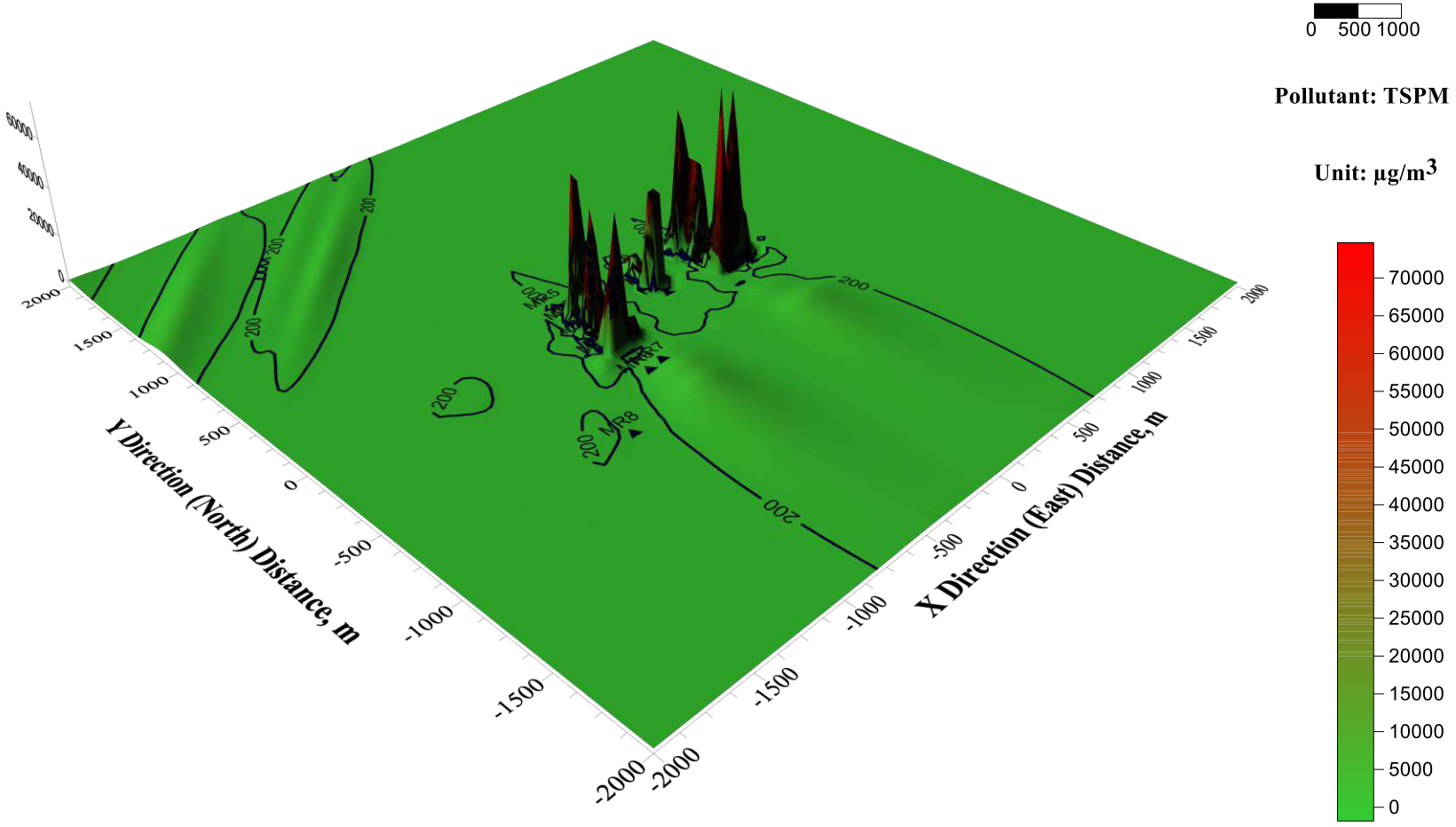


Figure 5.2: Surfer Showing AERMOD Predicted TSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario)

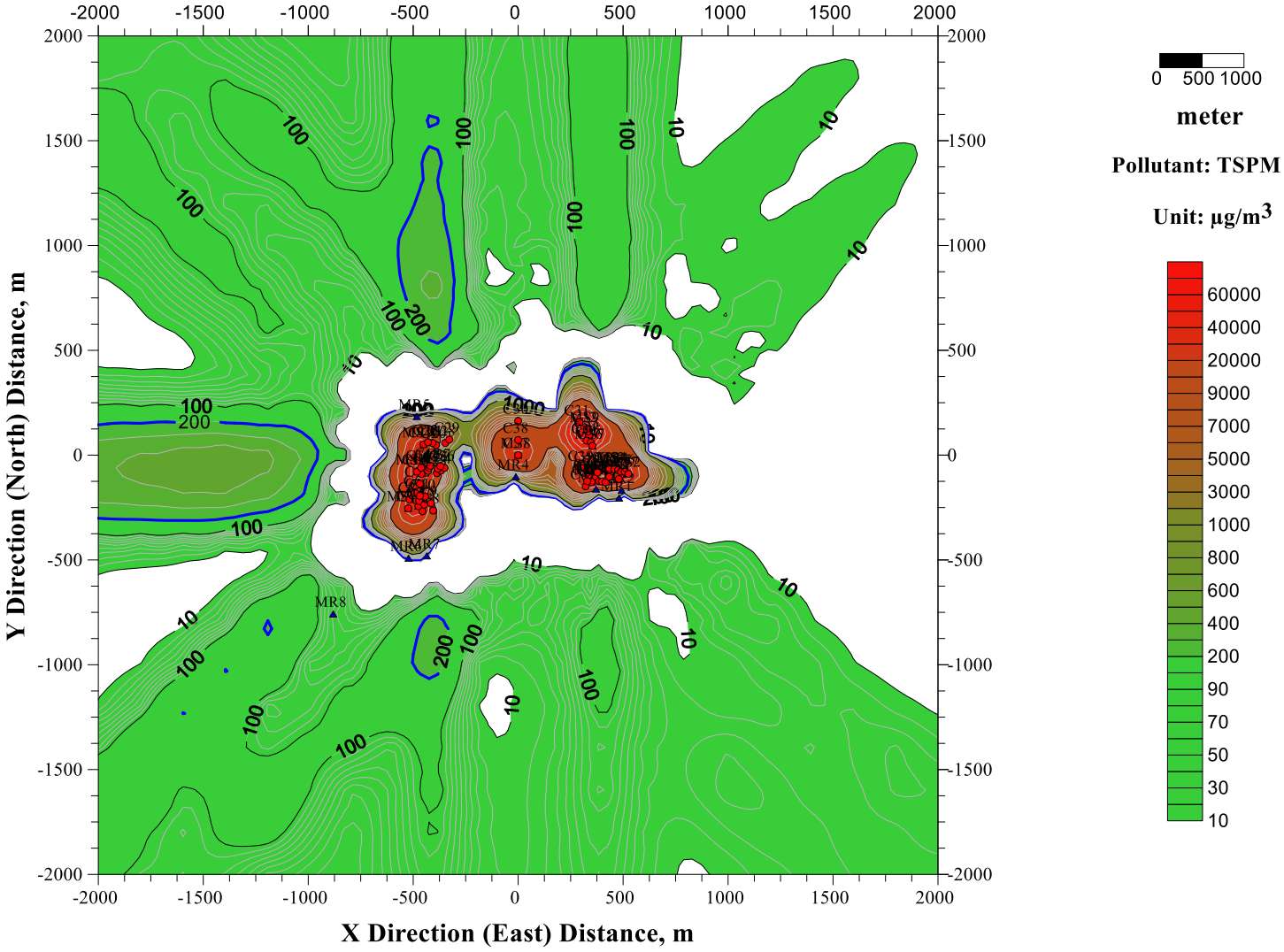


Figure 5.3: Isopleth Showing AERMOD Predicted TSPM Concentration: Tirusulam (Period/Seasonal Average)

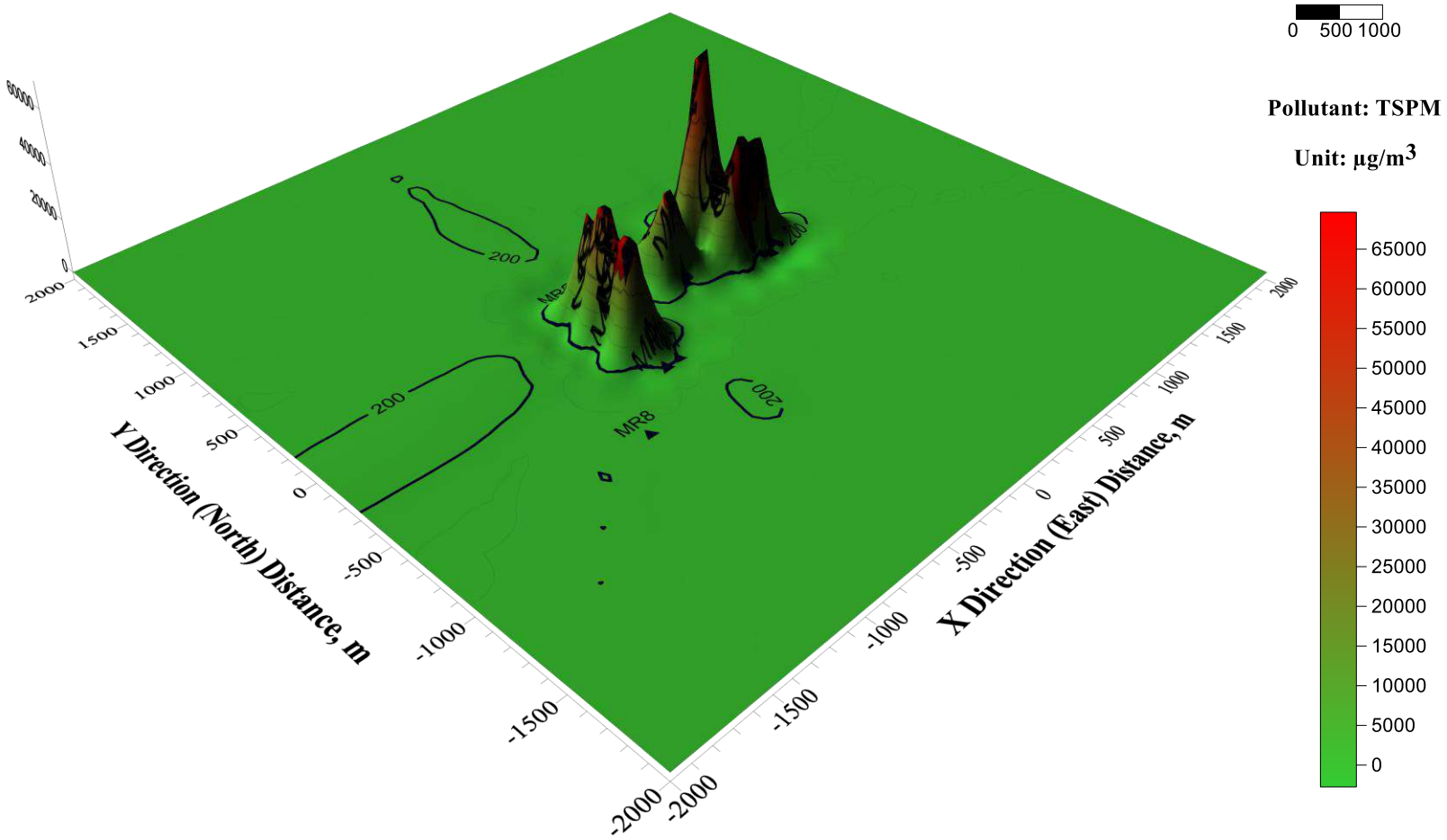


Figure 5.4: Surfer Showing AERMOD Predicted TSPM Concentration: Tirusulam (Period/Seasonal Average)

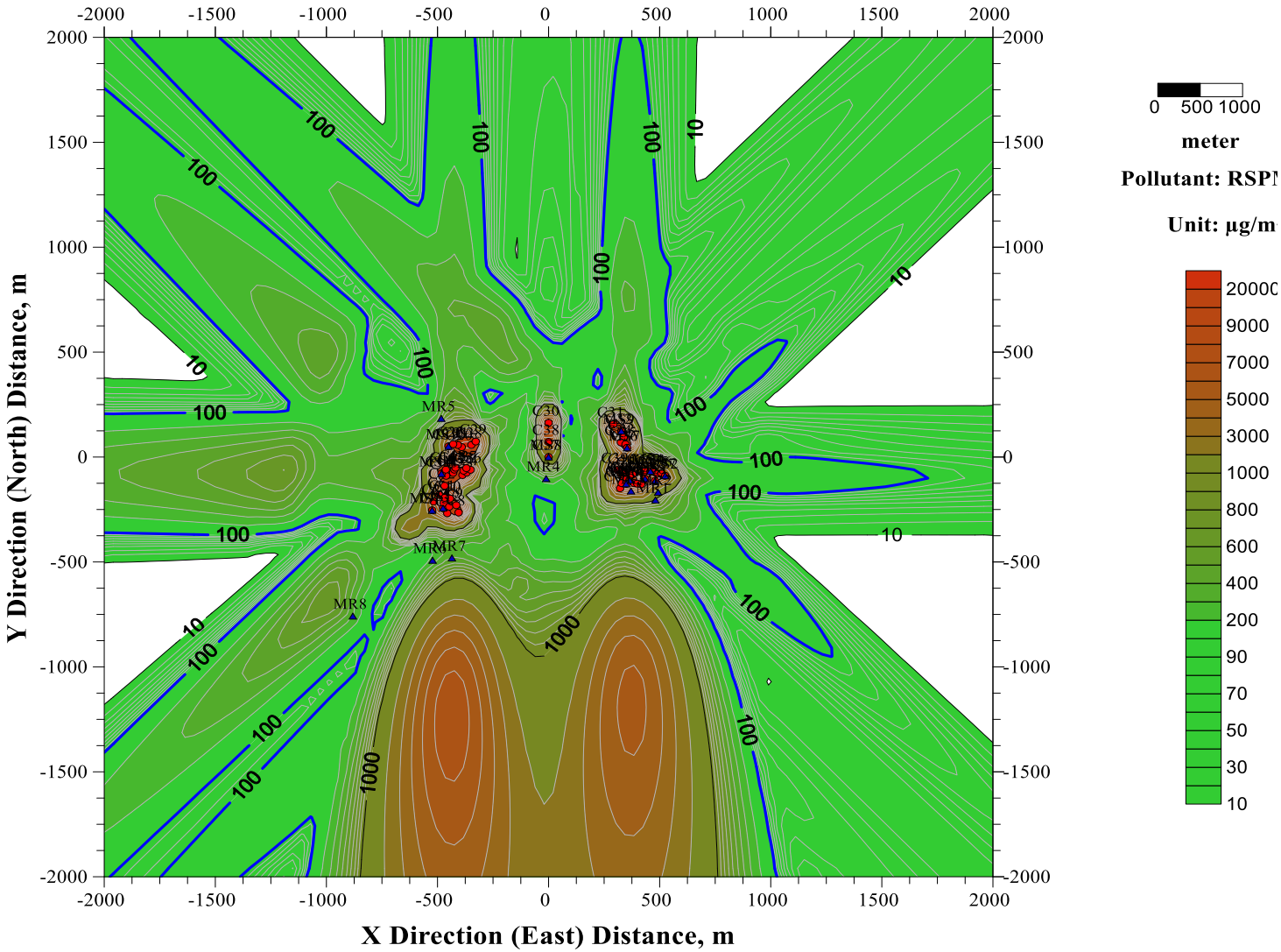


Figure 5.5: Isopleth Showing AERMOD Predicted RSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario)

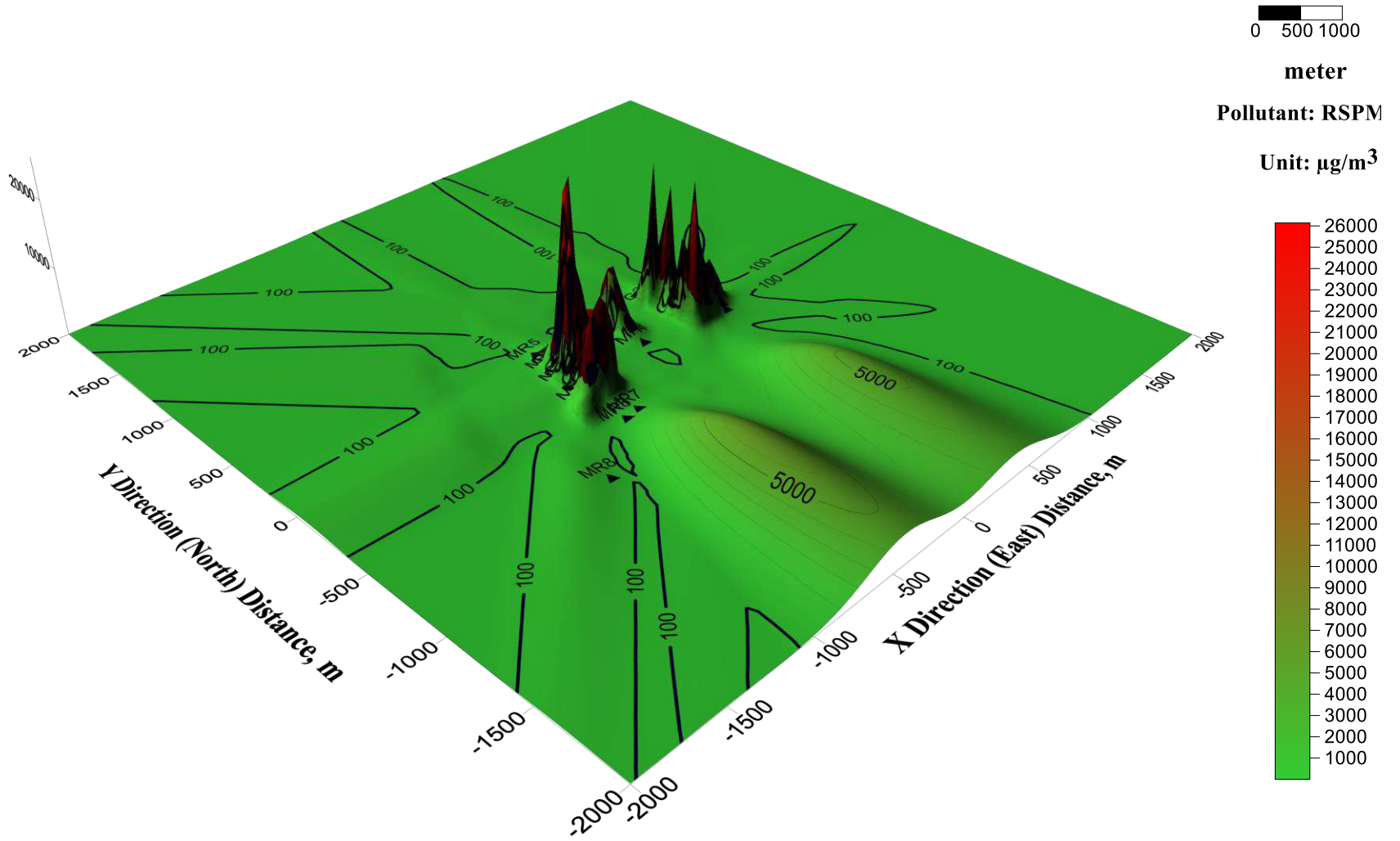


Figure 5.6: Surfer Showing AERMOD Predicted RSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario)

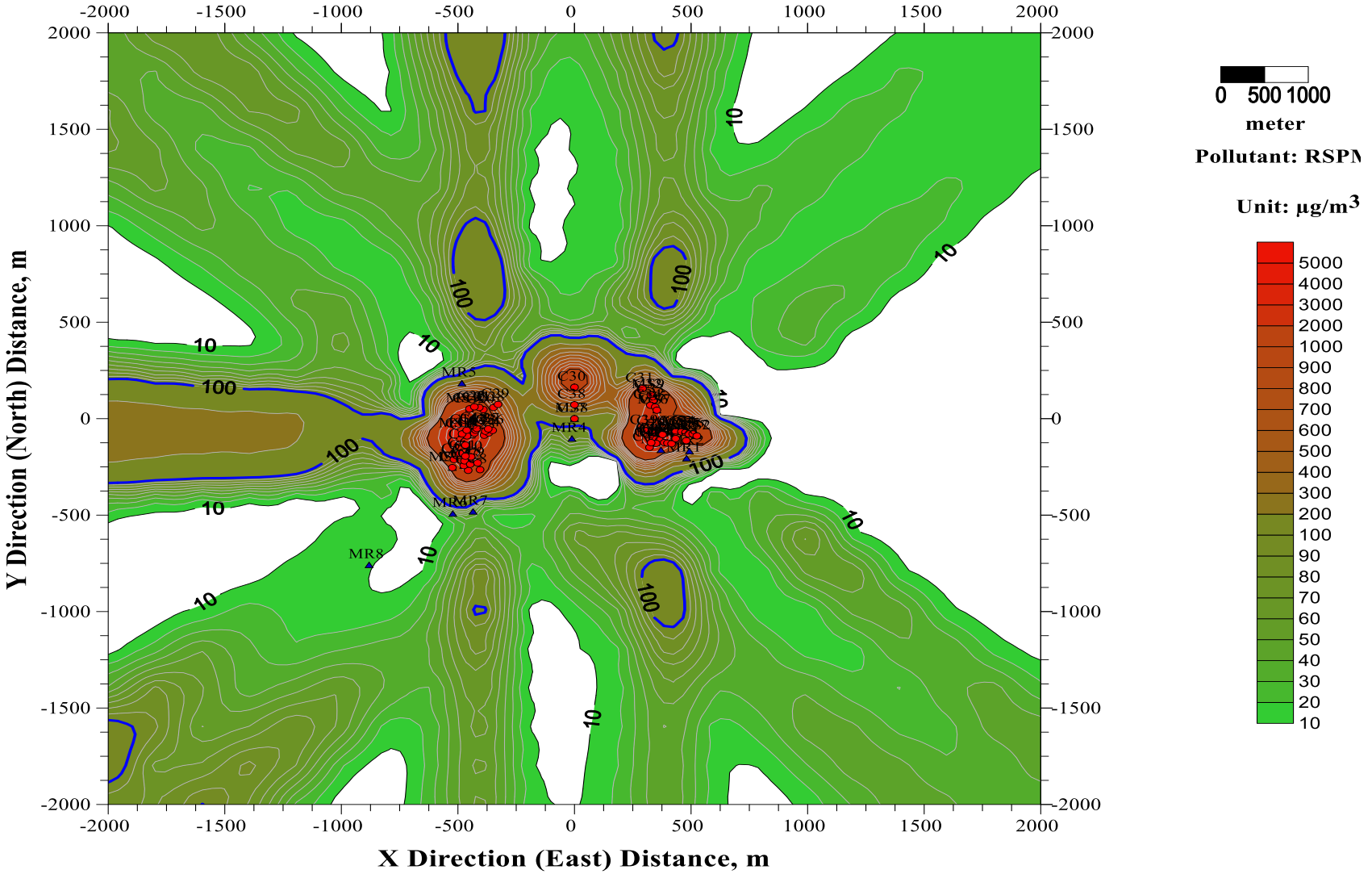


Figure 5.7: Isopleth Showing AERMOD Predicted RSPM Concentration: Tirusulam (Period/Seasonal Average)

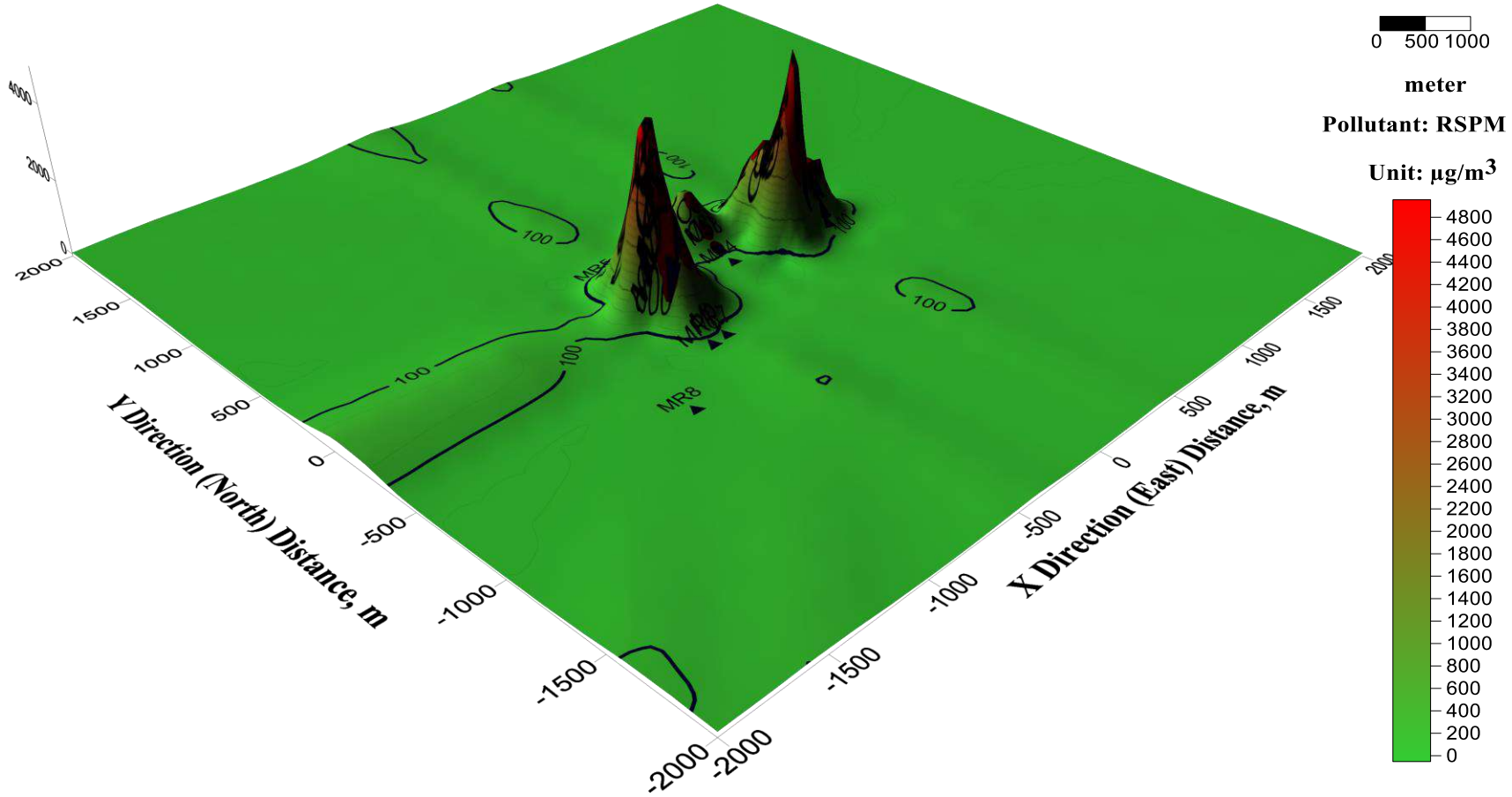


Figure 5.8: Surfer Showing AERMOD Predicted RSPM Concentration: Tirusulam (Period/Seasonal Average)

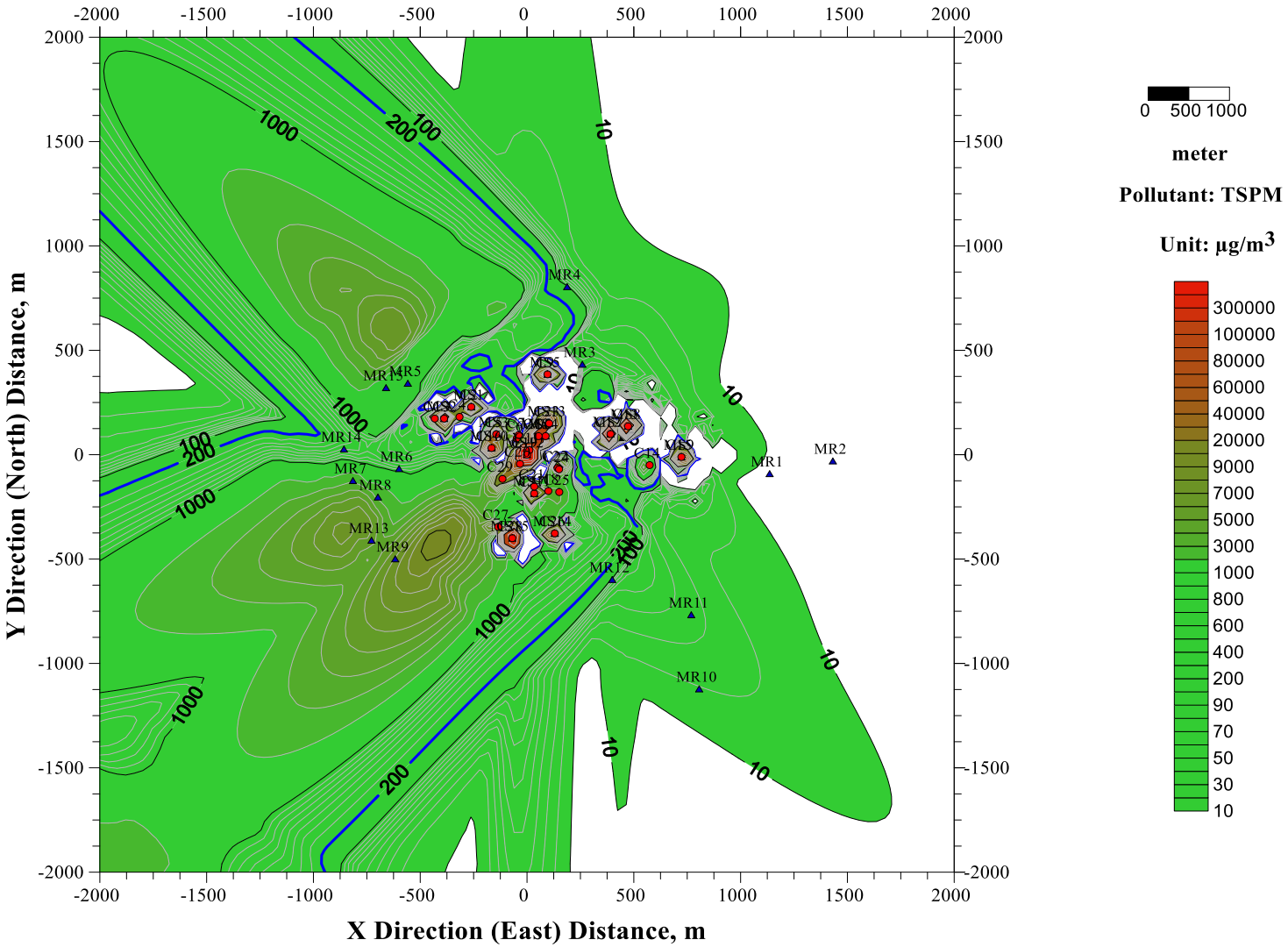


Figure 5.9: Isopleth Showing AERMOD Predicted TSPM Concentration: Tiruppur (First Highest 24-hour Average: Worst Case Scenario)

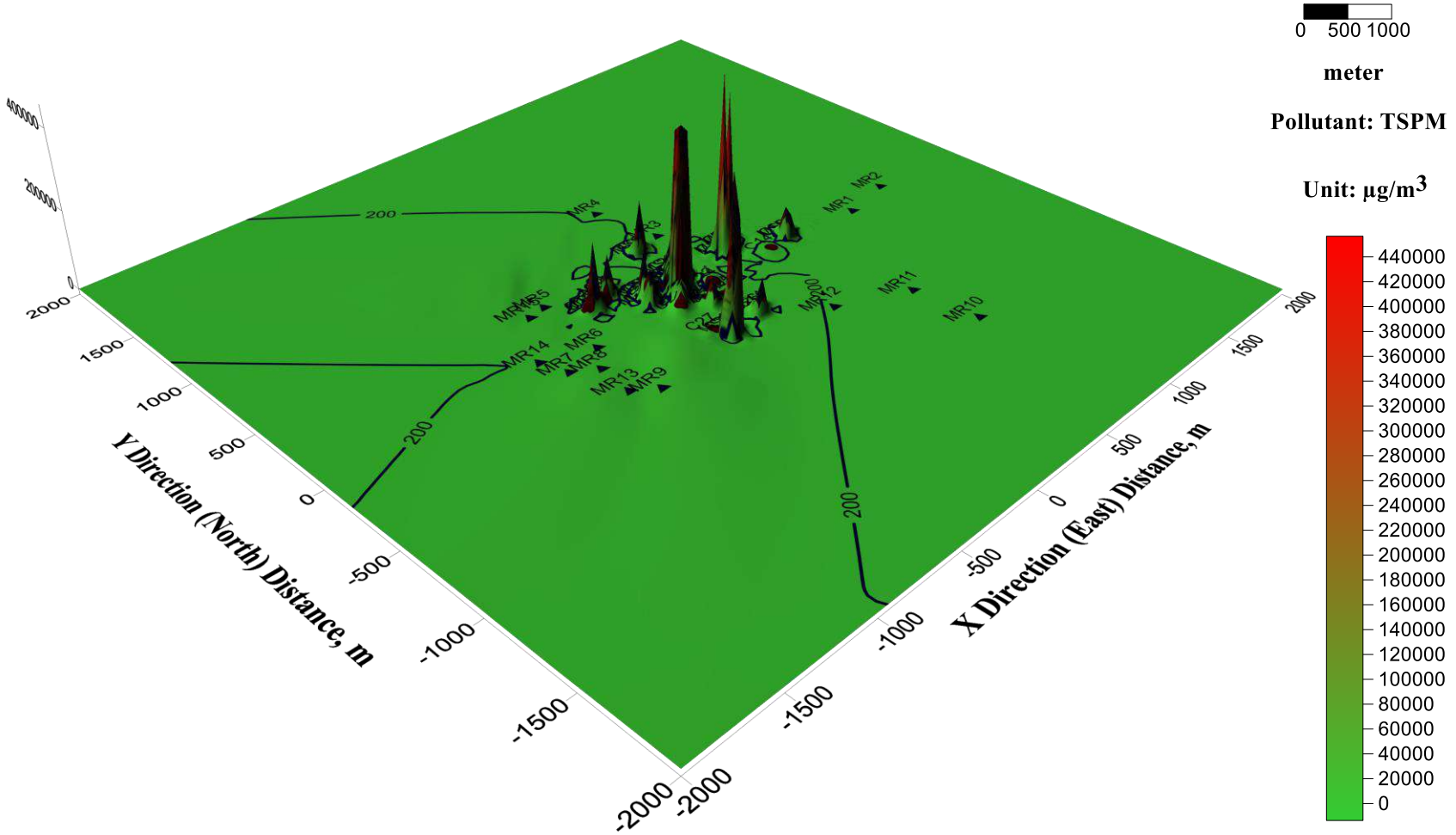


Figure 5.10: Surfer Showing AERMOD Predicted TSPM Concentration: Tiruppur (First Highest 24-hour Average: Worst Case Scenario)

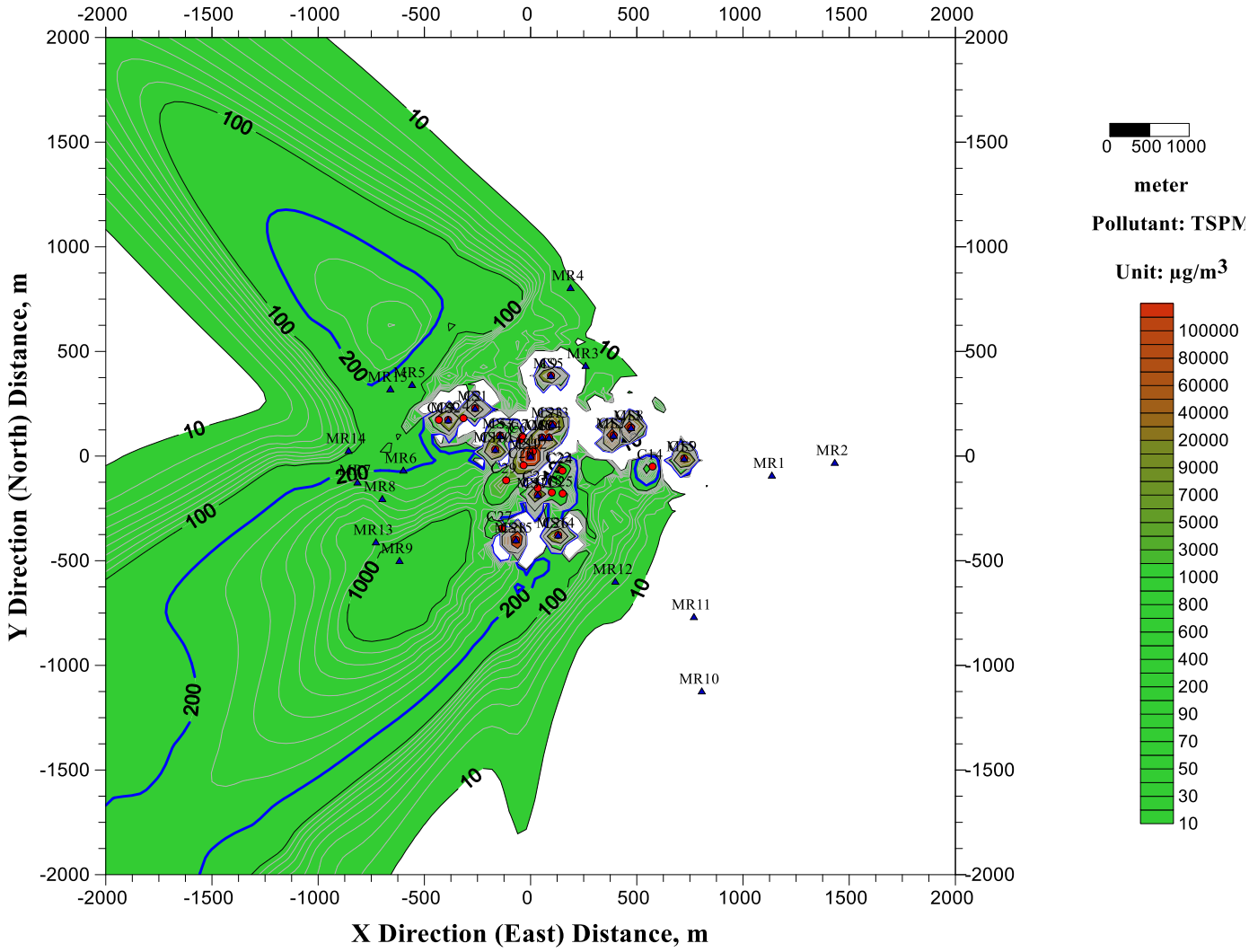


Figure 5.11: Isopleth Showing AERMOD Predicted TSPM Concentration: Tiruppur (Period/Seasonal Average)

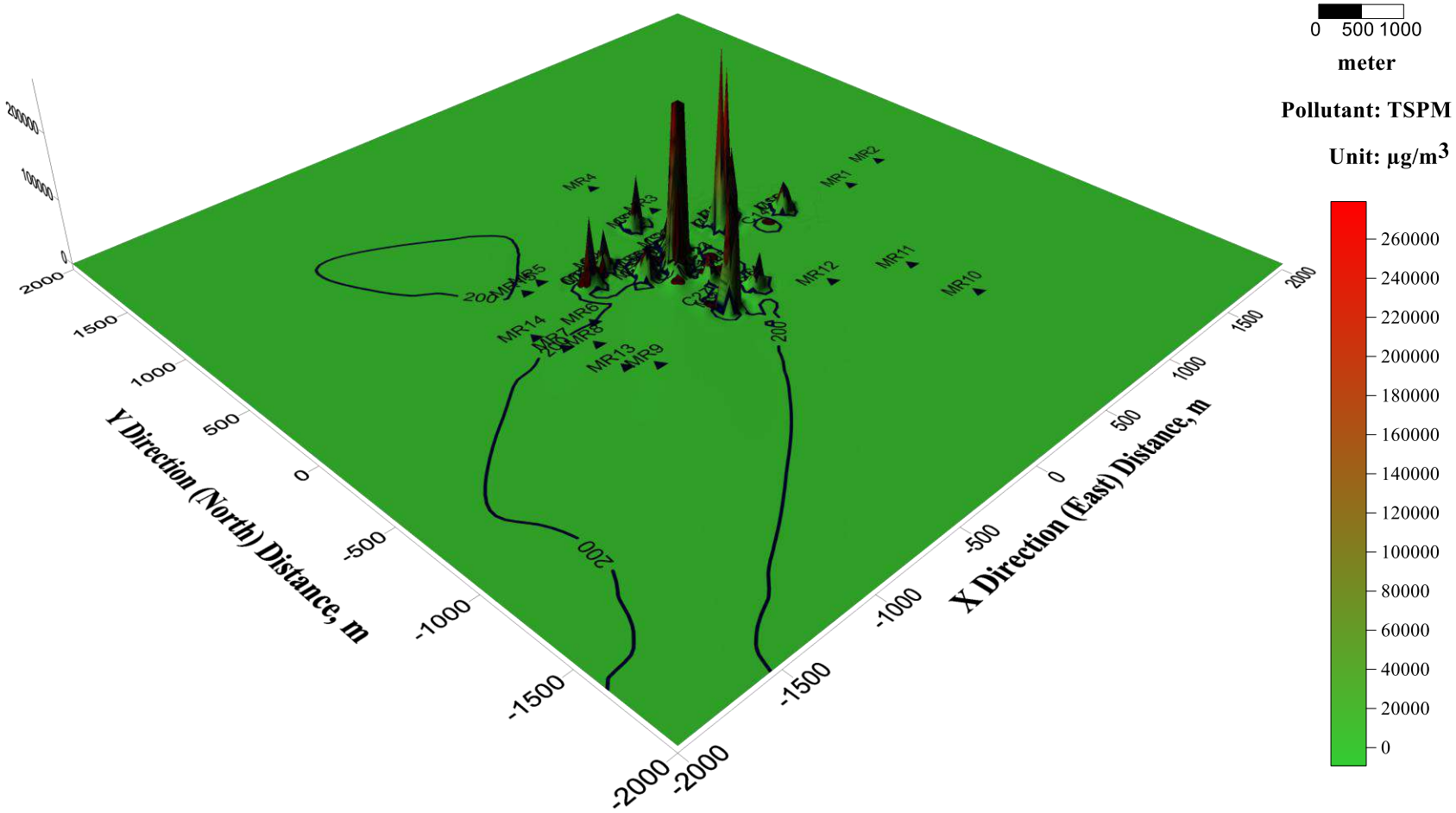


Figure 5.12: Surfer Showing AERMOD Predicted TSPM Concentration: Tiruppur (Period/Seasonal Average)

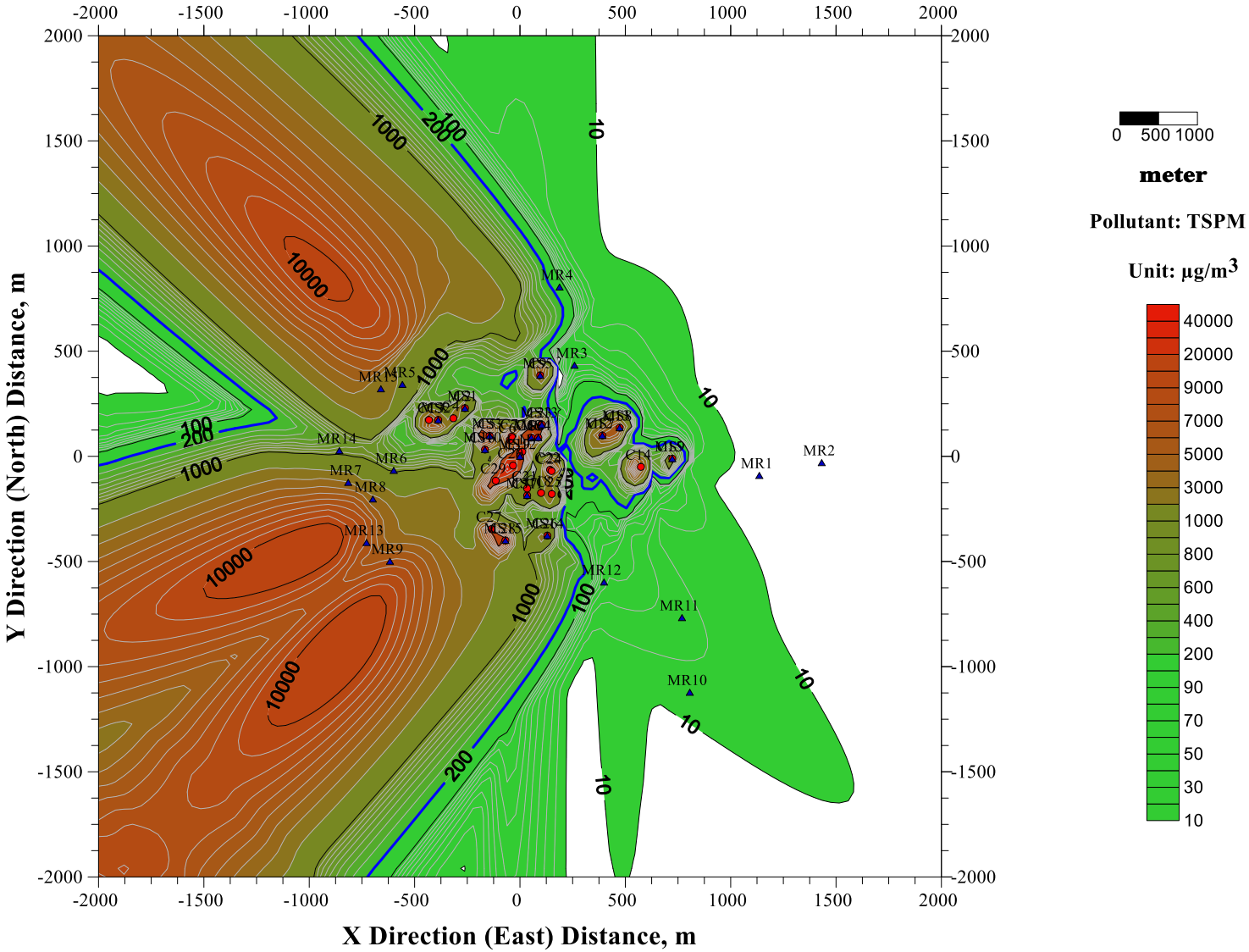


Figure 5.13: Isopleth Showing AERMOD Predicted RSPM Concentration: Tiruppur (First Highest 24-hour Average: Worst Case Scenario)

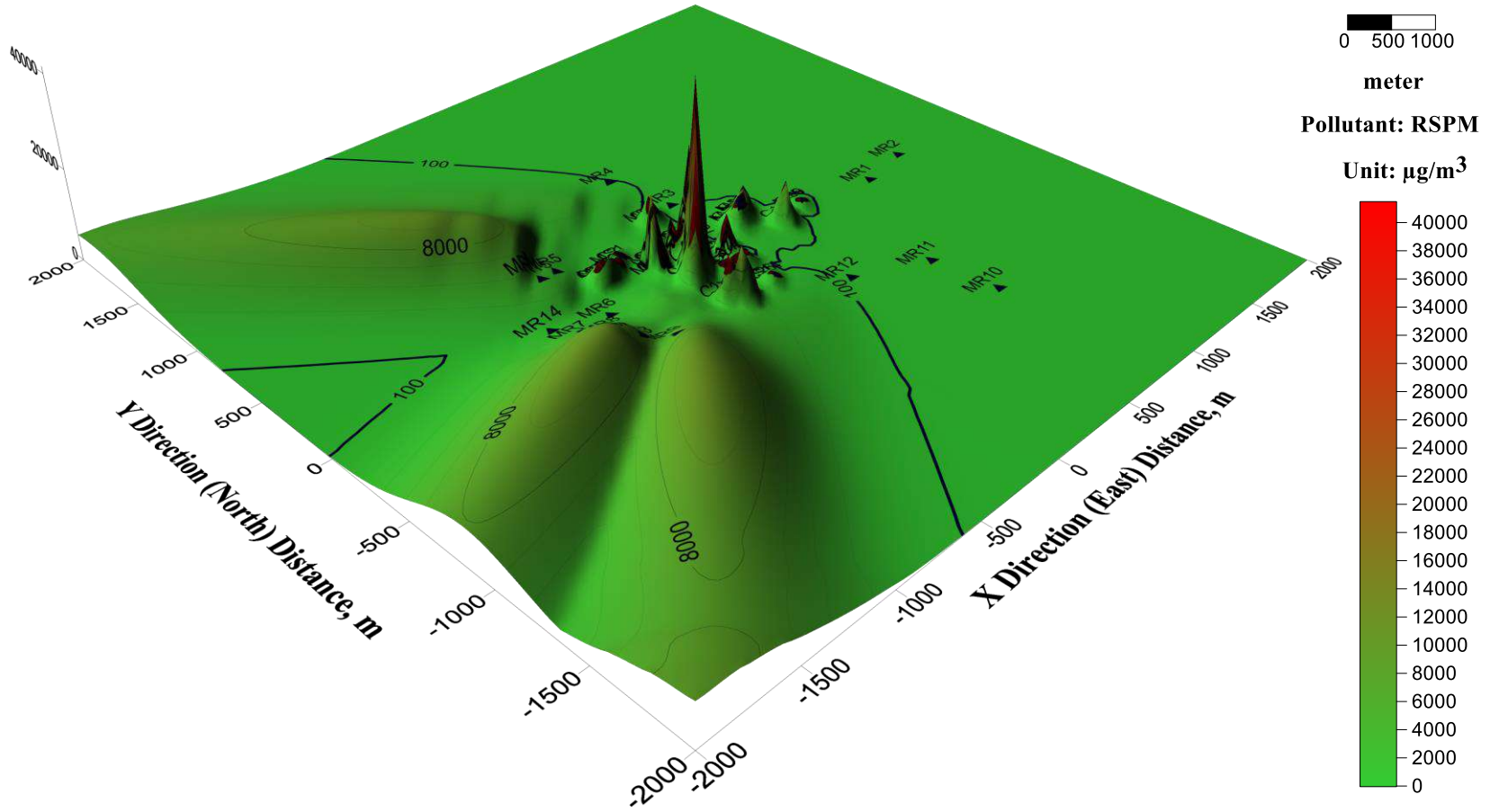


Figure 5.14: Surfer Showing AERMOD Predicted RSPM Concentration: Tiruppur (First Highest 24-hour Average: Worst Case Scenario)

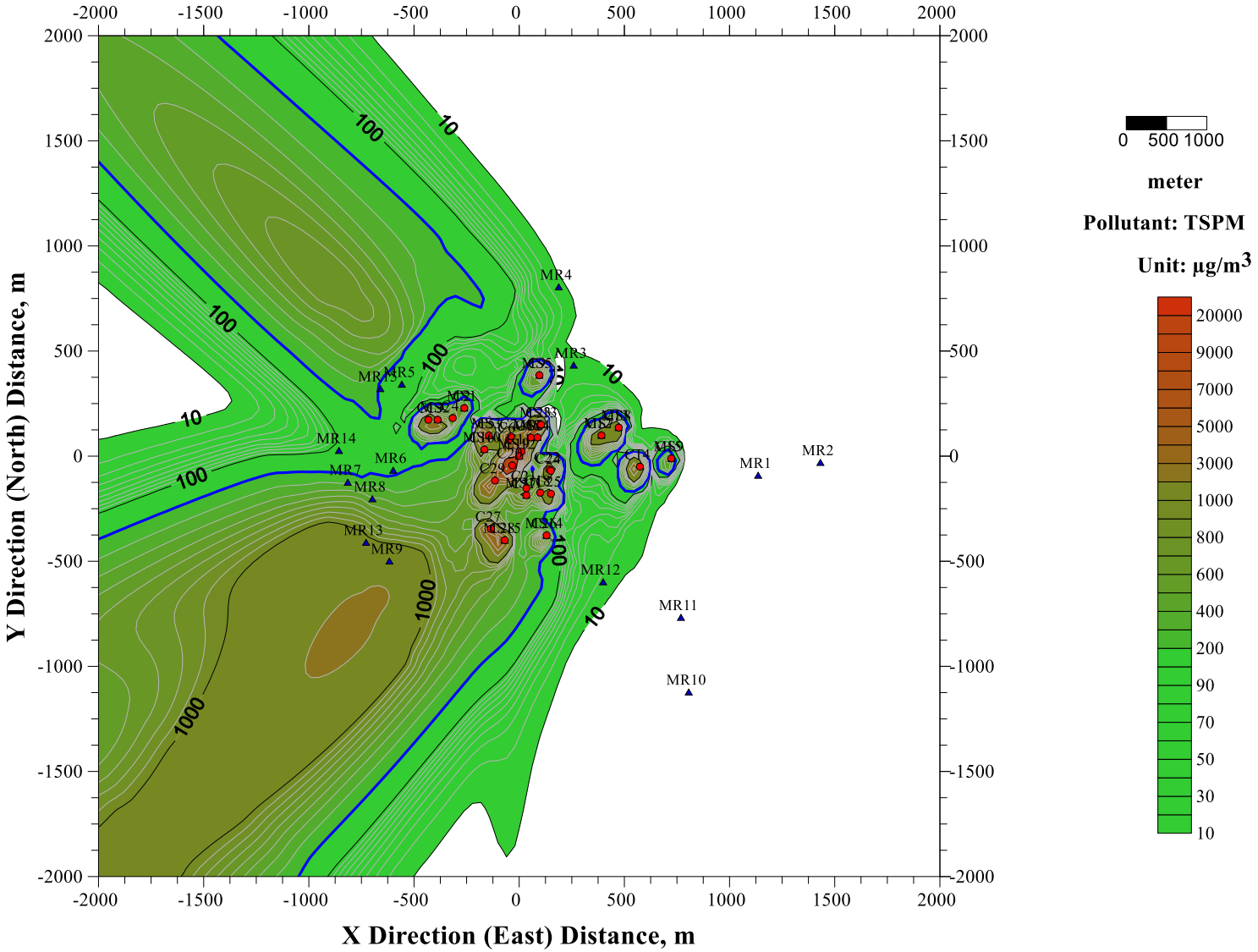


Figure 5.15: Isopleth Showing AERMOD Predicted RSPM Concentration: Tiruppur (Period/Seasonal Average)

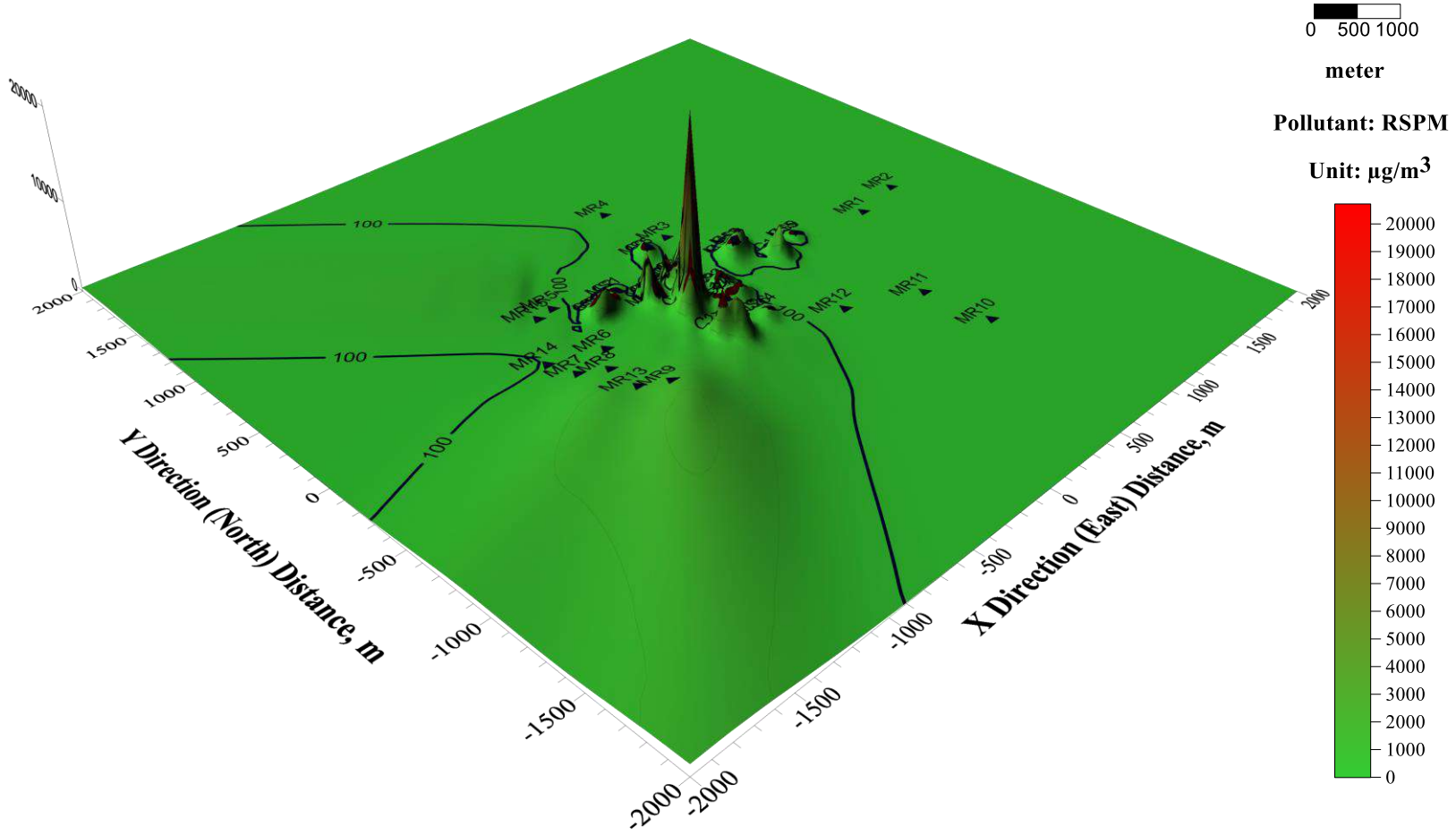


Figure 5.16: Surfer Showing AERMOD Predicted RSPM Concentration: Tiruppur (Period/Seasonal Average)

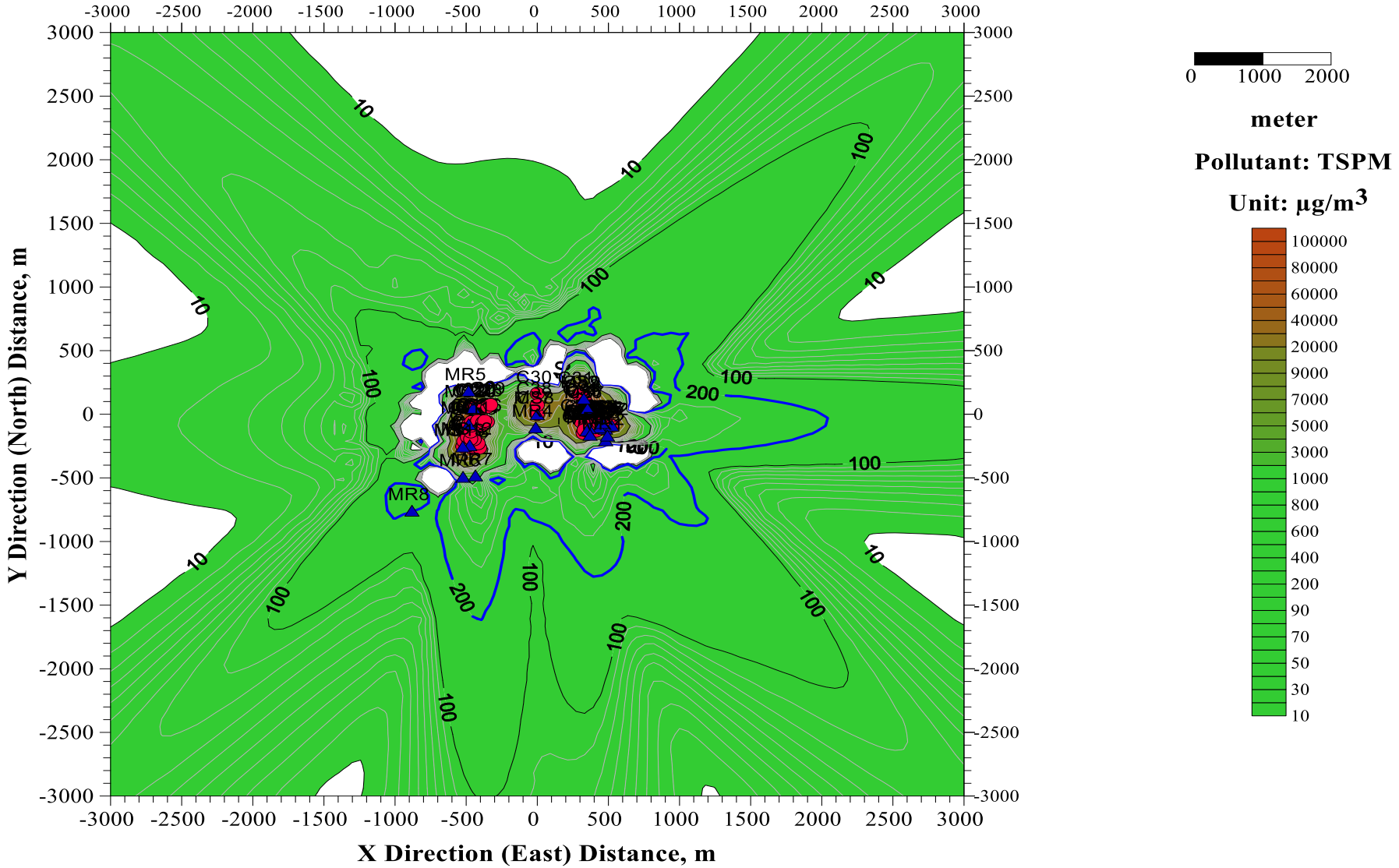


Figure 5.17: Isopleth Showing ISCST3 Predicted TSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario)

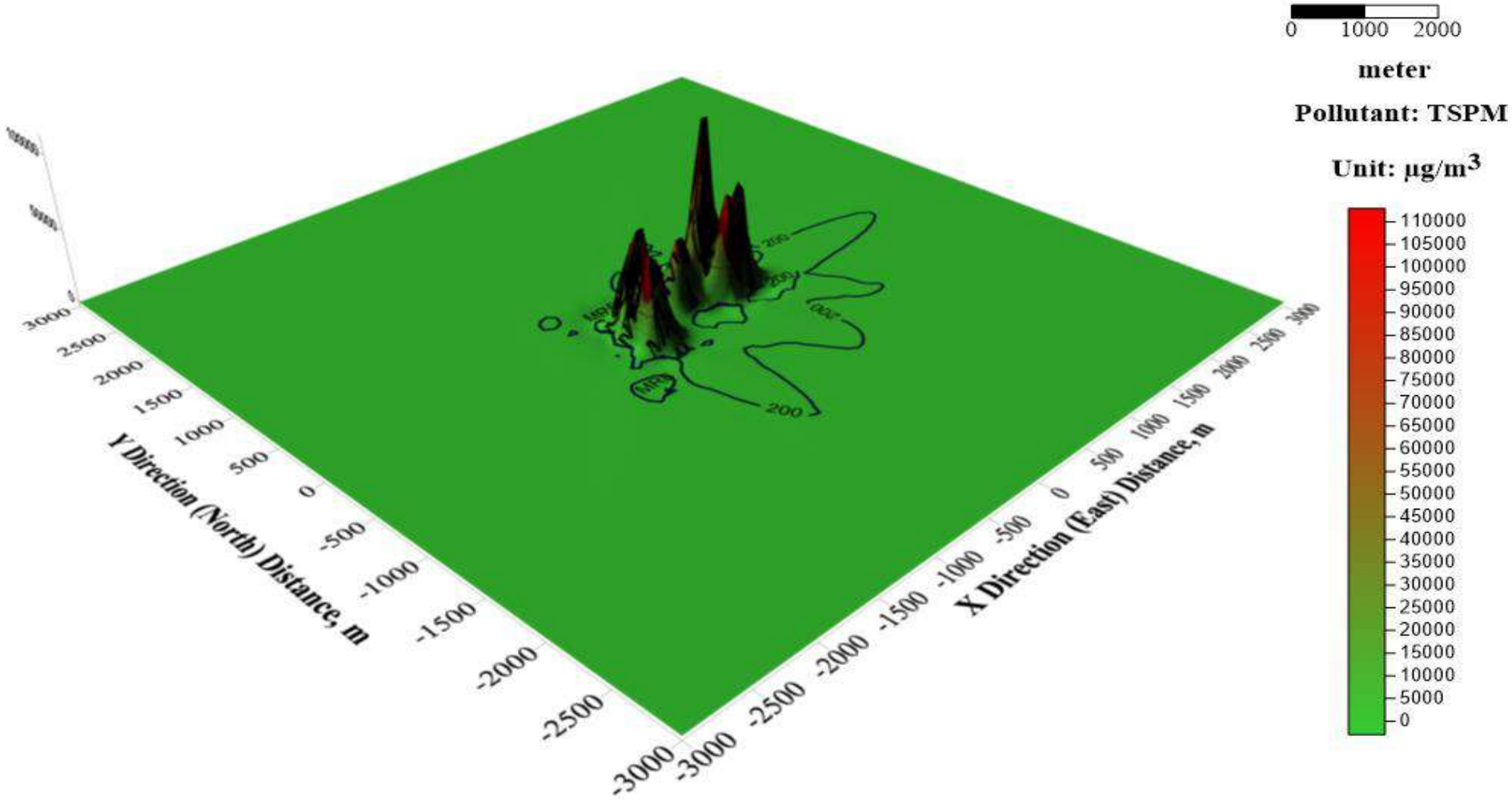


Figure 5.18: Surfer Showing ISCST3 Predicted TSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario)

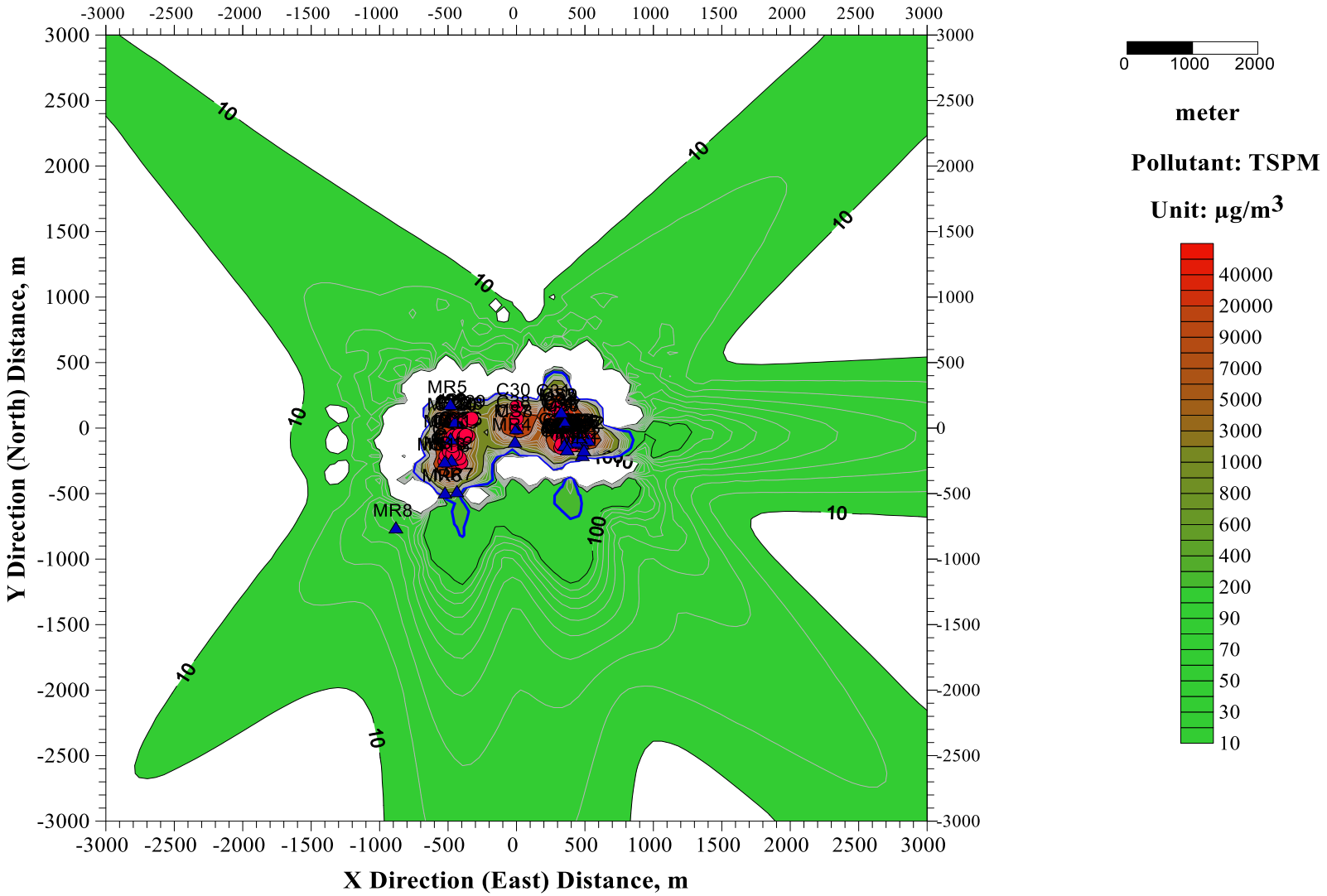


Figure 5.19: Isopleth Showing ISCST3 Predicted TSPM Concentration: Tirusulam (Period/Seasonal Average)

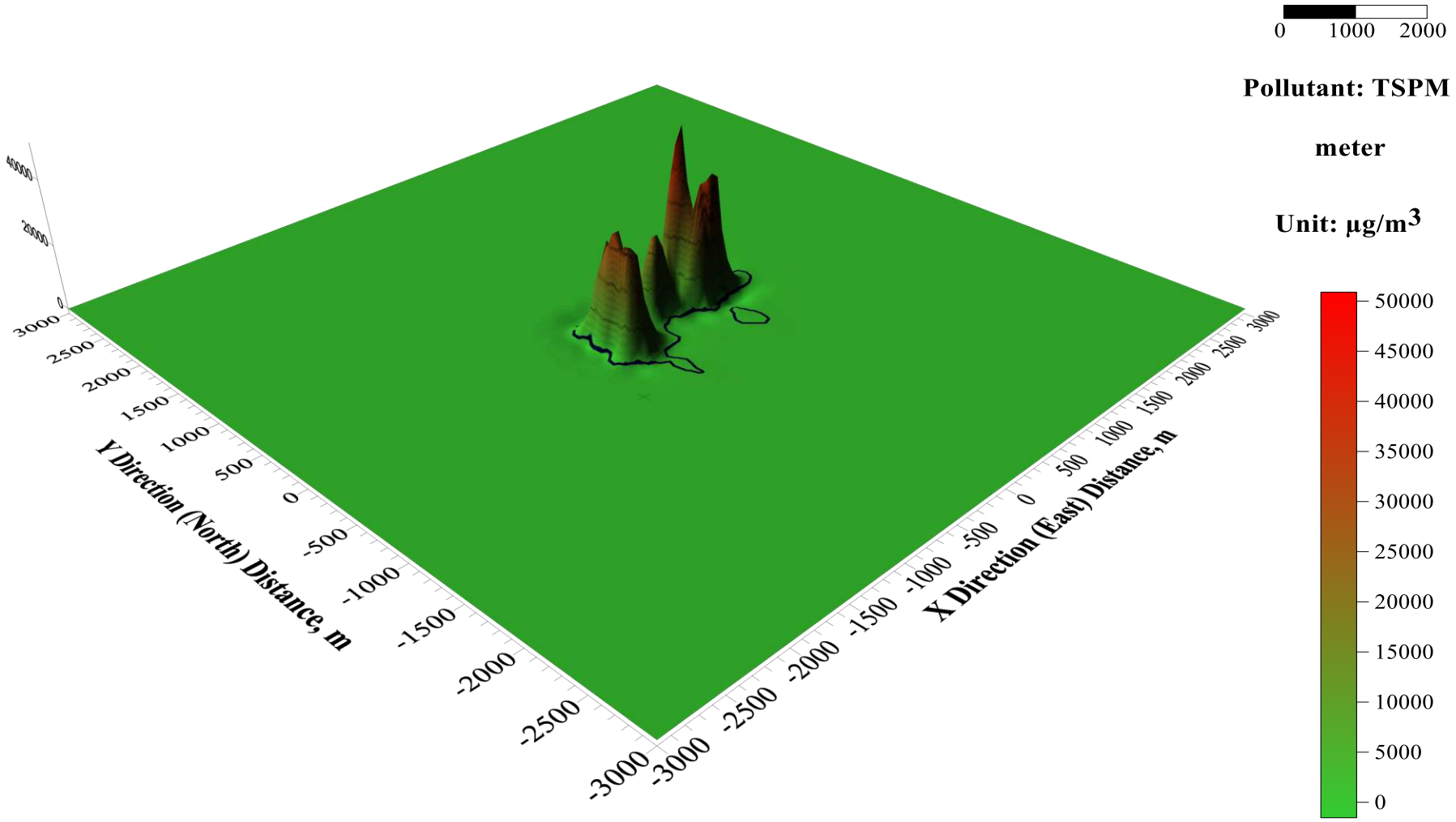


Figure 5.20: Surfer Showing ISCST3 Predicted TSPM Concentration: Tirusulam (Period/Seasonal Average)

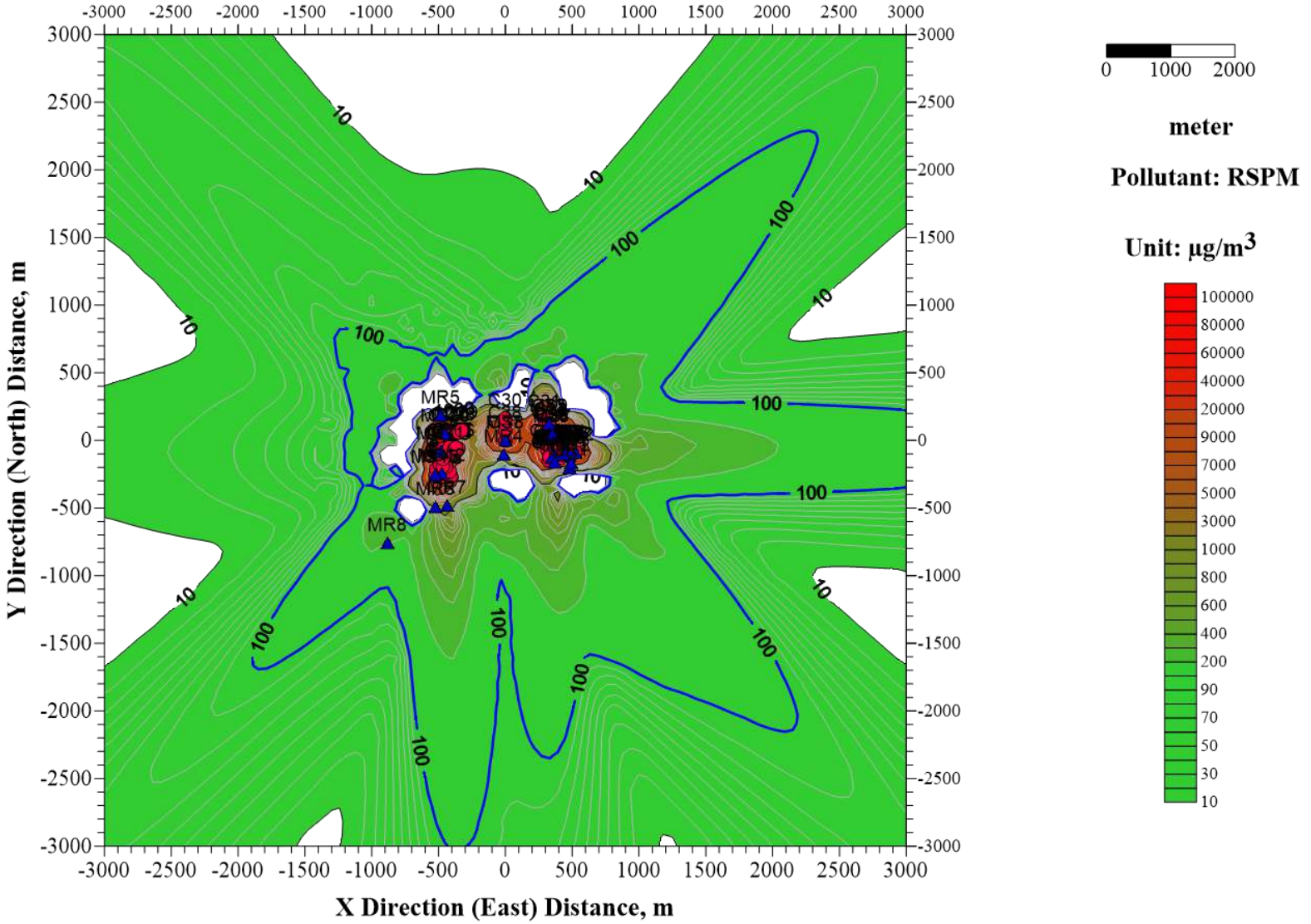


Figure 5.21: Isopleth Showing ISCST3 Predicted RSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario)

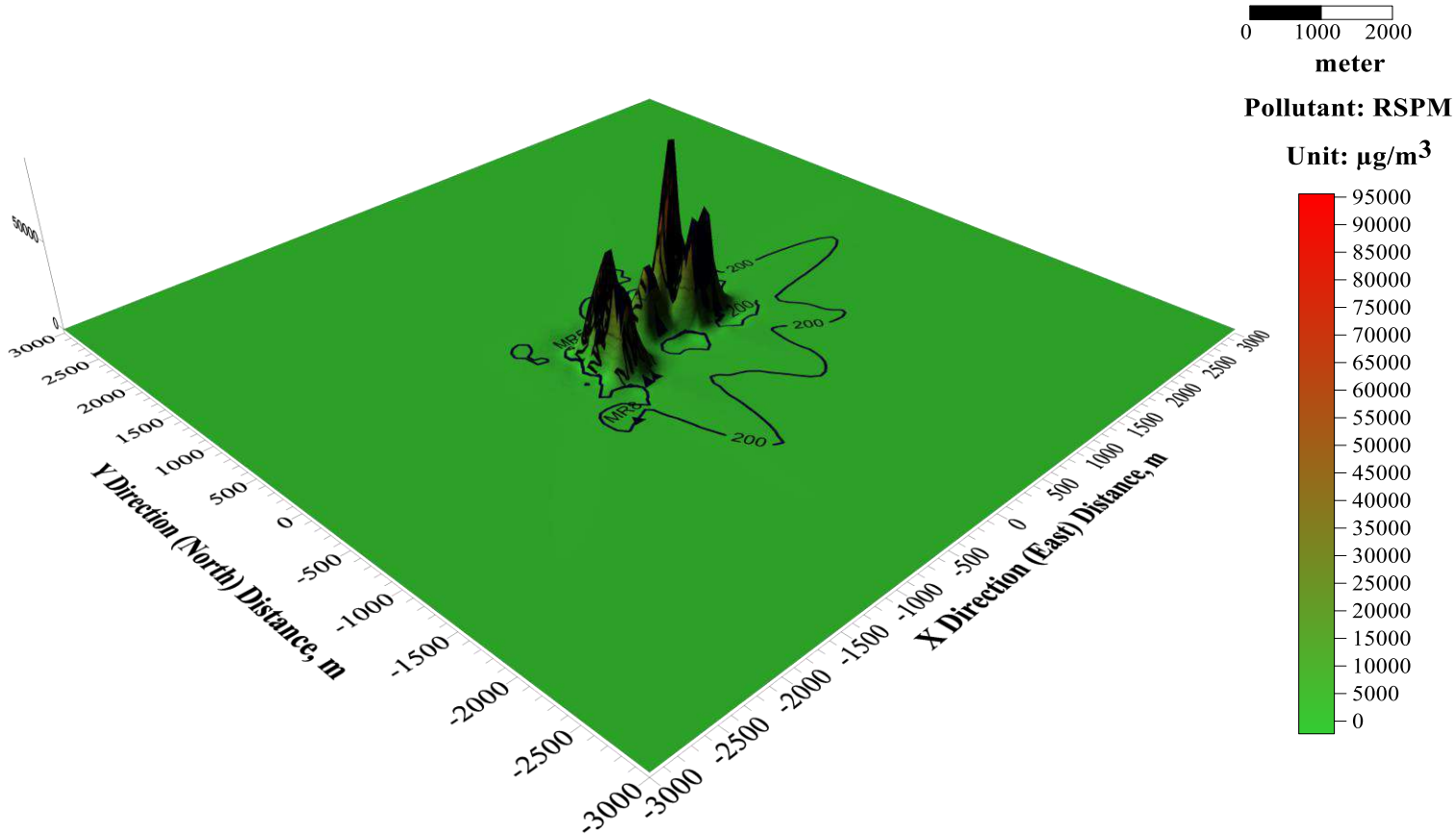


Figure 5.22: Surfer Showing ISCST3 Predicted RSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario)

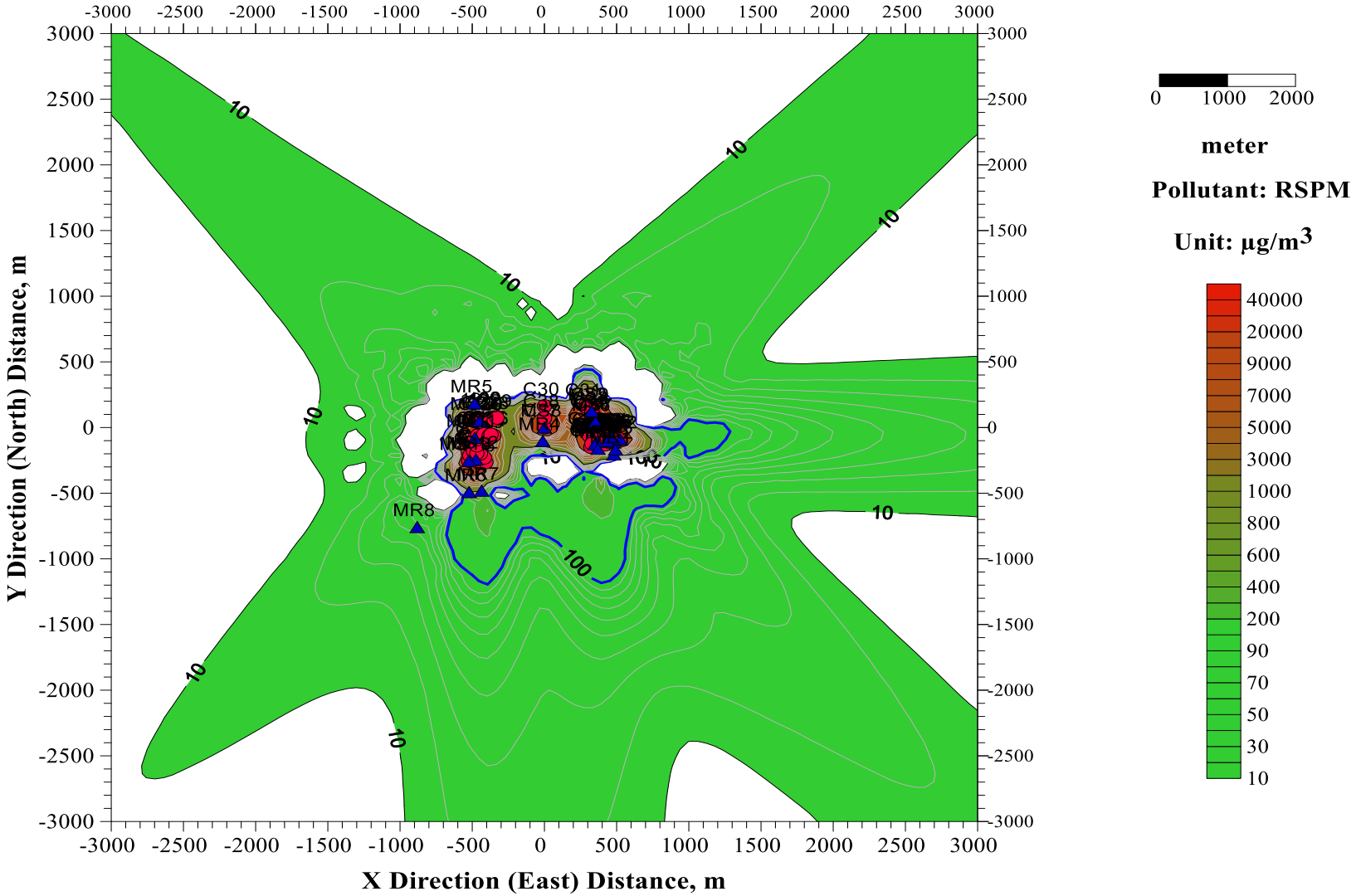


Figure 5.23: Isopleth Showing ISCST3 Predicted RSPM Concentration: Tirusulam (Period/Seasonal Average)

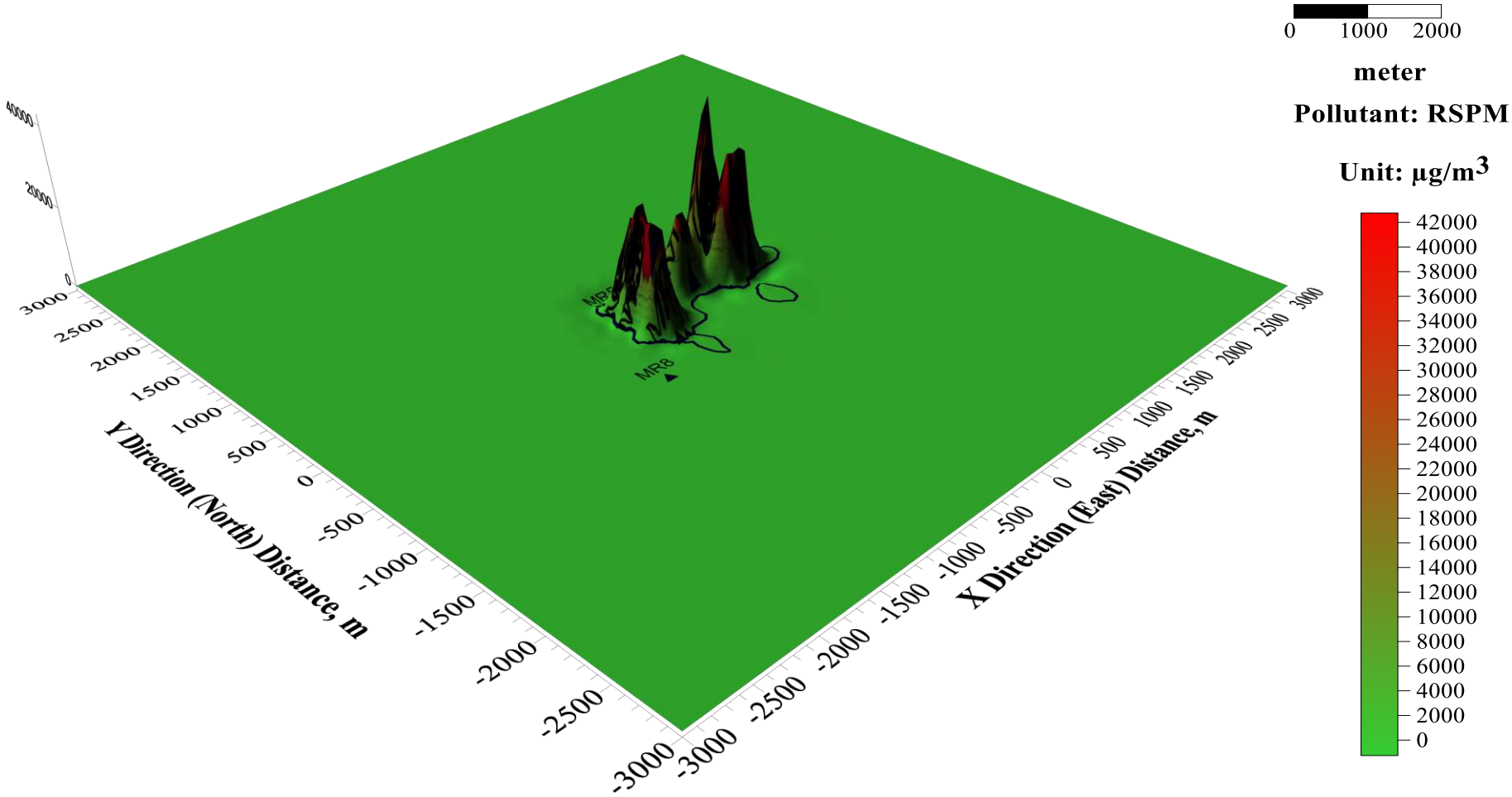


Figure 5.24: Surfer Showing ISCST3 Predicted RSPM Concentration: Tirusulam (Period/Seasonal Average)

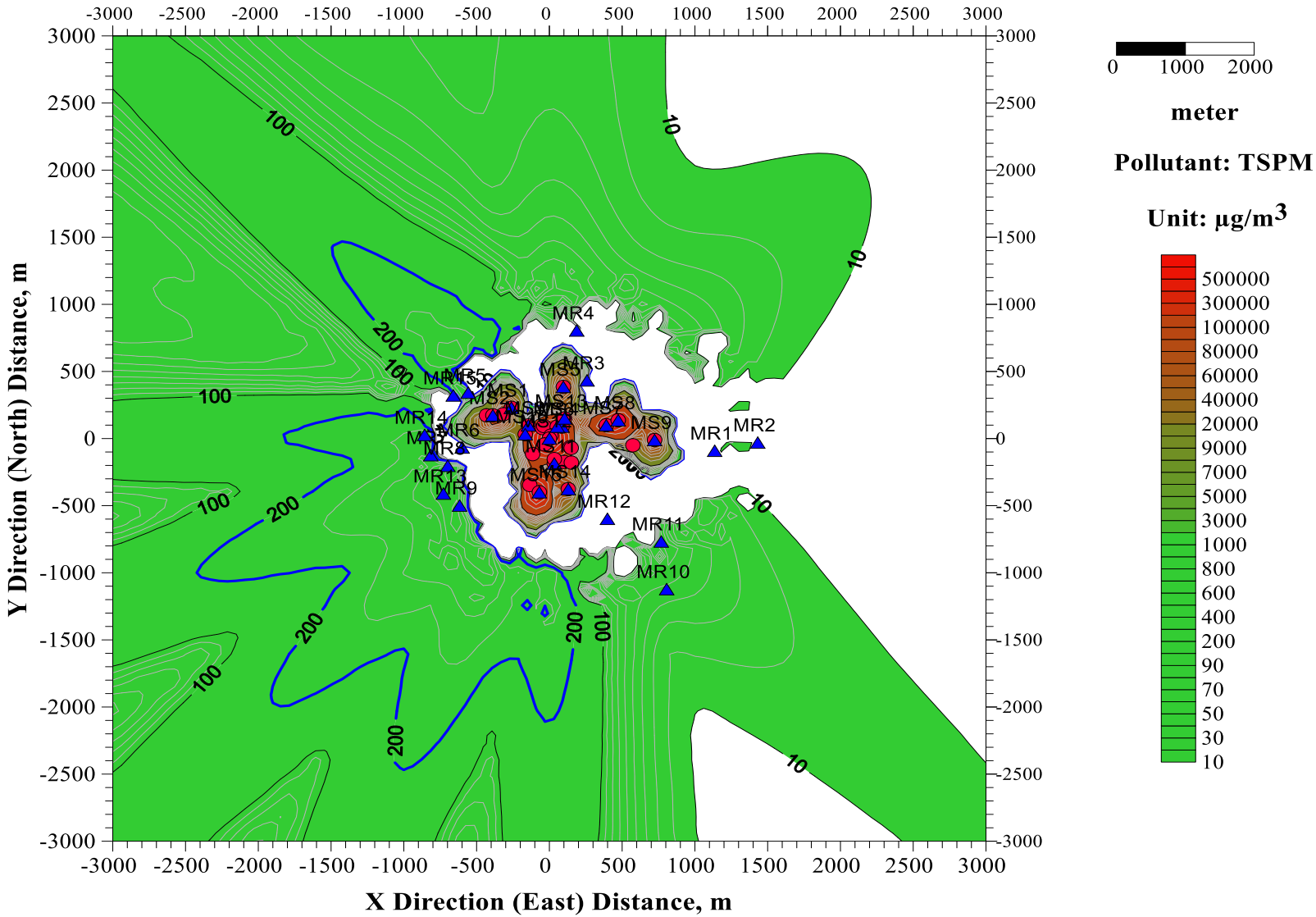


Figure 5.25: Isopleth Showing ISCST3 Predicted TSPM Concentration: Tiruppur (First Highest 24 hour Average: Worst Case Scenario)

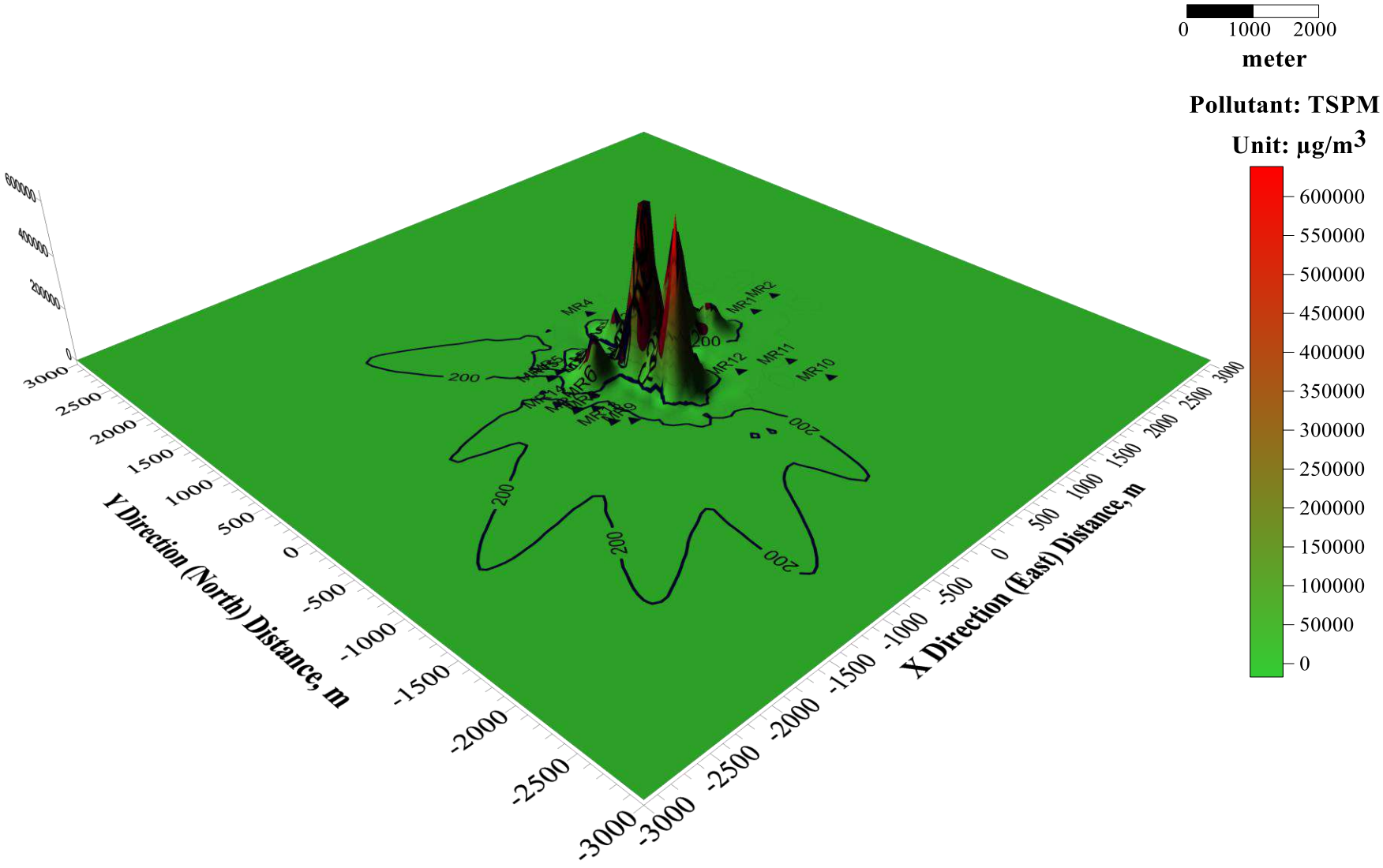


Figure 5.26: Surfer Showing ISCST3 Predicted TSPM Concentration: Tiruppur (First Highest 24 hour Average: Worst Case Scenario)

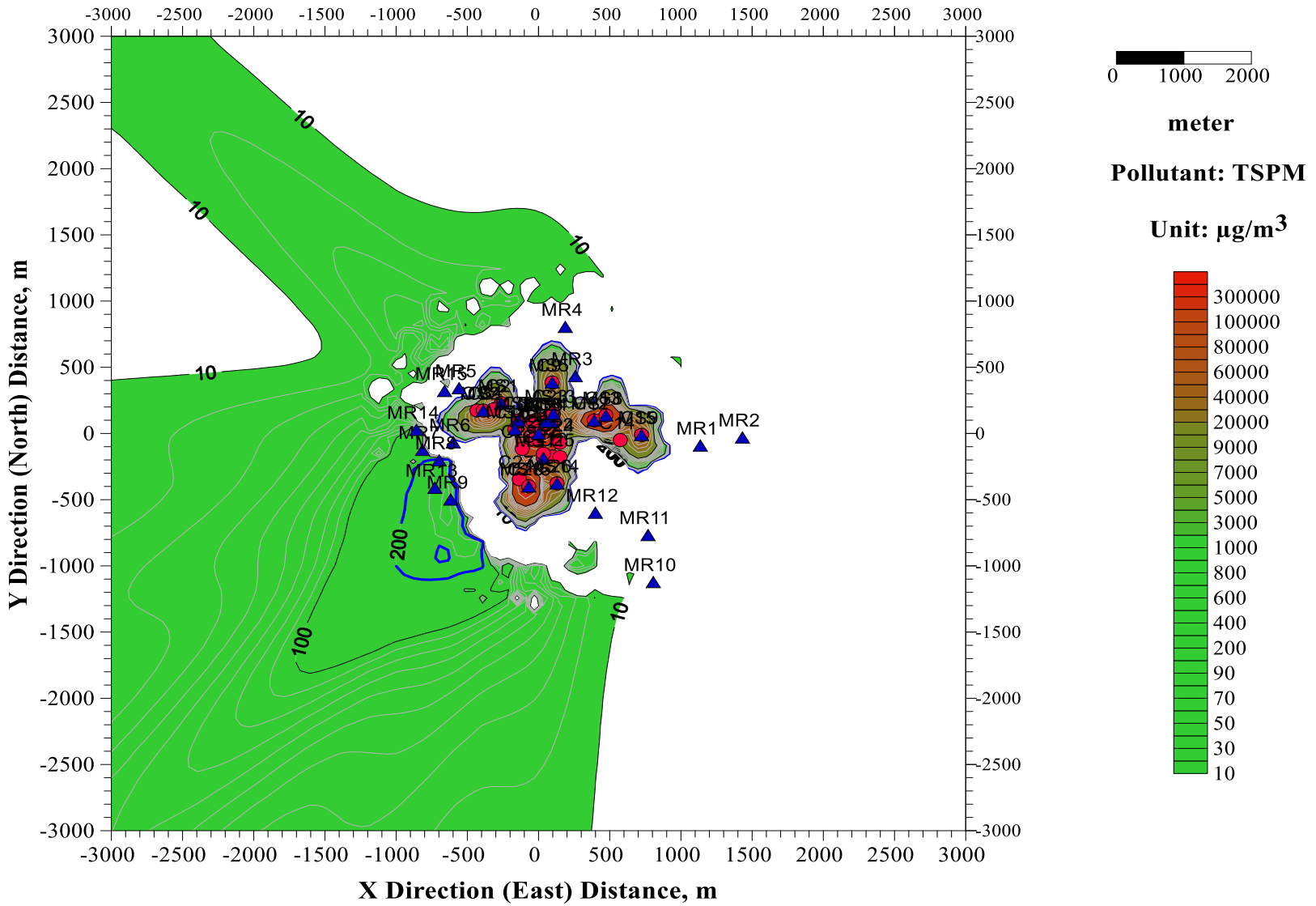


Figure 5.27: Isopleth Showing ISCST3 Predicted TSPM Concentration: Tiruppur (Period/Seasonal Average)

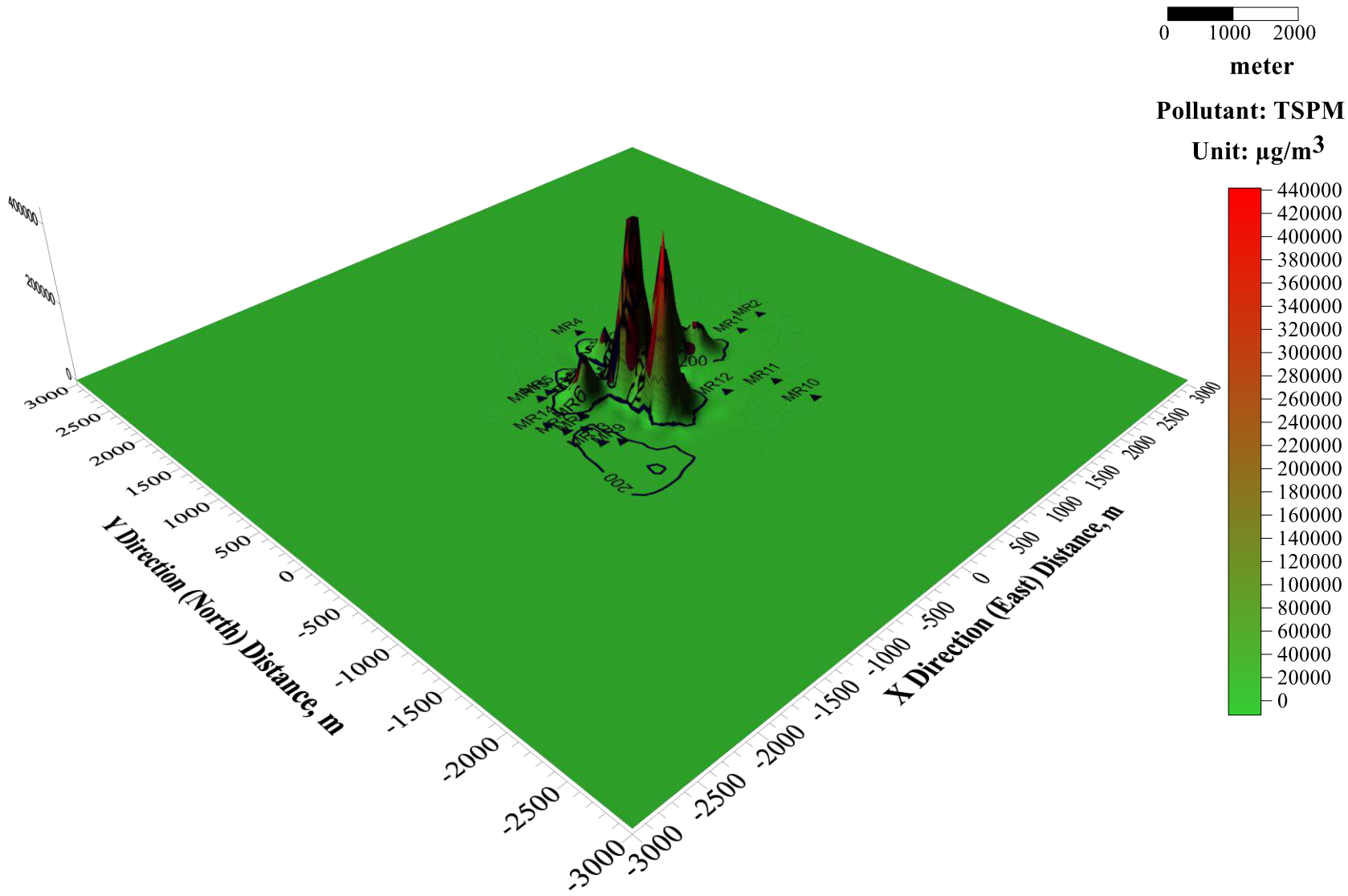


Figure 5.28: Surfer Showing ISCST3 Predicted TSPM Concentration: Tiruppur (Period/Seasonal Average)

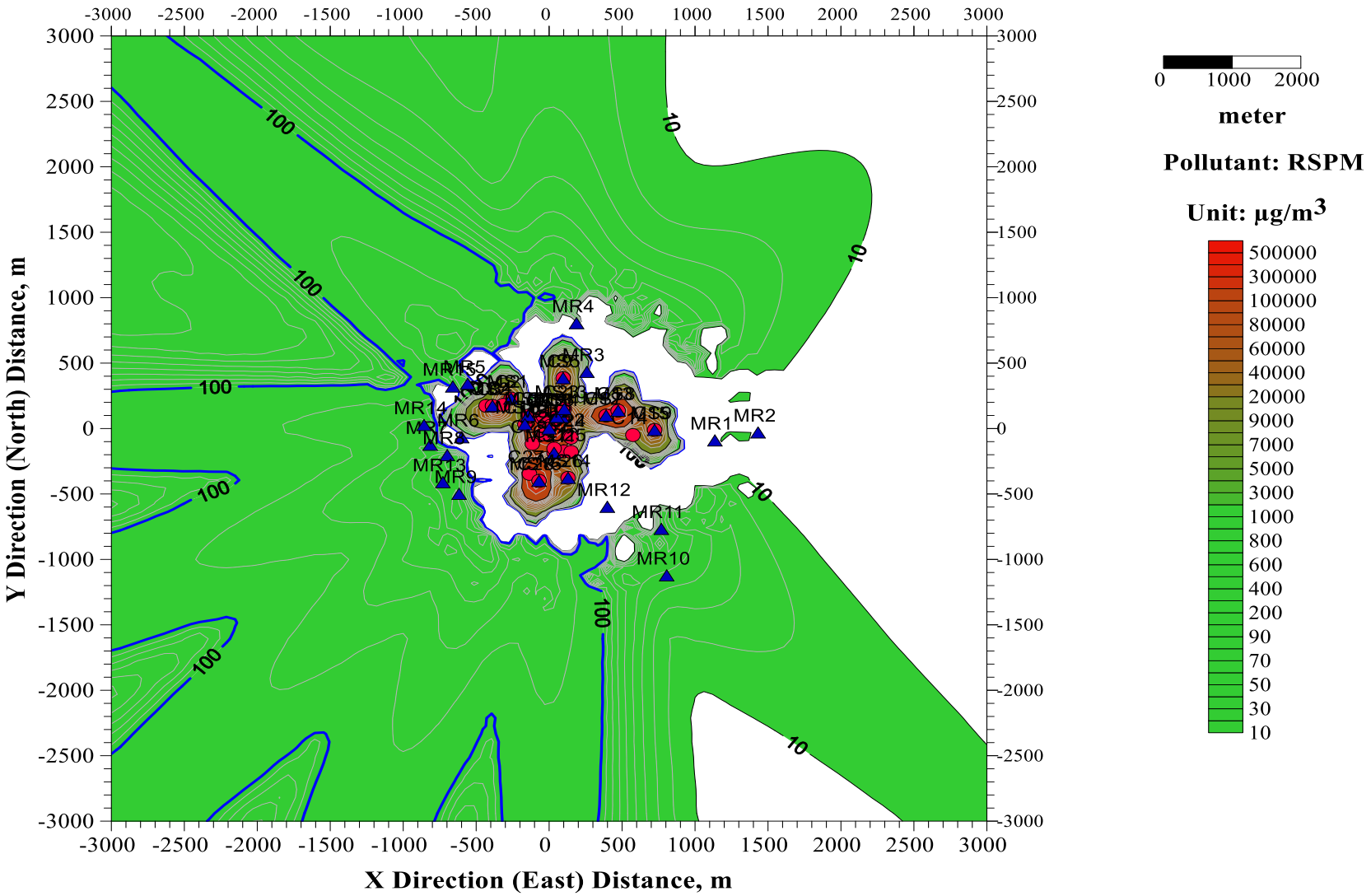


Figure 5.29: Isopleth Showing ISCST3 Predicted RSPM Concentration: Tiruppur (First Highest 24 hour Average: Worst Case Scenario)

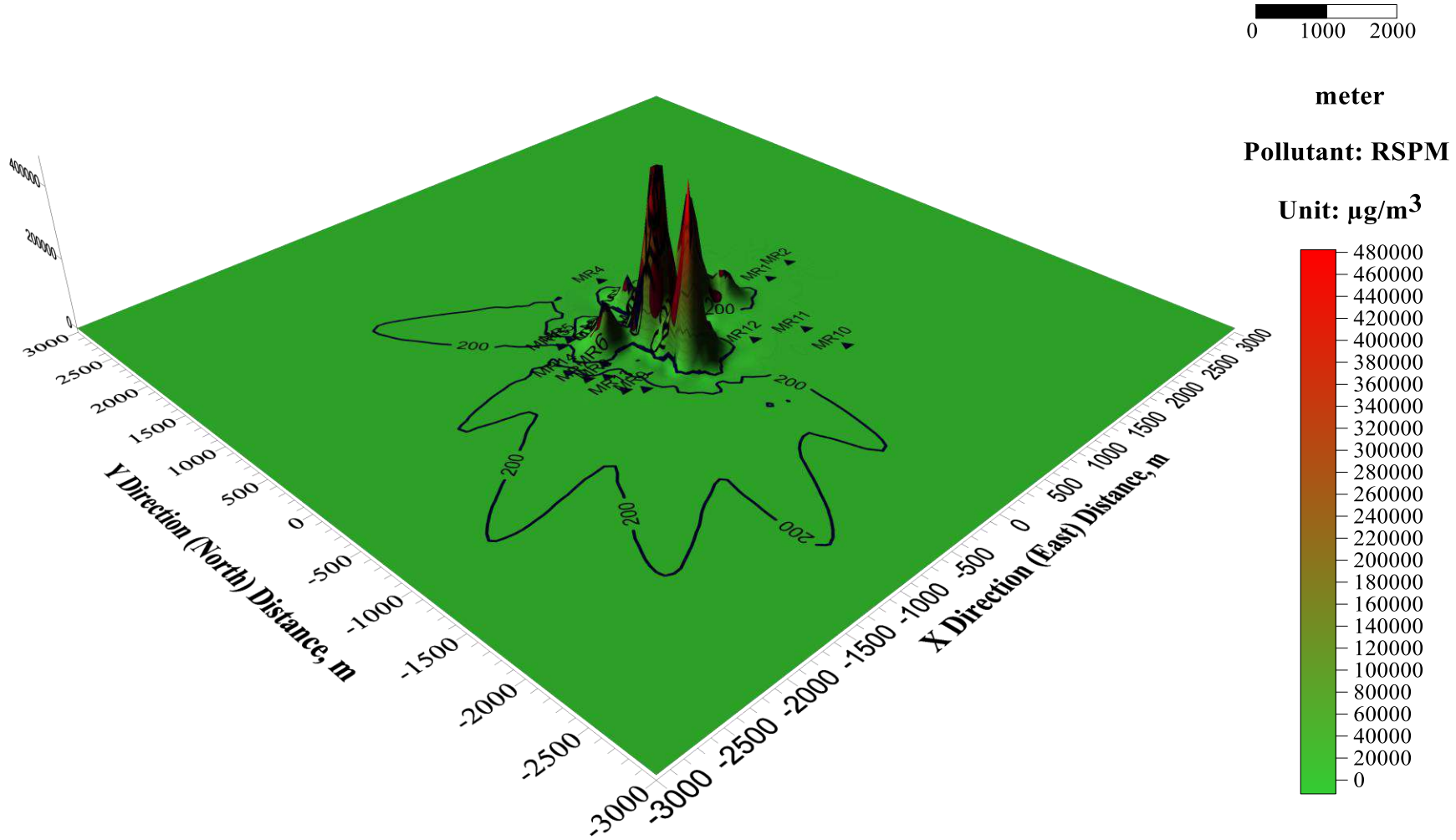


Figure 5.30: Surfer Showing ISCST3 Predicted RSPM Concentration: Tiruppur (First Highest 24 hour Average: Worst Case Scenario)

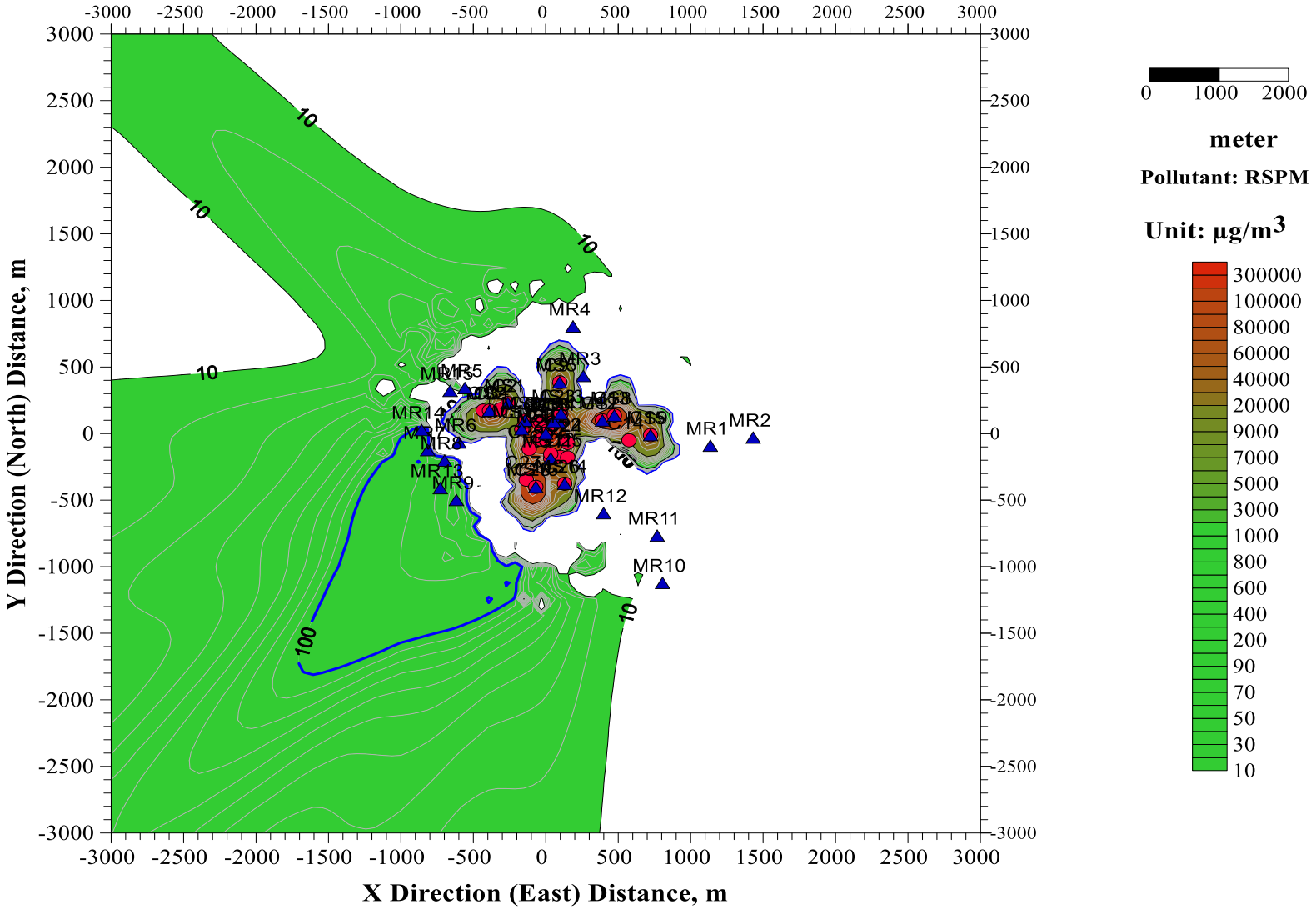


Figure 5.31: Isopleth Showing ISCST3 Predicted RSPM Concentration: Tiruppur (Period/Seasonal Average)

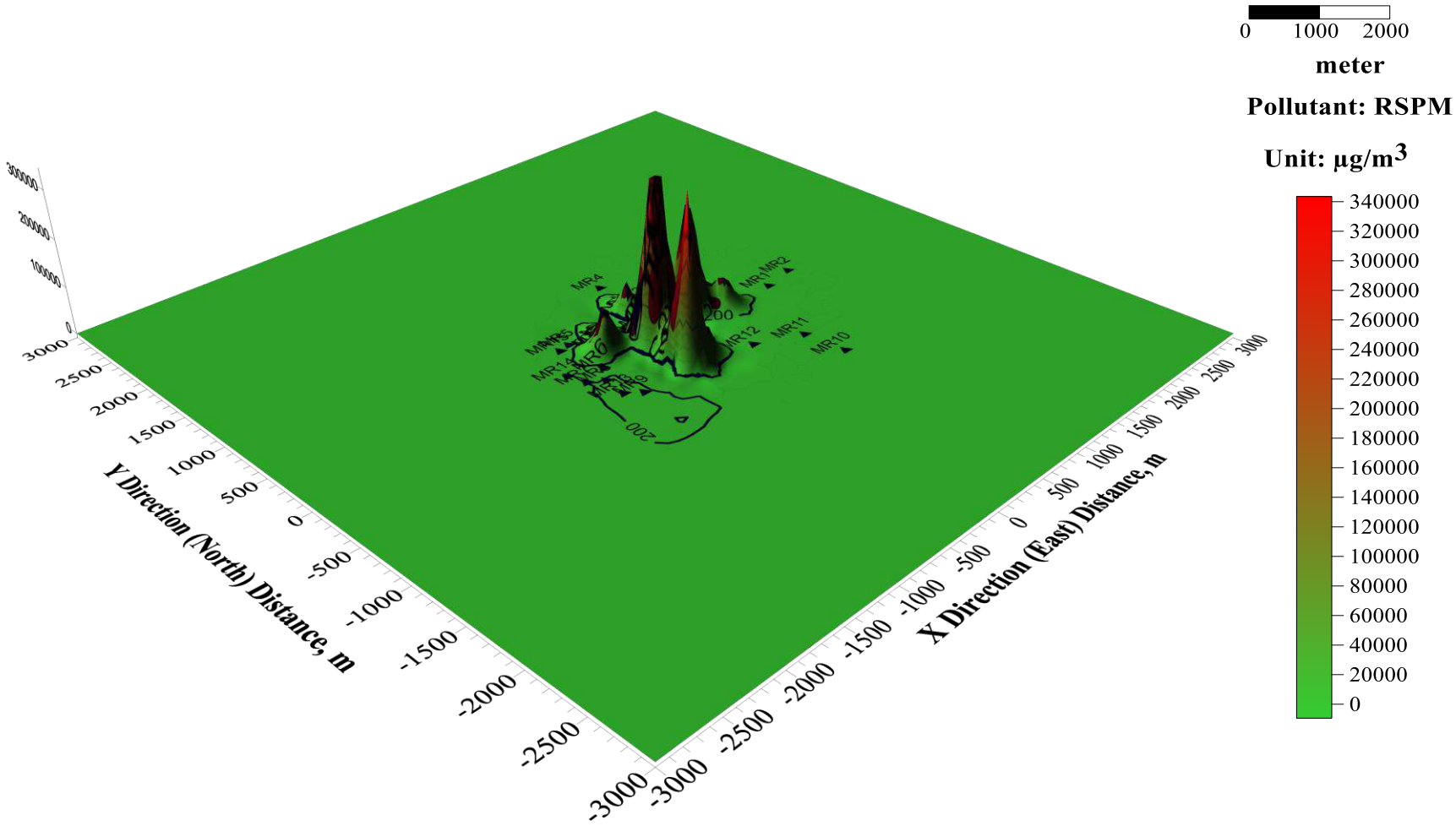


Figure 5.32: Surfer Showing ISCST3Predicted RSPM Concentration: Tiruppur (Period/Seasonal Average)

5.9.2 Prediction of Deposition Profile

Dust particles emitted from a given source when dispersed into the atmosphere settle under gravity at various distances near from the source depending on the meteorological conditions at the project site. Particles larger than 30µm are usually deposited within a short distance from the source and small particles of size in the range of 10 - 15µm stays for a longer time in the atmosphere. Model predictions were computed using daily emission data and on-site meteorology from stone crushing operations at coastal area, Tirusulam, Chennai and inland area, Kodangipallayam, Tiruppur.

The input data used for model predictions for various sampling conditions are given in **Tables 5.3 and 5.4**. The predicted deposition for both the conditions of first 24-hour maximum (critical case) during the monitoring period and also for the entire duration of monitoring period (seasonal average) using AERMOD and ISCST3 are presented in the form of isopleths and surfers as shown in **Figures 5.33 to 5.40** and **Figures 5.41 to 5.48** respectively, for both the coastal area, Tirusulam, Chennai and inland area, Kodangipallayam, Tiruppur.

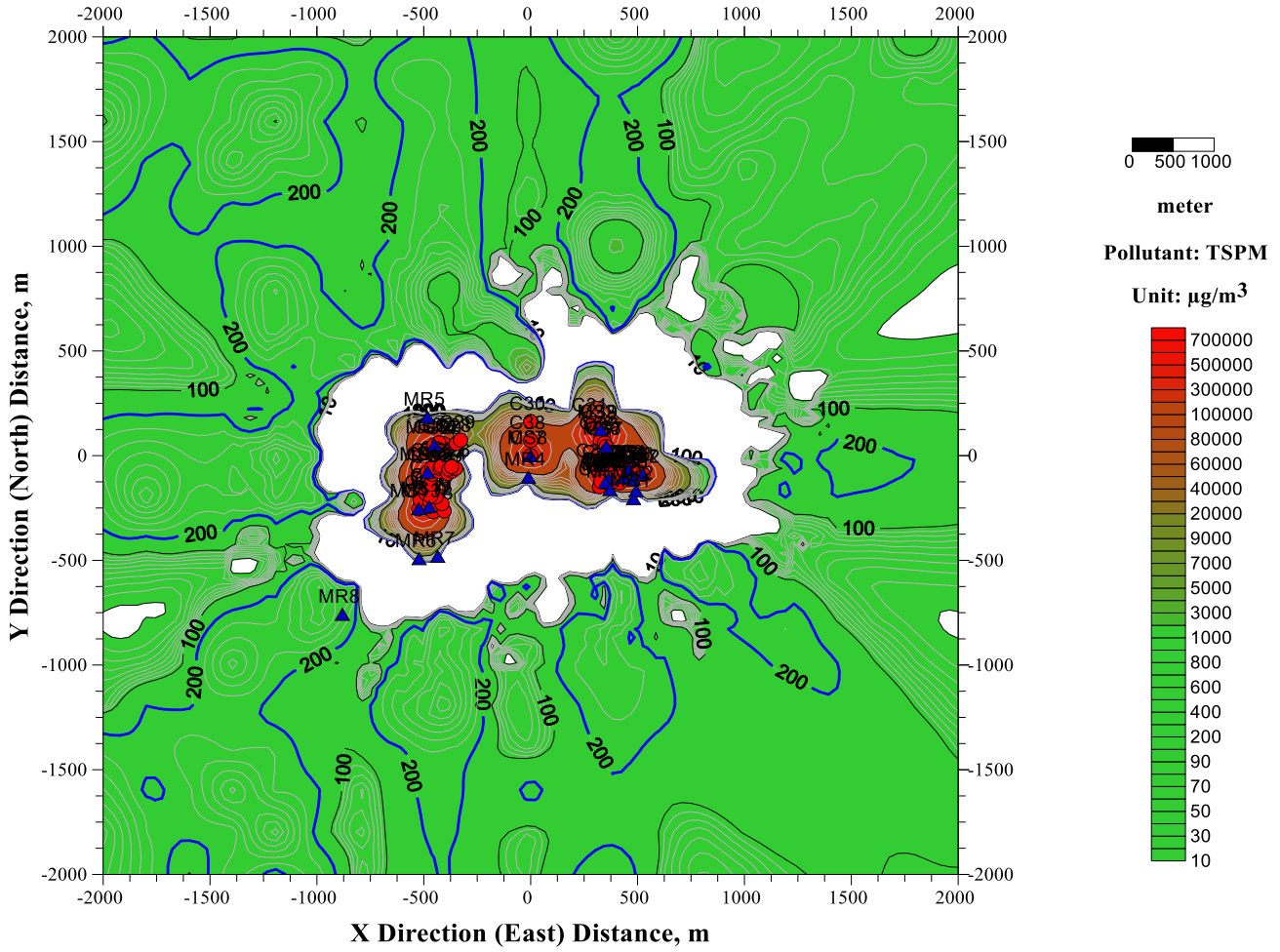


Figure 5.33: Isopleth Showing AERMOD Predicted TSPM Deposition: Tirusulam (First Highest 24-hour Average: Worst Case Scenario)

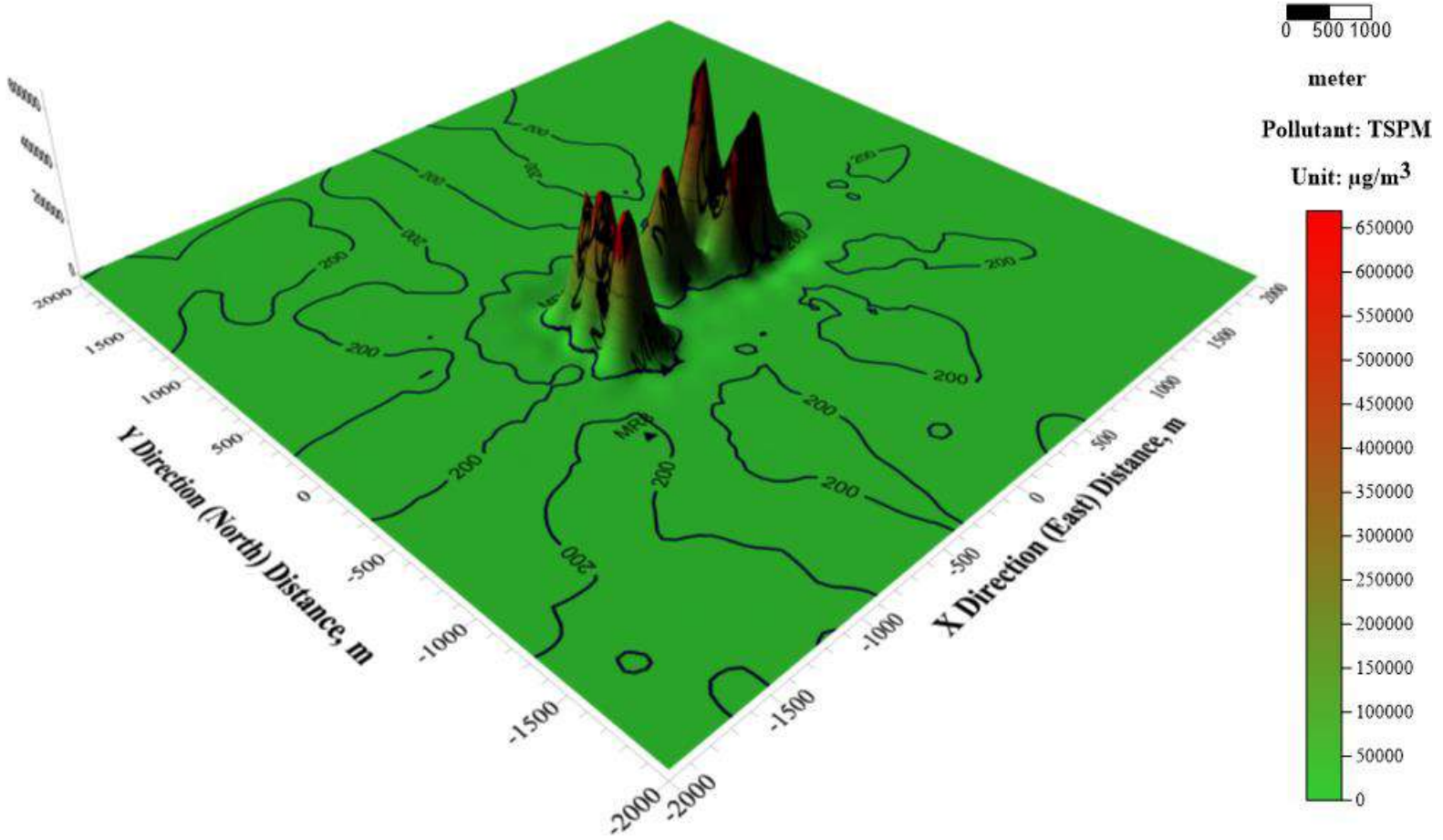


Figure 5.34: Surfer Showing AERMOD Predicted TSPM Deposition: Tirusulam (First Highest 24 hour Average: Worst Case Scenario)

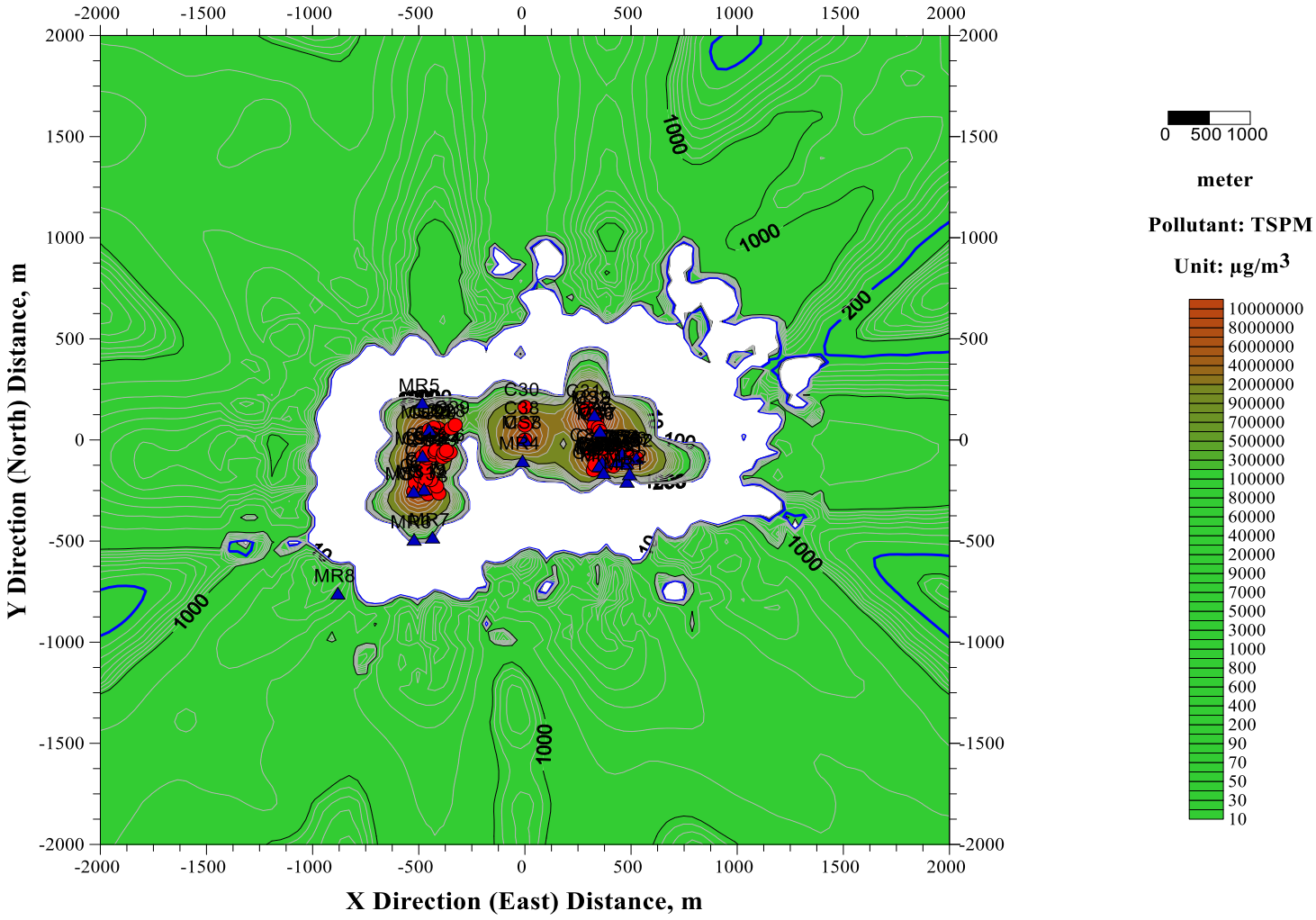


Figure 5.35: Isopleth Showing AERMOD Predicted TSPM Deposition: Tirusulam (Period/Seasonal Average)

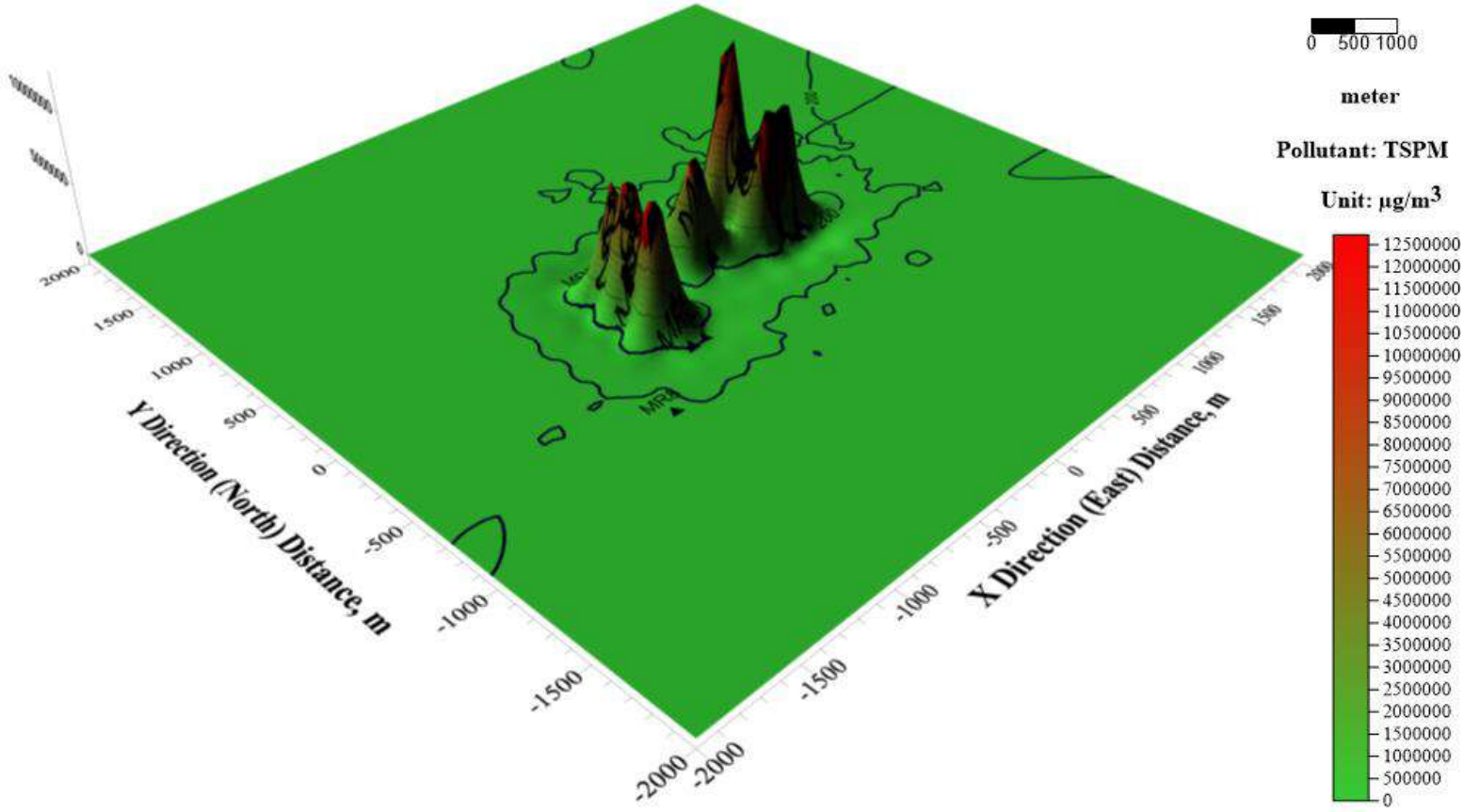


Figure 5.36: Surfer Showing AERMOD Predicted TSPM Deposition: Tirusulam (Period/Seasonal Average)

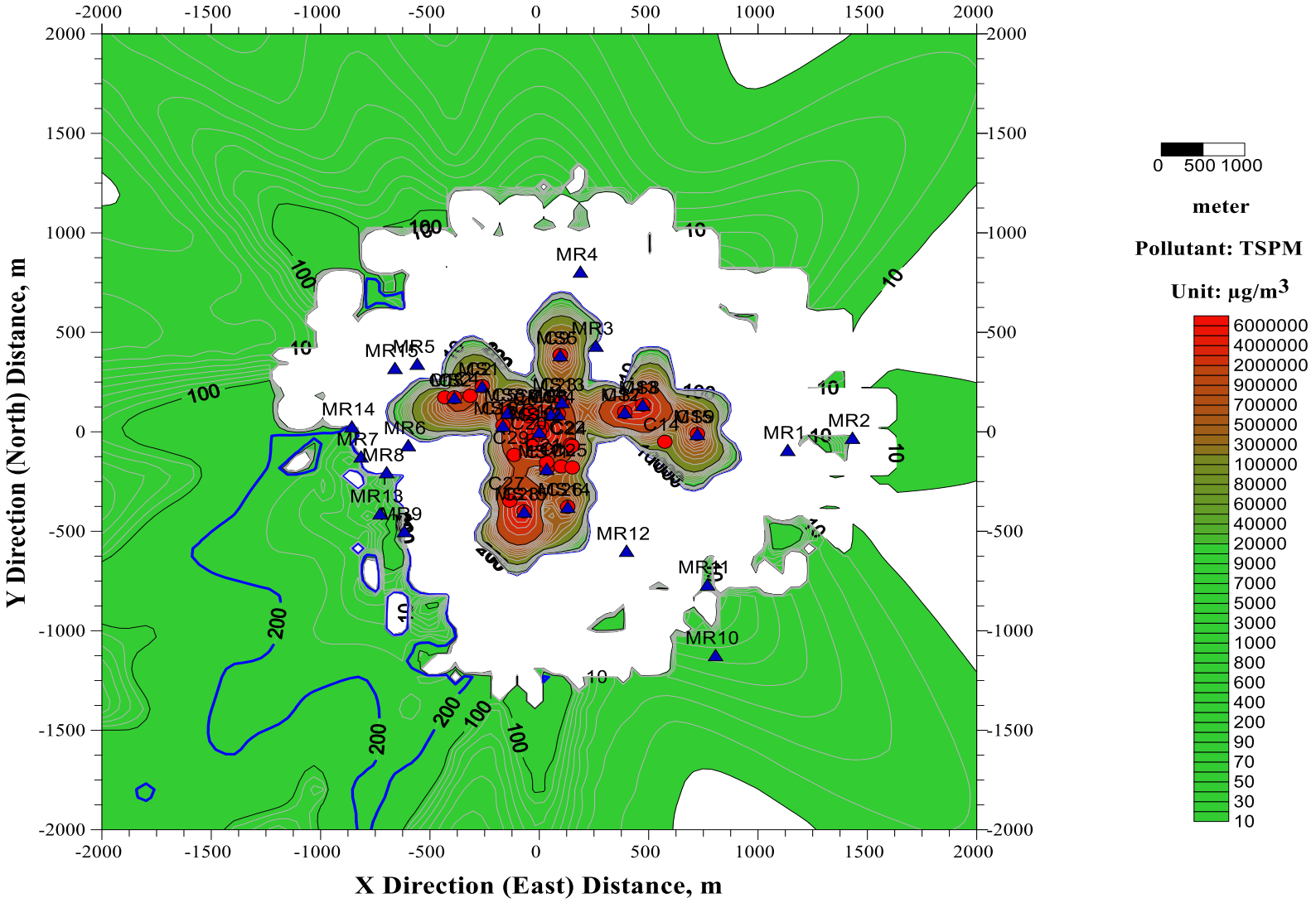


Figure 5.37: Isopleth Showing AERMOD Predicted TSPM Deposition: Tiruppur (First Highest 24 hour Average: Worst Case Scenario)

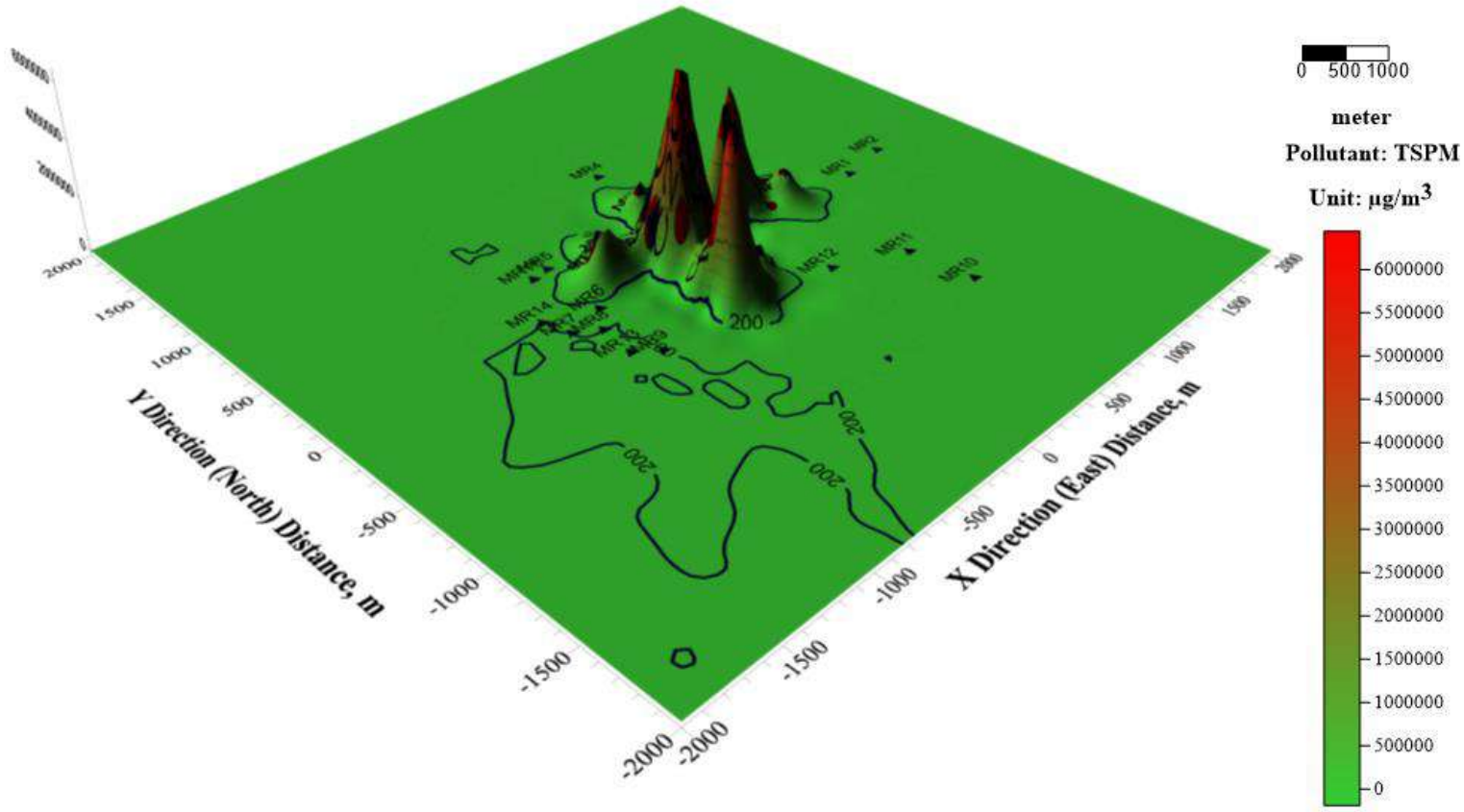


Figure 5.38: Surfer Showing AERMOD Predicted TSPM Deposition: Tiruppur (First Highest 24 hour Average: Worst Case Scenario)

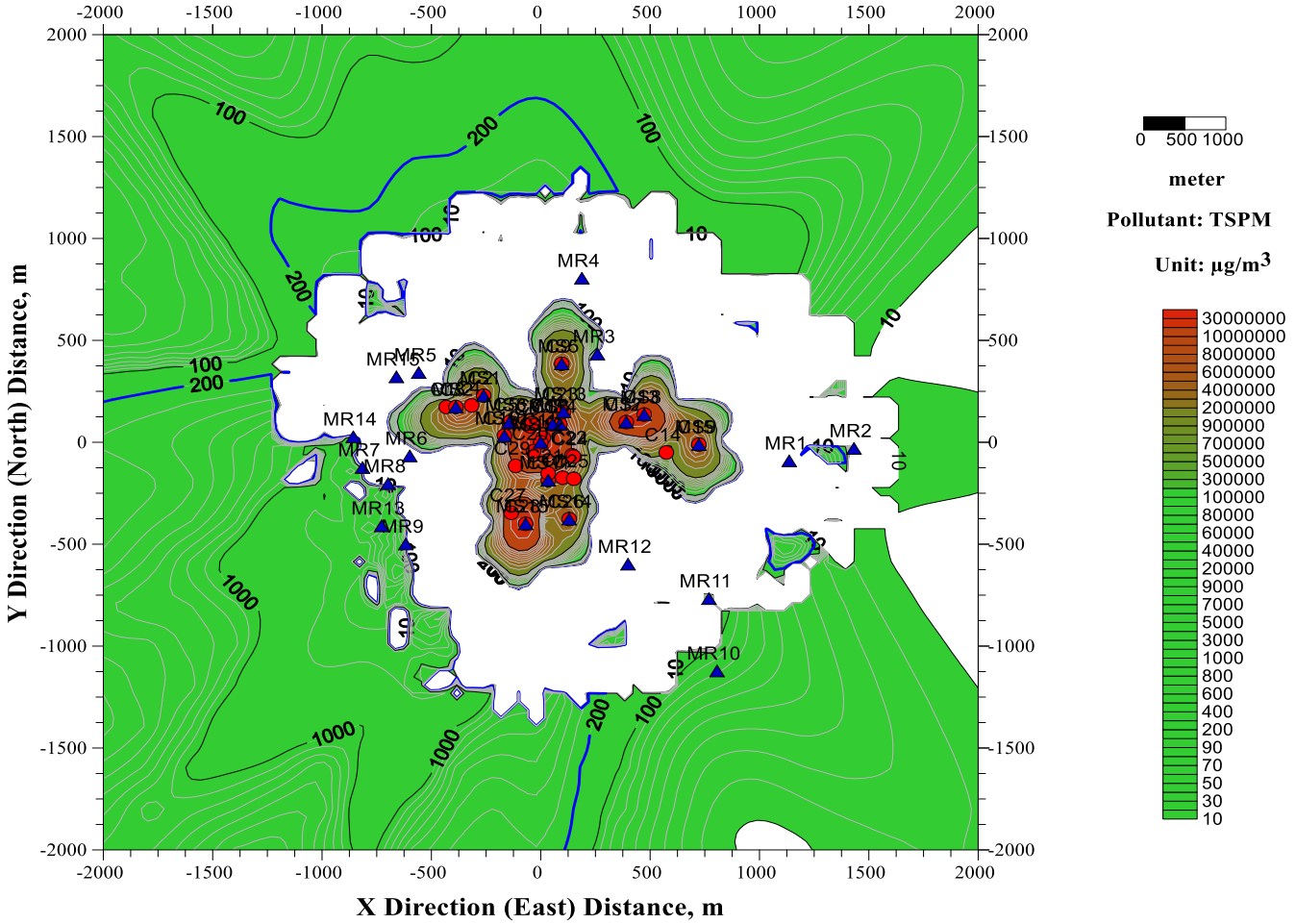


Figure 5.39: Isopleth Showing AERMOD Predicted TSPM Deposition: Tiruppur (Period/Seasonal Average)

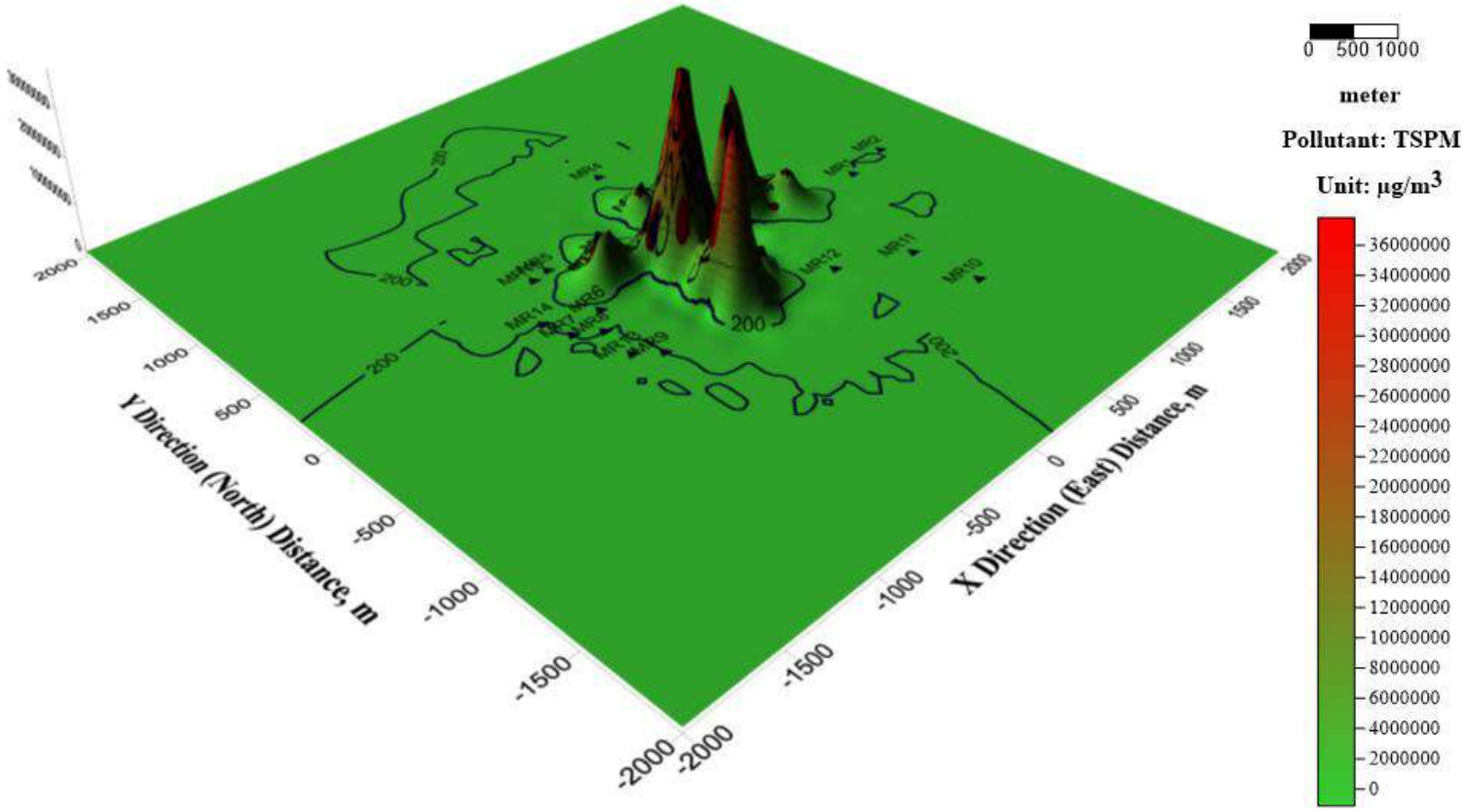


Figure 5.40: Surfer Showing AERMOD Predicted TSPM Deposition: Tiruppur (Period/Seasonal Average)

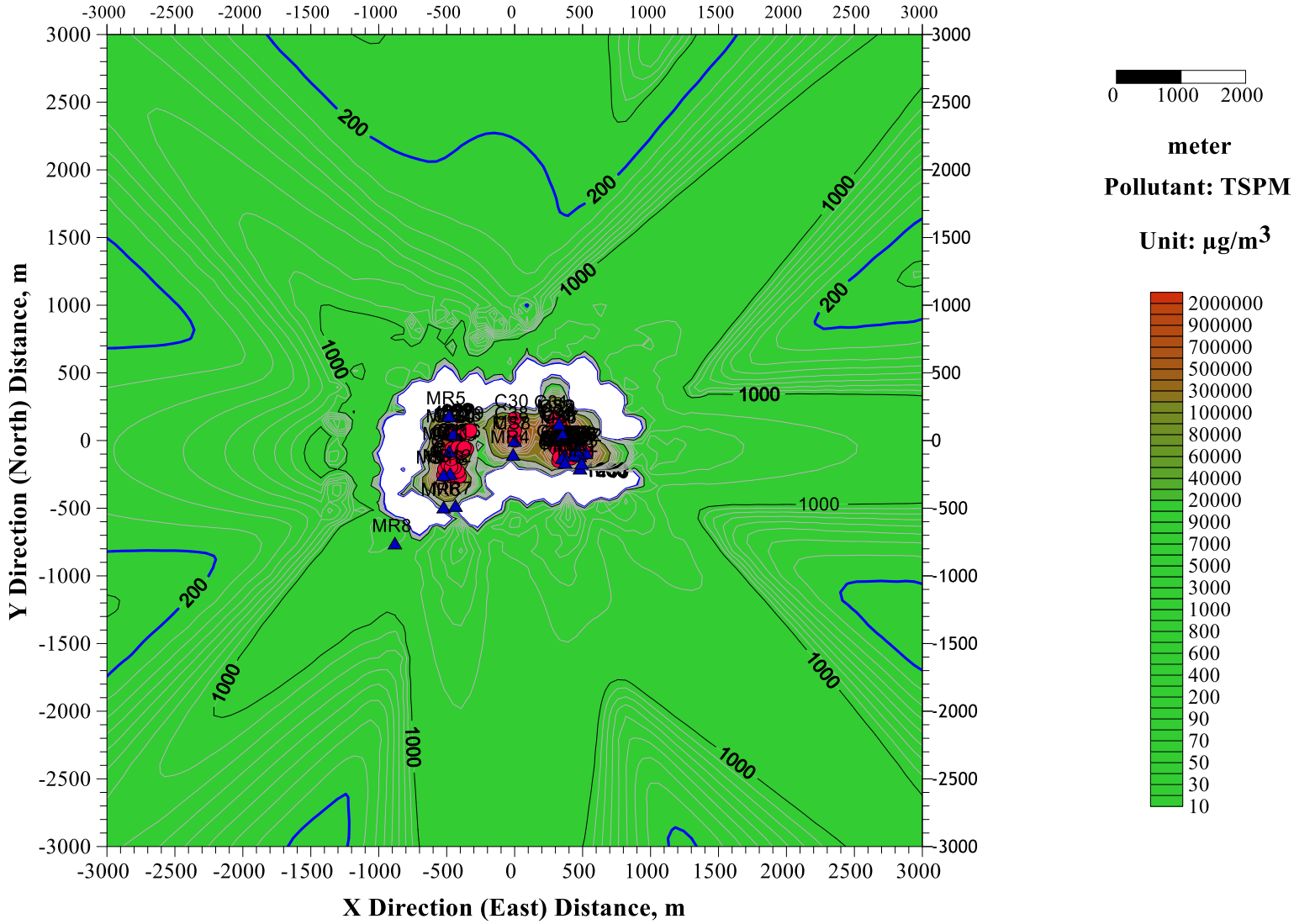


Figure 5.41: Isopleth Showing ISCST3Predicted TSPM Deposition: Tirusulam (First Highest 24 hour Average: Worst Case Scenario)

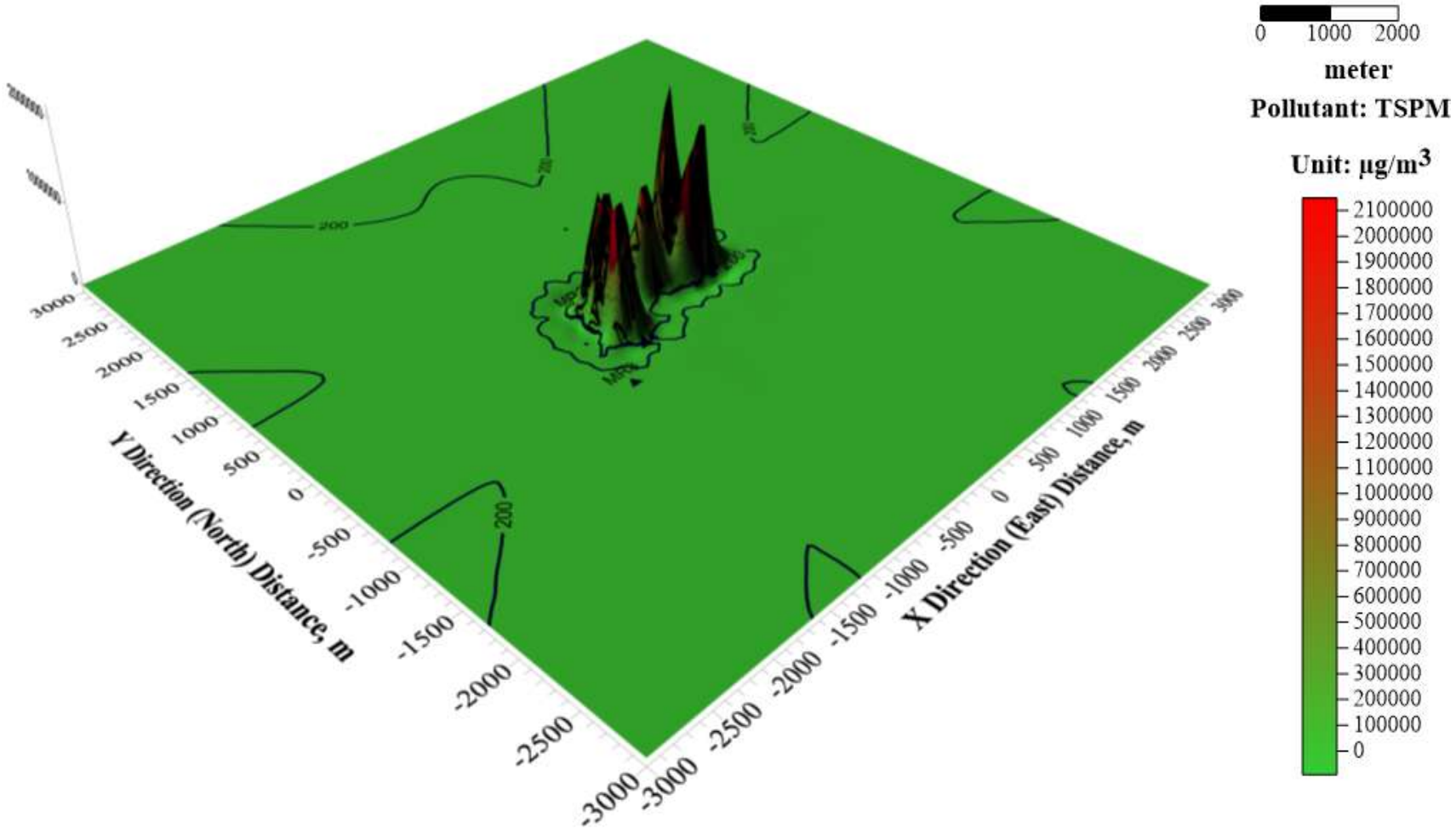


Figure 5.42: Surfer Showing ISCST3 Predicted TSPM Deposition: Tirusulam (First Highest 24 hour Average: Worst Case Scenario)

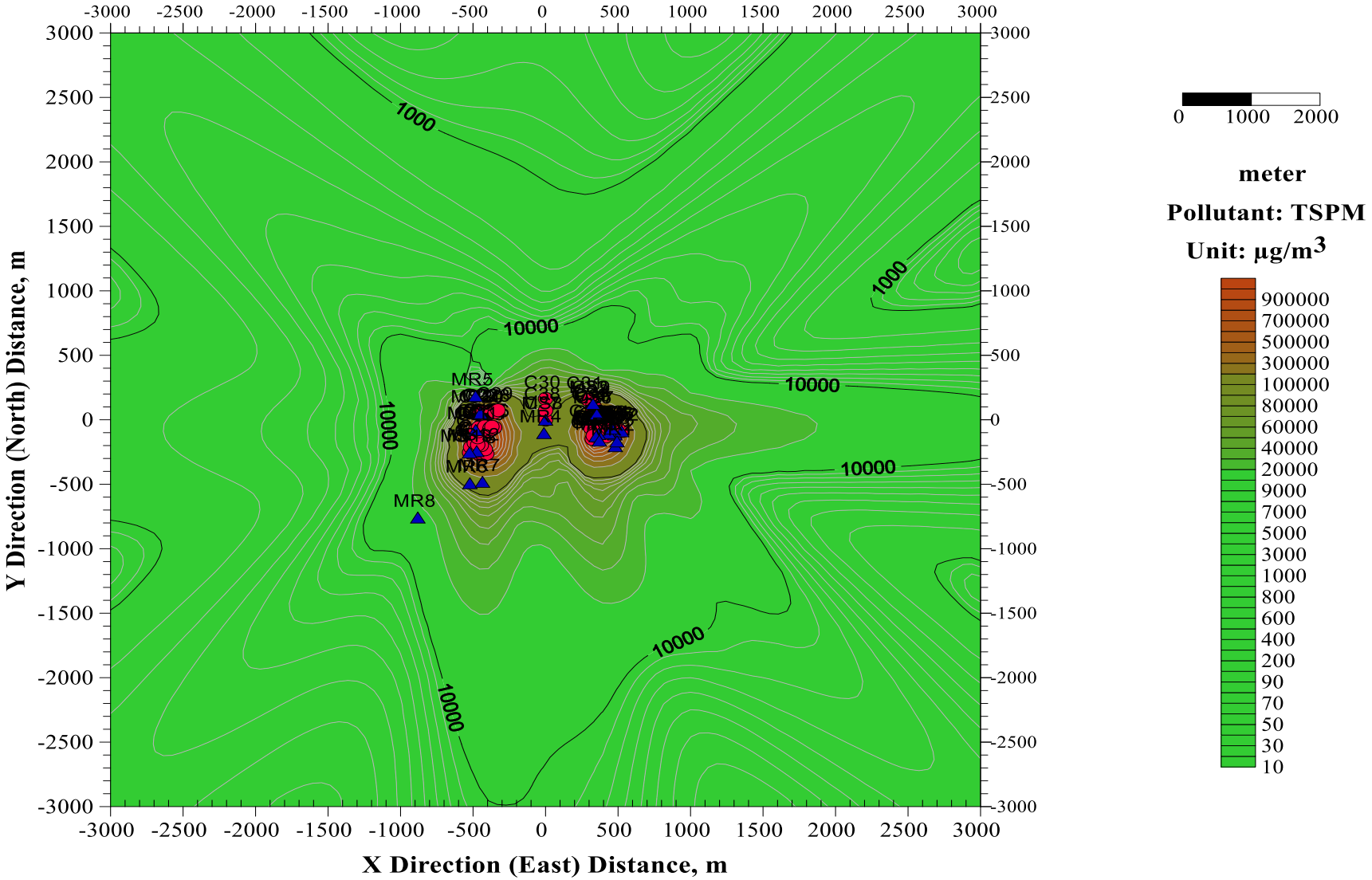


Figure 5.43: Isopleth Showing ISCST3 Predicted TSPM Deposition: Tirusulam (Period/Seasonal Average)

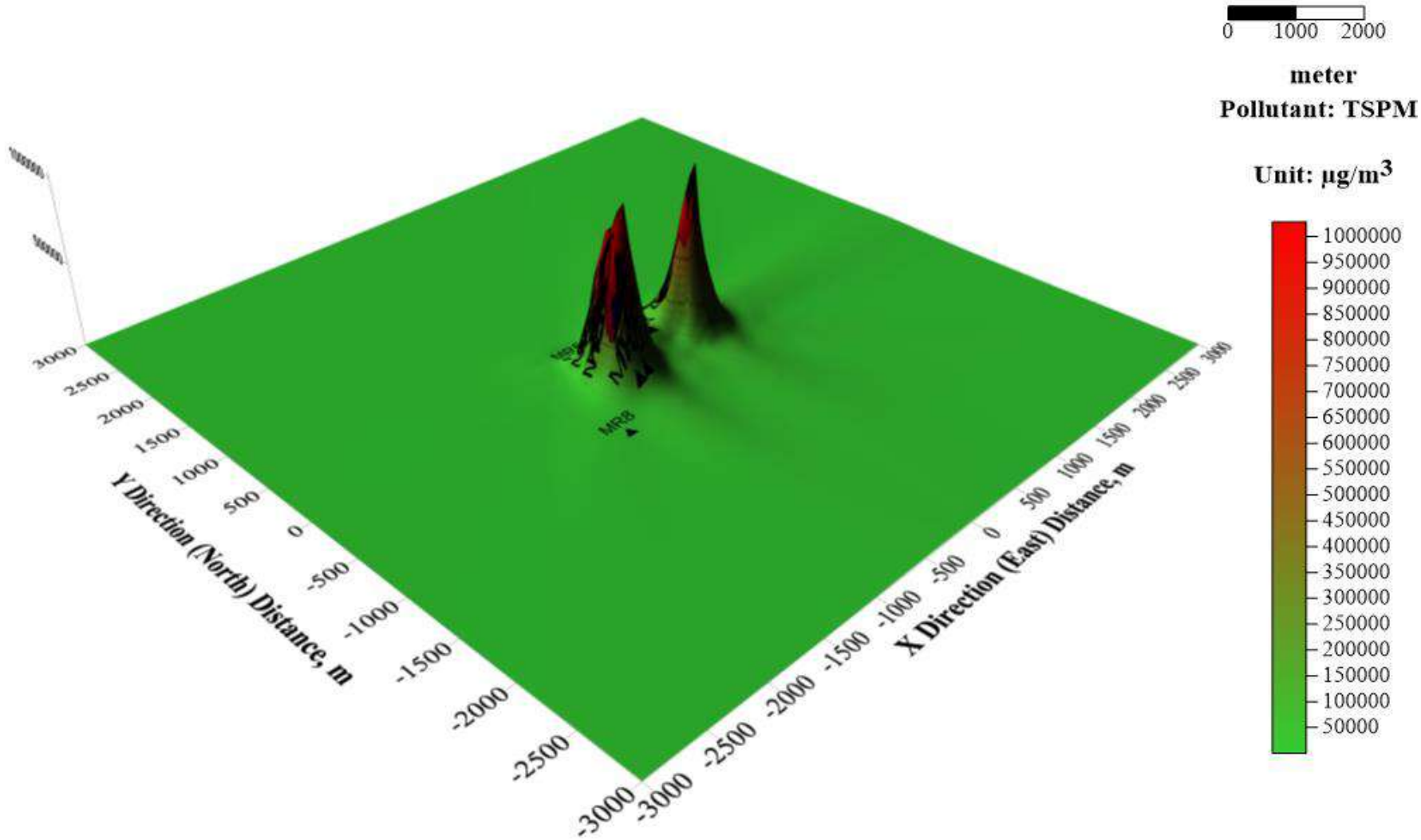


Figure 5.44: Surfer Showing ISCST3 Predicted TSPM Deposition: Tirusulam (Period/Seasonal Average)

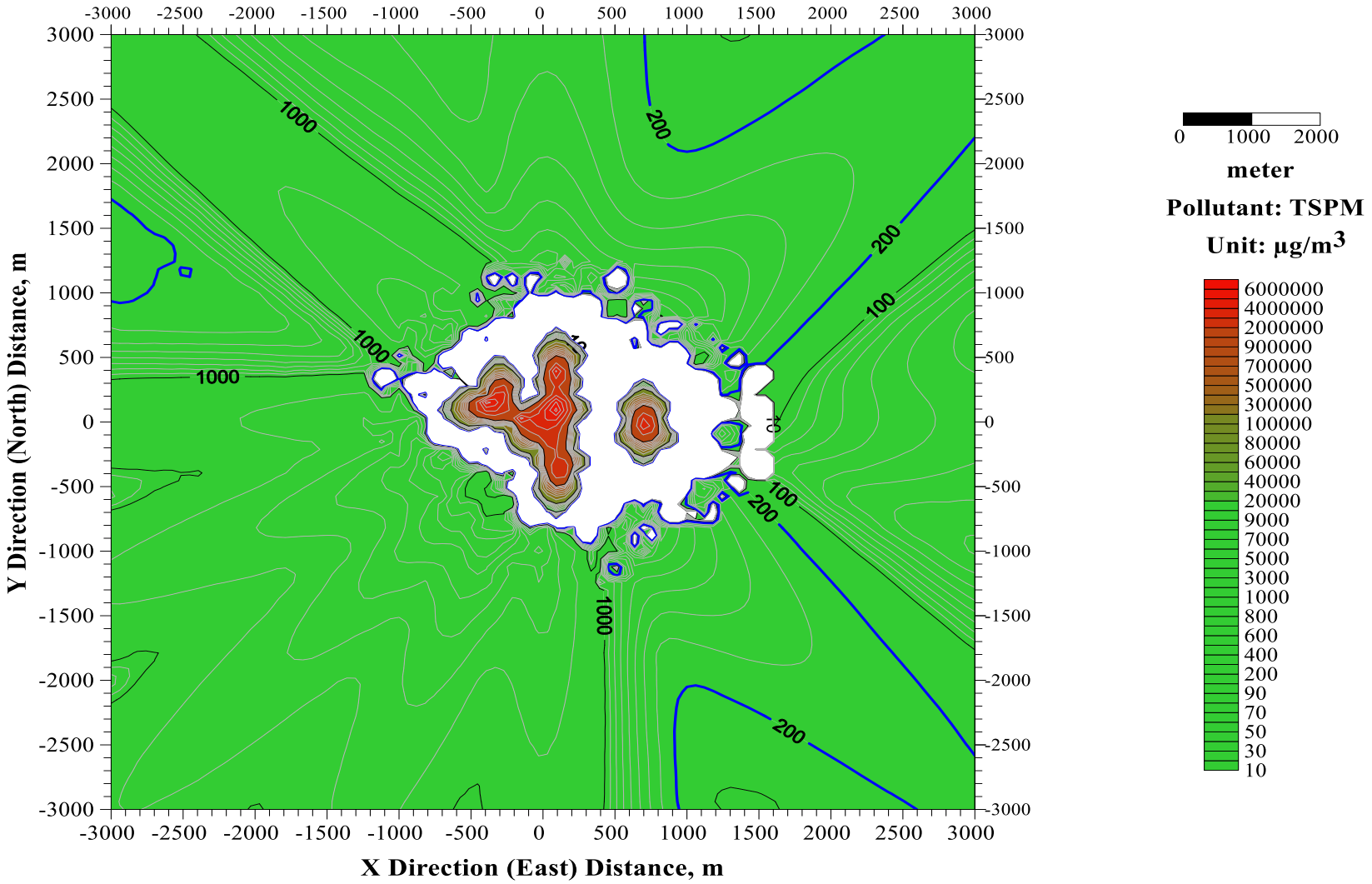


Figure 5.45: Isopleth Showing ISCST3 Predicted TSPM Deposition: Tiruppur (First Highest 24 hour Average: Worst Case Scenario)

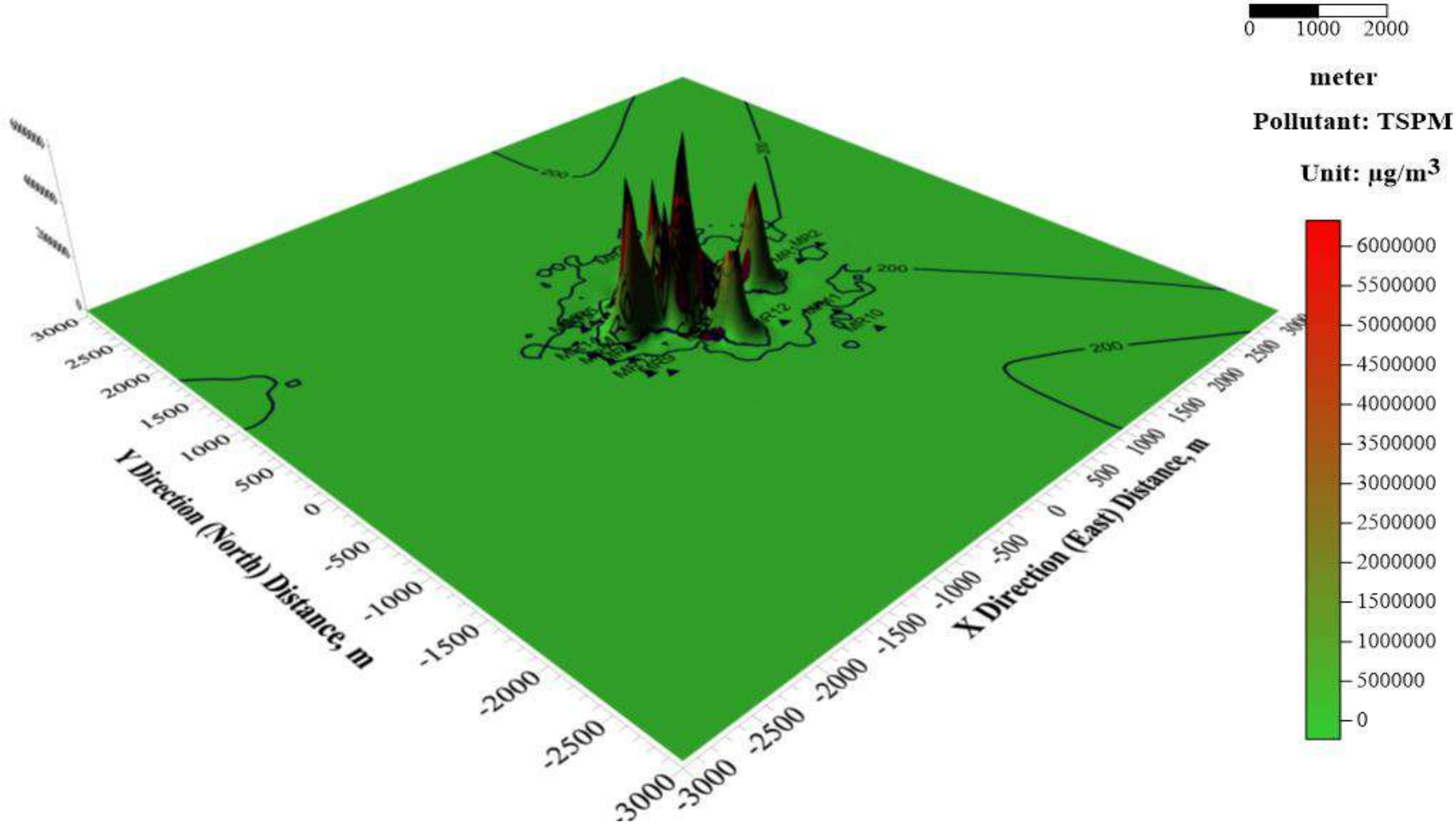


Figure 5.46: Surfer Showing ISCST3 Predicted TSPM Deposition: Tiruppur (First Highest 24 hour Average: Worst Case Scenario)

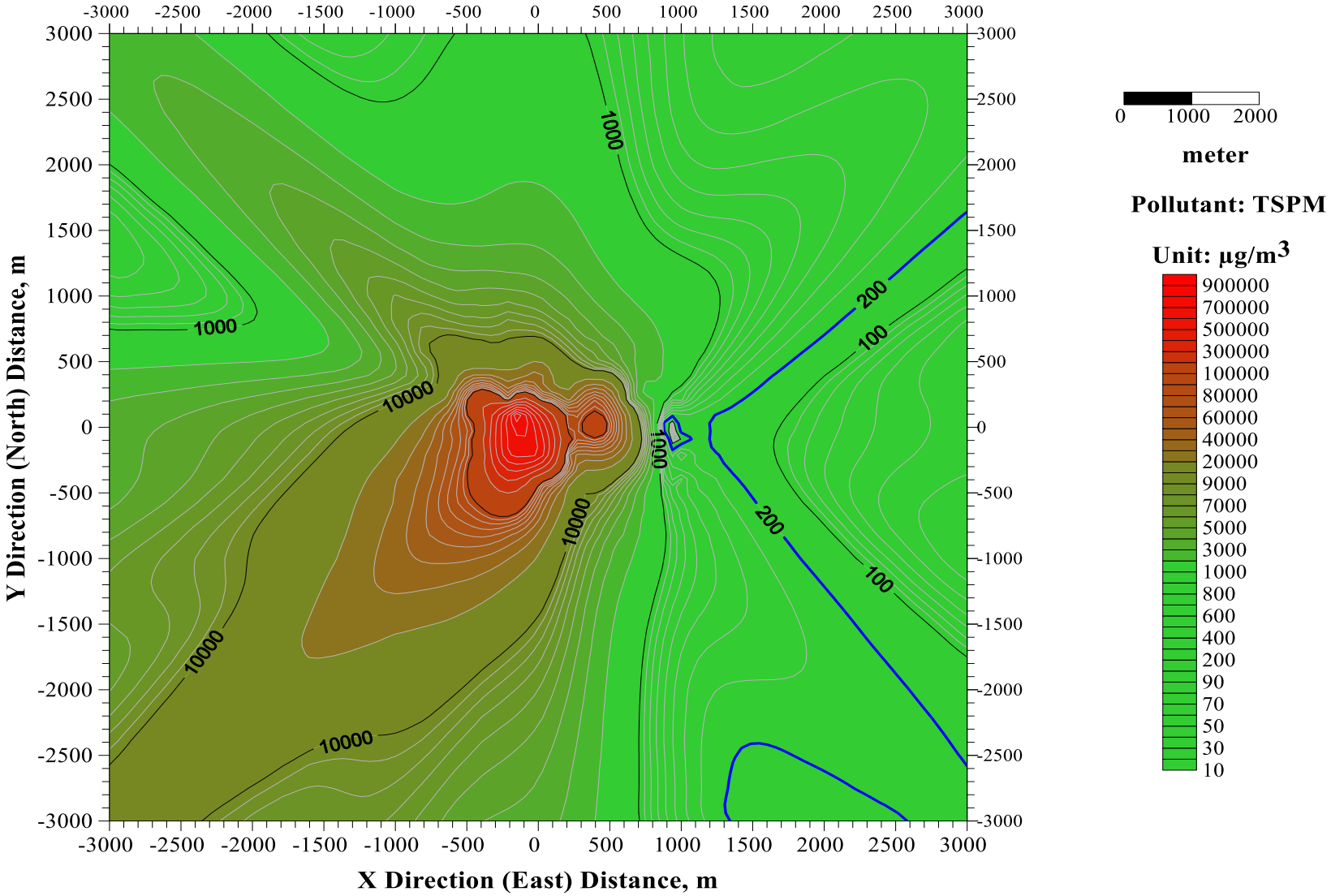


Figure 5.47: Isopleth Showing ISCST3 Predicted TSPM Deposition: Tiruppur (Period/Seasonal Average)

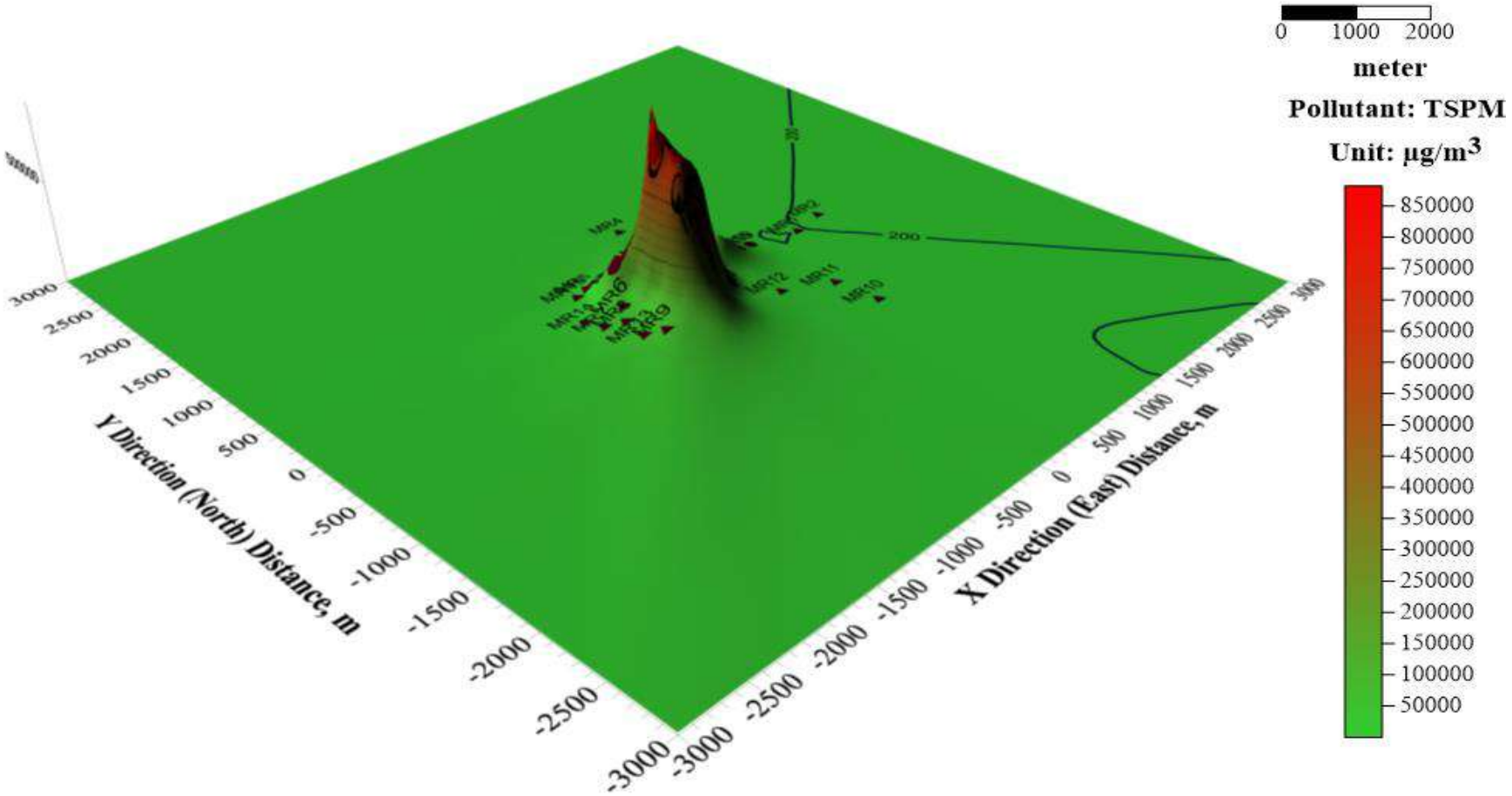


Figure 5.48: Surfer Showing ISCST3 Predicted TSPM Deposition: Tiruppur (Period/Seasonal Average)

5.10 Recommended safe distance

Based on the ambient air quality monitoring and model predicted concentration, impact zones for different crusher operating conditions were drawn. The impact zone (safe distance) was demarcated by drawing isopleths of concentration 200 µg/m^3 for TSPM and 100 µg/m^3 for PM_{10} and 60 µg/m^3 for $PM_{2.5}$ which are the standard limit set by CPCB for 24-hour averaging period. The safe distances were estimated for both these locations using measured and predicted concentrations. The impacts zone drawn using measured concentration at selected ambient air quality monitoring locations and predicted concentration for these locations are given in **Tables 3.23 and 5.6.**

5.11 Safe Distance for Coastal Area: Tirusulam, Chennai

5.11.1 Model AERMOD

Safe distance for measured TSPM concentration varied from 200 to 900m with a mean of 667m. Safe distance for TSPM predicted concentration of AERMOD varied from 81 to 2000 m with a mean of 823m for critical case. The safe distance based on TSPM predicted concentration of AERMOD based on the period/seasonal average varied from 81 to 258 m with a mean of 774m (**Tables 3.23 and 5.5**).

Safe distance for measured RSPM concentration varied from 250 to 900m with a mean of 683m. Safe distance for RSPM predicted concentration of AERMOD varied from 258 to 2000 m with a mean of 1231m for critical case. The safe distance based on RSPM predicted concentration of AERMOD based on the period/seasonal average varied from 16 to 2000 m with a mean of 769 m (**Tables 3.23 and 5.5**).

Safe distance for measured $PM_{2.5}$ concentration varied from 200 to 900m with a mean of 783m. (**Table 3.23**). The prediction for $PM_{2.5}$ is not carried out considering the prediction can be carried out only for annual basis, since our study area data covers only for a season.

5.11.2 Model ISCST3

Safe distance for measured TSPM concentration varied from 200 to 900m with a mean of 667m. Safe distance for TSPM predicted concentration of ISCST3 varied from 80 to 1500 m with a mean of 889 m for critical case. The safe distance based on TSPM predicted concentration of ISCST3 based on the period/seasonal average varied from 40 to 550 m with a mean of 288 m (**Tables 3.23 and 5.6**).

Safe distance for measured RSPM concentration varied from 250 to 900m with a mean of 683m. Safe distance for RSPM predicted concentration of ISCST3 varied from 142 to 3000 m with a mean of 1643 m for critical case. The safe distance based on RSPM predicted

concentration of ISCST3 based on the period/seasonal average varied from 40 to 900 m with a mean of 487 m (**Tables 3.23 and 5.6**).

Safe distance for measured $PM_{2.5}$ concentration varied from 200 to 900m with a mean of 783m. (**Table 3.23**). The prediction for $PM_{2.5}$ is not carried out considering the prediction can be carried out only for annual basis, since our study area data covers only for a season.

5.12 Safe distance for inland area, Kodangipallayam, Tiruppur

5.12.1 Model AERMOD

Safe distance for measured TSPM concentration varied from 700 to 1400m with a mean of 1200 m**.** Safe distance for TSPM predicted concentration of AERMOD varied from 32 to 2000m with a mean of 858m for critical case. The safe distance based on TSPM predicted concentration of AERMOD based on the period/seasonal average varied from 48 to 2000m with a mean of 742m (**Tables 3.23 and 5.5**).

Safe distance for measured RSPM concentration varied from 650 to 1400 m with a mean of 1167m. Safe distance for RSPM predicted concentration of AERMOD varied 65 to 2000m with a mean of 868m for critical case. The safe distance based on RSPM predicted concentration of AERMOD based on the period/seasonal average varied from 65 to 2000m with a mean of 1157m (**Tables 3.23 and 5.5**).

Safe distance for measured $PM_{2.5}$ concentration varied from 650 to 1400m with a mean of 1175 m (**Table 3.23**). The prediction for $PM_{2.5}$ is not carried out considering the prediction can be carried out only for annual basis, since our study area data covers only for a season.

5.12.2 Model ISCST3

Safe distance for measured TSPM concentration varied from 700 to 1400m with a mean of 1200m. Safe distance for TSPM predicted concentration of ISCST3 varied from 120m to 1600m with a mean of 451m for critical case. The safe distance based on TSPM predicted concentration of ISCST3 based on the period/seasonal average varied from 80 to 320m with a mean of 268m (**Tables 3.23 and 5.6**).

Safe distance for measured RSPM concentration varied from 650 to 1400m with a mean of 1167m. Safe distance for RSPM predicted concentration of ISCST3 varied 80 to 3000m with a mean of 695m for critical case. The safe distance based on RSPM predicted concentration of ISCST3 based on the period/seasonal average varied from 120 to320m with a mean of 257m (**Tables 3.23 and 5.6**).

Safe distance for measured $PM_{2.5}$ concentration varied from 650 to 1400m with a mean of 1175m. (**Table 3.23**). The prediction for $PM_{2.5}$ is not carried out considering the prediction can be carried out only for annual basis, since our study area data covers only for a season.

Table 5.5
Safe Distance for Cluster of Crushers at Tirusulam, Chennai and Kodangipallyam, Tiruppur (AERMOD Prediction)

Pollutant	Maximum			Minimum			North		East		South		West		Safe Distance, m (Average)
	Dir, degree	Dist, m	crusher no	Dir, degree	Dist, m	crusher no	Dist, m	crusher no	Dist, m	crusher no	Dist, m	crusher no	Dist, m	crusher no	
Coastal Area: Tirusulam, Chennai															
First Highest 24 hour Average: Worst Case Scenario															
TSPM	N	>2000	C1,C3,C8	S,W,E,E	81	C1,C14, C58,C29	484	C22	177	C9	>2000	C37	194	C1	823
RSPM	E	1129	C58	NW	258	C19	>2000	C32	1129	C58	>2000	C1	>2000	C14	1231
Period/Seasonal Average															
TSPM	W	629	C1	N	452	C32	452	C32	>2000	C58	484	C8	629	C1	774
RSPM	N	>2000	C14	S	16	C58	242	C30	177	C58	177	C1	>2000	C14	769
Inland Area: Kodangipallayam, Tiruppur															
First Highest 24 hour Average: Worst Case Scenario															
TSPM	SW,NW	>2000	C27	E	32	C14	65	C14	371	C27	677	C26	>2000	C27	858
RSPM	W	>2000	C27	E	65	C13	565	C9	81	C15	500	C1	>2000	C27	868
Period/Seasonal Average															
TSPM	SW	>2000	C27	W	48	C1	81	C28,C2	48	C15	274	C28	>2000	C29	742
RSPM	SW	>2000	C27	E	65	C14	65	C12	65	C14	435	C28	>2000	C27	1157

Table 5.6
Safe Distance for Cluster of Crushers at Tirusulam, Chennai and Kodangipallyam, Tiruppur (ISCST3 Prediction)

Pollutant	Maximum			Minimum			North		East		South		West		Safe Distance, m (Average)
	Dir, degree	Dist, m	crusher no	Dir, degree	Dist, m	crusher no	Dist., m	crusher no	Dist, m	crusher no	Dist, m	crusher no	Dist, m	crusher no	
Coastal Area: Tirusulam, Chennai															
First Highest 24 hour Average: Worst Case Scenario															
TSPM	E	1490	C57	N	78	C30	314	C31	1490	C57	1373	C3	588	C1	889
RSPM	S,E	>3000	C1,C57	W	142	C2	571	C30	>3000	C57	>3000	C1	142	C2	1643
Period/Seasonal Average															
TSPM	S	549	C3	N	39	C30	196	C31	235	C57	549	C3	157	C1	288
RSPM	S	857	C3	N	39	C30	234	C31	740	C57	857	C3	195	C1	487
Inland Area: Kodangipallayam, Tiruppur															
First Highest 24 hour Average: Worst Case Scenario															
TSPM	NW	1608	C1	E	118	C15	275	C9	275	C13	235	C26	196	C1	451
RSPM	NW	>3000	C1	E	78	C15	312	C9	234	C13	312	C28	234	C1	695
Period/Seasonal Average															
TSPM	N	314	C9	E	78	C15	314	C9	275	C14	314	C28	314	C1	268
RSPM	N	316	C9	E	118	C15	316	C9	237	C14	316	C28	237	C1	257

5.13 Prediction and Simulation of impact with control measures by Models AERMOD and ISCST3

Prediction was also carried out for controlled emissions from stone crushers assuming the implementation of the suggested control measures given below which are essential for stone crushers at Tirusulam, Chennai and Kodangipallayam, Tiruppur areas to bring down the dust levels to reduce the impact of dust emissions on the surrounding residential areas.

1. Dust suppression system at the SCIs
2. Spray nozzle for regular wetting of dust
3. Pavement of road surfaces inside stone crushers area
4. Collection of fine powder below ground level and complete covering
5. Covering of loaded trucks using tarpaulins while transportation
6. Arresting re-entrainment of settled dust from surfaces
7. Construction wind breaking wall/movable nets in the prevalent wind direction
8. Planting trees at the periphery of each SCIs with a width of 5 to 10m

It is estimated that the above control measures will bring down the emissions from stone crushers by 50%.

5.13.1 Prediction of Concentration Profile

The model was processed with emission rates, meteorological data and geometry of the source and receptors. For fugitive dust impacts, results are found very insensitive to values used for mixing height because the emissions are released at or near the ground and the impacts are generally very close to the source. As a result, the emissions have little opportunity to mix vertically to the height of the mixing layer. Model predictions were computed using daily emission data and on-site meteorology from stone crushing operations after implementing control measures at coastal area, Tirusulam, Chennai and inland area, Kodangipallayam, Tiruppur.

The predicted concentrations for both the conditions of first 24-hour maximum (critical case) during the monitoring period and also for the entire duration of monitoring period (seasonal average) using AERMOD and ISCST3 are presented in the form of isopleths and surfers as shown in **Figures 5.49 to 5.64** and **Figures 5.65 to 5.80** respectively, for both the coastal area, Tirusulam, Chennai and inland area, Kodangipallayam, Tiruppur.

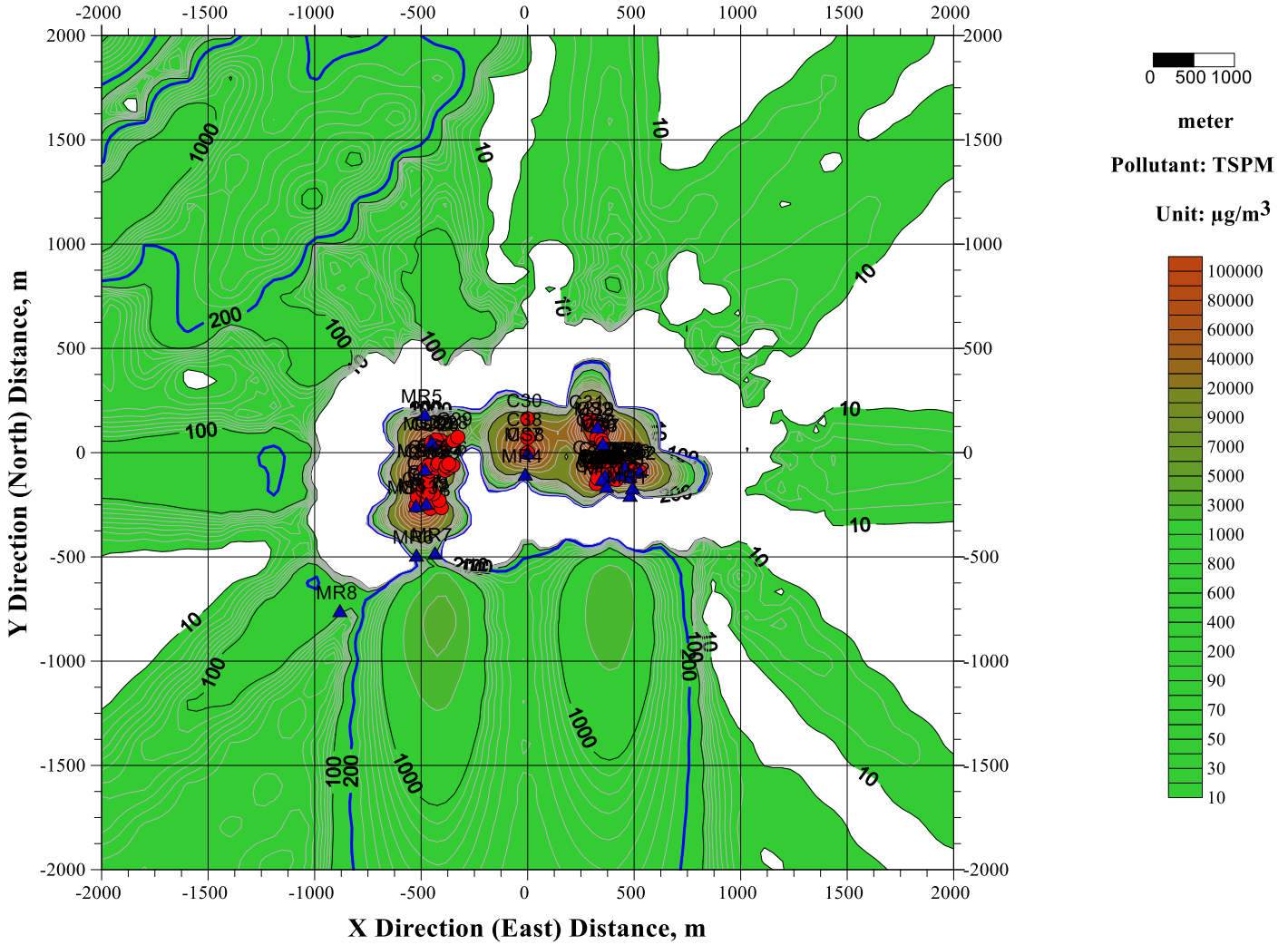


Figure 5.49: Isopleth Showing AERMOD Predicted TSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

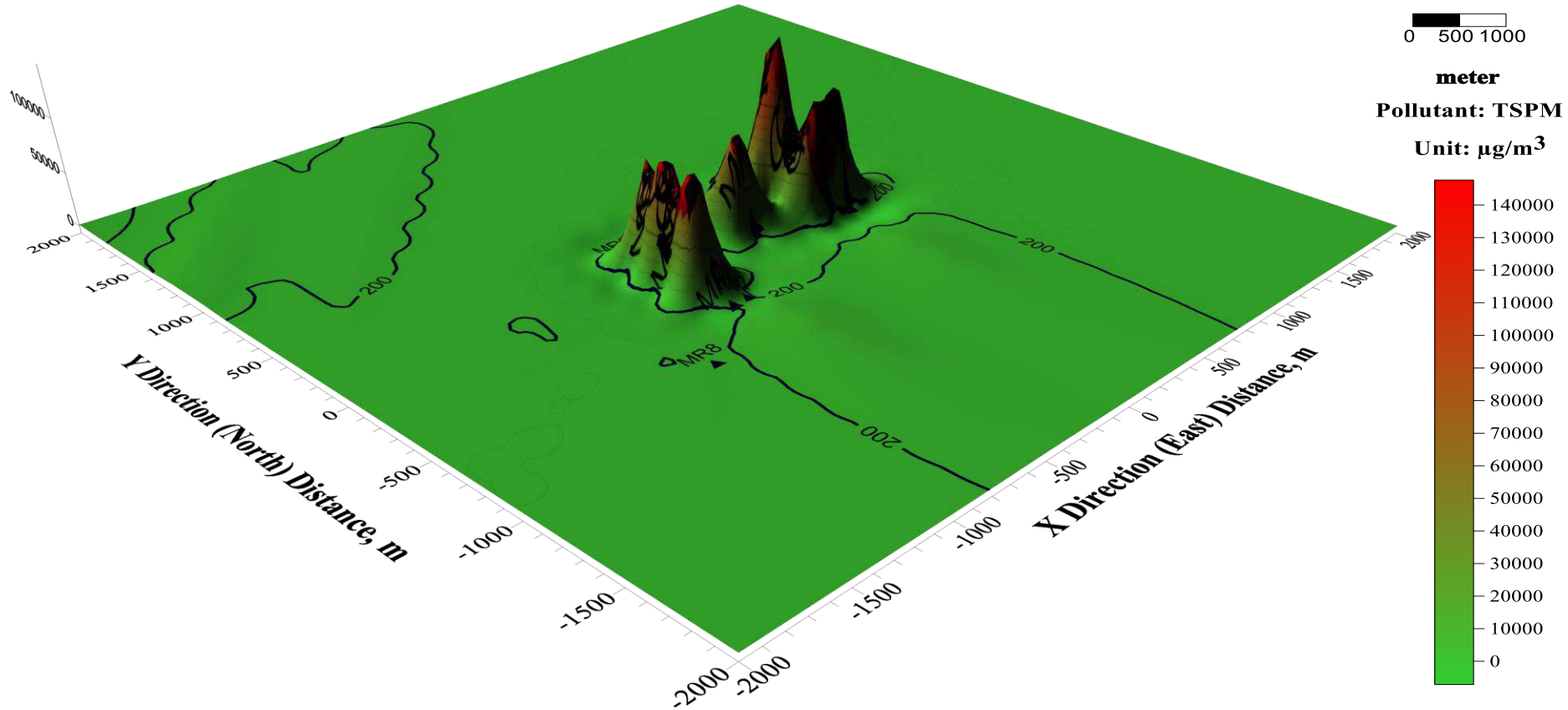


Figure 5.50: Surfer Showing AERMOD Predicted TSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

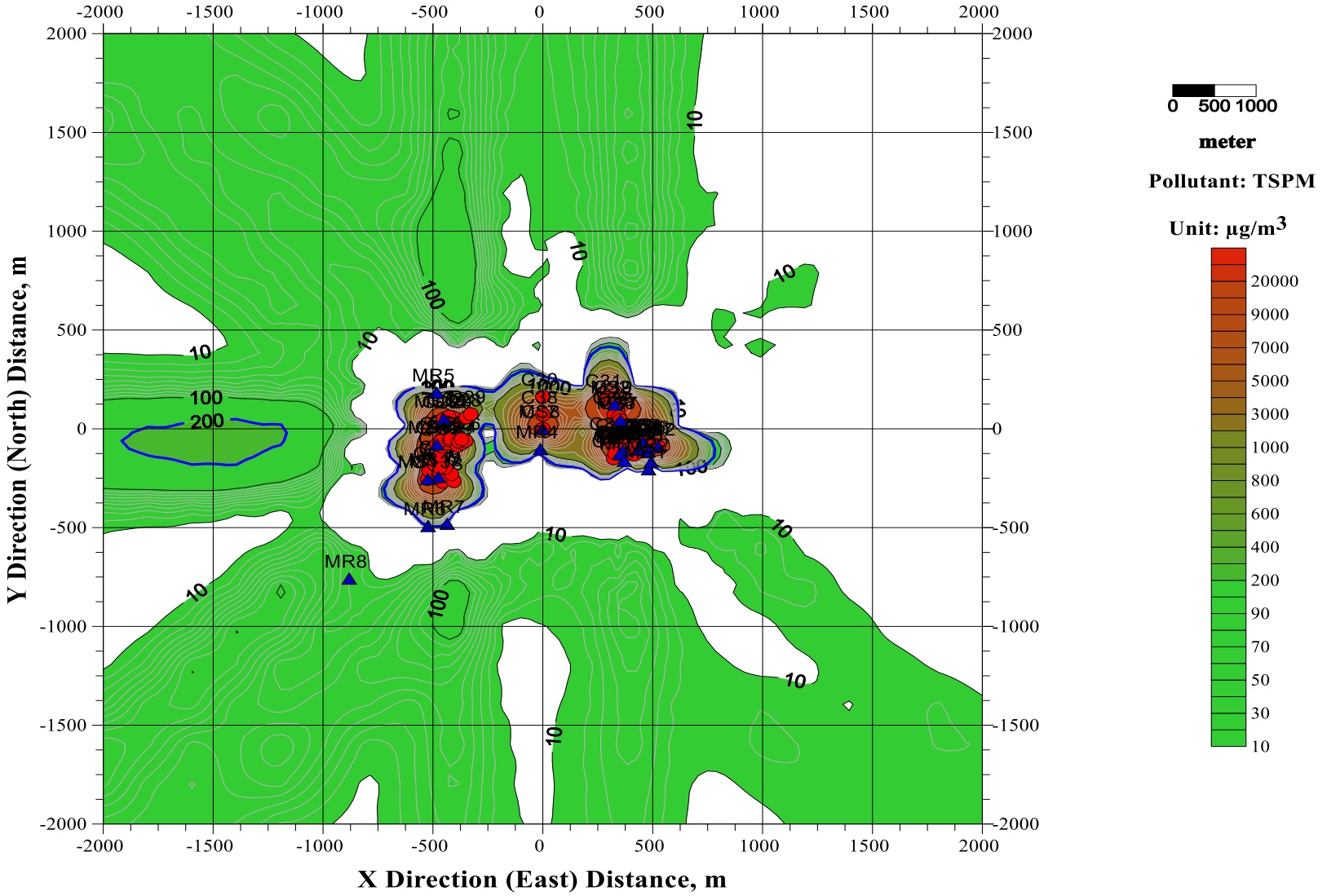


Figure 5.51: Isopleth Showing AERMOD Predicted TSPM Concentration: Tirusulam (Period/Seasonal Average after Control Measures)

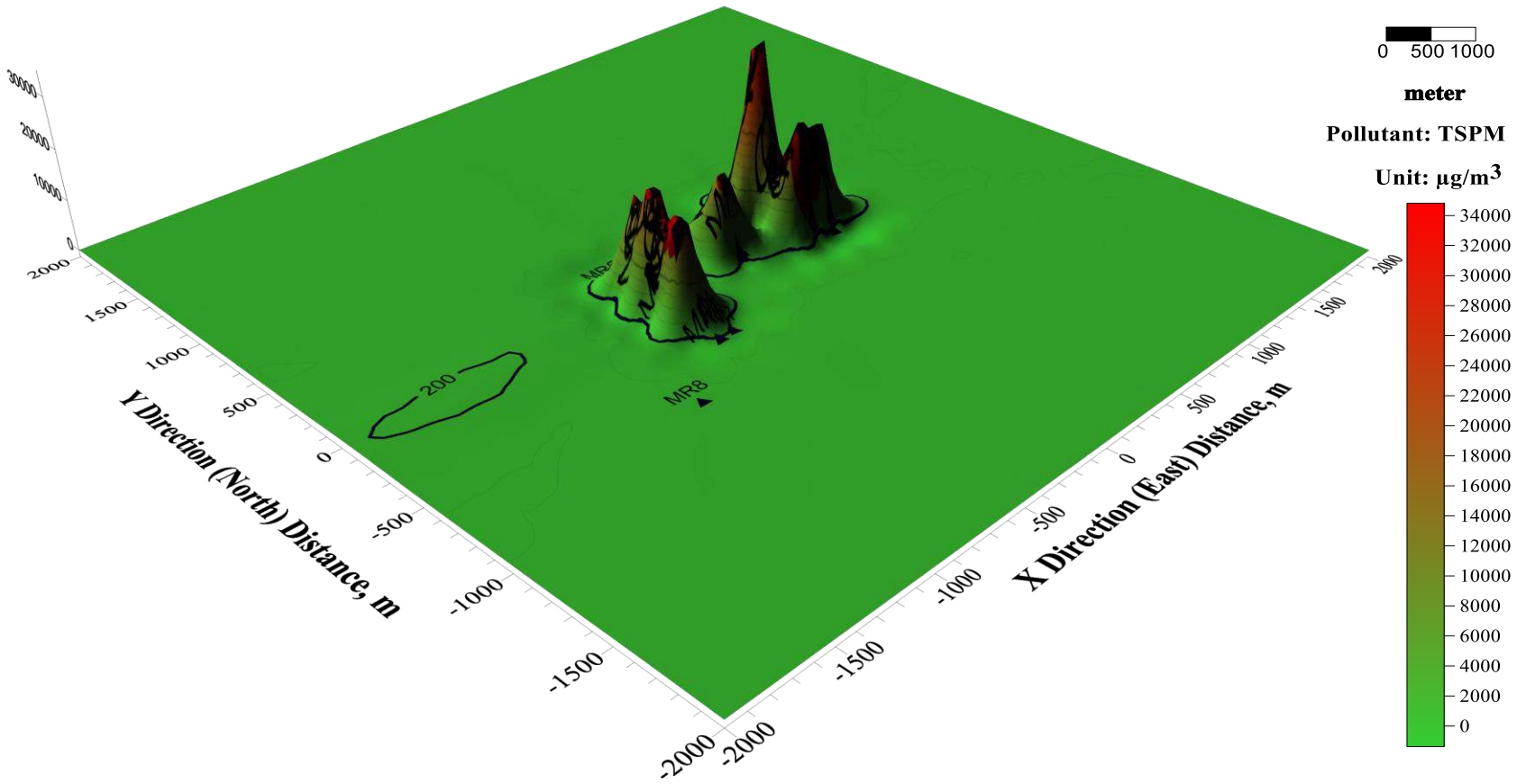


Figure 5.52: Surfer Showing AERMOD Predicted TSPM Concentration: Tirusulam (Period/Seasonal Average after Control Measures)

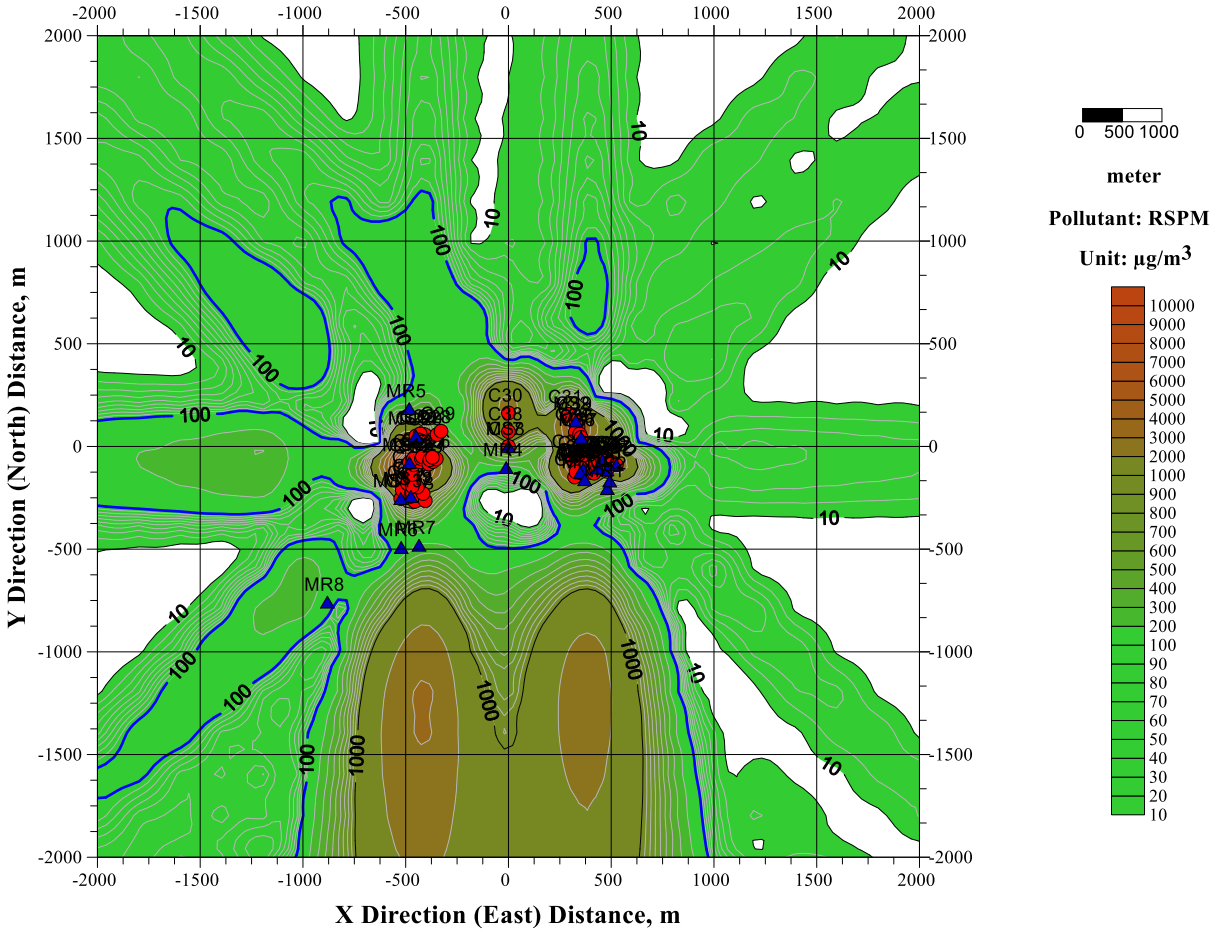


Figure 5.53: Isopleth Showing AERMOD Predicted RSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

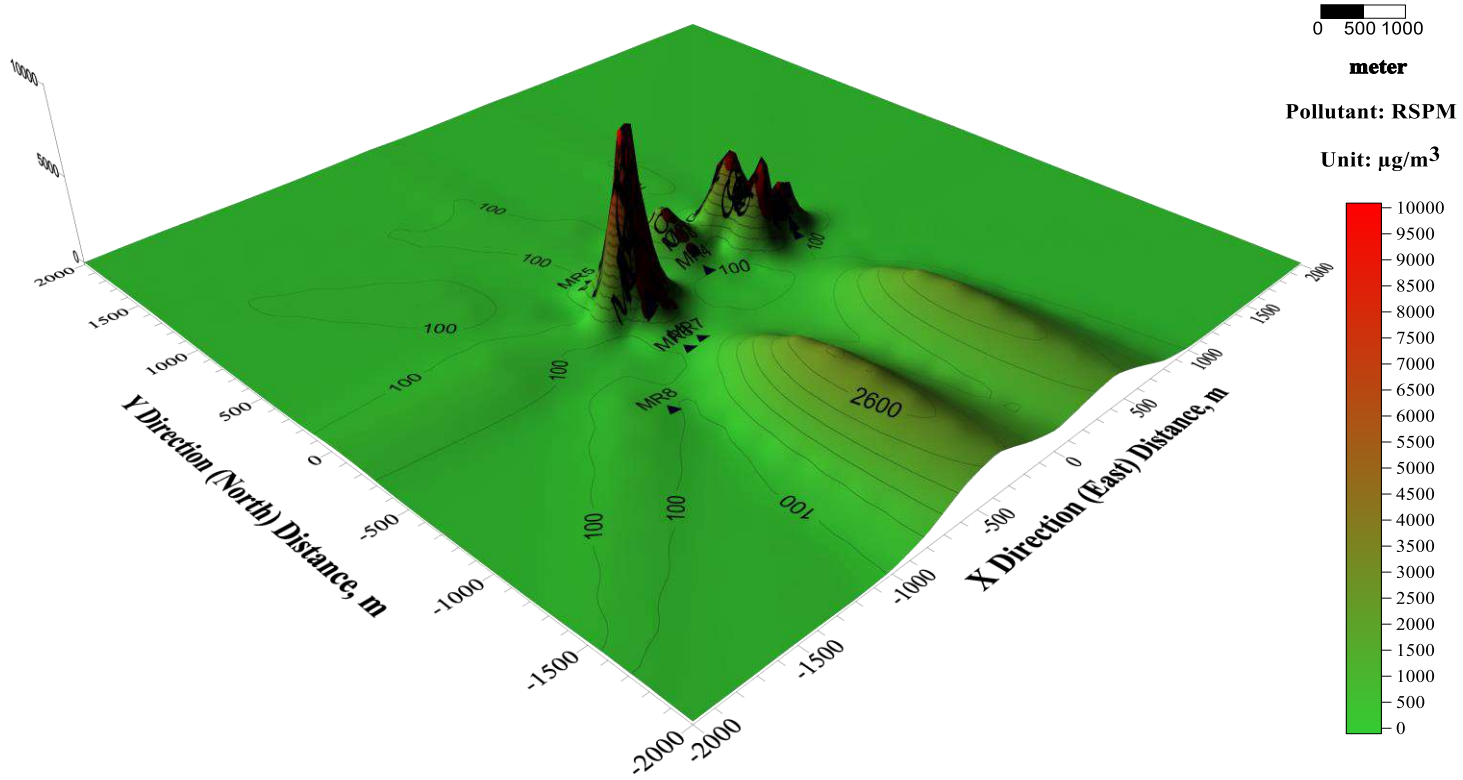


Figure 5.54: Surfer Showing AERMOD Predicted RSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

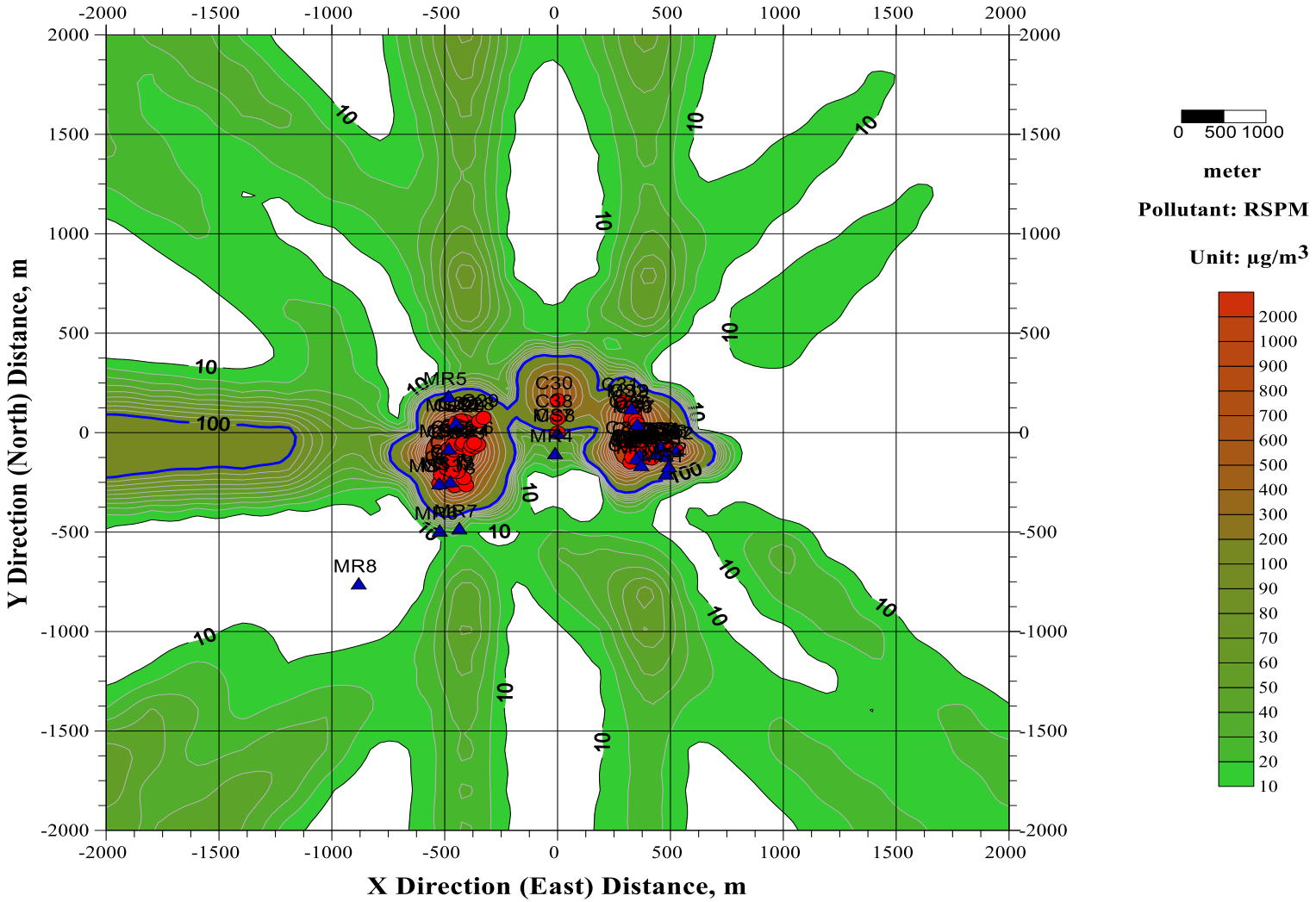


Figure 5.55: Isopleth Showing AERMOD Predicted RSPM Concentration: Tirusulam (Period/Seasonal Average after Control Measures)

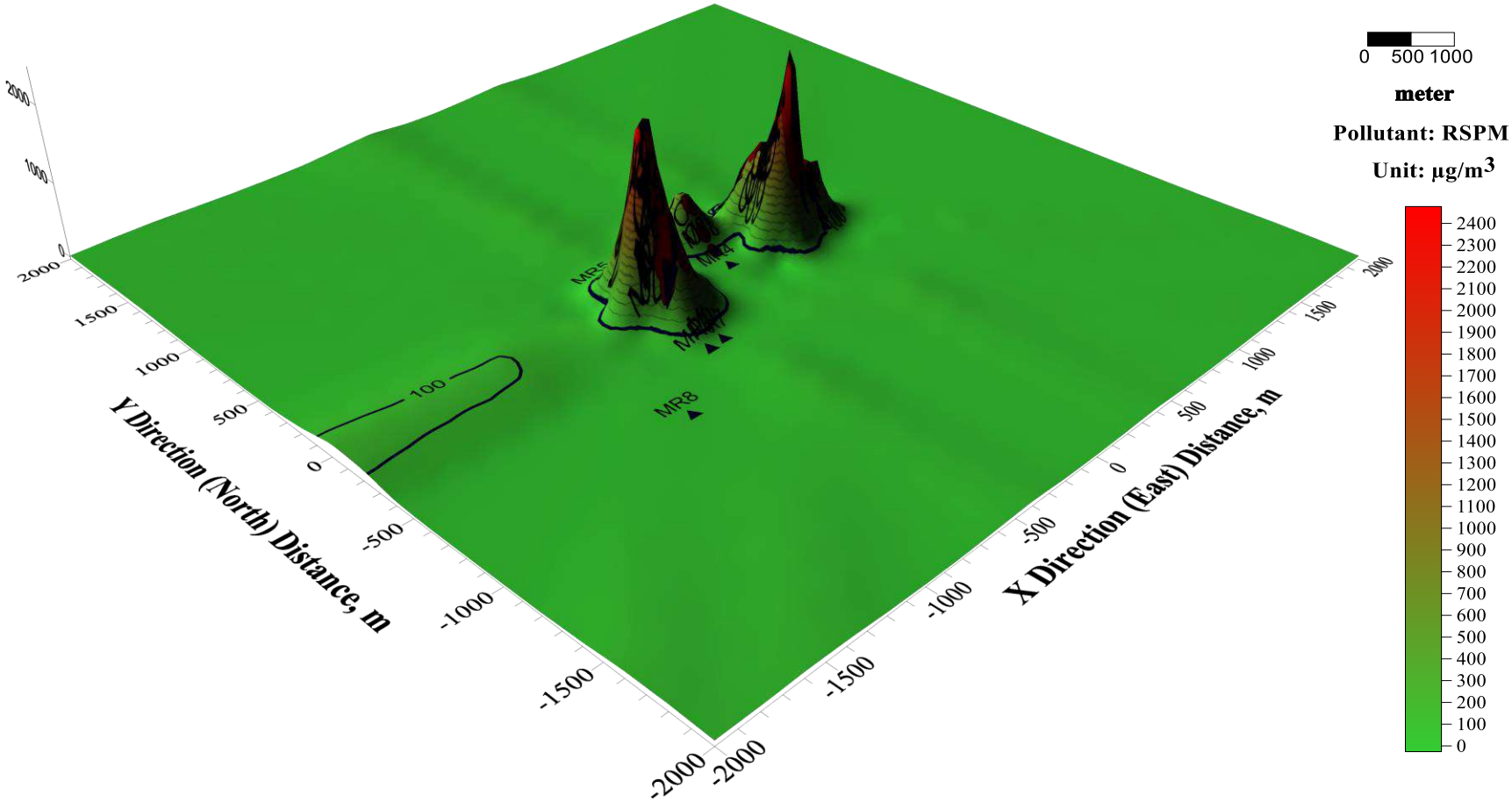


Figure 5.56: Surfer Showing AERMOD Predicted RSPM Concentration: Tirusulam (Period/Seasonal Average after Control Measures)

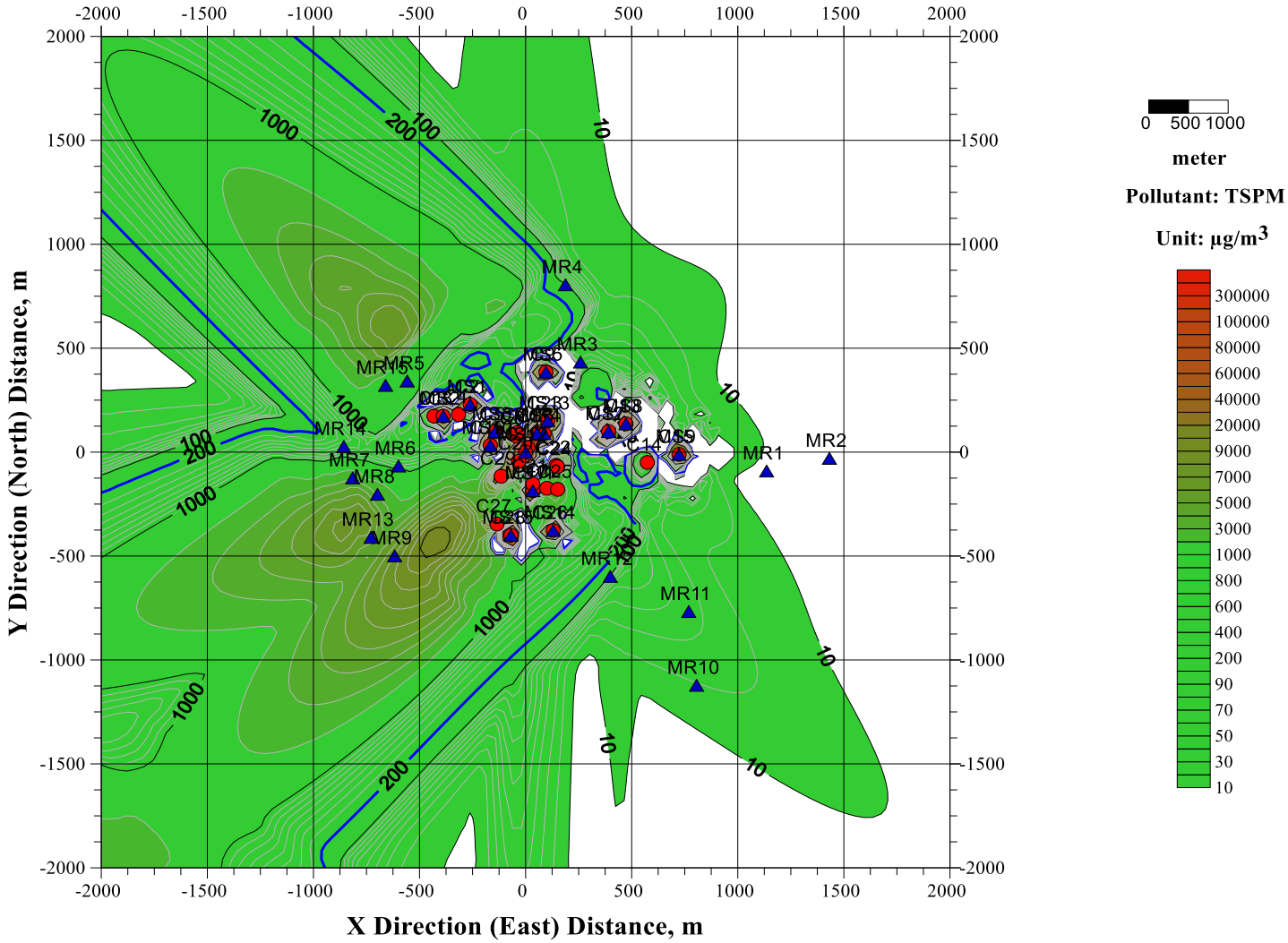


Figure 5.57: Isopleth Showing AERMOD Predicted TSPM Concentration: Tiruppur (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

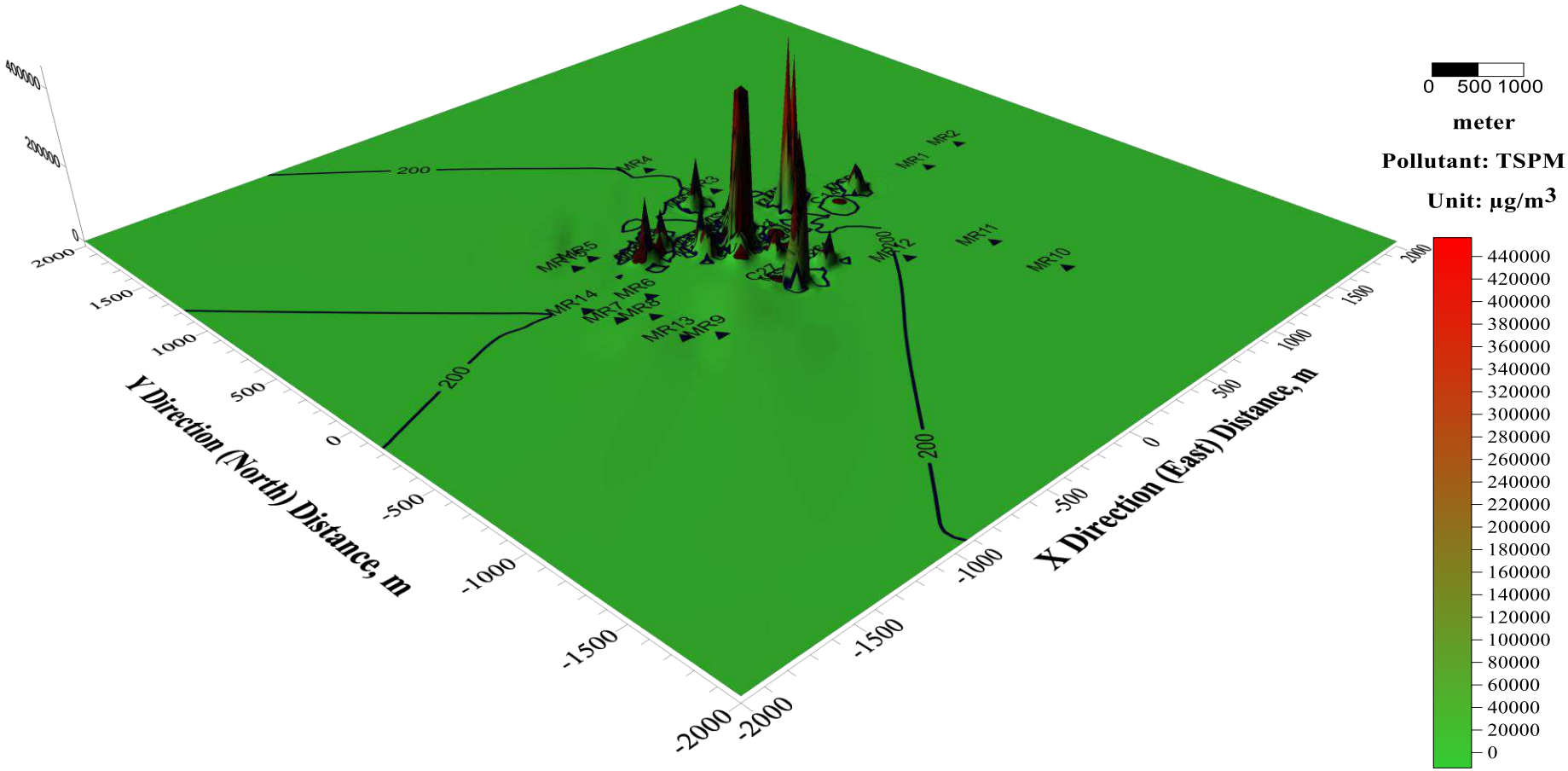


Figure 5.58: Surfer Showing AERMOD Predicted TSPM Concentration: Tiruppur (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

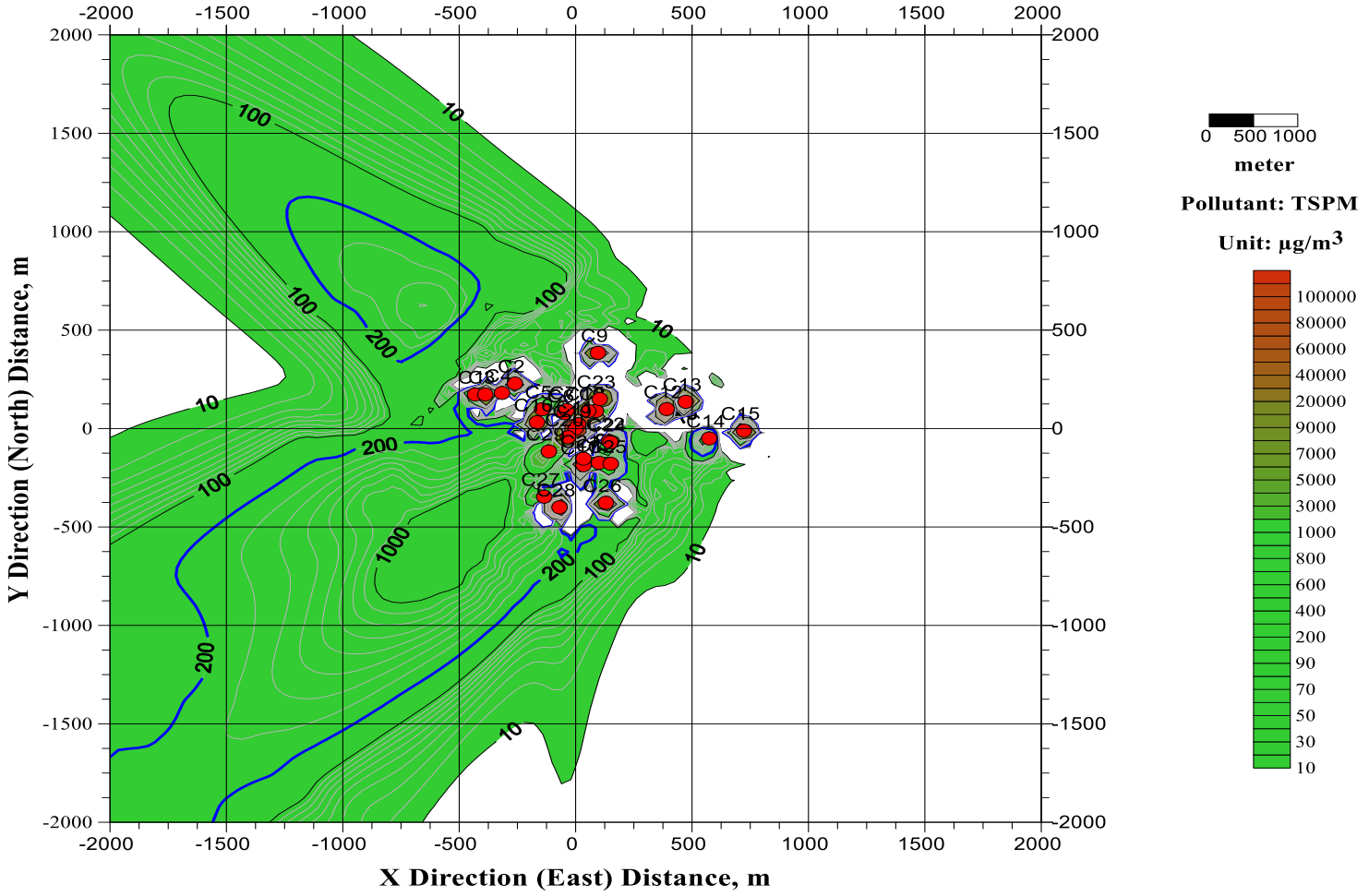


Figure 5.59: Isopleth Showing AERMOD Predicted TSPM Concentration: Tiruppur (Period/Seasonal Average after Control Measures)

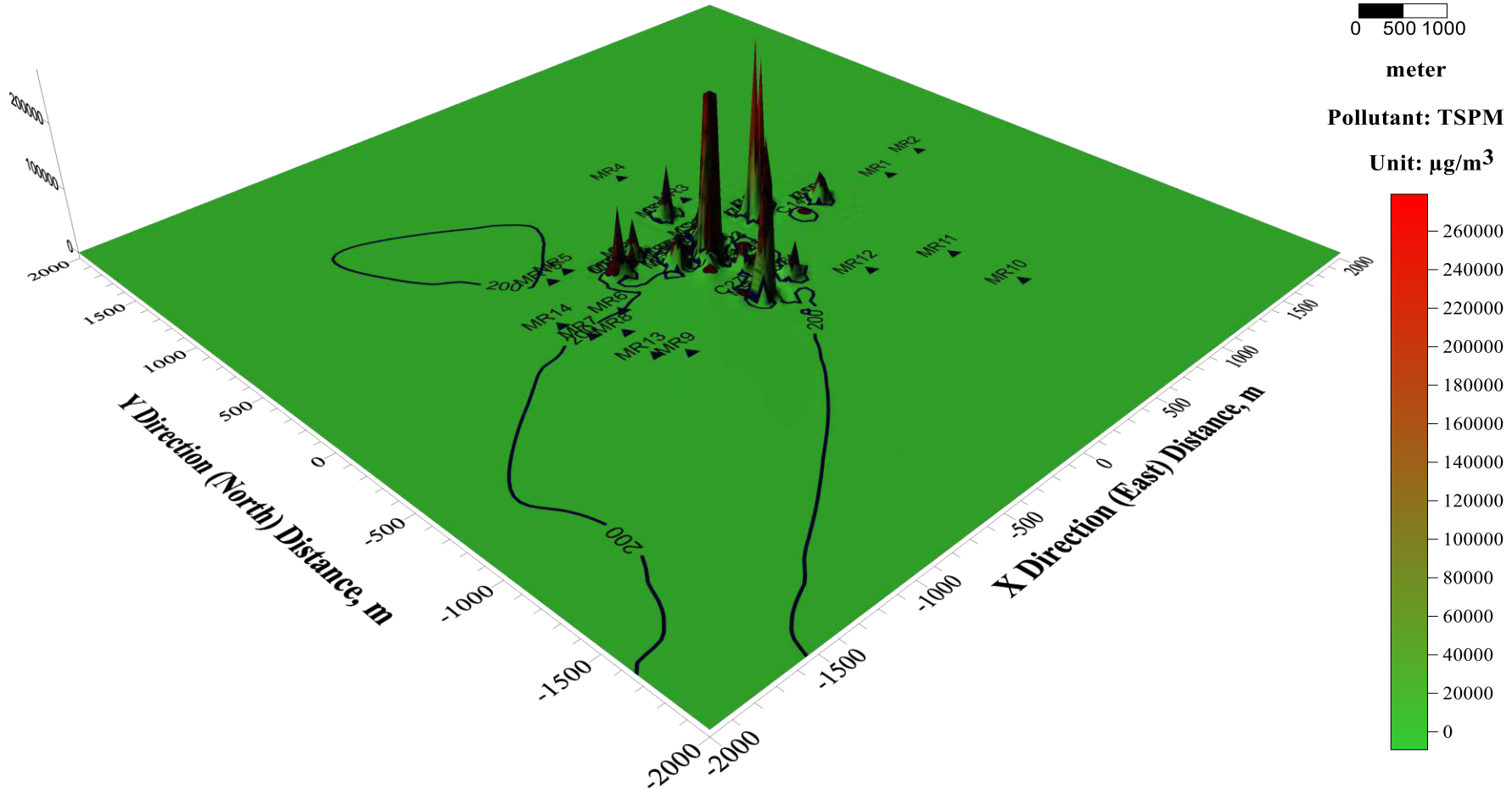


Figure 5.60: Surfer Showing AERMOD Predicted TSPM Concentration: Tiruppur (Period/Seasonal Average after Control Measures)

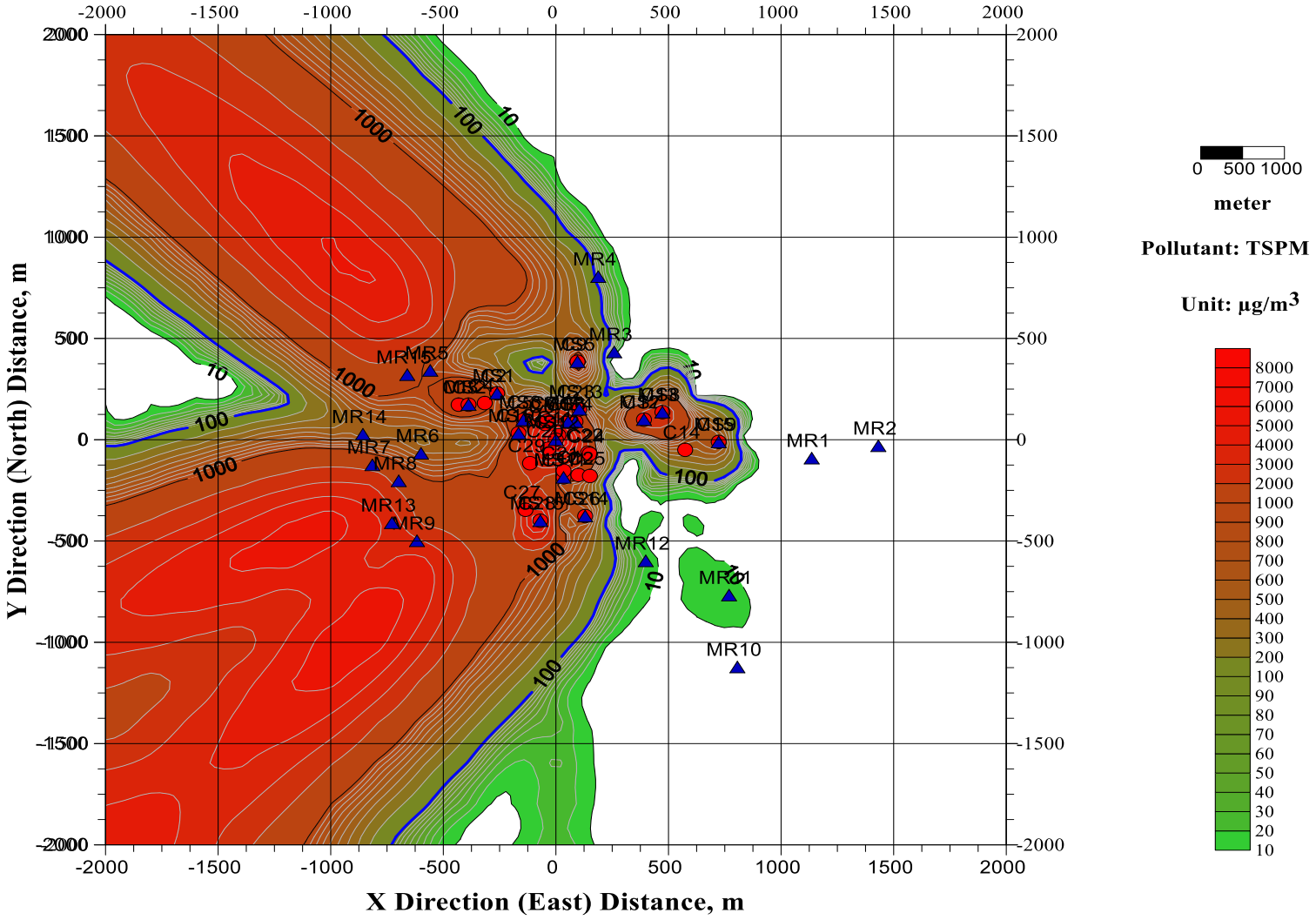


Figure 5.61: Isopleth Showing AERMOD Predicted RSPM Concentration: Tiruppur (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

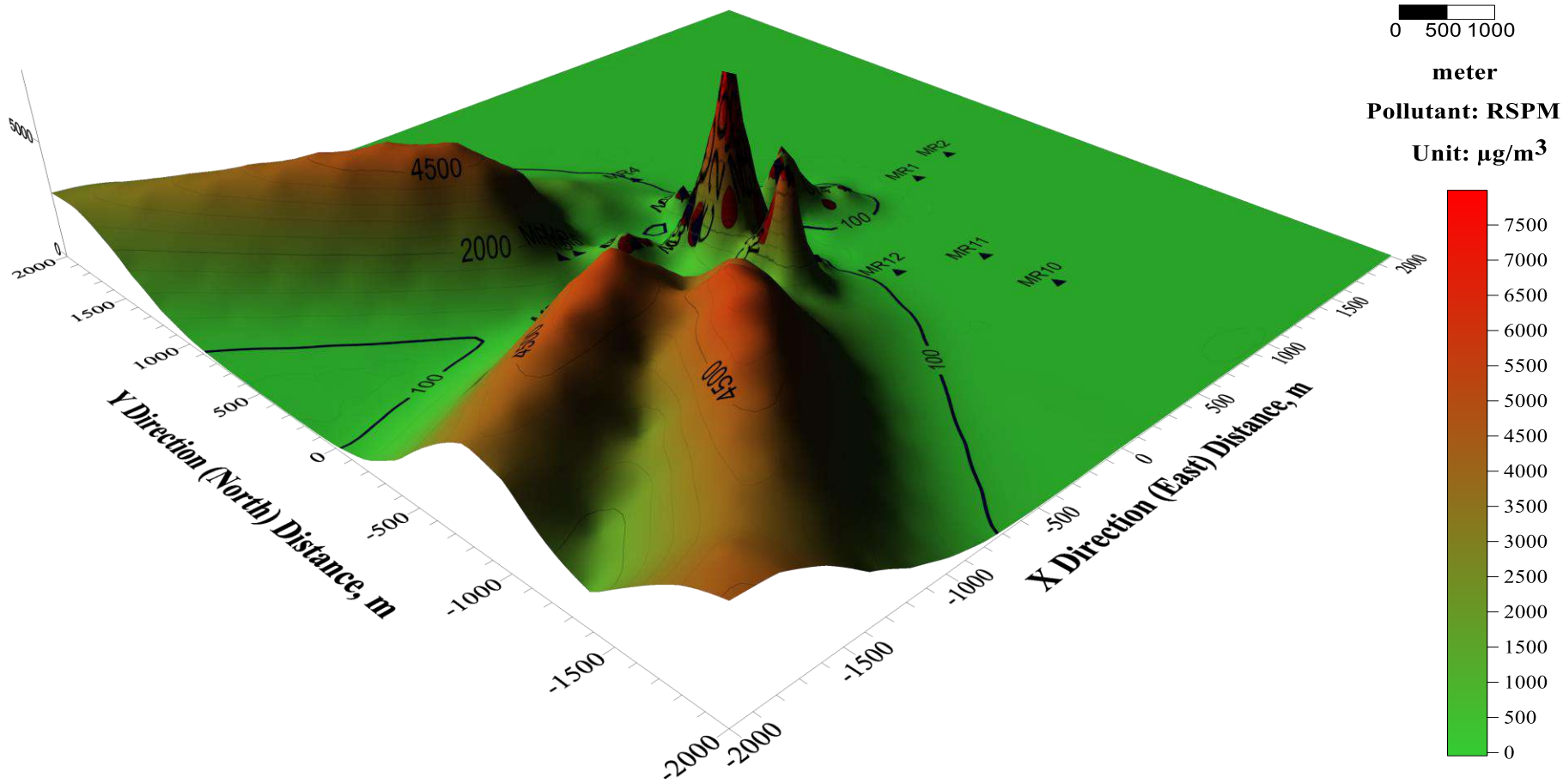


Figure 5.62: Surfer Showing AERMOD Predicted RSPM Concentration: Tiruppur (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

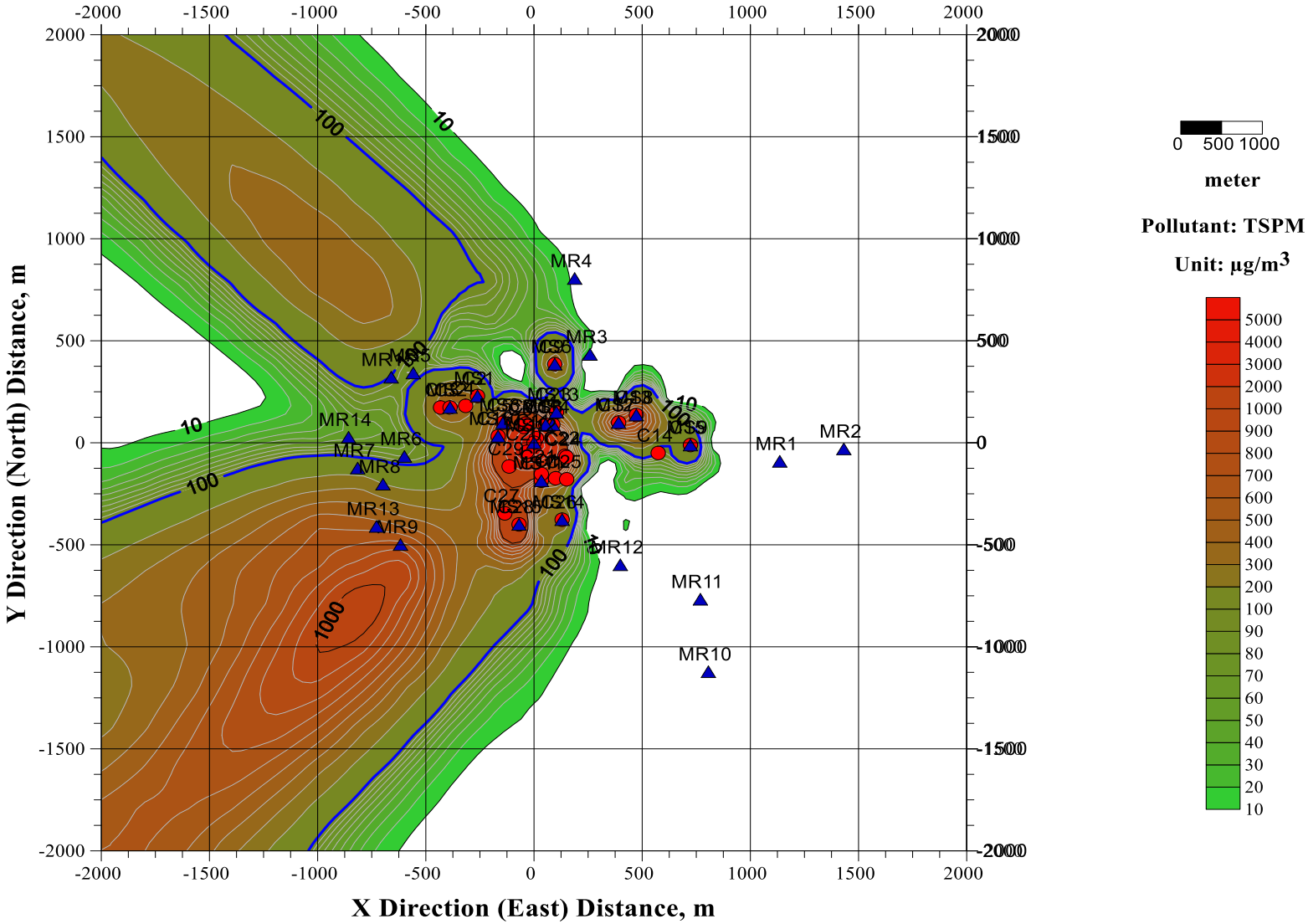


Figure 5.63: Isopleth Showing AERMOD Predicted RSPM Concentration: Tiruppur (Period/Seasonal Average after Control Measures)

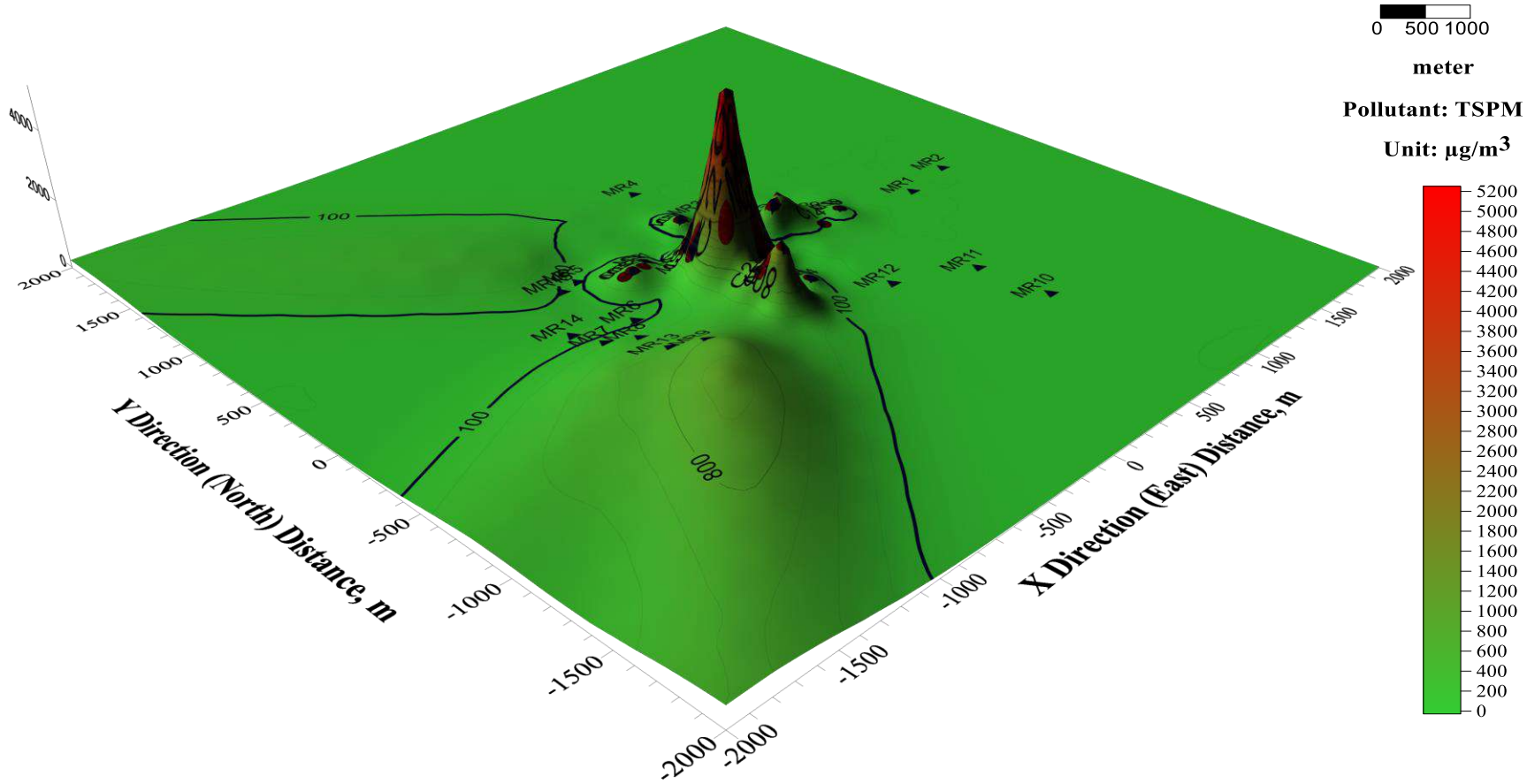


Figure 5.64: Surfer Showing AERMOD Predicted RSPM Concentration: Tiruppur (Period/Seasonal Average after Control Measures)

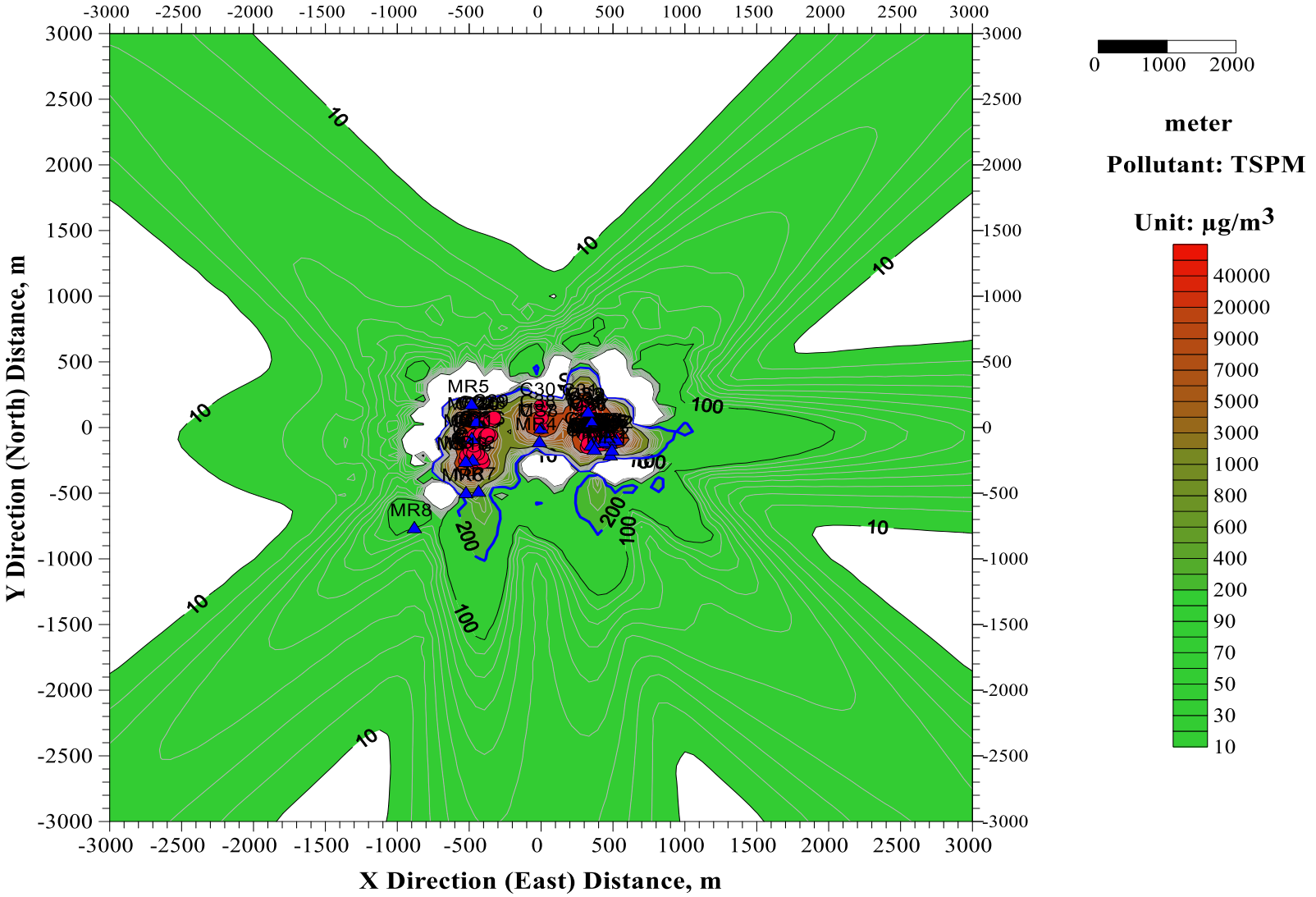


Figure 5.65: Isopleth Showing ISCST3 Predicted TSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

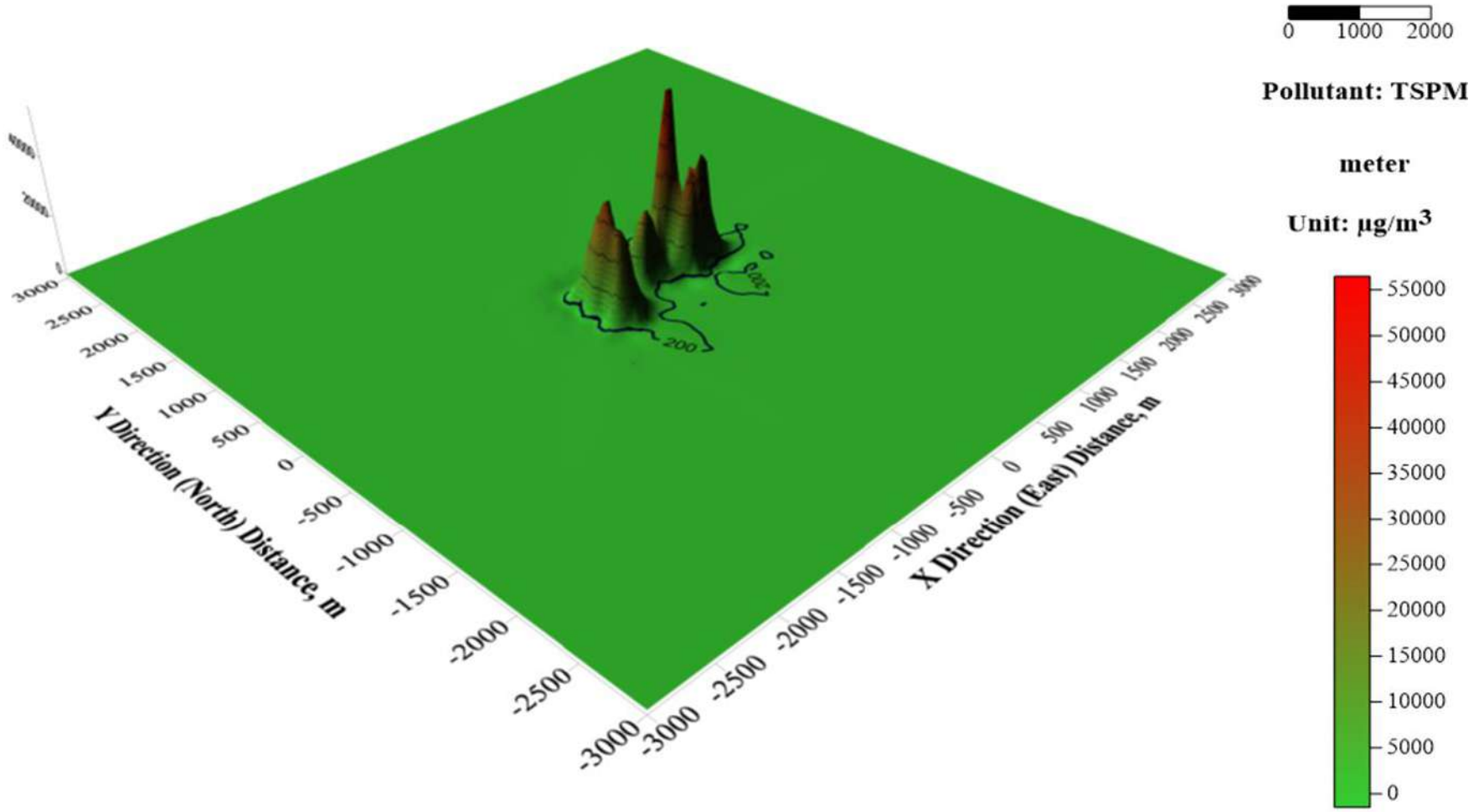


Figure 5.66: Surfer Showing ISCST3Predicted TSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

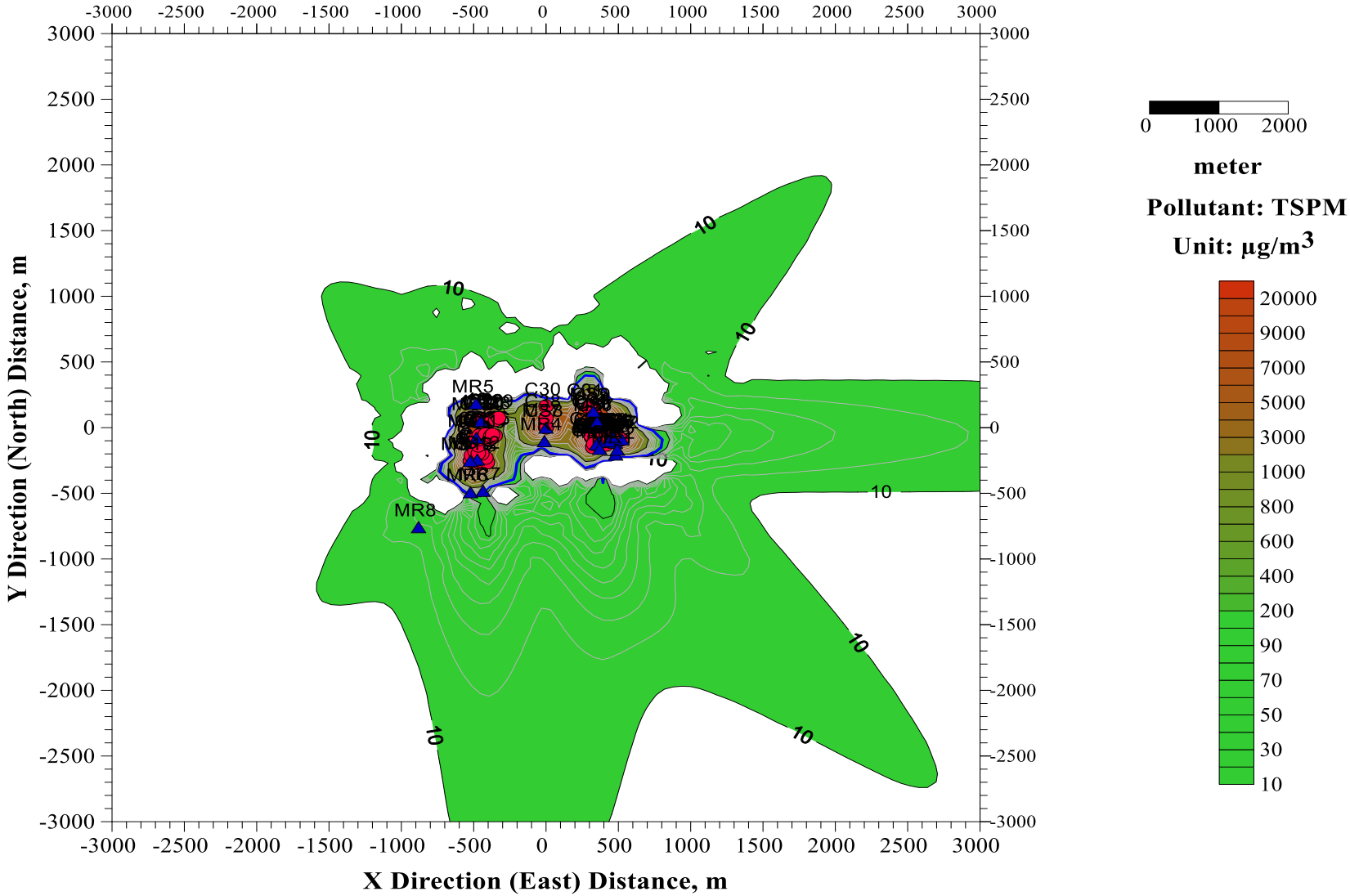


Figure 5.67: Isopleth Showing ISCST3 Predicted TSPM Concentration: Tirusulam (Period/Seasonal Average after Control Measures)

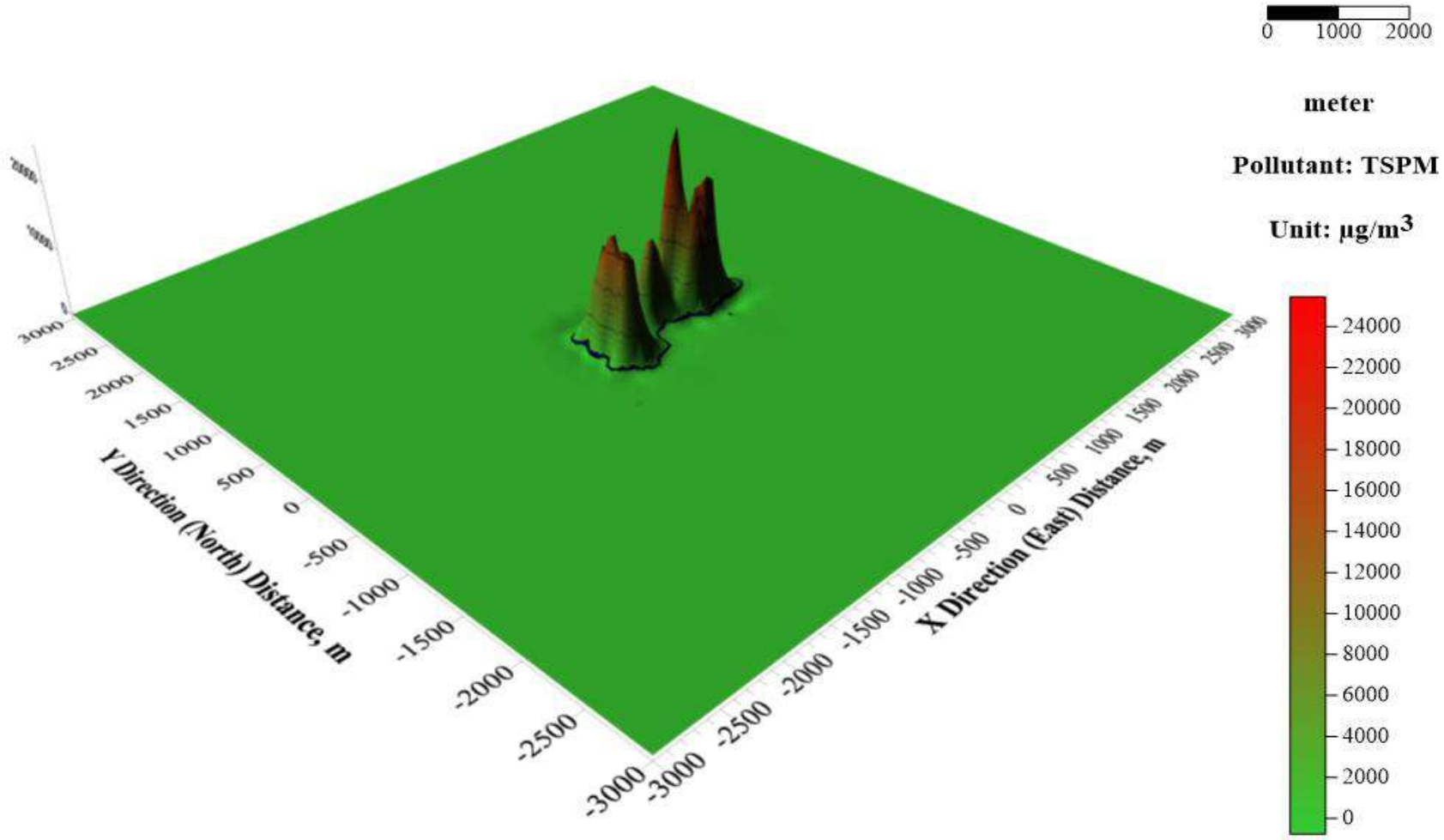


Figure 5.68: Surfer Showing ISCST3 Predicted TSPM Concentration: Tirusulam (Period/Seasonal Average after Control Measures)

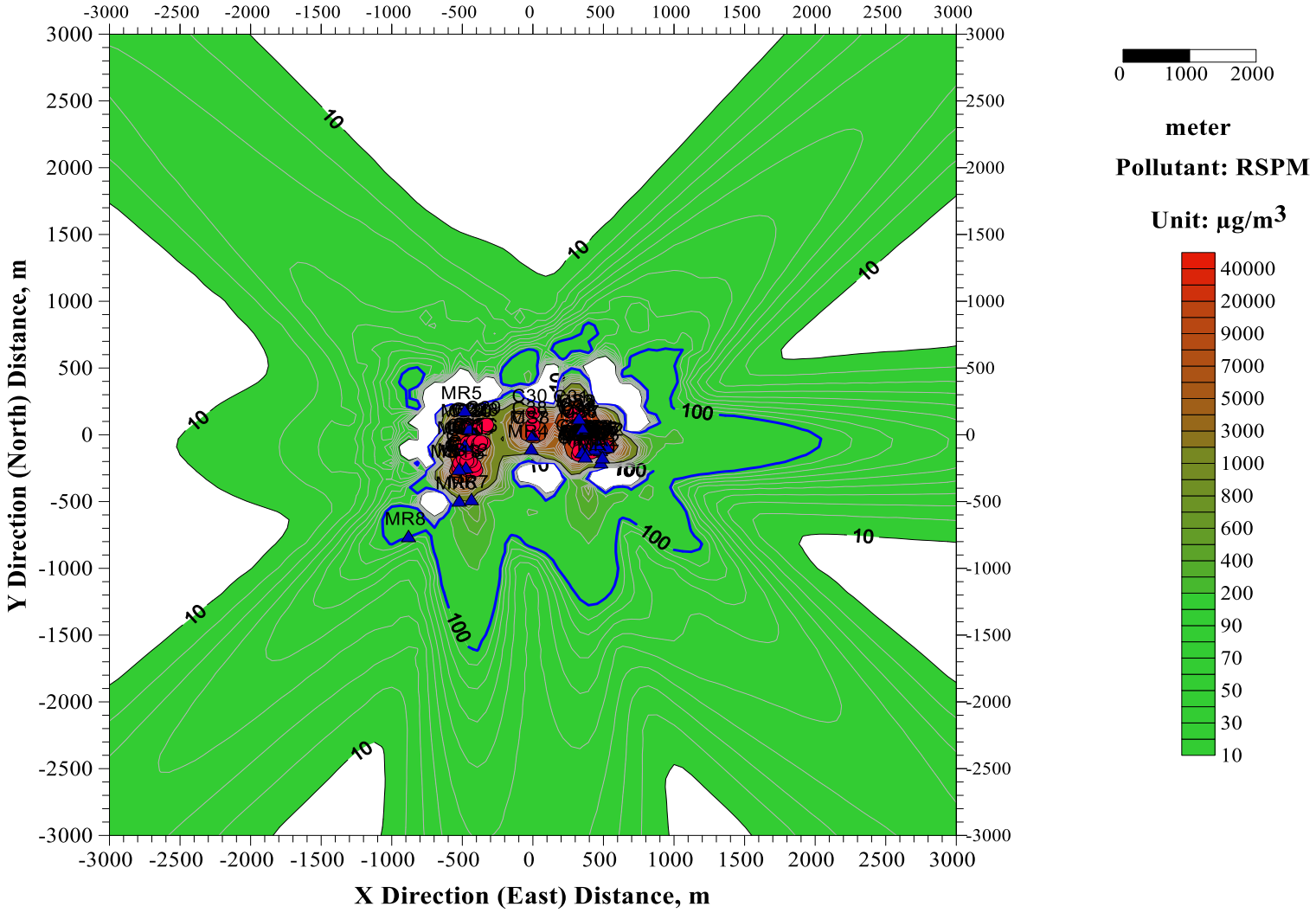


Figure 5.69: Isopleth Showing ISCST3 Predicted RSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

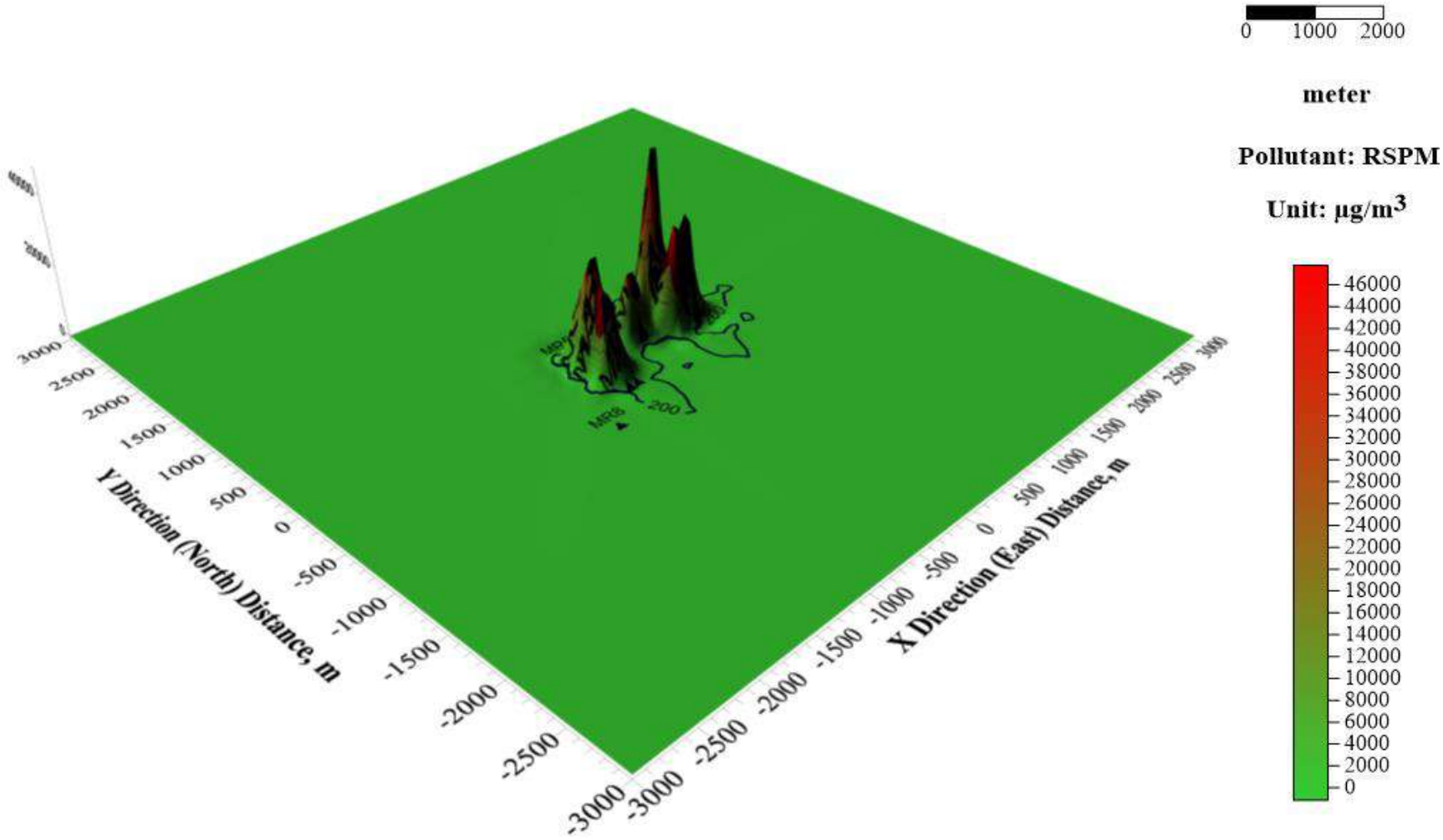


Figure 5.70: Surfer Showing ISCST3Predicted RSPM Concentration: Tirusulam (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

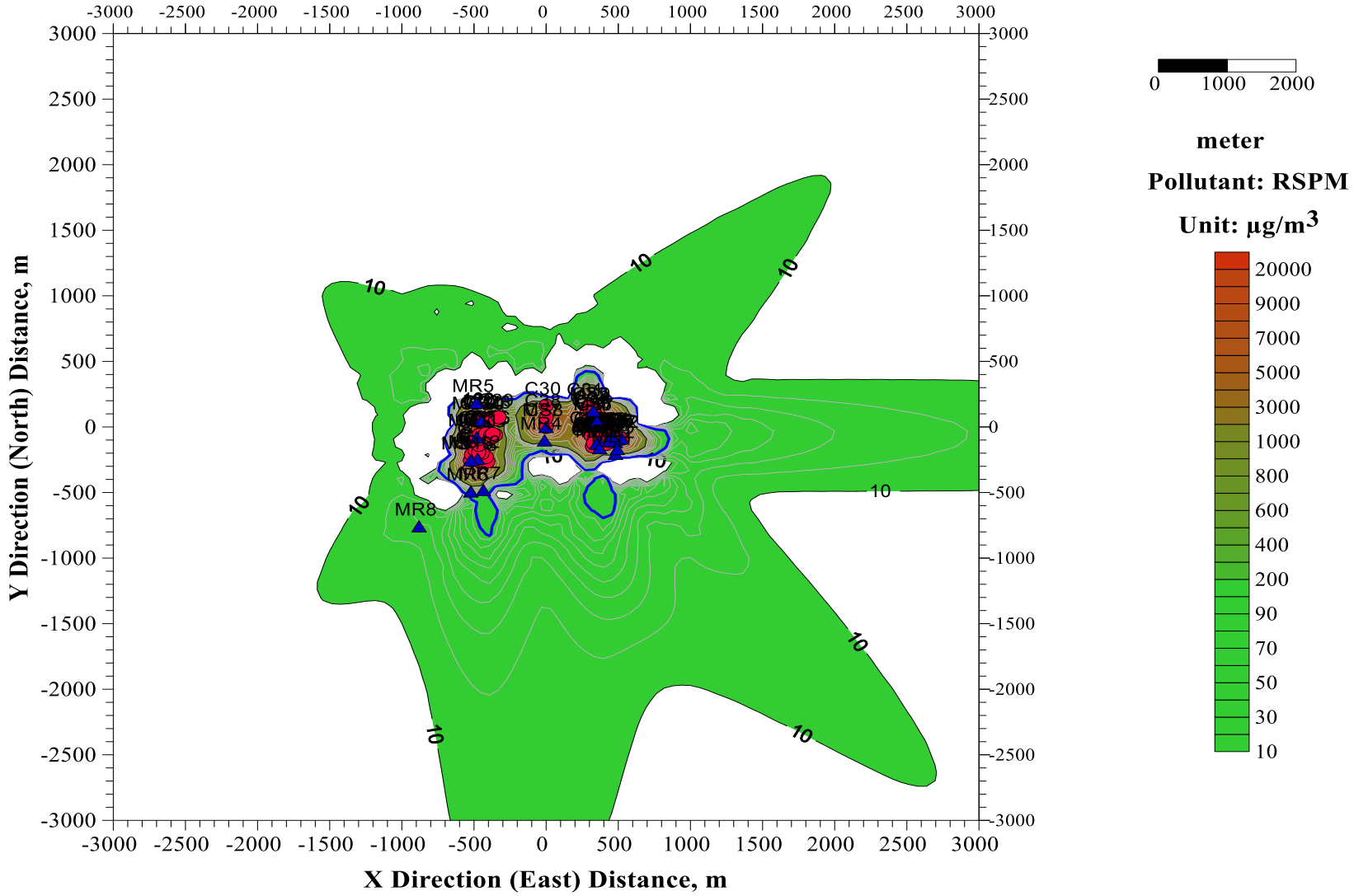


Figure 5.71: Isopleth Showing ISCST3 Predicted RSPM Concentration: Tirusulam (Period/Seasonal Average after Control Measures)

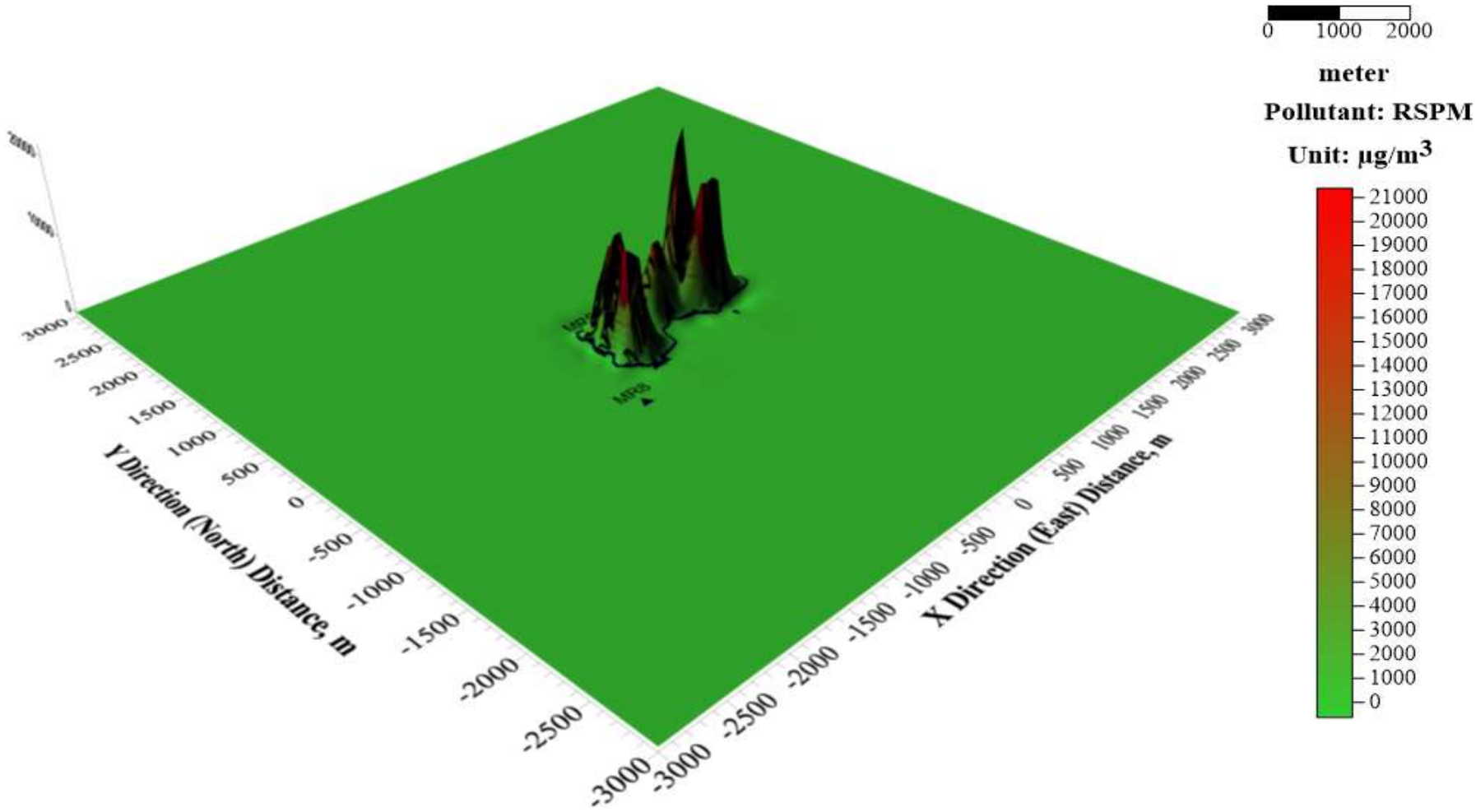


Figure 5.72: Surfer Showing ISCST3 Predicted RSPM Concentration: Tirusulam (Period/Seasonal Average after Control Measures)

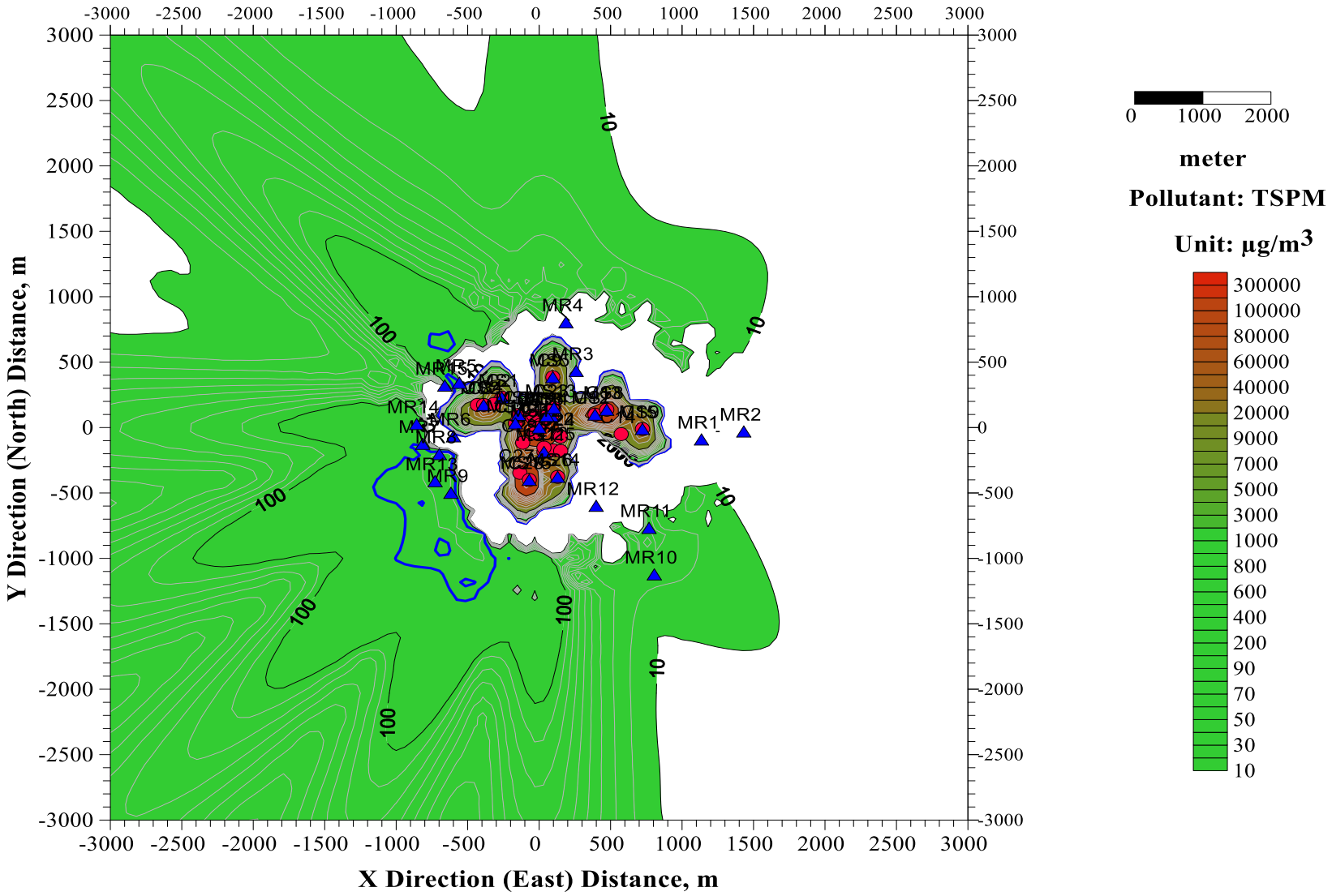


Figure 5.73: Isopleth Showing ISCST3 Predicted TSPM Concentration: Tiruppur (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

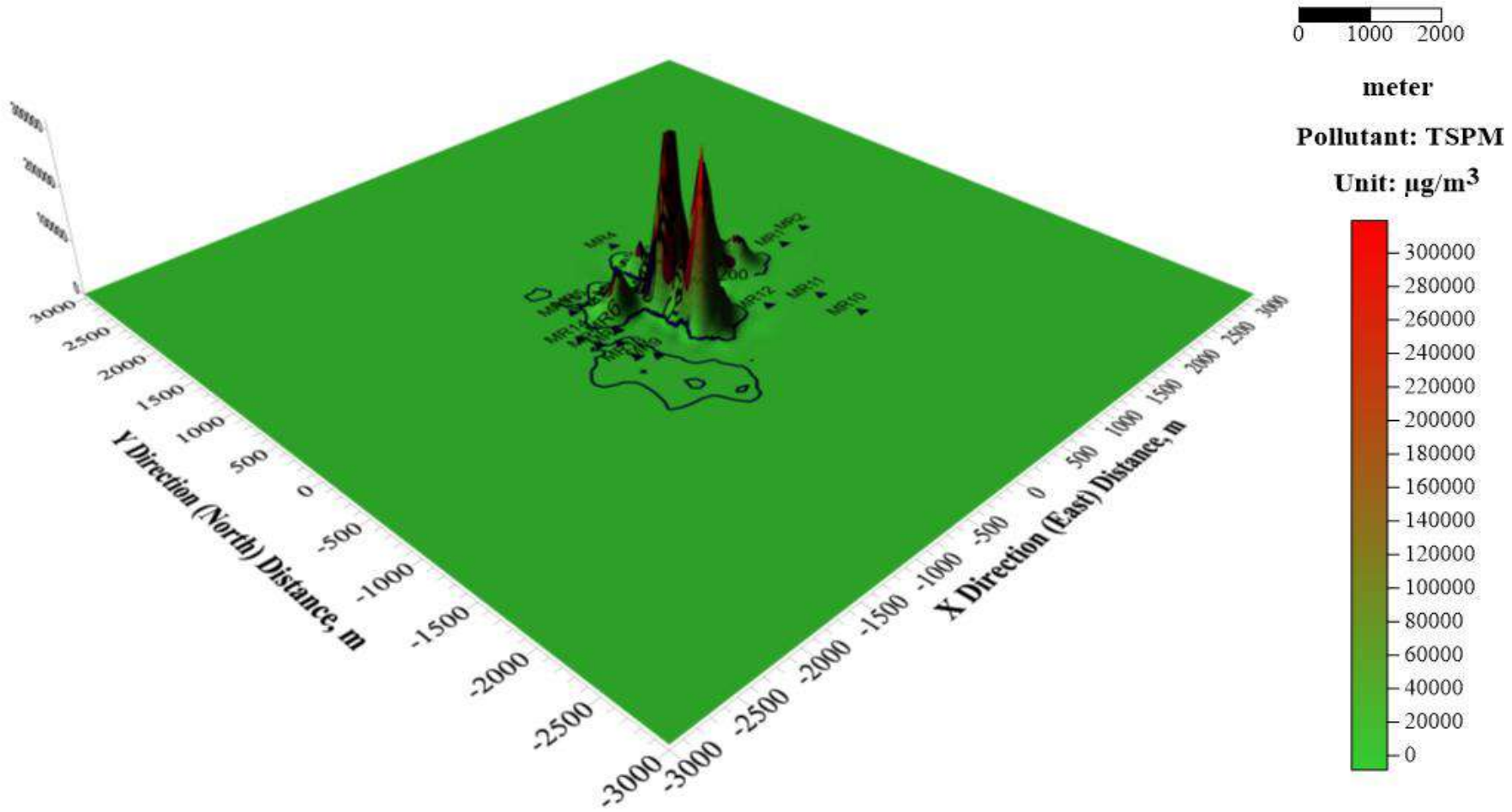


Figure 5.74: Surfer Showing ISCST3 Predicted TSPM Concentration: Tiruppur (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

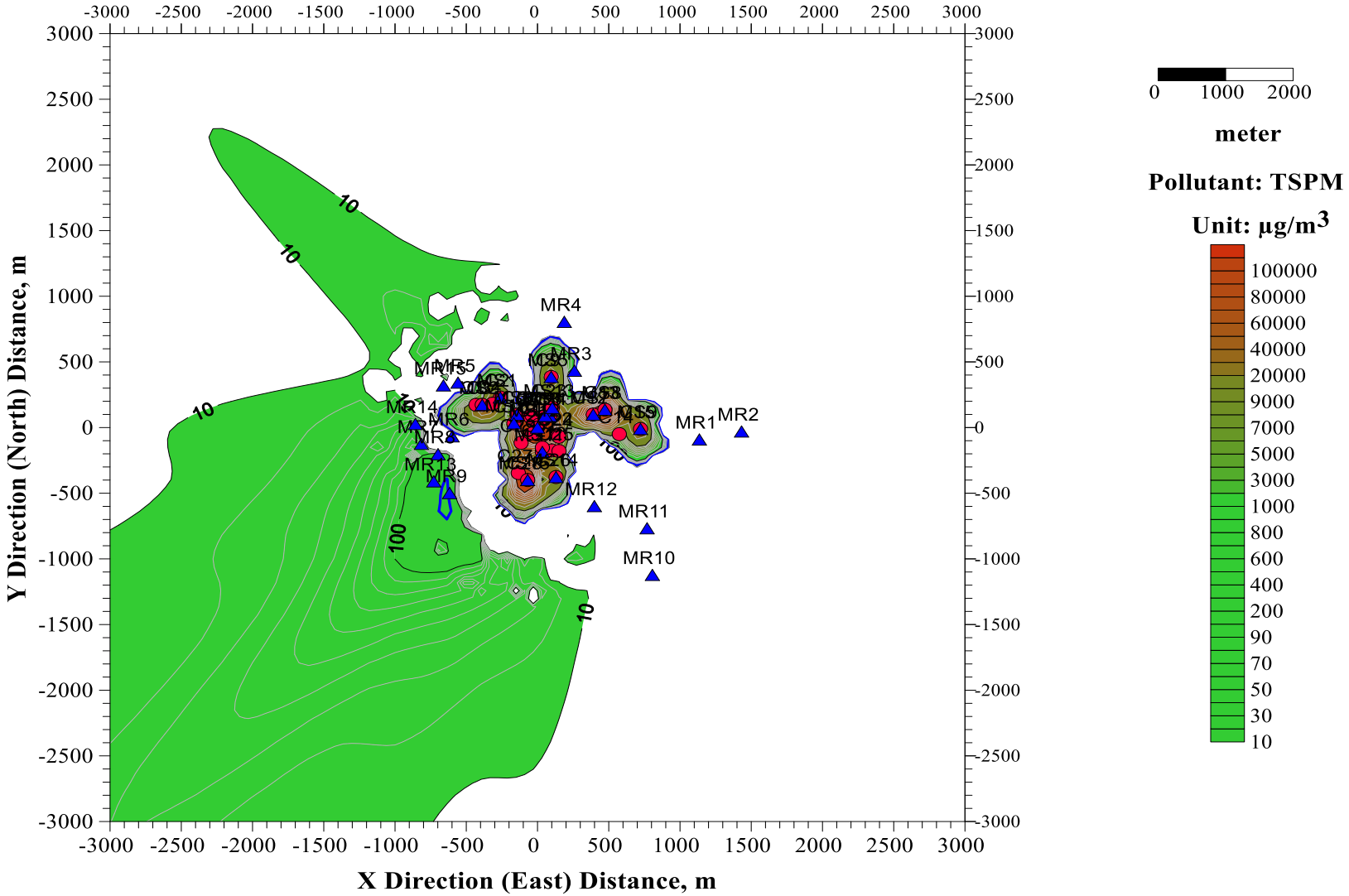


Figure 5.75: Isopleth Showing ISCST3 Predicted TSPM Concentration: Tiruppur (Period/Seasonal Average after Control Measures)

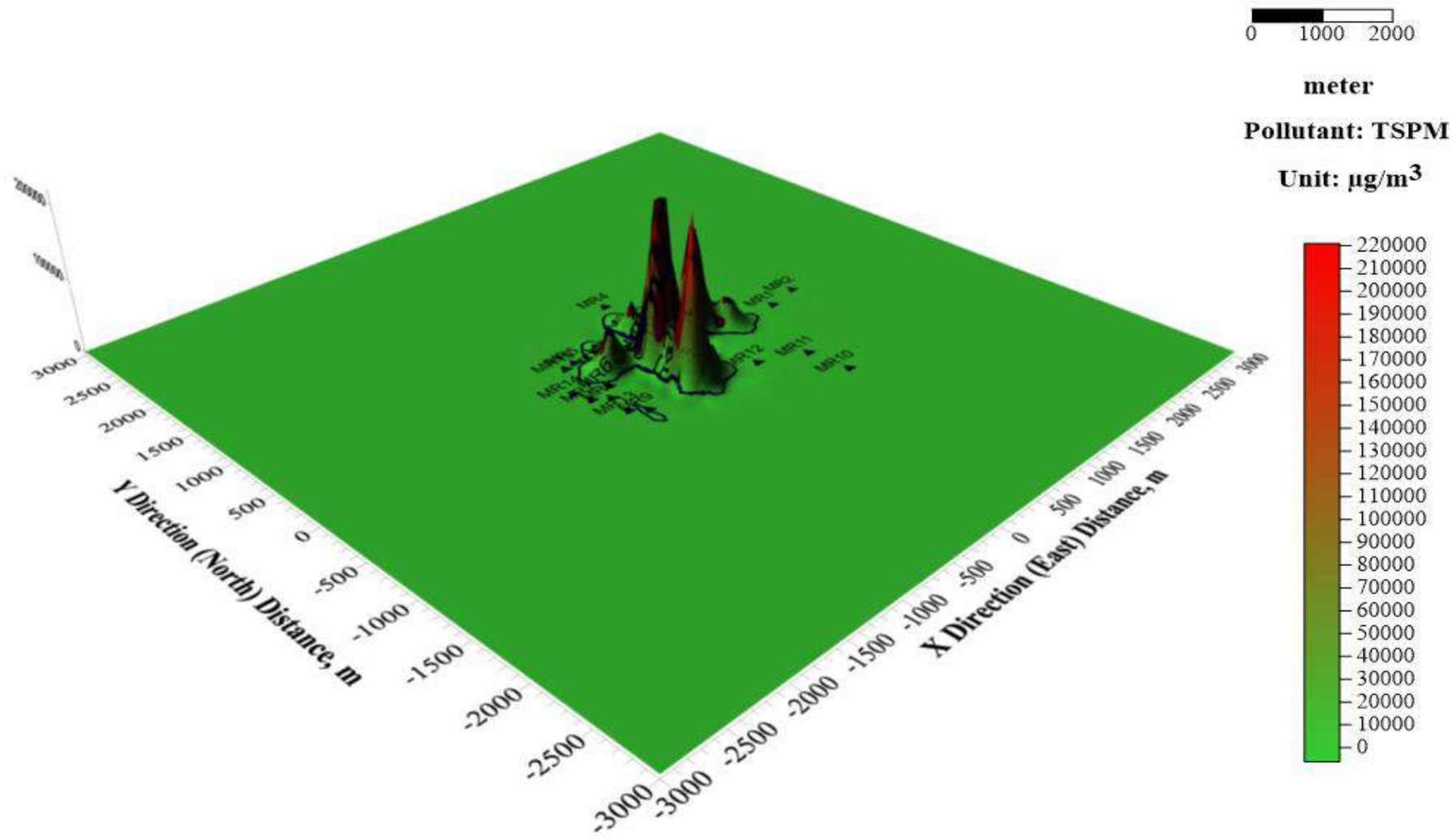


Figure 5.76: Surfer Showing ISCST3 Predicted TSPM Concentration: Tiruppur (Period/Seasonal Average after Control Measures)

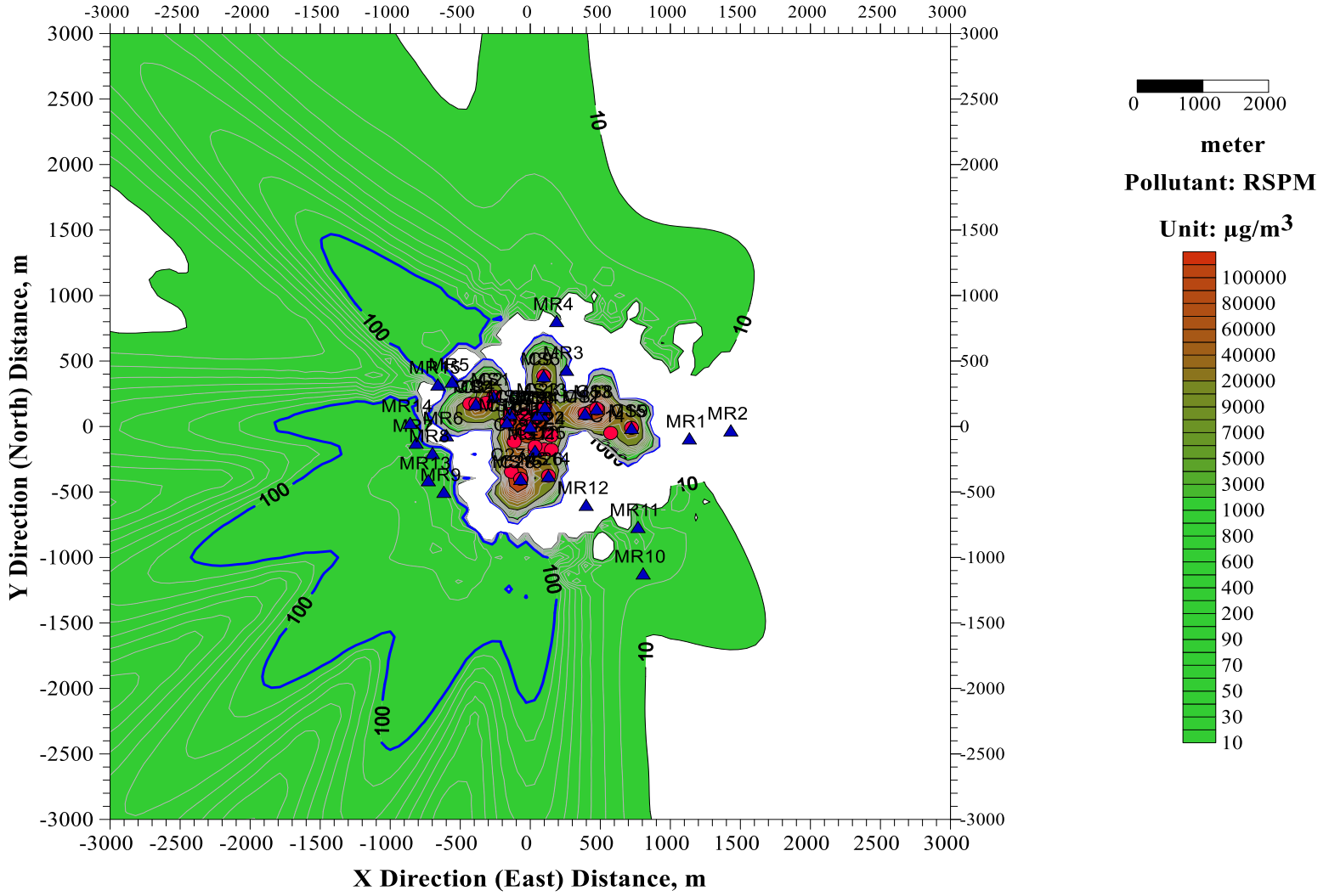


Figure 5.77: Isopleth Showing ISCST3 Predicted RSPM Concentration: Tiruppur (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

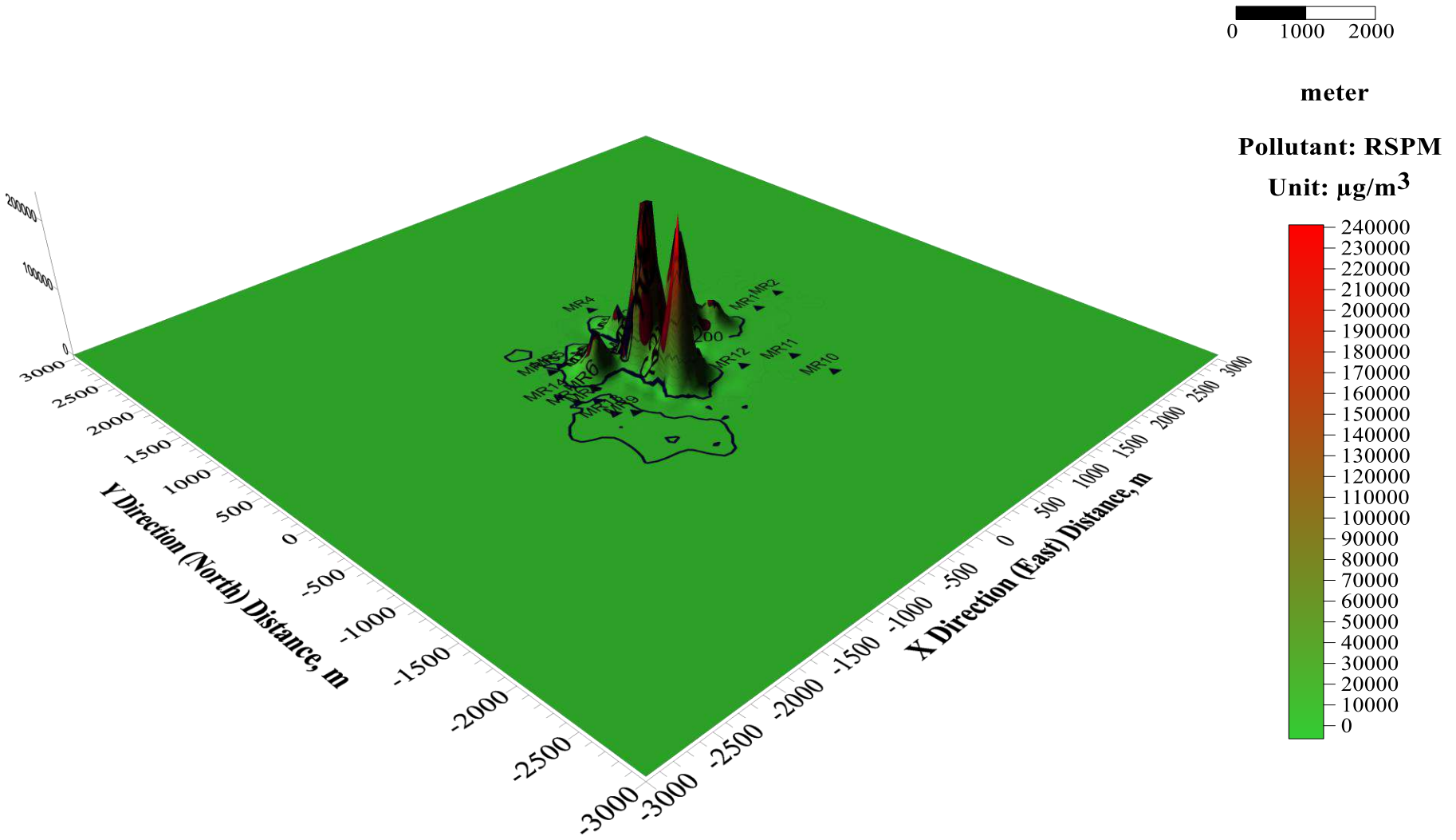


Figure 5.78: Surfer Showing ISCST3 Predicted RSPM Concentration: Tiruppur (First Highest 24 hour Average: Worst Case Scenario after Control Measures)

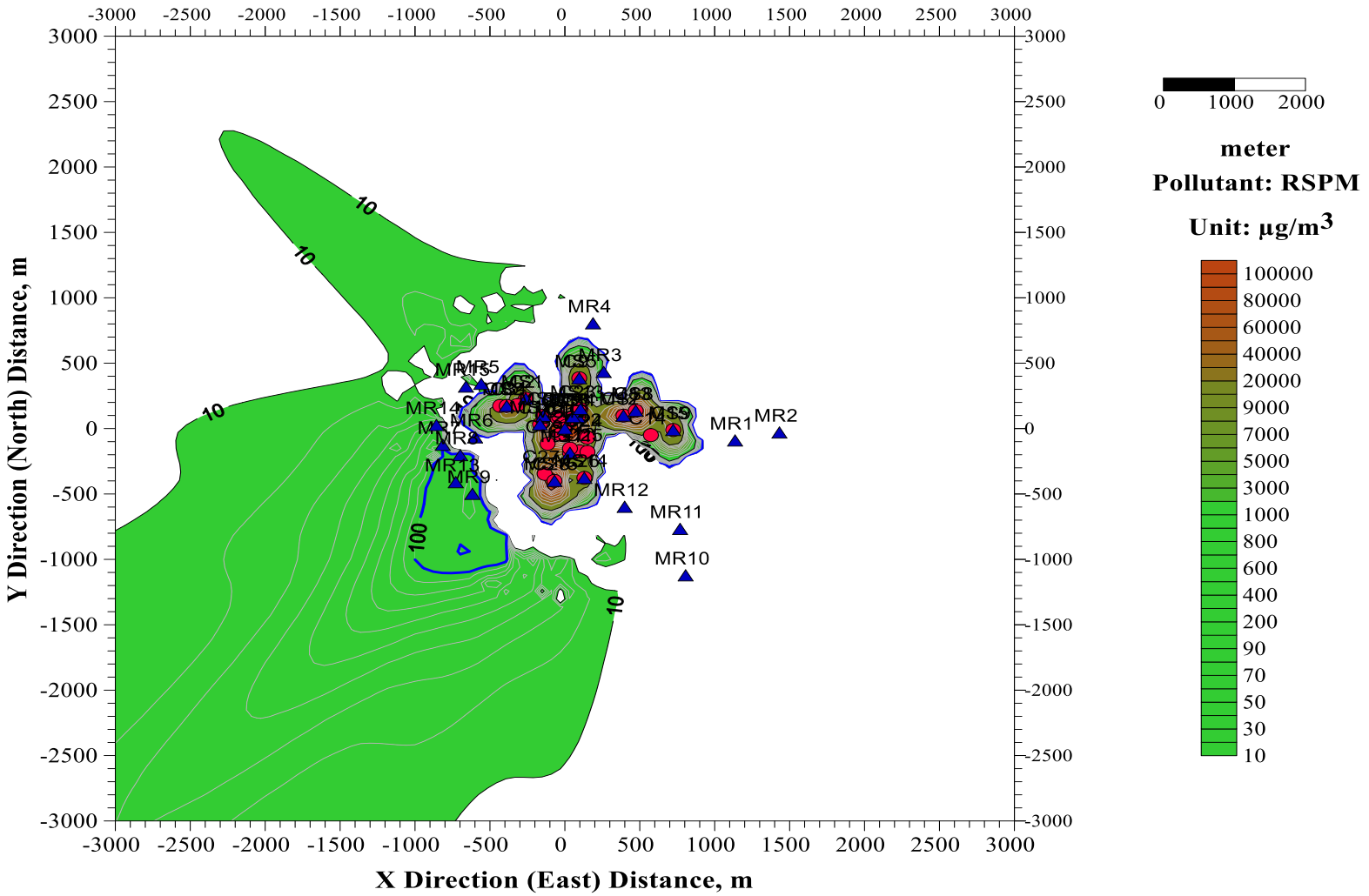


Figure 5.79: Isopleth Showing ISCST3 Predicted RSPM Concentration: Tiruppur (Period/Seasonal Average after Control Measures)

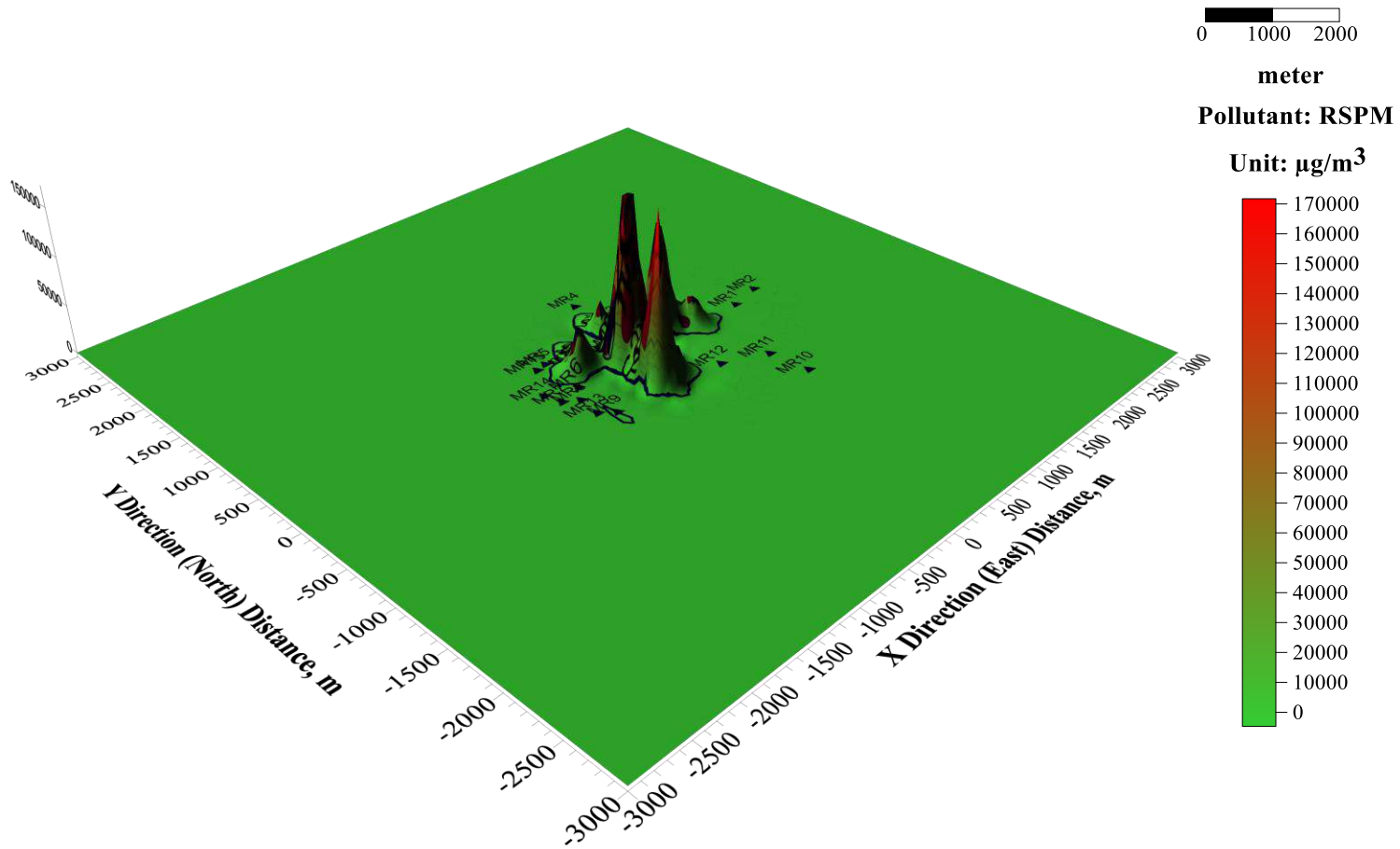


Figure 5.80: Surfer Showing ISCST3 Predicted RSPM Concentration: Tiruppur (Period/Seasonal Average after Control Measures)

5.13.2 Prediction of Deposition profile

Dust particles emitted from a given source when dispersed into the atmosphere settle under gravity at various distances near from the source depending on the meteorological conditions at the project site. Particles larger than 30µm are usually deposited within a short distance from the source and small particles of size in the range of 10 - 15µm stays for a longer time in the atmosphere. Model predictions were computed using daily emission data and on-site meteorology from stone crushing operations at coastal area, Tirusulam, Chennai and inland area, Kodangipallayam, Tiruppur.

The predicted deposition for both the conditions of first 24-hour maximum (critical case) during the monitoring period and also for the entire duration of monitoring period (seasonal average) using AERMOD and ISCST3 are presented in the form of isopleths and surfers as shown in **Figures 5.81 to 5.88** and **Figures 5.89 to 5.96** respectively, for both the coastal area, Tirusulam, Chennai and inland area, Kodangipallayam, Tiruppur.

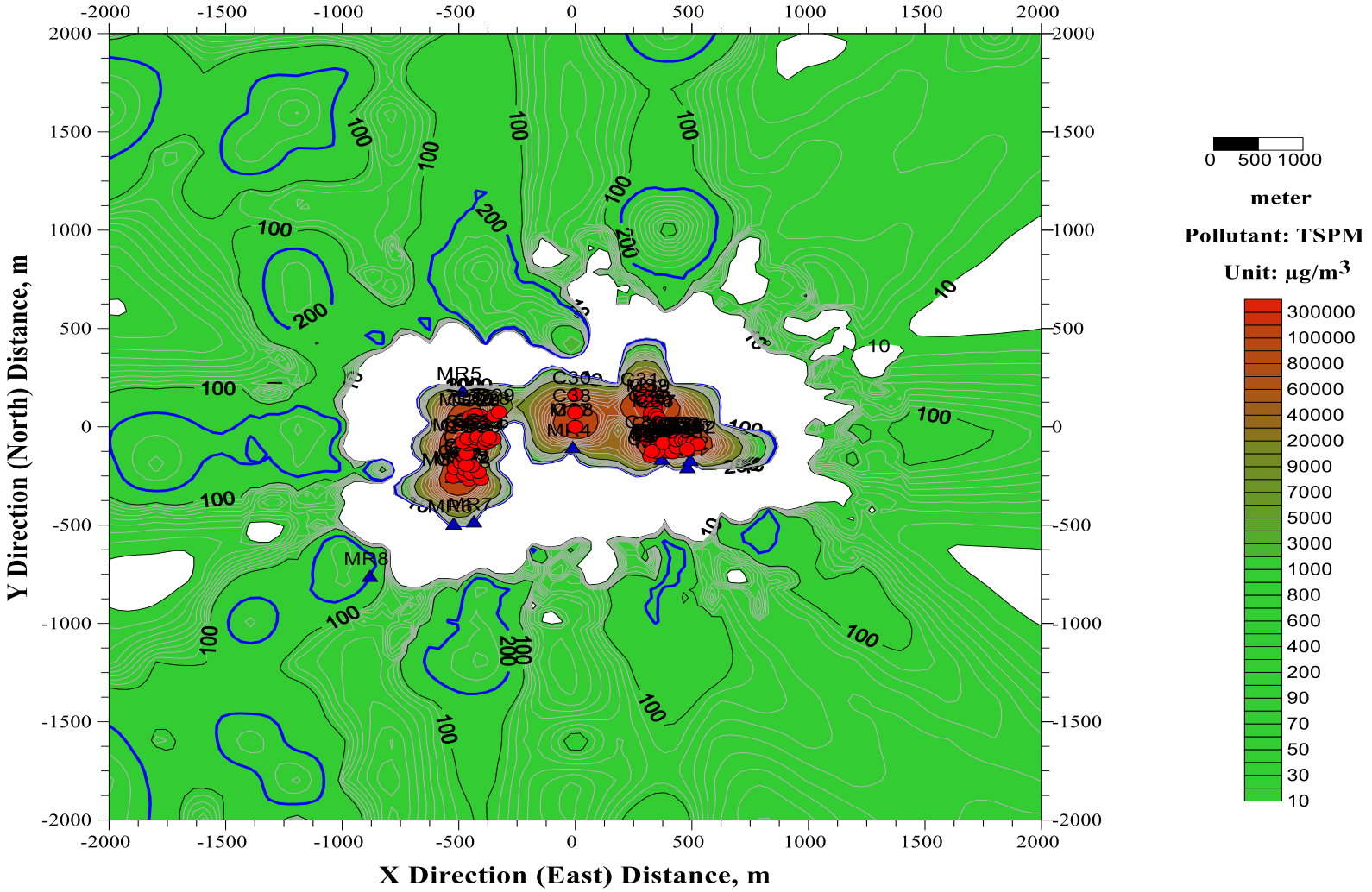


Figure 5.81: Isopleth Showing AERMOD Predicted TSPM Deposition: Tirusulam (First Highest 24 hour Average: Worst Case Scenario with Control Measures)

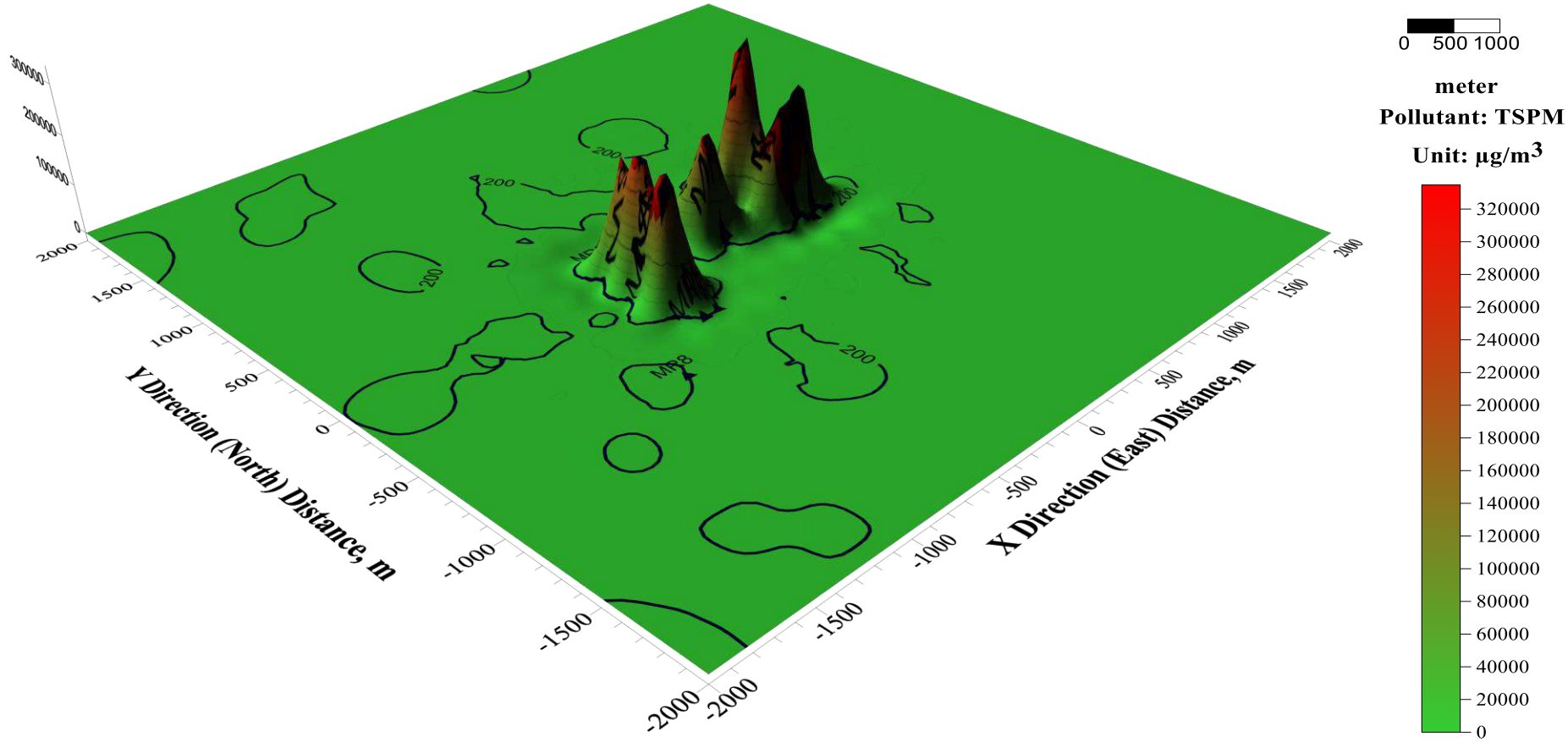


Figure 5.82: Surfer Showing AERMOD Predicted TSPM Deposition: Tirusulam (First Highest 24 hour Average: Worst Case Scenario with Control Measures)

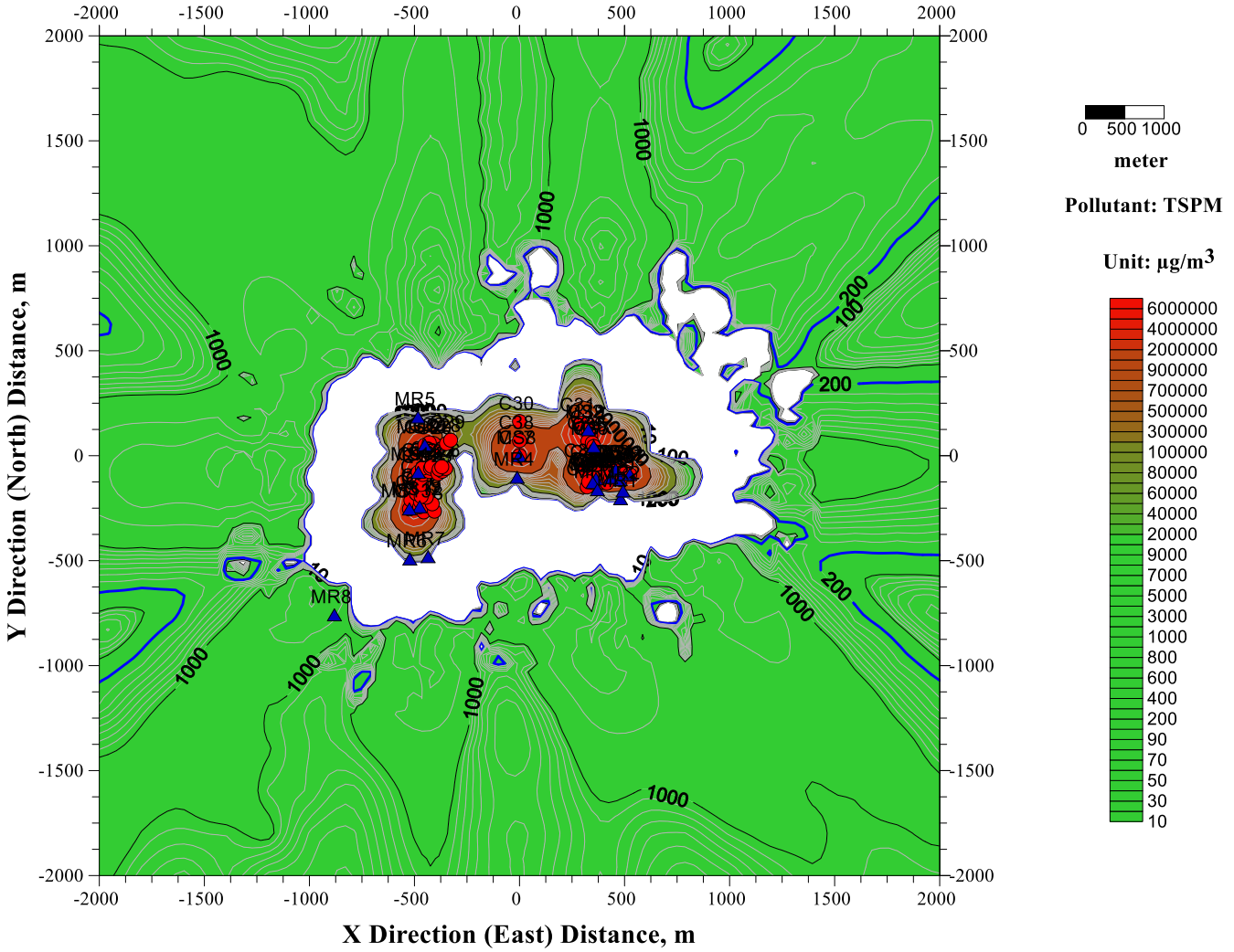


Figure 5.83: Isopleth Showing AERMOD Predicted TSPM Deposition: Tirusulam (Period/Seasonal Average with Control Measures)

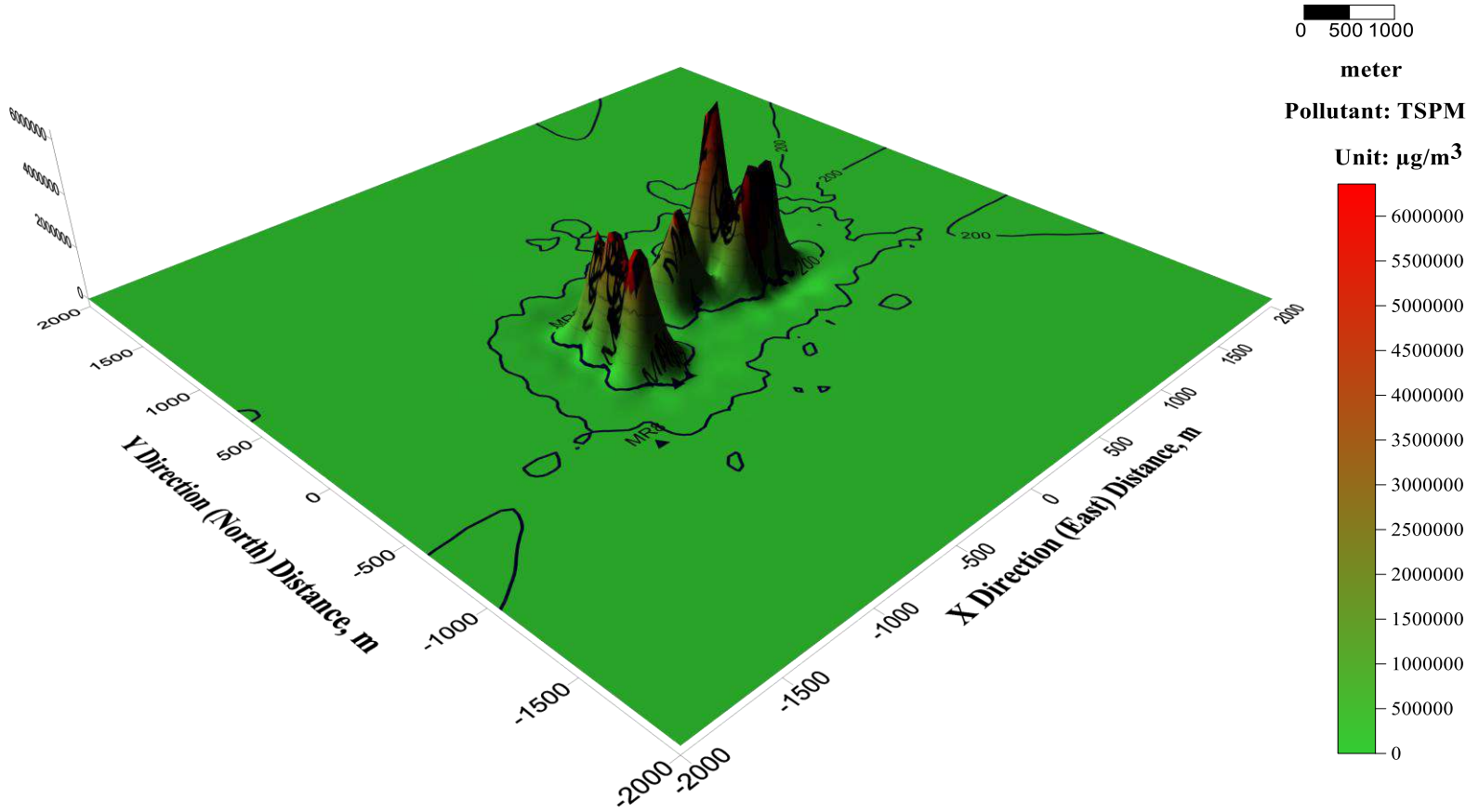


Figure 5.84: Surfer Showing AERMOD Predicted TSPM Deposition: Tirusulam (Period/Seasonal Average with Control Measures)

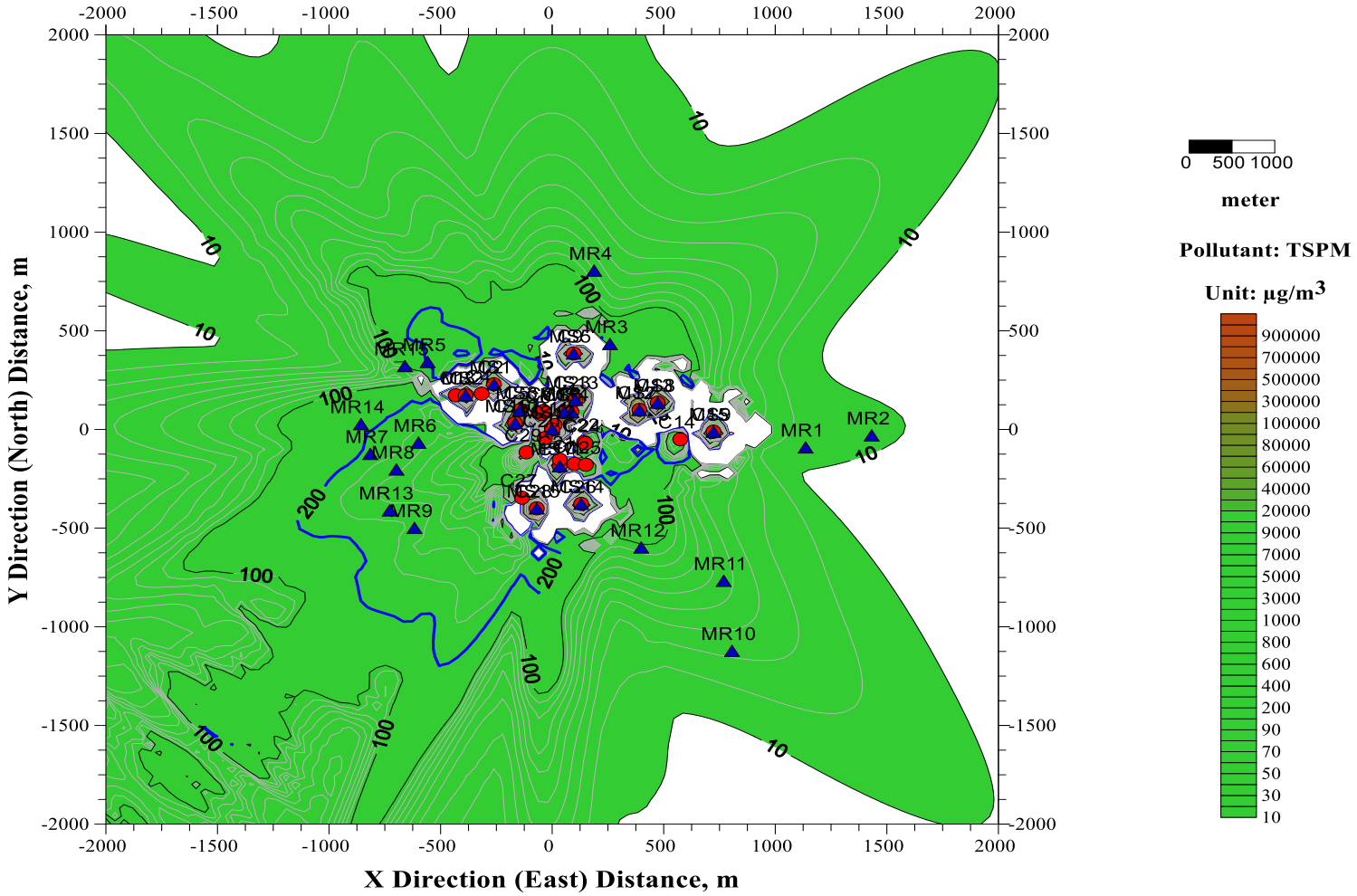


Figure 5.85: Isopleth Showing AERMOD Predicted TSPM Deposition: Tiruppur (First Highest 24 hour Average: Worst Case Scenario with Control Measures)

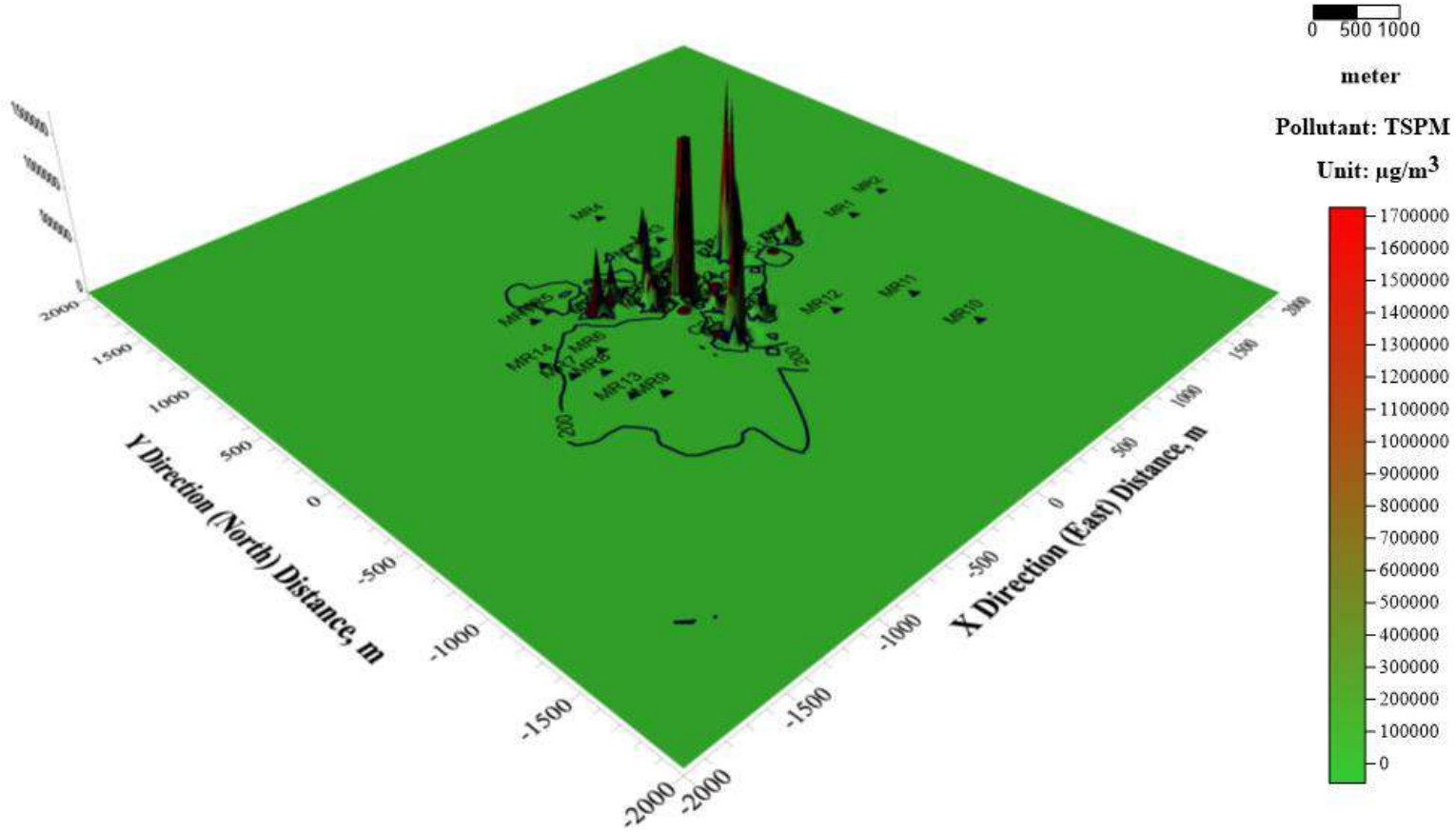


Figure 5.86: Surfer Showing AERMOD Predicted TSPM Deposition: Tiruppur (First Highest 24 hour Average: Worst Case Scenario with Control Measures)

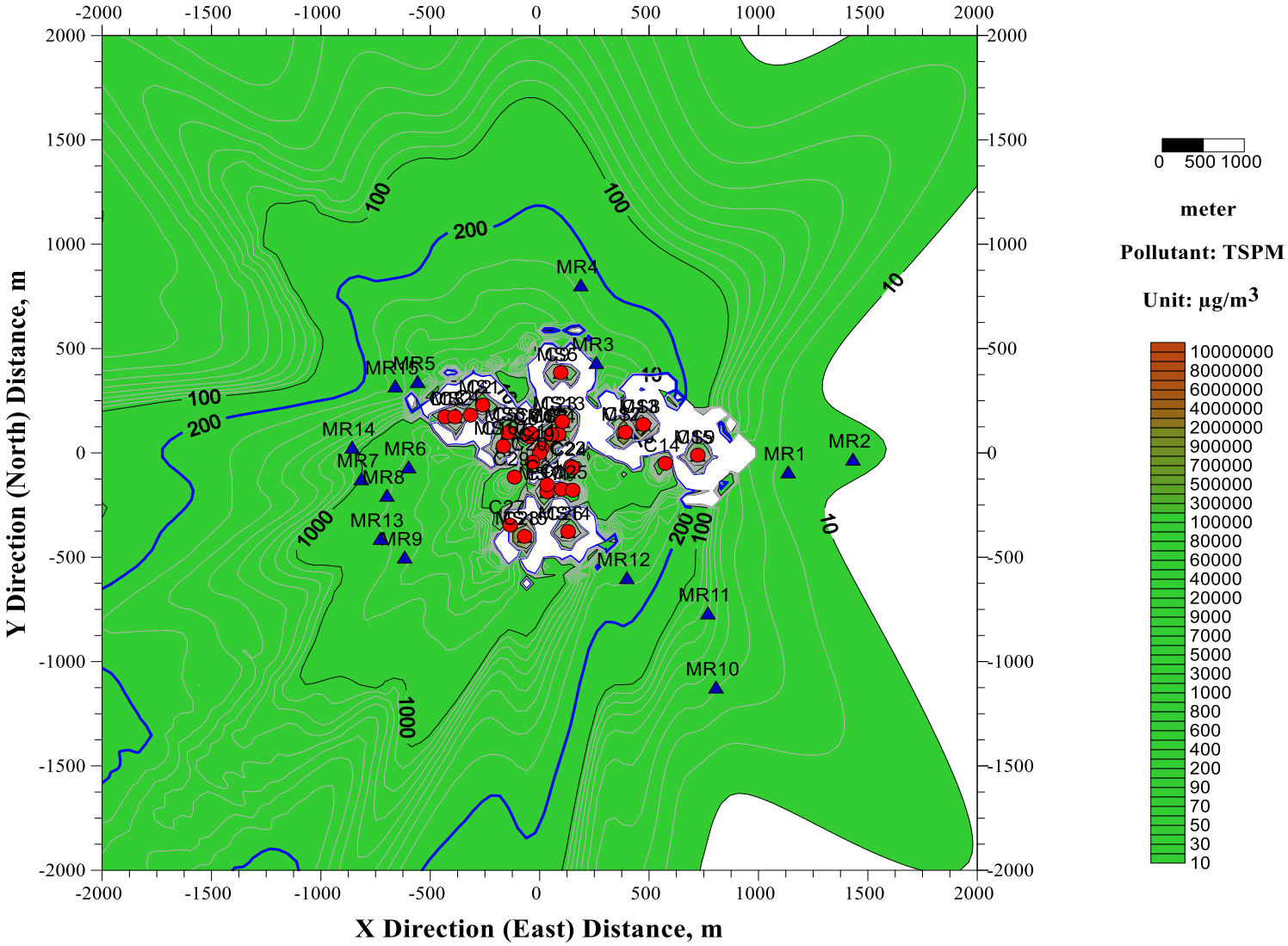


Figure 5.87: Isopleth Showing AERMOD Predicted TSPM Deposition: Tiruppur (Period/Seasonal Average with Control Measures)

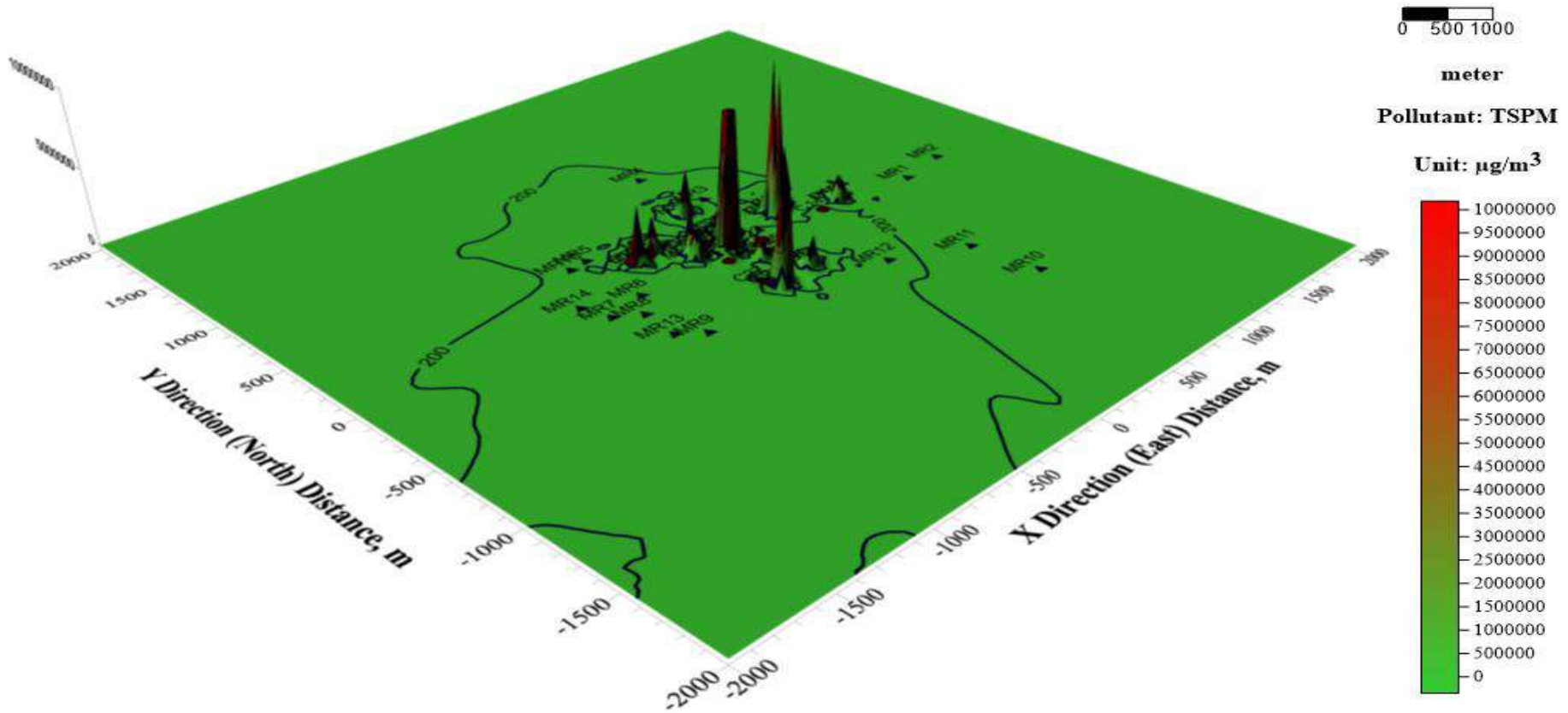


Figure 5.88: Surfer Showing AERMOD Predicted TSPM Deposition: Tiruppur (Period/Seasonal Average with Control Measures)

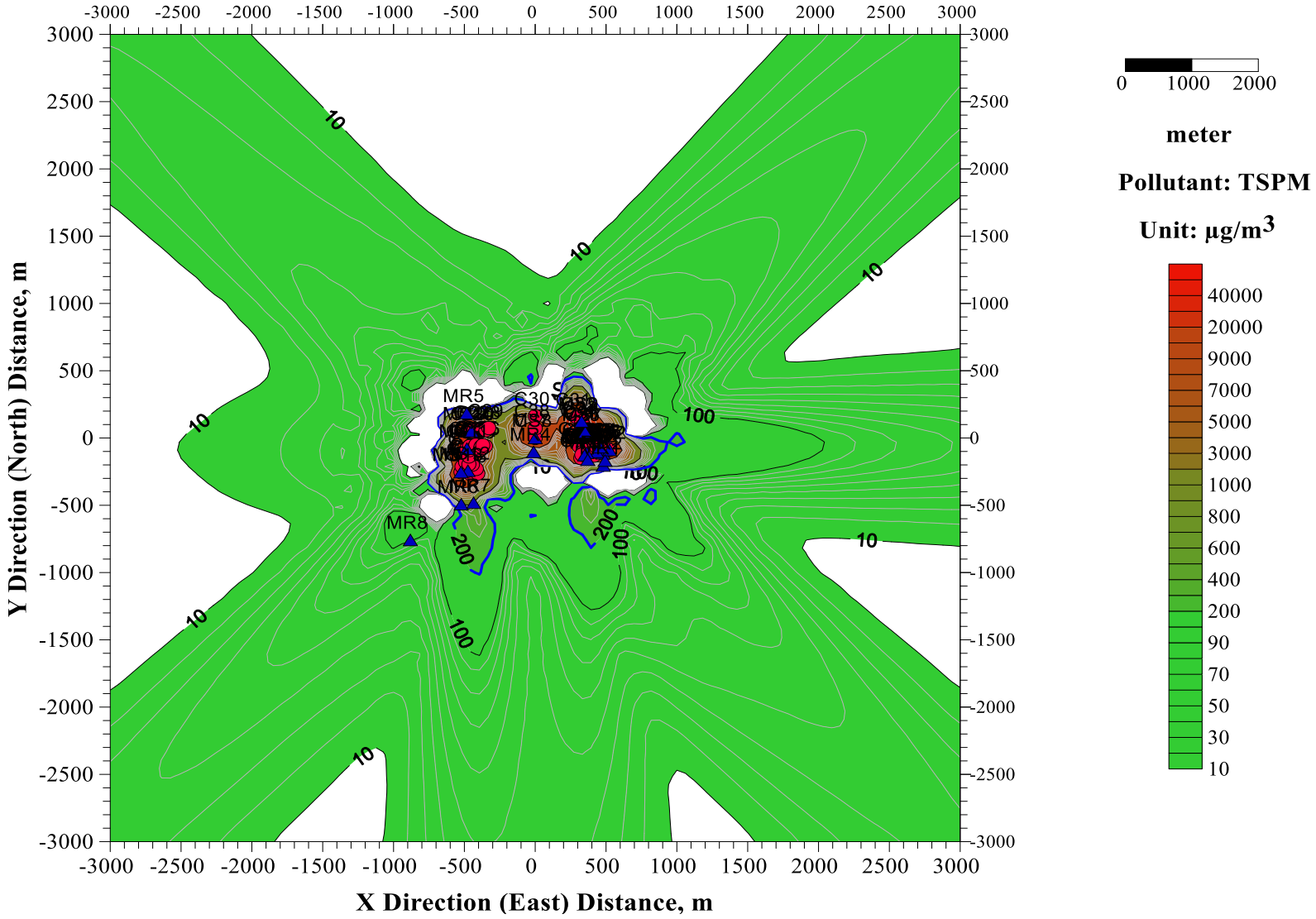


Figure 5.89: Isopleth Showing ISCST3Predicted TSPM Deposition: Tirusulam (First Highest 24 hour Average: Worst Case Scenario with Control Measures)

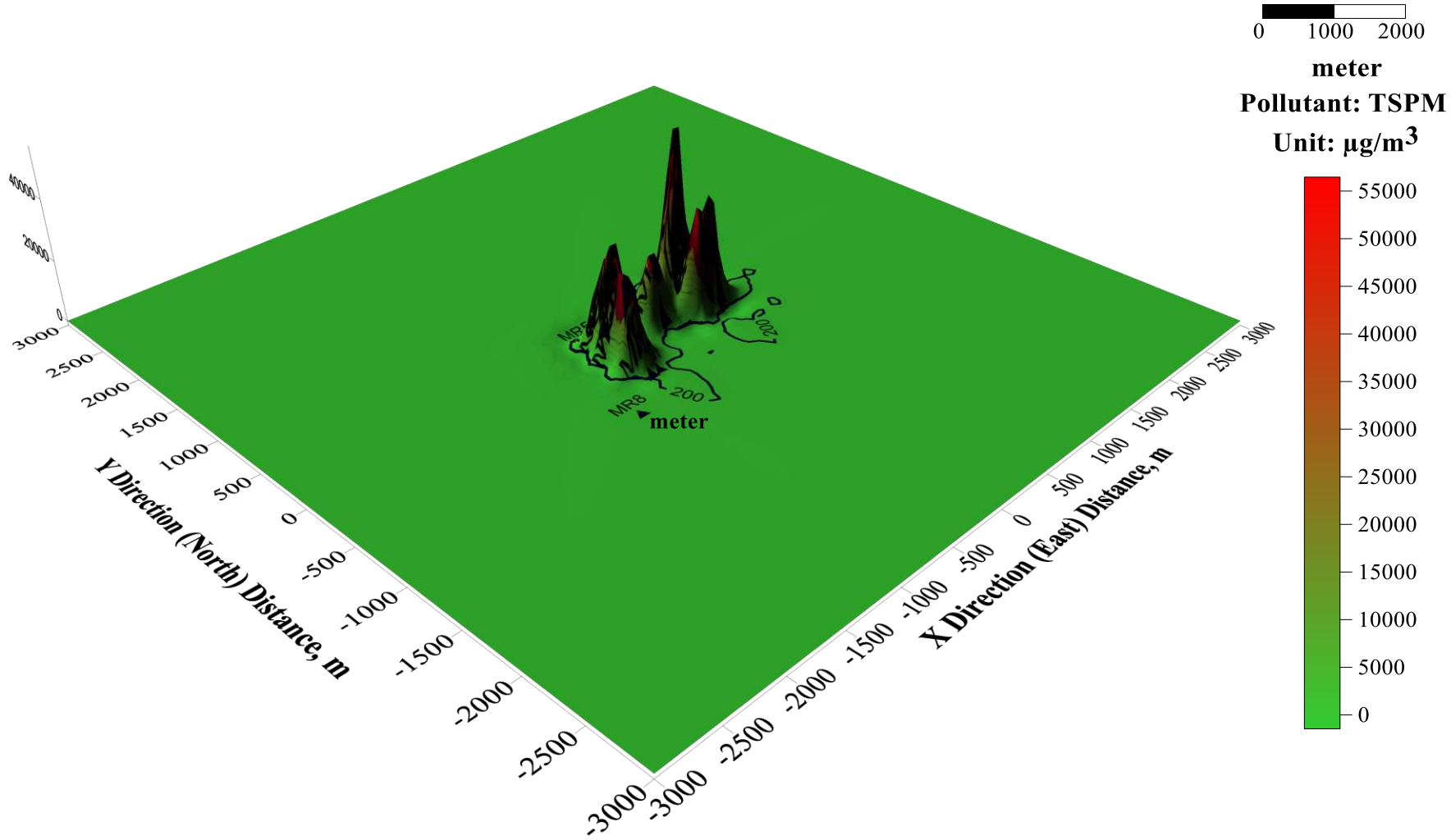


Figure 5.90: Surfer Showing ISCST3 Predicted TSPM Deposition: Tirusulam (First Highest 24 hour Average: Worst Case Scenario with Control Measures)

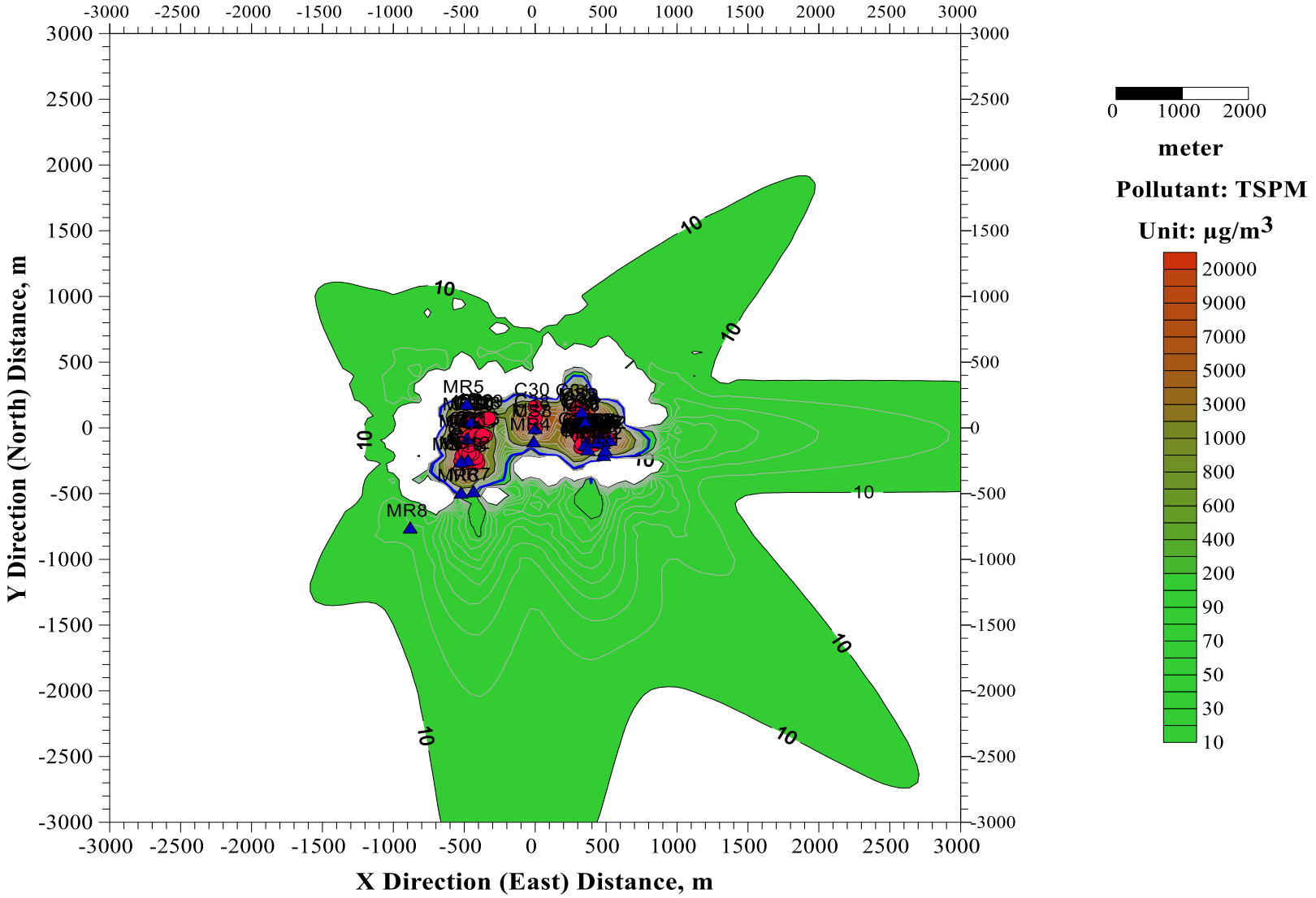


Figure 5.91: Isopleth Showing ISCST3 Predicted TSPM Deposition: Tirusulam (Period/Seasonal Average with Control Measures)

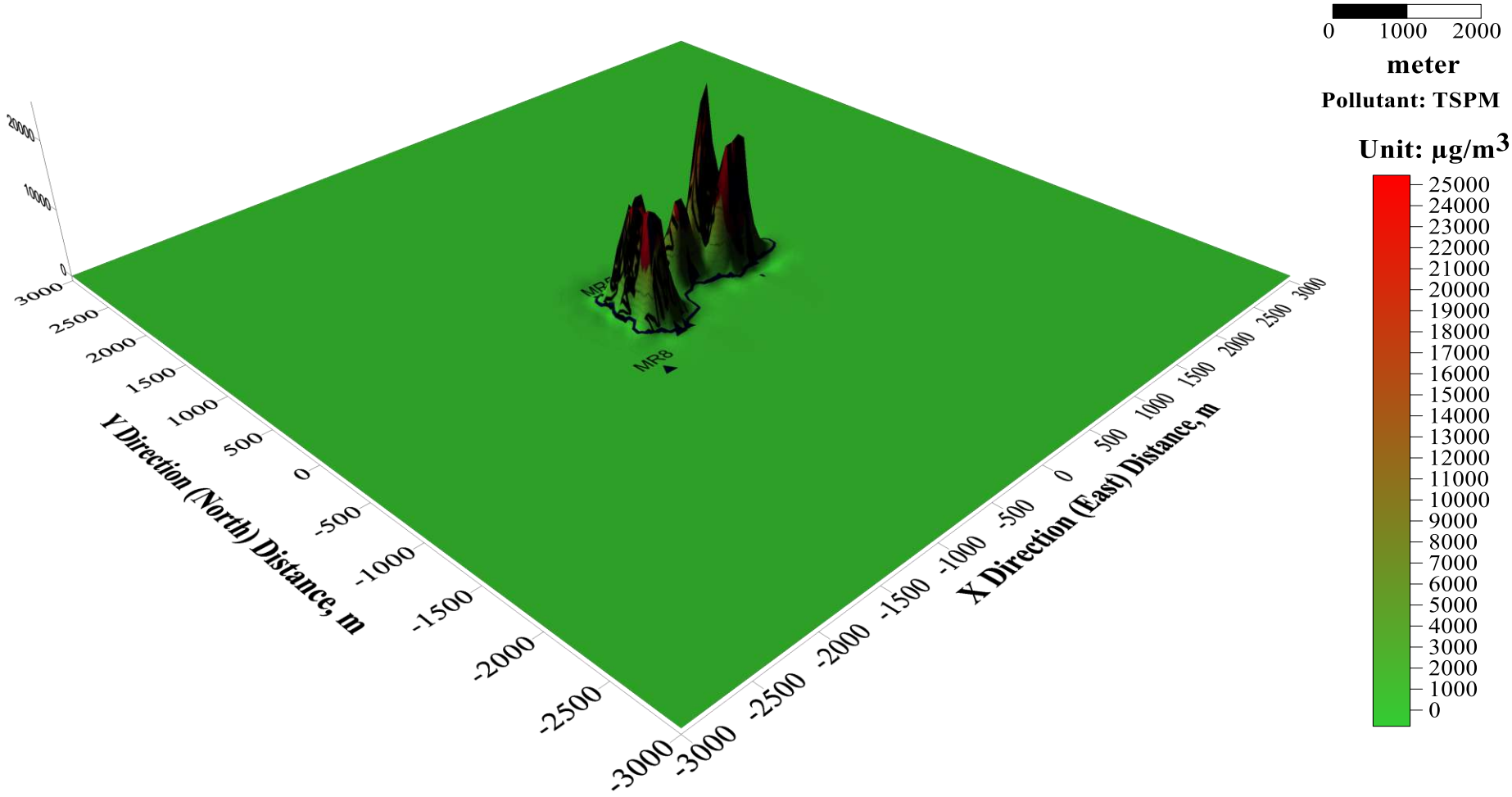


Figure 5.92: Surfer Showing ISCST3 Predicted TSPM Deposition: Tirusulam (Period/Seasonal Average with Control Measures)

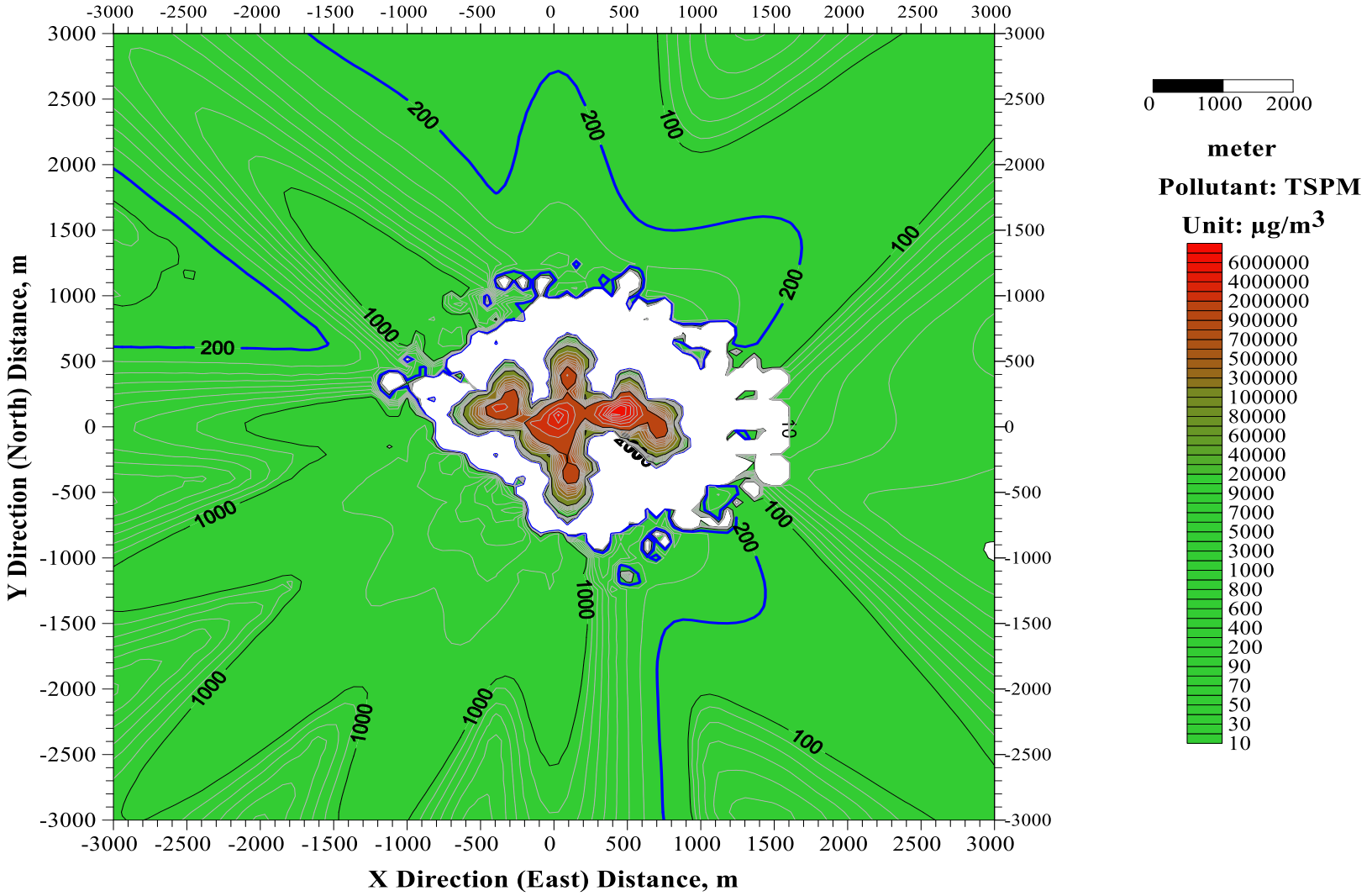


Figure 5.93: Isopleth Showing ISCST3 Predicted TSPM Deposition: Tiruppur (First Highest 24 hour Average: Worst Case Scenario with Control Measures

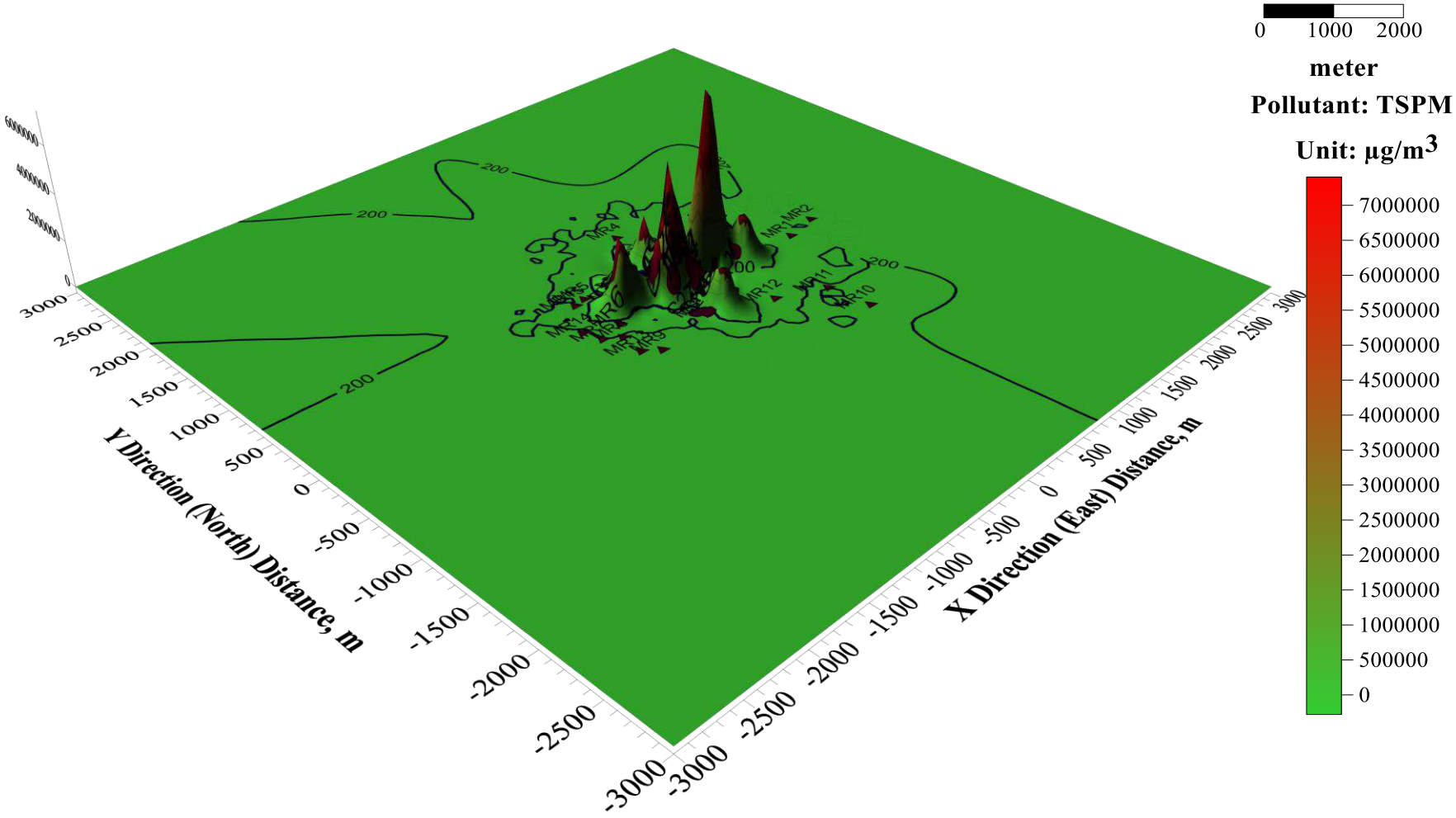


Figure 5.94: Surfer Showing ISCST3 Predicted TSPM Deposition: Tiruppur (First Highest 24 hour Average: Worst Case Scenario with Control Measures)

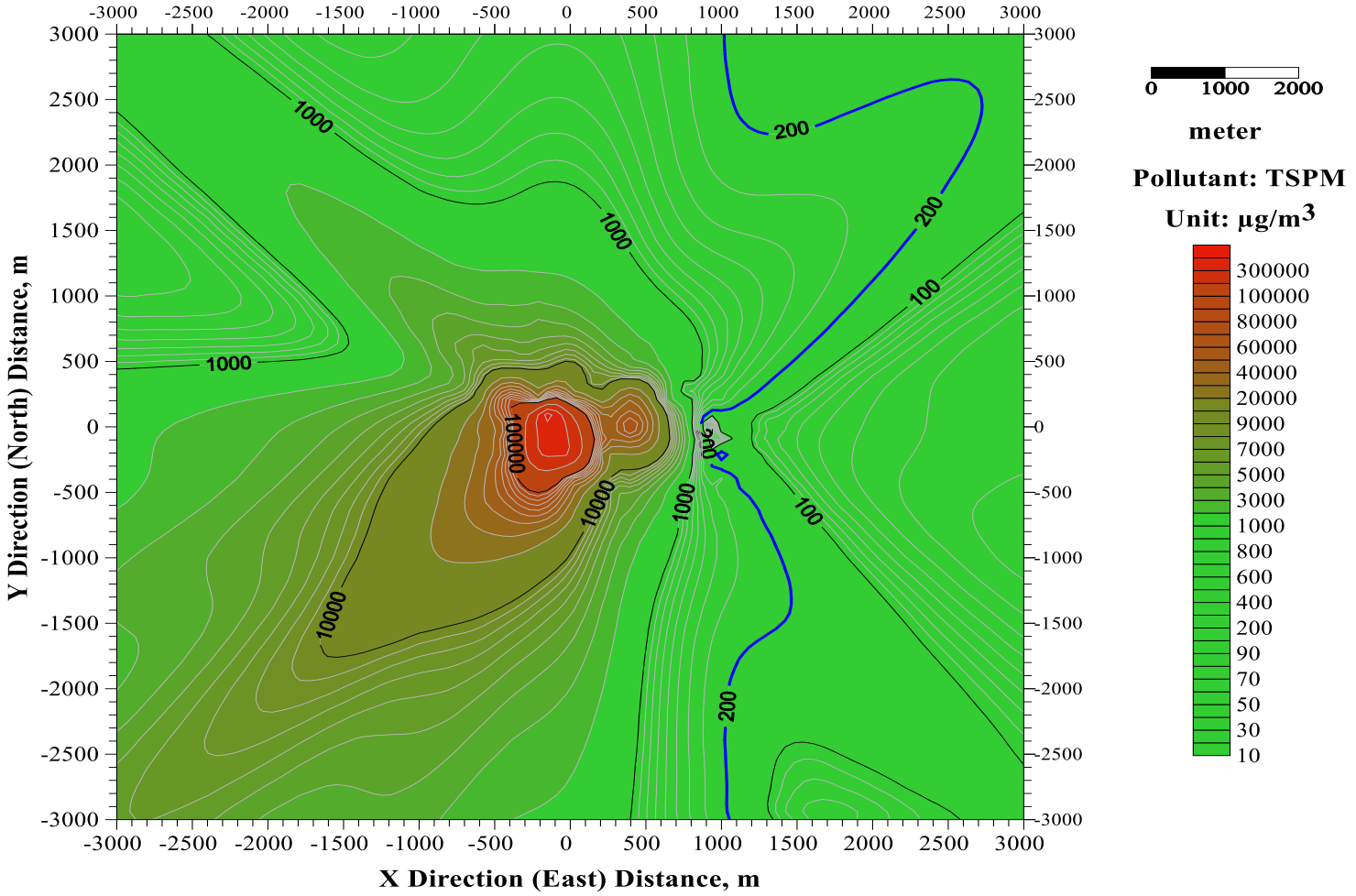


Figure 5.95: Isopleth Showing ISCST3 Predicted TSPM Deposition: Tiruppur (Period/Seasonal Average with Control Measures)

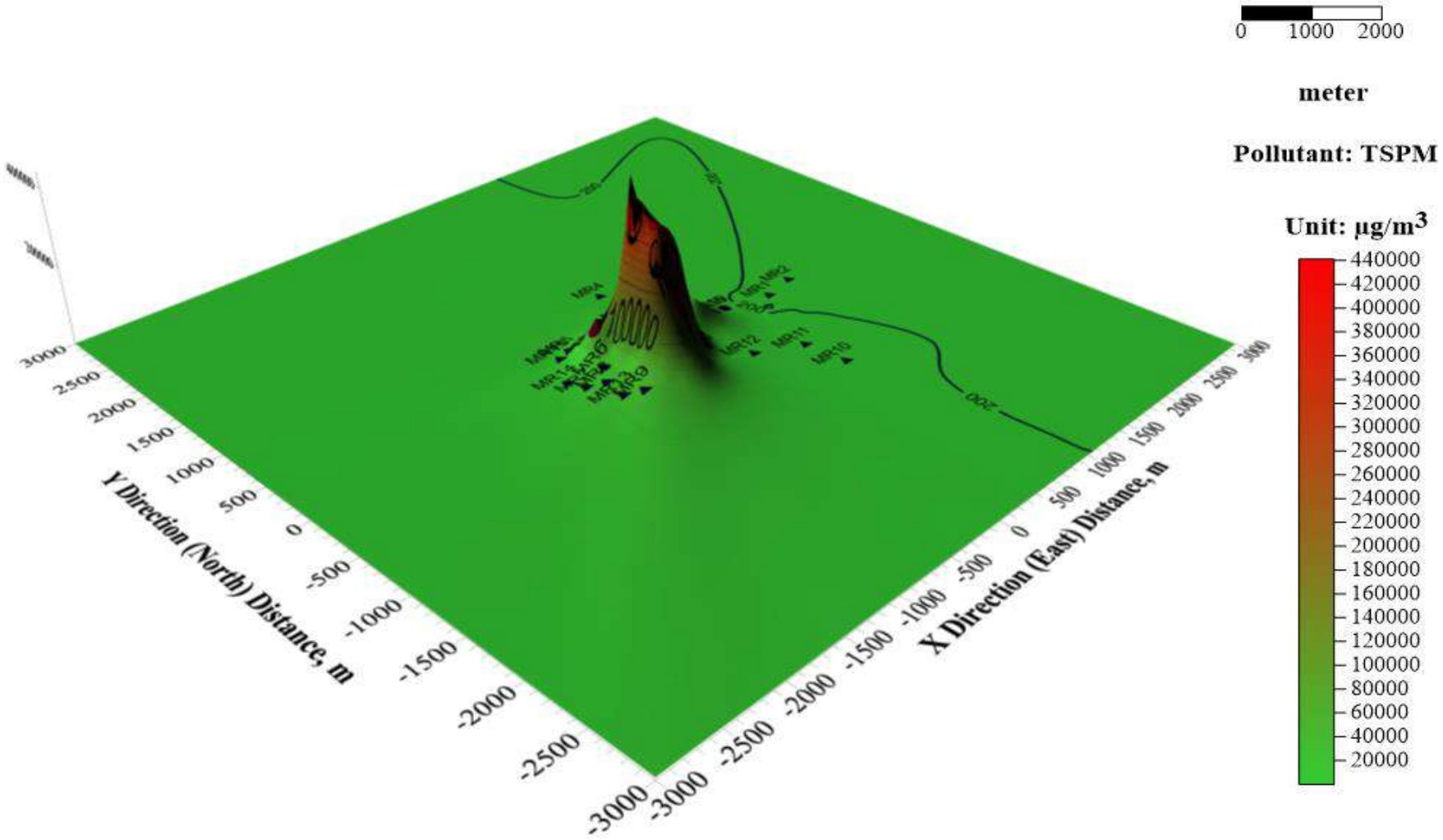


Figure 5.96: Surfer Showing ISCST3 Predicted TSPM Deposition: Tiruppur (Period/Seasonal Average with Control Measures)

5.14 Recommended safe distance

Based on the ambient air quality monitoring and model predicted concentration, impact zones for different crusher operating conditions were drawn. The impact zone was by demarcated by drawing isopleths of concentration 200 µg/m^3 for TSPM and 100 µg/m^3 for PM_{10} and 60 µg/m^3 for $PM_{2.5}$ which are the standard limit set by CPCB for 24 hour averaging period. The safe distances were estimated for both these locations using measured and predicted concentrations. The impacts zone drawn using measured concentration at selected ambient air quality monitoring locations and predicted concentration for these locations are given in **Tables 3.23 and 5.8.**

5.15 Safe distance for Coastal Area: Tirusulam, Chennai

5.15.1 Model AERMOD

Safe distance for TSPM predicted concentration of AERMOD varied from 65 to 1750 m with a mean of 714 m for critical case. The safe distance based on TSPM predicted concentration of AERMOD based on the period/seasonal average varied from 48 to 177 m with a mean of 134m (**Table 5.7**).

Safe distance for RSPM predicted concentration of AERMOD varied from 65 to 2000 m with a mean of 1086 m for critical case. The safe distance based on RSPM predicted concentration of AERMOD based on the period/seasonal average varied from 97 to 177 m with a mean of 142 m (**Table 5.7**).

5.15.2 Model ISCST3

Safe distance for TSPM predicted concentration of ISCST3 varied from 40 to 600m with a mean of 320 m for critical case. The safe distance based on TSPM predicted concentration of ISCST3 based on the period/seasonal average varied from 40 to 240 m with a mean of 183m (**Tables 3.23 and 5.8**).

Safe distance for RSPM predicted concentration of ISCST3 varied from 80 to 1800 m with a mean of 896m for critical case. The safe distance based on RSPM predicted concentration of ISCST3 based on the period/seasonal average varied from 40 to 470 m with a mean of 273 m (**Tables 3.23 and 5.8**).

5.16 Safe distance for inland area, Kodangipallayam, Tiruppur

5.16.1 Model AERMOD

Safe distance for TSPM predicted concentration of AERMOD varied from 16 to 2000m with a mean of 587m for critical case. The safe distance based on TSPM predicted concentration of AERMOD based on the period/seasonal average varied from 48 to 2000m with a mean of 438m (**Table 5.7**).

Safe distance for RSPM predicted concentration of AERMOD varied from 48 to 2000m with a mean of 855m for critical case. The safe distance based on RSPM predicted concentration of AERMOD based on the period/seasonal average varied from 32 to 2000m with a mean of 1145m (**Table 5.7)**

5.16.2 Model ISCST3

Safe distance for TSPM predicted concentration of ISCST3 varied from 120 to 320m with a mean of 257m for critical case. The safe distance based on TSPM predicted concentration of ISCST3 based on the period/seasonal average varied from 80 to 320m with a mean of 248m (**Tables 3.23 and 5.8**).

Safe distance for RSPM predicted concentration of ISCST3 varied 80 to 1590m with a mean of 452m for critical case. The safe distance based on RSPM predicted concentration of AERMOD based on the period/seasonal average varied from110 to 290m with a mean of 232m (**Tables 3.23 and 5.8**).

Table 5.7
Safe Distance for Cluster of Crushers after Control Measures at Tirusulam, Chennai and Kodangipallyam, Tiruppur (based on AERMOD Prediction)

Pollutant	Maximum			Minimum			North		East		South		West		Safe Distance, m (Average)
	Dir, degree	Dist, m	crusher no	Dir, degree	Dist, m	crusher no	Dist, m	crusher no	Dist, m	crusher no	Dist, m	crusher no	Dist, m	crusher no	
Coastal Area: Tirusulam, Chennai															
First Highest 24 hour Average: Worst Case Scenario															
TSPM	S	>2000	C1	E	65	C47	242	C31	81	C9	>1750	C1	145	C47	714
RSPM	S,SW,W	>2000	C1,C14	W	65	C1	226	C30	226	C36	.>2000	C1	>2000	C14	1086
Period/Seasonal Average															
TSPM	N,E	177	C31,C58	S	48	C47	177	C31	177	C58	48	C47	177	C19	134
RSPM	W	177	C38	N	97	C31	177	C30	129	C58	129	C1	145	C19	142
Inland Area: Kodangipallayam, Tiruppur															
First Highest 24 hour Average: Worst Case Scenario															
TSPM	S	532	C28	E	16	C14	48	C9	339	C26	532	C28	>2000	C27	587
RSPM	SW,NW	>2000	C27,C3	E	48	C15	581	C9	65	C15	435	C26	>2000	C27	855
Period/Seasonal Average															
TSPM	SW	>2000	C16	E	32	C15	48	C12,C13	32	C15	258	C28	258	C16	438
RSPM	SW,NW	>2000	C28	E	32	C26	97	C12	32	C26	419	C28	>2000	C27	1145

Table 5.8
Safe Distance for Cluster of Crushers after control measures at Tirusulam, Chennai and Kodangipallyam, Tiruppur (ISCST3 Prediction)

Pollutant	Maximum			Minimum			North		East		South		West		Safe Distance, m (Average)
	Dir, degree	Dist, m	crusher no	Dir, degree	Dist, m	crusher no	Dist, m	crusher no	Dist, m	crusher no	Dist, m	crusher no	Dist, m	crusher no	
Coastal Area: Tirusulam, Chennai															
First Highest 24 hour Average: Worst Case Scenario															
TSPM	**S**	588	C3	N	39	C30	196	C31	353	C57	588	C3	157	C1	320
RSPM	E	1792	C57	N	78	C30	273	C31	1792	C57	1286	C3	156	C1	896
Period/Seasonal Average															
TSPM	E	235	C57	N	39	C30	235	C31	235	C57	196	C37	157	C1	183
RSPM	S	468	C3	N	39	C30	195	C31	273	C57	468	C3	195	C1	273
Inland Area: Kodangipallayam, Tiruppur															
First Highest 24 hour Average: Worst Case Scenario															
TSPM	S	316	C28	E	118	C15	316	C9	237	C14	316	C28	237	C1	257
RSPM	NW	1587	C1	E	77	C15	310	C9	271	C14	271	C28	194	C1	452
Period/Seasonal Average															
TSPM	N,S,N	314	C9,C28 ,C13	E	78	C15	314	C9	235	C14	314	C28	235	C1	248
RSPM	N,S	286	C9,C28	E	107	C15	286	C9	214	C14	286	C28	214	C1	232

Chapter 6

Green Belt Development

6.1 Preamble

Urban green belts are considered as the lungs of the cities as they act as a sink for some of the harmful gases released by vehicles and industries operating in the area. Whether sprawling over a large or a smaller area, these green belts are found in all cities and play a very important role. They serve as sink for the pollutants, check the flow of dust and bring down noise pollution level.

6.2 Design of Green Belt for Stone Crushing Industries

Each stone crusher need to be environmentally improved by planting trees apart from the main road bearing incessant plying vehicles augmenting dust and noise. Hence, it is better to plant tree species, around the stone crushers and the road side also, as detailed below.

6.3 Peripheral planting to protect the nearby residential area

To minimize the impact of dust produced from the stone crushers, tall dense trees shall be planted as indicated below:

Polyalthia	நெட்டிலிங்கம்
Casuarina junghuniana	தாய்லாந்து சவுக்கு
Kaya senegalensis	ஆப்பிரிக்கன் மஹோகனி
Melia dubia	மலை வேம்பு
Cassia siamia	மஞ்சக் கொன்றை

6.4 Avenue planting

Avenue plantation shall include green belt development along the roads on both sides of the roads as indicated below:

Casuarina junghuniana	தாய்லாந்து சவுக்கு
Hibiscus tiliaceous	காட்டுப் பூவரசு
Delonix regia	மயில் கொன்றை
Samanea saman	தூங்கும் வாகை
Cassia alata	சீமை அகத்தி

6.5 Planting around crusher

To avoid dust emanating from each stone crusher, tree plantation need to be designed to arrest the fugitive dust at the source itself. This includes plantation of the following species:

Delonix regia	மயில் கொன்றை
Peltophoursum	இயல் வாகை
Pongamia pinnata	புங்கன்
Cassia fistula	சரக் கொன்றை
Azadirachta indica	வேம்பு
Acacia auriculiformis	கத்தி சவுக்கு
Simaruba glauca, etc	சொர்க்க மரம்

The species to be chosen are such that they have profuse foliage to abate pollution and are fast growing.

6.6 Planting around Quarry

To reduce noise and dust pollution from quarrying operations the following species were identified:

1. Polyalthia longifolia	5'distance
2. Casuarina equisitifolia	5'
3. Acacia auriculiformis	8'
4. Calophyllum inophtllum	12'
5. Bassia latifolia	15'
6. Ficus benjamina	10'
7. Murraya exotica	5'
8. Nerium oleander	5'
9. Bougainvillea varieties	5'
10. Thevitia nerifolia	8'
11. Tabernae montona caronaria	8"

6.7 Planting technique

The pit size shall be 1 m^3 the pits will be filled with two parts & manure especially, vermicasting, one-part sand and one-part red earth. 1m^3 pits found to promote fast growth in trees which is very much essential in this case as the tree growth is likely to be retarded because of the constant dust produced and deposited on the surface soil. Two soil workings are must per year to enable fast growth.

6.7.1 Espacement

Except for the species, Casuarina and Polyalthia, where the espacement will be 1m x 1m, for the rest of the species the spacing will be 3m x 3m

6.7.2 Selection of plant

Plant selection: Healthy grown saplings free from pests with a height of minimum 1m are preferable. The saplings shall be transported from the different available nursery points.

6.8 Maintenance after planting

Staking should be given for straight growth. Tree guard should be provided if necessary. Regular watering is must for minimum of two years and it may vary according to the climatic condition. Technical expert's inspection is must to monitor proper growth. Casualties should be immediately replaced. Two soil workings are absolutely necessary.

Chapter 7

Control Measures

7.1 Preamble

Planning control measures at the Stone Crushing Industries (SCIs) plays an important role in the mitigation of dust particles emanating from the Stone Crushing Industries (SCIs) considering the emissions from SCIs are fugitive in emissions, not vented through proper channel or stacks, unorganized and highly labor intensive units. For SCIs 2 standards are to be followed one for the source and another for the ambient air for the delineation of safe distance from SCIs to the nearby habitation is detailed below used for the formulation of the safe distance based on the results of the monitoring, modelling and simulation exercise carried out in this study using models.

7.2 Standards for the Stone Crushing Industries (SCIs)

7.2.1 Source Standards

The source standards stipulate the following standards for suspended particulate matter in stone crushing units:

The standards consist of two parts:

i) Implementation of following pollution control measures
   a) Dust containment cum suppression system for the equipment
   b) Construction of wind breaking walls
   c) Construction of metaled roads within the premises
   d) Regular cleaning and wetting of the ground within the premises
   e) Growing of a green belt along the periphery

i) Quantitative standard for the TSPM

The suspended particulate matter measured between 3 - 10 meters from any process equipment of a stone crushing unit shall not exceed 600 µg/m^3

7.2.2 Ambient Air Quality Standards

The concentration of the dust particles in terms of PM_{10} and $PM_{2.5}$ shall not exceed the permissible Indian standards of 100 and 60 µg/m^3 in ambient air on the 24 hourly average basis. Considering the above two standards for the source and in ambient air the following control measures are devised for the SCIs to arrest the spread of the pollutants.

7.3 Control measures at Stone Crushing Industries (SCIs)

Control measures for reducing or eliminating fugitive emissions from stone crushing plants include the following:

- Wetting of material or surfaces with water with or without surfactants or foaming agents
- Covering open operations to prevent dust entrainment by the wind

- ❖ Reducing the drop height of dusty material
- ❖ Using hooding, industrial ventilation systems and dust collectors (e.g. bag houses) on dusty processes amenable to enclosure

The National Productivity Council demonstrated a suitable dust suppression and containment system for the stone crusher industries in Tamil Nadu. The dust containment system comprises of building enclosures over the major dust emission sources so as to contain the dust within the housing. Only the rotary screen is considered for dust containment enclosures. It is not recommended to enclose the jaw crusher as frequent manual intervention and attention is required. The dust suppression system comprises of spraying of water as a fine mist through special nozzles over such dust generation sources as material transfer points.

7.4 Recommendation

7.4.1 Cluster of crushers at Tirusulam, Chennai

Emissions from stone processing are considered to be fugitive when the sources are not vented to a bag house or contained in an enclosure with a forced air vent or stack. Water sprinkling at dust discharge points wets the dust particles and augments settling. The other control measures for reducing dust emission should include the following good housekeeping practices:

1. The drop height should be kept at a minimum while loading and unloading operation
2. Fine powder should be collected at the ground level and disposed of immediately
3. Conveyor chutes should be provided at the discharge points
4. Covering open operations to prevent dust entrainment by the wind
5. Raising a green belt around the Stone Crushing Industries (SCIs) to arrest the spread of particulate matter along the boundary of each SCIs on all the sides with evergreen high foliage trees like Neem, Casaurina, Tamarind and other local trees.
6. Construction of metaled road (paved) leading to the individual crushers
7. On the road sides also trees should be planted to arrest the dust from vehicular movement
8. Fine dust accumulated in the crushing area should be collected below the ground level and periodically cleared and the dumps should be covered with tarpaulins to arrest the spread of dust
9. As an occupational safety measure all the workers should be provided with nose masks to avoid dust entering the respiratory system
10. The fine powder accumulated so far should be immediately disposed off and the crushers should follow periodical disposal practice in consultation with TNPCB

11. Good house-keeping by way of spraying water at the vulnerable points/locations to arrest the spread of dust particles should be practiced
12. Drop height of the conveyors should be kept at the minimum
13. Wind breaking wall/net should be provided all along the stone crushers adjacent to residential areas
14. No more stone crushers should be allowed in this area
15. A minimum distance of 500 m with a green belt of 5 to 10m width should be provided around the periphery of each Stone Crushing Industries (SCIs) at Tirusulam, Chennai subject to the condition of meeting both the ambient air and source standards

7.4.2 Cluster of crushers at Kodangipalayam, Tiruppur

Based on the study conducted at inland area at Kodangipallayam, Tiruppur the following recommendations are made:

- NPC dust containment and dust suppression system should be provided
- Paving of roads should be adopted
- Fine powder should be collected at the ground level
- Conveyor chute should be provided at the discharge points
- Drop height for the conveyor operations should kept at the minimum
- The fine powder should be disposed off periodically
- Covering of fine dust with tarpaulin during storage and transport to final destination should be practiced
- A minimum distance of 500 m with a green belt of 10 to 15m width should be provided around the periphery of each Stone Crushing Industries (SCIs) at Kodangipallayam, Tiruppur subject to the condition of meeting both the ambient air and source standards

Chapter 8

Summary and Conclusions

8.1 Preamble

The study was carried out at identified two locations in Coastal and inland areas to assess the dispersion pattern of dust pollution from stone crushing industries in Tamil Nadu, considering the distinct meteorological conditions. A brief summary of the study findings at both these locations are given below.

8.1.1 Coastal Area: Tirusulam, Chennai

The findings of the study at Coastal Area: Tirusulam, Chennai are summarized below:

- In Tirusulam area, there were 57 crushing units operating during the study period.
- Dust sampling and monitoring was carried out during September - December, 2021 both at the source and in the ambient air.
- During the study each crusher was operating at crushing capacity of 50 MT/day
- During the study period the predominant wind directions were from North, North West, South East and West.
- Air quality monitoring network consisting of 21 sampling locations, considering meteorology, number of Stone Crushing Industries, their spacing and cluster geometry to monitor TSPM, RSPM and $PM_{2.5}$ concentrations during working, non-working and 24 hourly basis for the entire study period.
- The parameters studied were TSPM, RSPM and $PM_{2.5}$ at the source and in ambient air
- The ambient air quality monitoring was carried out in the predominant upwind and downwind directions for the different distances from the source at 10, 25, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900 and 1000 m.
- Source strength of each stone crusher working in Tirusulam area was estimated by upwind downwind technique considering the meteorological conditions at the site
- The maximum source emission rate for TSPM varied from 47.66 kg/d (Ponni BM) to 905.91 kg /d (Thiruvakkari BM). The minimum source emission rate for TSPM varied from 11.22 kg/d (Rathna BM) to 79.13 kg/d (Viswanathan BM). The average source emission rate for TSPM varied from 30.94 kg/d (Rathana BM) to 467.24 kg/d (Thiruvakkarai BM) with a mean of 137.7 kg /d.
- The maximum source emission rate for RSPM varied from 18.69 kg/d (Rathna BM) to 171.6 kg/d (Thiruvakkarai BM). The minmum source emission rate for RSPM varied from 4.66 kg/d (Rathna BM) to at Thiruvakkarai BM 52.42 kg/d (Thiruvakkarai BM).

The average source emission rate for RSPM varied from 8.62 kg/d (J. R. Vimala BM) to 99.13 kg/d (Thiruvakkarai BM) with a mean of 29.938 kg/d.

- With no crushing activity and only vehicle traffic/movement represented, the background concentration also monitored during the study period accounted for about 1/4th to 1/3rd of the crusher operating condition.
- The 24 hourly average concentration of TSPM varied from120 µg/m^3 (Rathana BM) to 1279 µg/m^3 (Thiruvakkarai BM) with a mean of 445 µg/m^3
- The 24 hourly average concentration of RSPM varied from 62 µg/m^3 (Rathana BM) to 357 µg/m^3 (Thiruvakkarai BM) with a mean of 139 µg/m^3
- The 24 hourly average concentration of $PM_{2.5}$ varied from 8 µg/m^3 (Rathana BM) to 110 µg/m^3 (Karthick BM) with a mean of 34 µg/m^3
- Safe distance for measured TSPM concentration of AERMOD varied from 200 to 900m with a mean of 667 m**.**
- Safe distance for measured RSPM concentration of AERMOD varied from 250 to 900 m with a mean of 683m.
- Safe distance for measured $PM_{2.5}$ concentration of AERMOD varied from 200 to 900m with a mean of 783 m
- Model AERMOD and ISCST3 were employed for prediction of dust emissions from stone crushing industries on the surrounding.
- Prediction was carried out for modelling both concentration and deposition profiles from stone crushing industries considering source-receptor geometry, meteorological and topography of the site.
- Prediction was carried for simulating period average (seasonal) as well as first 24-hour maximum concentration profile for critical case (worst case) during the entire study period.
- Prediction of safe distance by AERMOD based on TSPM concentration varied from 81 to 2000m with a mean of 823m for critical case, whereas for ISCST3 the safe distance based on the predicted TSPM concentration varied from 80 to 1500 m with a mean of 889 m for critical case
- Prediction of safe distance by AERMOD based on TSPM predicted concentration of AERMOD for period/seasonal average varied from 81 to 258m with a mean of 744m,

whereas for ISCST3 the safe distance based on the predicted TSPM concentration varied from 40 to 550m with a mean of 28 m

- Prediction of safe distance by AERMOD based on RSPM predicted concentration of AERMOD varied from 258 to 2000m with a mean of 1231m for critical case, whereas for ISCST3, the safe distance based on the predicted RSPM concentration varied from 142 to 3000m with a mean of 164 m for critical case.
- Prediction of safe distance by AERMOD based on RSPM predicted concentration of AERMOD for period/seasonal average varied from 16 to 2000m with a mean of 769m, whereas for ISCST3 the safe distance based on the predicted RSPM concentration varied from 40 to 900m with a mean of 487m.

8.1.2 Inland area: Kodangipalayam, Tiruppur

The findings of the study at Inland area: Kodangipalayam, Tiruppur are summarized below:

- In Kodangipalayam, there were 29 crushing units operating during the study period
- Monitoring was carried out during January, 2022 both at source and in the ambient air
- During the study each crusher was operating at crushing capacity of around 50-300 MT/day
- During the study period the predominant wind directions were from North East, North of North East and NEE
- Air quality monitoring network consisting of 30 sampling locations, considering meteorology, number of Stone Crushing Industries, their spacing and cluster geometry to monitor TSPM, RSPM and $PM_{2.5}$ concentrations during working, non-working and 24 hourly basis for the entire study period
- The parameters considered for the study are: TSPM, RSPM and $PM_{2.5}$ at the source and in ambient air
- The ambient air quality monitoring was carried out in the predominant upwind and downwind directions for the different distances from the source at 10, 25, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900 and 1000 m
- Source strength of each stone crusher working in Kodangipalayam area was estimated by upwind downwind technique considering the meteorological conditions at the site
- The maximum source emission rate for TSPM varied from 502.35 kg/d (Palaniappa BM) to 7376.26 kg/d(Nirmal BM). The minimum source emission rate for TSPM

varied from 29.38 kg/d (Sri Om Muruga BM) to 925.75 kg/d (Nirmal BM). The average source emission rate for TSPM varied from 323.09 kg/d (Palaniappa BM) to 3299.05 kg/d (Nirmal BM) with a mean of 1179.66kg/d.

- The maximum source emission rate for RSPM varied from 74.91kg/d (Palaniappa BM) to 1302.43kg/d(Nirmal BM) . The minimum source emission rate for RSPM varied from BM 11.47kg/d (Sri Om Muruga BM) to 200.31kg/d (Nirmal BM) . The average source emission rate for RSPM varied from 46.48kg/d(Palaniappa BM) to 739.37kg/d (Nirmal BM) with a mean of 253.799kg/d.
- With no crushing activity and only vehicle traffic/movement represented, the background concentration also monitored during the study period accounted for about $1/4^{th}$ to $1/3^{rd}$ of the crusher operating condition.
- The 24 hourly average concentration of TSPM varied from 97 $\mu g/m^3$ (Sarojini Residence) to 1683 $\mu g/m^3$ (K.M Chinnaswamy Residence) with a mean of 250 $\mu g/m^3$
- The 24 hourly average concentration of RSPM varied from 39 $\mu g/m^3$ (R. Shanmugam Residence) to 551 $\mu g/m^3$ (K.M Chinnaswamy Residence) with a mean of 93 $\mu g/m^3$
- The 24 hourly average concentration of $PM_{2.5}$ varied from 15 $\mu g/m^3$ (Kumar Godown) to 97 $\mu g/m^3$ (K.M Chinnaswamy Residence) with a mean of 49 $\mu g/m^3$
- Safe distance for measured TSPM concentration of AERMOD varied from 700 to 1400m with a mean of 1200 m**.**
- Safe distance for measured RSPM concentration of AERMOD varied from 650 to 1400 m with a mean of 1167m.
- Safe distance for measured $PM_{2.5}$ concentration of AERMOD varied from 650 to 1400m with a mean of 1175 m.
- Model AERMOD and ISCST3 were employed for prediction of dust emissions from stone crushing industries on the surrounding
- Prediction was cried out for modelling both concentration and deposition profiles from stone crushing industries considering source-receptor geometry, meteorological and topography of the site
- Prediction was carried for simulating period average (seasonal) as well as first 24-hour maximum concentration profile for critical case (worst case) during the entire study period

- Prediction of safe distance by AERMOD based on the TSPM predicted concentration of AERMOD varied from 32 to 2000m with a mean of 858m for critical case, whereas for ISCST3 the safe distance based on predicted TSPM concentration varied from 120m to 1600m with a mean of 451m for critical case.
- Prediction of safe distance by AERMOD based on the TSPM predicted concentration of AERMOD for period/seasonal average varied from 48 to 2000m with a mean of 742m, whereas for ISCST3 the safe distance based on predicted TSPM concentration varied from 80 to 320m with a mean of 268m.
- Prediction of safe distance by AERMOD based on the RSPM predicted concentration of AERMOD varied 65 to 2000m with a mean of 868m for critical case, whereas for ISCST3 the safe distance based on the predicted RSPM concentration varied from 80 to 3000m with a mean of 695m for critical case.
- Prediction of safe distance by AERMOD based on the RSPM predicted concentration of AERMOD for period/seasonal average varied from 65 to 2000m with a mean of 1157m, whereas for ISCST3 the predicted RSPM concentration varied from 120 to 320m with a mean of 257m.

8.2 Recommendations to study area

Emissions from stone processing are considered to be fugitive when the sources are not vented to a bag house or contained in an enclosure with a forced air vent or stack. Water sprinkling at dust discharge points wets the dust particles and augments settling. The other control measures for reducing dust emission should include the following good housekeeping practices:

8.2.1 Coastal Area: Tirusulam, Chennai

- A minimum distance of 500 m with a green belt of 100 m width should be provided around the periphery of the crushing area at Tirusulam
- Raising a green belt around the crushing area to arrest the spread of particulate matter along the boundary of the crushing area on all the sides with evergreen high foliage trees like Neem, Ashoka, Coconut, Tamarind and other local trees belonging to *cesalfinaceae* like Gul Mohar and Fire of the Forest. On the road sides also trees should be planted to arrest the dust from vehicular movement
- Sprinkling of water should be increased to arrest the spread of dust (RSPM & TSPM) with periodical cleaning of spray nozzles

- Fine dust accumulated in the crushing area should be periodically cleared and the dumps should be covered with tarpaulins to arrest the spread of dust
- Construction of metalled road (paved) within the premises
- No more stone crushers should be allowed in this area
- The drop height should be kept at a minimum while loading and unloading
- Fine powder should be collected at the ground level and disposed off immediately
- Conveyor chutes should be provided at the discharge points
- Covering open operations to prevent dust entrainment by the blowing wind
- As an occupational safety measure all the workers should be provided with nose masks to avoid dust entering the respiratory system
- Evergreen trees like Neem, Ashoka, Tamarind and other local trees belonging to the family *cesalfinaceae* like Gul Mohar and Fire of the Forest should be planted all around the crushing area. Similarly, trees should be planted along the roads to arrest the spread of particulate arising from vehicular movement inside the area
- Roads leading to the individual crushers should be paved
- The fine powder accumulated so far should be immediately disposed off and the crushers should follow periodical disposal practice in consultation with TNPCB
- Good housekeeping by way of spraying water at the vulnerable points/locations to arrest the spread of dust particles should be practiced
- Drop height of the conveyors should be kept at the minimum
- Wind breaking wall/net should be provided all along the stone crushers adjacent to residential areas

8.2.2 In-land Area: Kodangipalayam, Tiruppur

Based on the study conducted at Kodangipalayam, Tiruppur stone crushing area by operating all the crusher the following recommendations are made:

- NPC dust containment and dust suppression system should be provided
- Paving of roads should be adopted
- Fine powder should be collected at the ground level
- Conveyor chute should be provided at the discharge points
- Drop height for the conveyor operations should kept at the minimum
- The fine powder should be disposed off periodically

- Covering of fine dust with tarpaulin during storage and transport to final destination should be practiced
- The minimum distance from single crusher source should be kept as 500m with a width 10-15m green belt at the periphery of the SCIs subject to the condition of meeting the both the ambient air and source standards

8.3 Formulation of safe distance

The safe distance in this report delineated is based on 2 standards considering the source and ambient air quality standard for PM_{10} and $PM_{2.5}$.

8.3.1 Tirusulam, Chennai

The prediction was carried out for two cases considering the first 24-hour maximum (critical case) and period (seasonal) average basis using the measured concentrations at the site and the predicted concentration by models AERMOD and ISCST3 at the site. . The data reveals that the safe distance varied from 200 to 900m for TSPM and from 250 to 950m for RSPM and from 200 to 900m for $PM_{2.5}$ for measured concentrations based monitoring results.

The safe distance based on the AERMOD model predicted concentrations for first 24-hour maximum (critical case) varied from 81 to 2000 m for TSPM and from 258 to 2000 for RSPM for the coastal area: Tirusulam, Chennai. The period (seasonal) average varied from 81 to 258 m for TSPM and from 16 to 2000 m for RSPM for the coastal area: Tirusulam, Chennai.

The safe distance based on the ISCST3 model predicted concentrations for first 24-hour maximum (critical case) varied from 80 to 1500m for TSPM and from 142 to 3000m for RSPM for the coastal area: Tirusulam, Chennai. The period (seasonal) average varied from 40 to 550 m for TSPM and from 40 to 900 m for RSPM for the coastal area: Tirusulam, Chennai.

8.3.2 Kodangipallayam, Tiruppur

The prediction was carried out for two cases considering the first 24-hour maximum (critical case) and period (seasonal) average basis the measured concentrations at the site and the predicted concentration by models AERMOD and ISCST3 at the site. The data reveals that the safe distance varied from 700 to 1400 m for TSPM and from 650 to 1400m for RSPM and from 650 to 1400m for $PM_{2.5}$ for measured concentrations based monitoring results.

The safe distance based on the AERMOD model predicted concentrations for first 24-hour maximum (critical case) varied from 32 to 2000m for TSPM and from 65 to 2000m for RSPM for the inland area area: Kodangipallayam, Tiruppur. The period (seasonal) average varied

from 48 to 2000m for TSPM and from 65 to 2000m for RSPM for the inland area: Kodangipallayam, Tiruppur

The safe distance based on the ISCST3 model predicted concentrations for first 24-hour maximum (critical case) varied from 120m to 1600m for TSPM and from 80 to 3000m for RSPM for the inland area area: Kodangipallayam, Tiruppur. The period (seasonal) average varied from 80 to 320m for TSPM and from 120 to320m for RSPM for the inland area: Kodangipallayam, Tiruppur

8.4 Safe distance for SCIs with Control Measures

8.4.1 Tirusulam, Chennai

The prediction was carried out for two cases considering the first 24-hour maximum (critical case) and period (seasonal) average basis.

The safe distance based on the AERMOD model predicted concentrations for first 24-hour maximum (critical case) varied from 65 to 1750 m for TSPM and from 65 to 2000 m for RSPM for the coastal area: Tirusulam, Chennai. The period (seasonal) average varied from 48 to 177 m for TSPM and from 97 to 177 m for RSPM for the coastal area: Tirusulam, Chennai.

The safe distance based on the ISCST3 model predicted concentrations for first 24-hour maximum (critical case) varied from 40 to 600m for TSPM and from 80 to 1800m for RSPM for the coastal area: Tirusulam, Chennai. The period (seasonal) average varied from 40 to 240m for TSPM and from 40 to 470 m for RSPM for the coastal area: Tirusulam, Chennai.

8.4.2 Kodangipallayam, Tiruppur

The prediction was carried out for two cases considering the first 24-hour maximum (critical case) and period (seasonal) average basis.

The safe distance based on the AERMOD model predicted concentrations for first 24-hour maximum (critical case) varied from 16 to 2000m for TSPM and from 48 to 2000m for RSPM for the inland area area: Kodangipallayam, Tiruppur. The period (seasonal) average varied from 48 to 2000m for TSPM and from 32 to 2000m for RSPM for the inland area: Kodangipallayam, Tiruppur

The safe distance based on the ISCST3 model predicted concentrations for first 24-hour maximum (critical case) varied from 120 to 320m for TSPM and from 80 to 1590m for RSPM for the inland area area: Kodangipallayam, Tiruppur. The period (seasonal) average varied from 80 to 320m for TSPM and from 110 to 290m for RSPM for the inland area: Kodangipallayam, Tiruppur.

Considering SCIs operating conditions and working schedule and the prevalent micro-meteorological conditions, there is scope for improvement in bringing down the safe distance for SCIs. In order to achieve this the following control measures and strategies are recommended.

8.5 Control at the source

All the crushers operating points of the sources of potential emissions like jaw crusher, vibratory screens, conveyor chutes and storage yards are to be covered without hindering their normal operations and ventilation conditions of the SCIs and avoiding pollution built-up inside the working atmosphere of the SCIs wherever possible, thereby reducing the emissions close to 50%.

Planting trees around each SCIs with thick foliage trees of width of 5 to 10m all along the periphery of each SCIs.

Providing wind breaking walls or moveable net keeping in view of the prevailing wind conditions at the site considering various climatic conditions and the topographic features.

Reducing the drop heights and collection of fine dust well below the ground level.

A safe distance of 500m with green belt width of 5 to 10m at the periphery of each SCIs is recommended considering the following:

Each crusher shall follow the control measures suggested above by following good housekeeping practices, proper control measures and paving the roads and planting the trees along their periphery so that standards w.r.to ambient air quality is achieved. In case within the recommended distance of 500m, even after providing a green belt width of 5 to 10m at the periphery of each SCIs the desired ambient air quality standards are not achieved as per the Indian norms; the following steps needs to be adopted strictly as listed below.

1. Making the crushers to tighten their control measures as listed above
2. Providing adjustable, movable wind breaking nets based on the topography and the prevailing meteorological conditions (wind speed and direction)
3. Taking every effort to restore tall thick foliage trees of width of 5 to 10m along the periphery of each crushers
4. Operating the crushers in consented capacity only during the high assimilative capacity hours of the day i.e. 10am to 4pm by restricting their operations during these hours.

5. If possible reducing the production schedule during high impact periods (July to August: Aadi period of high wind speed in the state of Tamil Nadu), where the distance of the spread of the pollutants is high considering the high wind speed during these period and operating at normal capacity during favorable climatic conditions

Considering the above points, a safe distance of 500m is recommended with a green belt development of 5 to 10m width at the periphery of each SCIs with all the control measures as recommended above are meeting the national standards of dust pollutants in terms of PM_{10} and $PM_{2.5}$.

This safe distance is to be reconsidered in case of SCIs which are not meeting the prescribed standards in terms of PM_{10} and $PM_{2.5}$ standards even after adopting the above mitigation measure as suggested in the step 1 to 5.

8.6 Distance from Stone Crusher to nearby Stone Crusher

The distance from stone crushing industry to stone crushing industry as mentioned in the TNPCB Proceeding (BP No. 4, dated 02.07.2004) is not important & significant and can be withdrawn considering the following facts:

1. Be specifying inter distance between the stone crushing industries shall lead to the dispersal of stone crushing industries across in the state of Tamil Nadu resulting into spreading of of dust pollutants.
2. Inter distance between stone crushing industries is not as significant and governing criteria compared to specifying distance from stone crushing industries to habitation areas (approved residences/inhabited site, Educational Institutions, Places of public offices and religious importance, State/National Highways etc.)
3. Specifying inter distance between stone crushing industries as a limiting criteria is a way against cluster of industries, which is not preferable leading to spread and increase in the dust pollutants

Considering the above, the minimum distance between crusher to crusher is dispensed so as to avoid mushrooming of single clusters over a larger area and paving way for favorable condition for cluster of crushers in a compact area closer to each other, thereby reducing the minimum distance between the crushers, confining the pollution levels within a smaller area so that prevention measures (control/mitigation) can be adopted more effectively.

8.7 Recommendations to Stone Crushing Industries in the State of Tamil Nadu

As per the terms of reference given in the work order issued by the TNPCB vide proceeding T1/F.4792/2019, dt 11.08.2021, the following recommendations are made for the stone crushing units located in the State of Tamil Nadu

- The stone crushing units shall provide for dust containment and dust suppression system as recommended by the National Productivity Council. They shall provide green belt of 5 to 10m width at the periphery for meeting the national ambient air quality standards in terms of PM_{10} and $PM_{2.5}$.
- The stone crushing units shall provide
  - (i) Evergreen trees like Neem, Ashoka, Tamarind and other local trees belonging to the family *cesalfinaceae* like Gul Mohar and Fire of the Forest may be planted all around the crushing area. Similarly, trees may be planted along the roads to arrest the spread of particulate arising from vehicular movement inside the area.
  - (ii) Good house-keeping by way of spraying water at the vulnerable points/locations to arrest the spread of dust particles should be practiced.
  - (iii) Paving of roads should be adopted
  - (iv) Fine powder should be collected at the ground level.
  - (v) The fine powder should be disposed off periodically
  - (vi) Conveyor chute should be provided at the discharge points
  - (vii) Drop height for conveyor operations should be kept at the minimum
  - (viii) Covering of fine dust with tarpaulin during storage and transport to final destination should be practiced.
  - (ix) Wind breaking structures (wall or net) preferably adjustable, moveable wind breaking nets based on the topography and the prevailing meteorological conditions should be provided.
  - (x) Ambient air quality monitoring with respect to PM_{10} and $PM_{2.}5$ should be carried out in both the downwind and upwind directions during summer.
  - (xi) As an occupational safety measures, all the workers should be provided with nose masks to avoid dust entering the respiratory system.
- A minimum 500m safe distance is to be maintained from any National Highways or State Highways or inhabited site or educational institutions / and other public offices

and places of religious importance so as to avoid influence of dust emission from the Stone Crushing Industries.

- The minimum 1km distance between one stone crushing unit to another stone crushing unit shall be dispensed so as to avoid mushrooming of single crushers over a larger area. This will pave the way for favorable condition for cluster of crushers in a compact area close to each other, thereby reducing the minimum distance between the crushers, confining the pollution levels within a smaller area so that prevention measures (control/mitigation) can be adopted more effectively.

8.8 Conclusions

The dust generated from stone crushing activities contains a significant amount of fine inhalable matter. The effect of fine particulate matter can be disproportionately large even though it constitutes only a small fraction of the total suspended particulate matter. The presence of a high percentage of silica in the dust and the particle size distribution further suggest that the occupational environment of the workers and surrounding areas may be hazardous to human health.

Most of the stone crushers have inadequate dust control systems. Mostly all units have neither enclosures nor water spraying arrangements. As a result, the dust emissions are substantial which leads to adverse impacts on workers as well as the surrounding environment. The existing control measures such as dust containment enclosures, water spray arrangements etc. needs to be improved along with inclusion of wind breaking structures (wall or net) and development of thick foliage trees around each crushing units, paving of the SCIs premises etc.

The re-entrainment of settled dust from unpaved roads and surfaces is another phenomenon which seriously contributes to dust pollution in these areas which should be controlled immediately by paving the roads and surfaces inside crushing area and reducing the drop heights and covering potential fugitive dust emission sources. With these stringent control measures in practices and good housekeeping in place, it is expected that a minimum distance of 500m with a green belt width of 5 to 10m, with provision for adjustable wind breathing net structures as per the prevailing local meteorological conditions at the site base on the seasons, subject to the condition of meeting both the ambient air and source standards to arrest the dust pollution in and around the SCIs.

Annexure I

ANNUXURE I
Distribution of Stone Crushing Industries in Tamil Nadu

No.	Name of the Stone Crusher	Crushing Capacity/Production Details of Stone Crusher
	1. District: Ariyalur	
1	K.S.MEKALAI CRUSHER	Stone jelly size 40mm,20mm,12mm,6mm - 1900T/M
2	C.K.BLUE METALS	Blue metal stones of 40mm,20mm,12mm,6mm - 2500T/M
3	THIRUPATHI BLUE METAL	Stone jelly size 40mm,20mm,12mm chips - 1700T/M
4	SRI JAYA UDHAYAM CRUSHER	Shoaling and Blue metal jelly of size 40mm,20mm, - 1200T/M
5	COIMBATORE MINERALS	Stone Jelly of size 40mm,25mm,20,12,6mm and chips - 6000T/M
6	SRI RAJAGANAPATHY CRUSHER	Stone jelly of sizes 40mm,20mm,12mm,6mm - 1500MT/M
7	R.S.K.BLUE METALS	Stone jelly of sizes 40mm,20mm,12mm,6mm - 2700T/M
8	SRI MURUGAN STONE CRUSHERS	Stone jelly size 40mm,20mm,12mm,6mm - 2800T/M
9	ROCKFORT BLUE METAL	Blue metal jelly 40mm,20mm,12mm,6mm - 3000T/M
10	S.V.J. BLUE METAL	Blue Metal Stones of size 40mm,20mm,12mm,6mm - 1500T/M
11	SAROJA BLUE METAL	Stone Jelly of size 40mm,20mm,12mm,6mm - 1500T/M
12	VELAVAN CRUSHERS	12mm 20mm 40mm Stone chips dust - 1800T/M
13	SREE ANNAKAMATCHIAMMAN BLUE METALS	Blue Metal Jelly - 2000T/M
14	SELVI AND CO	Blue metal jelly 12mm 20mm Stone chips Powder - 1200T/M
15	KAVITHA BLUE METALS	40mm 20mm 12mm 6mm stone chips - 1800T/M
16	SAKTHI CRUSHER	Blue metal jelly 12mm - 540T/M 6mm - 180T/M
17	SHIVA BALA BLUE METALS	Blue Metal Jelly of 20mm 25mm 40mm sizes - 1000T/M
18	NEW LAKSHMI CRUSHER	Blue metal stones 40mm 20mm 12mm 6mm - 1000T/Month
19	SHANTHI BLUE METAL	40mm 20mm 12mm chips - 900T/M
20	DEVA BLUE METAL	Stone Jelly of Size 20mm,12mm,6mm - 800Tons per M
21	RAJA INDUSTRIES	Granite stones 12mm 20mm chips - 625T/M
22	UMA CRUSHER WORKS	Blue Metal Jelly - 700T/M Stone Dust - 200T/M
23	PNS CRUSHER	Blue Metal Jelly - 1000T/M
24	SREE SAKTHI BLUE METALS	Blue Metal Jelly of size 40mm,20mm,12mm,6mm chips - 800T/M
25	SRI MURUGAN INDUSTRIES	20mm - 600MT/M 12MM- 250MT/M CHIPS/ 50MT/M Stone dust- 20MT/M
26	VETRI (VICTORY) BLUE METAL	Blue Metal Stone 20mm,12mm,6mm - 1000T/M
27	THIRUVALLUVAR STONE CRUSHER	Blue Metal Jelly - 900T/M
28	SRI SELVA GANAPATHY BLUE METAL	Blue Metal Jelly 40mm, 20mm, 12mm, 6mm - 800T/M
29	SRI ANGAYEE AMMAN BLUE METALS	Stone jelly 40mm,20mm,12 mm and 6 mm - 15000T/month Stone Dust - 3000T/month
30	SRI SIVASAKTHI BLUE METALS	12mm 20mm 25mm 40mm - 1000T/M
31	MADURA STONE CRUSHER UNIT	Stone Jelly of size 20mm,12mm,6mm - 480T/M
32	SREE MADHURA KALI AMMAN CRUSHER	20mm - 540T/M 6mm- 180T/M
33	K M P BLUE METAL	20mm 40mm - 1000T/M stone dust chips- 200T/M
34	SRI SRINIVASA CRUSHER	Stone Jelly - 1400T/M
35	VMT CRUSHER	Blue metal jelly - 1750T/M Stone chips and powder - 750T/M
36	DEVAR CRUSHER	Stone jelly Size 40mm,20mm,12mm,6mm - 1900T/M
37	KAVERI BLUE METALS	Blue metal jelly sizes 12mm 20mm 40mm chips - 1100T/M
38	INDU NAVAYUGA INFRA PROJECTS PVT LTD	Less than 6mm- 1500MT/day
39	KALAIMANI CRUSHER	Stone jelly 20mm - 625T/M
40	J K INDUSTRIES FORMERLY SAKTHI BLUE MET	Stone Jelly 20mm 12mm - 500T/M
41	MAHA BLUE METALS	Blue Metal Jelly - 1000Tons/Month
42	SRI MURUGAN CRUSHER	Blue metal stone of size 40mm,20mm,12mm,6mm - 3000T/M
43	SRI MURUGAN CRUSHER	Blue metal jelly 20mm - 600T/M
44	KING INDUSTRIES	20MM Jelly - 4800T/M 12mm jelly - 2000T/M
45	SRI BALAMURUGAN BLUE METAL	Blue metal stone sizes 40mm,20mm,12mm,6mm - 2500T/M
46	VENKATESWARA CRUSHING & MINING COMPANY	Blue metal stone jelly of size 40mm 20mm 12mm and - 1800T/M
47	SRI MURUGAN BLUE METALS	Stone Jelly of Size 1.5, 0.75, 0.50, 0.25 - 1500T/M
48	SRI RAMAJAYAM BLUE METALS	Stone Jelly of size 40mm,20mm,12mm,6mm - 2600 T/Month
49	VIJAYALAKSHMI BLUE METALS	Stone Jelly - 1750T/M
50	SRI THIRUMAL CRUSHER	Stone jelly of size 40mm 20mm 12mm 6mm - 1800T/M
51	SRI MURUGAN AND CO	Stone jelly of sizes 20mm,12mm,6mm - 1600T/M
52	J M K CRUSHER	Stone Jelly of Sizes 40mm, 20mm, 12mm, 6mm - 1750T/Month

53	SRI VELMURUGAN CRUSHER	Stone Jelly of size 40mm 20mm 12mm 6mm - 2500T/M
54	R.P.D.BLUE METALS	Stone Jelly - 1750T/M
55	VALARGREEN BLUE METALS	Stone jelly of size 40mm20mm 12mm 6mm - 1800T/month
56	A GOPI BLUE METALS	Stone Jelly 0f size 40mm, 20mm ,12mm and 6mm - 1800 T/M
57	SRI RAMAJAYAM BLUE METALS	Stone jelly size 40mm,20mm,12mm,6mm - 2000T/M
58	JEYAPRADHA BLUE METAL	Stone jelly of size 40mm 20mm 12mm chips - 850T/M
59	SENTHIL STONE CRUSHER	Stone Jelly of size 20mm, 12mm, 6mm - 40T/day Chips - 5T/day
60	JAYAPRAKASH BLUE METAL	Stone Jelly of size 20mm,12mm,6mm - 940T/M
61	SRI AZHAGAR QUARRY METALS	Hard broken stone jelly of size 10mm 12mm - 900MT/M
62	APN BLUE METAL	Stone jelly of size 40mm-600T/M, 20mm-600T/M,12mm-600T/M
63	SRI BHAVANI BLUE METALS	Stone Jelly of size 20mm 12 mm and 6mm - 800T/Month
64	SRI LAKSHMI NARAYANA SWAMY BLUE METAL	Blue Metal Jelly 1/4,1/2,3/4,1 1/2 - 1050T/Month
65	DEVI CRUSHER	Stone jelly of sizes 40mm,20mm 12mm 6mm - 2100T/M
66	MOHANA CRUSHER	Stone jelly of sizes 150mm to 6mm - 2400T/M
67	SRI SARASWATHI BLUE METAL	Stone Jelly of size 40mm,20mm,12mm,6mm - 1000T/M
68	SRI ANBU GANAPATHY BLUE METALS	Stone Jelly - 937T/M
69	MANJUNATHAN INDUSTRY(A P N BLUE METAL)	40mm - 600T/M 20mm- 600T/M 12mm/ 600T/M
70	SELVAM CRUSHER	Blue Metal Stones of 40mm, 20mm, 12mm, 6mm - 800T/M
71	GANGA CRUSHER	Blue Metal Jelly - 270T/Month
72	GOWTHAMI MURALI CRUSHER	Stone Jelly of size 3 4 - 1050T/M
73	SRI SAROJA BLUE METALS	Stone jelly of size 40mm,20mm 12mm,6mm and chips - 1400T/M
74	SRI RAJA GANAPATHY BLUE METAL	chips by installing primary Secondary crusher - 2000T/M
75	S.K.D BLUE METAL	20mm 40mm - 1000T/M Stone dust chips- 200T/M
76	SREE INFRA TECH	Stone jelly of sizes 20mm,12mm,6mm - 900T/M
77	VALLALAR CRUSHER	Stone jelly of sizes40mm 20mm 12mm chips - 1400T/M
78	MURUGAN BLUE METAL INDUSTRIES	Blue Metal Jelly of Sizes 40mm, 20mm, 12mm, 6mm - 6000T/M
79	DHANALAKSHMI CRUSHER	Stone jelly chips - 750T/M
80	ANDAVAR BLUE METAL	65mm 40mm 25mm 20mm 12mm chips - 2200T/M
81	AMMA RURAL TRUST	Blue metal stones of 20mm,12mm,6mm - 1000T/M
82	SUN BLUE METALS	Blue metal jelly of 12mm 20mm stone chips - 900T/M
83	MANGAI INDUSTRIES	Stone jelly of sizes 20mm - 1800T/M
84	THANTHAI ROVER CRUSHER	Stone jelly of size 20mm,10mm - 550T/M
85	ELANGO STONE CRUSHER	CHIPS - 875T/M
86	ART BLUE METALS	Blue metal jelly - 2600T/M
87	S P T CRUSHER FORMERLY AMMAN CRUSHER	Blue metal jelly 40mm,20mm,12mm,6mm - 2700T/M
88	SRI DHANALAKSHMI BLUE METAL	Blue Metal Stone Size 20mm, 12mm, 6mm - 35T/M
89	SRI JAYALAKSHMI INDUSTRIES	Stone jelly of size 40mm,20mm,12mm,6mm - 2000 T/M
90	JAYALAKSHMI AND CO	Stone Jelly of size 40mm,20mm,12mm,6mm - 900T/M
91	J R R CRUSHER	Blue metal jelly 40mm,20mm,12mm - 2150T/M
92	S P BLUE METALS	Blue metal stone jelly of size 40mm 20mm 12mm - 2250T/M
93	MTM CRUSHER	Stone jelly of sizes 12mm 20mm 40mm chips - 1800T/M
94	KUNGUMAYEE CRUSHER	Stone jelly of size 65mm 40mm 25mm 20mm 12mm - 2000T/M
95	KCR BLUE METAL	Stone Jelly of size 40mm,20mm,12mm,6mm - 2100T/Month
96	P.A. ENTERPRISES	Stone jelly of size 40mm 20mm 12mm 6mm - 10000T/M
97	SRI AYYANAR BLUE METAL	Stone Jelly of size 40mm,20mm,12mm,6mm - 2050T/M
98	SRI AZHAGAR BLUE METALS	Stone jelly of sizes 6mm 12mm 20mm 25mm 40mm -2850MT/M
99	P.M.S.CRUSHER	Stone Jelly of size 40mm,20mm,12mm,6mm - 1600T/Month
100	D T V CRUSHER	Stone Jelly of size 40mm,20mm,12mm,6mm - 1500T/Month
101	R M K BLUE METAL	Stone jelly of size 40mm 20mm and 12 mm - 800T/Month
102	MAXIMUS CRUSHER	Stone jelly of size - 1800T/M
103	KARTHICK BLUE METALS	Stone jelly - 1000T/M
104	P S T BLUE METALS	Stone Jelly of Size 40mm,20mm 12mm,6mm and chips - 1400T/M
105	MALA STONE CRUSHER	Stone Jelly of size 40mm,20mm,12mm,6mm - 1500T/month
106	SRI AMMAN BLUE METALS	Stone Jelly of Size 40mm,20mm,12mm,6mm - 2520T/Month
107	NJN CRUSHER	Stone Jelly of Size 40mm,20mm,12mm,6mm - 1800T/Month
108	KATHIRAVAN CRUSHER	Stone Jelly of size 1 1 2 - 840T/M Chips - 60T/M
109	MARUTHI BLUE METAL	Stone Jelly of size 6mm, 12mm, 20mm, 40mm - 1000T/Month
110	JAYASANKAR CRUSHER	40mm 20mm 12mm 6mm chips - 1000T/Month
111	V.M.K.Crusher	Stone Jelly of size 40mm,20mm,12mm,6mm - 1800 T/month
112	JAYASHANKAR CRUSHER	Stone Jelly of size 40mm, 20mm, 12mm, 6mm - 1800 T/Month

113	SRI VELMURUGAN BLUE METAL	Stone Jelly of size 40mm,20mm,12mm,6mm - 1400T/Month
114	NANDHINI BLUE METALS	Stone jelly 40mm 20mm 12mm chips - 7000T/M
115	SRI VENKATESWARA CRUSHER	Stone Jelly of Sizes 40mm, 20mm, 12mm and chips - 1400T/M
116	PATEL INFRASTRUCTURE LIMITED SETHIYAHOPU	Stone jelly of sizes 65 mm, 40mm, 20mm, 12mm, 6mm - 2000 Tons/Day
117	C S BLUE METALS	Blue metals jelly of various size blue metal pow - 250t/day
118	SRI BALAJI MINERALS CRUSHER DIVISION	Various size of Blue metal jelly - 64000Tons/Month
119	K N R CONSTRUCTIONS LIMITED	Blue metal jelly and stone dust - 3990t/day
	2. District: Coimbatore North	
1	G.S. MINERALS	Quartzand Feldspar and other powders of fine mesh - 500T/M
2	CHANAKYA BLUE METALS	Blue Metal Stones 40mm 19mm 12mm 6mm sizes - 790T/M
3	CBT SAND	Various Sizes of Blue Metal Jelly - 15000Tons/Month Manufactured sand - 10000Tons/Month
4	TECHNOMAX BUILDING SOLUTION INDIA P.LTD	Various Sizes of Blue Metal Jelly/Manufactured sa - 1000T/Day
5	SRI SAKTHI VINAYAGA BLUE METALS	Blue Metals - Various Sizes - 1350 T/M Stone Dust and Powder - 150T/M
6	NST BLUE METALS M SAND UNIT	powder - 1200 T/M
7	SRI VENKATESWARA BLUE METALS	Stone Jelly - 400T/M
8	ARV M SAND	Blue Metals 1 4 - 750T/M
9	VELMURUGAN BLUE METALS	Blue Metals 1 4 - 1000 T/M
10	SRI ARANGA BLUE METALS	Stone Jelly with various sizes - 100T/M Stone Dust - 10T/M
11	JMS BLUE METALS	Blue Metal Jelly 3 4 - 400T/M Blue Meal Jelly 1 2 - 100T/M Blue Metal Powder- 15T/M
12	R.K.BLUE METALS	Blue Metal Jelly of various sizes and Powder - 250T/M
13	SENTHURA BLUE METALS	Blue Metal Jelly of various sizes - 900T/D
14	BALAMURUGAN BLUE METALS	Blue Metal Jelly of Various Sizes - 1500 T/M Manufactured Sand & Plastering Sand - 300 T/M
15	OTHIMALAI ANDAVAR BLUE METALS	Blue Metals Various Sizes,M,P SAND - 1000 T/Day
16	SARAVANA BLUE METAL INDUSTRY	Stone Jelly with various sizes and stone - 750 T/d
17	SRI BALAJI BLUE METALS	Blue Metal Jelly one by quate inch half inch - 1600 T/M
18	VENKATESWARA BLUE METALS	Stone Jelly of Various sizes and Powder - 9000T/M
19	SRI SHANMUGA BLUE METALS	Blue Metal Jelly of Various Sizes and Powder - 1000 T/Day
20	SRI HARIHARAN BLUE METALS	11 2 - 60 T/M 3 4 - 60 T/M 1 2- 25 T/M 1 4/ 10 T/M Dust- 45 T/M
21	HARSHAVARDHAN BLUE METALS	Crushing of Stone to produce stone jelly of - 2500 T/M
22	SHRI DEVI BLUE METALS	Blue Metal Stone with various sizes and stone - 1500 T/day
23	PALANIVELSRI BLUE METALLS INDIA PRIVATE	Stone Jelly of Sizes 1 4 - 150 T/M
24	VKV BLUE METALS	Blue Metals Jelly 3-4, 1-2, 1-4 - 750T/M
25	SRI BLUE METALS	1 1 2 jally - 600 T/M, 3 4 jally - 250 T/M, 1 2 jally- 130 T/M, 1 4 jally/ 100 T/M, Stone Dust- 20 T/M
26	NIRMAL BLUE METALS	various size and to produce stone dust - 5000T/M
27	KUMARAN BLUE METALS	Blue Metal Jelly with various sizes crusher sand - 12000 T/m
28	R.SUBRAMANIAM CRUSHER	Blue Metal Jelly of various sizez M-sand and Powe - 100T/d
29	SRI RAJALAKSHMI SAMAPPA BUILDING MATERIAL	Blue Metal Jelly - 1500T/D, M Sand - 1800 T/D
30	GANESHA BLUE METALS	Blue metal of various sizes m sand stone dust - 1500T/D
	3. DISTRICT: COIMBATORE SOUTH	
1	AYYASAMY BLUE METALS	Blue Metal Jelly of Various Sizes - 2500T/M Stone Dust - 500T/M
2	CRUSHER UNIT BLUE METALS	STONE BOULDERS - 850T/M
3	KNR CONSTRUCTIONS LIMITED BLUE METALS	Various sizes of 3 4 1 2 stone jelly chips and - 1500TONS/M
4	SIVA SIVAA BLUE METAL	Stone Jelly of various sizes 3 4 inch Size - 35T/day, 1 4 inch Size - 14 T/d, Dust- 21 T/d
5	RAAJ BLUE METALS	Blue Metal Jelly of various sizes - 110 T/M
6	GAYATHRI BLUE METAL	Blue Metal Jelly Various Sizes - 1100T/M, Stone dust and, Powder - 605T/M
7	SRI SHARATHI BLUE METALS	Blue Metal - 1800 T/M Stone Powder - 200 T/M
8	KADIESWARI BLUE METALS	Stone Jally - 48T/d
9	ANGALAMMAN BLUE METALS	3-4 JELLY - 360T/M 1-2 - 210T/M 1-4- 120T/M
10	MAHAVEER MINERALS	Quartz Powder and Felsper Powder - 100 T/M
11	KOVAI BLUE METALS UNIT-II	Stone Jelly of various sizes - 2100 T/M, Chips - 900 T/M Mineral sand- 180 T/M

12	SIVAJOTHI BLUE METALS	Jelly - 36 T/d Stone Powder - 4 T/d
13	SRI KUMARAN METAL WORKS	Baby Jelly - 20 T/d,Ellice Jelly - 7 T/d, Stone Powder- 3 T/d Blue Metals Jelly of various Sizes/ 15000 Tons/M
14	SRI GOKULAM BLUE METALS	Blue Metal Jelly 1-4 - 393T/M,Blue Metal Jelly1-2 - 449T/M Blue Metal Jelly 3-4- 295T/M, Baby Jelly/ 155T/M
15	ARUN BLUE METAL	Blue Metal Jelly - 700 T/M
16	SREE MAHALAKSHMI BLUE METALS	Blue Metal Stone of 3-4 - 215 T/M
17	BEST BLUE METALS	Blue Metal Jelly - 15 T/M, Stone Powder - 50 T/M
18	RAVIKUMAR BLUE METALS	Blue Metal Jelly - 450 T/M
19	VENKATESWARA BLUE METALS	III Quarter inches Jelly - 250 T/M, Half inches Jelly - 100 T/M Quarter inches Jelly- 100 T/M,Stone dust/ 25 T/M
20	S.S. BLUE METALS	Three by Four inches Jelly - 360T/M,Half inches Jelly - 210T/M,Three by Eight inches Jelly- 120T/M,Blue Metal Dust/ 310T/M
21	KALAISELVI BLUE METAL	Three by Four inches Jelly - 200 T/M,Chips - 200 T/M, Stone Dust- 100 T/M
22	VINAYAKA BLUE METALS	Three by Four inches - 400T/M, Half inches- 400T/M, One by Four inches/ 200T/M,Stone dust- 200T/M
23	MSR BLUE METALS	Blue Metal Jelly -One by Four inches - 850 T/M
24	RAJAGURU BLUE METALS	Blue Metal -Three by Four inches - 850 T/M
25	VIGNESHWARA BLUE METALS	Blue Metal Jellyof various sizes - 900 T/M
26	SIVASANKARI BLUE METALS	Three by Four inches and One by Four inches Jelly - 850 T/M
27	SARAVANA CONSTRUCTIONS-CRUSHER DIVISION	Three by Four inches Jelly - 1050T/M
28	SHANTHI GRANITES	One and Half inches Jelly - 950T/M
29	SRI DHANALAKSHMI BLUE METAL	Three by Four inches Jelly - 850T/M
30	GOMATHY AMMAN AND COMPANY	Three by Four inches Jelly - 900 T/M
31	KOVAI BLUE METALS	Blue Metals of various sizes and stone dust - 1200T/M
32	AMIRTHAM BLUE METALS	One by Four inches Jelly- 800 T/M
33	C.K.M. BLUE METALS	3 by 4 inches Jelly - 900 T/M
34	DHANDAYUTHAPANI CRUSHER	Quater, half 3 by 4 inches Jelly and Stone dust - 900T/M
35	MOHANA BLUE METALS	3by4 inches Jelly - 600 T/M, Half inches Jelly - 600 T/M 3by8 inches Jelly- 300 T/M, Stone Dust/ 200 T/M
36	SREE GANESH BLUE METALS	Jally and Stone Dust - 3000 T/M
37	LAKSHMI BLUE METALS	Stone Jelly 3by4 inches and stone dust - 1200 T/M
38	GURU METAL SUPPLIERS	3by4 inches Jelly, Half Inch and Quarter Inches - 1500T/M
39	SAKTHI STONE CRUSHER	Jelly- 1 and Half inches - 800 T/M
40	SULOCHANA THANGARAJ STONE CRUSHER	Blue Metal Jelly - 800 T/M
41	BALAJI STONE CRUSHER	Stone Jelly 3by4 - 1425 T/M
42	SRI ANGALAMMAN BLUE METALS	Stone Jelly of Various sizes - 535 T/M Stone Dust - 25 T/M
43	VELLINGIRI ANDAVAR BLUE METALS	Blue Metal Jelly - 1000 T/M
44	SRI AYYAPPA BLUE METALS	Stone jelly 1 1BY2 - 535T/M Stone dust - 25T/M
45	ULTRA SAHARA SAND	Blue Metal Stones of various sizes and blue metal - 100T/day
46	SRI KARIYAKALIAMMAN BLUE METALS	Blue Metal Jelly various size - 5 T/day
47	SHRI NAKODA MINERALS	Quartz and Feldspar Powder - 200T/M,Quartz Powder - 1608T/M
48	UTHARAKALIYAMMAN BLUE METAL	Blue Metal Jelly of Various Size - 49 T/d
49	UTHARAKALIYAMMAN BLUE METAL	Blue Metal Jelly of various sizes and stone dust - 300 T/d
50	R.M. BLUE METALS	Blue Metal stones of various sizes - 150T/day
51	SRI KARIYA KALIAMMAN BLUE METALS	Blue Metal Jelly of various sizes and stone dust - 535T/M
52	GUGHAN BLUE METALS	Blue Metal Jelly of various sizes - 1900 T/M
53	VKS Blue Metals	Blue Metal Jelly of various sizes and stone dust - 40 T/day
54	SRI MURUGAN THUNAI BLUE METALS	Blue Metal Various Size - 25 T/d
55	SPARK BLUE METALS	Blue Metal Stones various size and stone dust - 100 T/d
56	True Source India Private Limited	Various grades and sizes of jalli - 90Tons/day, Stone Dust - 10Tons/day
57	SRI KARIYAKALIAMMAN BLUE METALS KK TK	Blue Metal Jelly - 5 T/D
58	USHUS BLUE METALS AND MINERAL SAND	BLUE METALS JELLY VARIOUS SIZES - 1500 T/DAY MINERAL SAND - 70T/DAY
59	GOMUKI BLUE METALS LLP	Blue Metal Stone - 900 MT/M, Stone Dust Powder - 300 MT/M
60	ANGALAMMAN BLUE METALS	Various sizes of Blue Metals - 5000T/M
61	M.R.N BLUE METAL	Blue Metals stone - 790T/M

62	Thangam Blue Metals	CRUSHED STONES - 450T/M
63	SRI MURUGAN BLUE METAL	STONE JELLY - 450T/M
64	K.G. Blue Metals	Blue Metal Stone - 550T/M
65	Rameshkumar Blue Metals	Blue Metal Stone - 750T/M
66	S.K.T. Blue Metals	Blue Metal Stone - 790T/M
67	TAMILNADU BLUE METALS	BLUE METAL STONES - 2750T/M, STONE DUST POWDER - 250T/M
68	K.V.N.R.BLUE METALS	3 4 - 700T/M
69	MAHALAKSHMI BLUE METALS	Blue Metal Stone - 1200T/M
70	A.E. BLUE METAL	BLUE METAL STONES - 1200T/M
71	M.R.BLUE METALS-SRI VINAYAGA BLUE METAL	METAL - 400T/M METAL - 700T/M METAL- 200T/M METAL / 100T/M STONE DUST- 100T/M
72	K.S.P. STONE CRUSHER	Blue Metal Stone - 650T/M
73	KADESWARI BLUE METALS	Blue Metal Stone - 650T/M
74	NITHIN BLUE METALS	BLUE METAL JELLY - 1300T/M BULE METAL JELLY - 300T/M BLUE METAL JELLY- 300T/M
75	GANESAN BLUE METALS	JELLY SIZE OF - 300T/M JELLY SIZE OF - 200T/M JELLY SIZE OF- 100T/M
76	J.K. BLUE METALS	BLUE METAL JELLY - 450T/M BLUE METAL JELLY - 200T/M BLUE METAL JELLY- 200 T/M
77	Bharath Blue Metals	Blue Metal Stone - 27T/Day
78	BANNARI AMMAN BLUE METALS	Blue Metal Stone - 620T/M
79	S.V. BLUE METALS	Crushed Stone - 200T/M
80	GEETHA BLUE METALS	CRUSHED STONE - 210T/M
81	SRS CRUSHERS	Blue Metal Stone - 600T/M
82	SRI SIVA BLUE METALS	STONE SIZE - 280T/M
83	THEVAR BLUE METALS	Blue Metal Stone - 312T/M
84	SRI ARANGANATHA MINERALS	BLUE METAL STONE - 1300M/TM
85	M.V. BLUE METALS	CRUSHED STONE OF SIZE AND - 200T/M
86	THIRU MURUGAN BLUE METALS (Old Name) A.V (Old Name) A.V.M. BLUE METALS,	Stone Jelly of Various Sizes - 790Tons/Month Stone Dust - 170Tons/Month
87	OM SHANTHI METAL PRODUCTS	Blue Metal Stone - 1000T/M
88	M.K.BLUE METALS	Blue Metal Stone - 790T/M
89	SRI VENKATESWARA BLUE METALS	BLUE METAL STONES - 550T/M
90	S.R.A. AND CO -UNIT - II	Blue Metal Stone - 400t/M Blue Metal Stone - 350t/M Blue Metal Stone- 325t/M Blue Metal Stone/ 225t/M
91	MANGAIAMMAN BLUE METALS	jalli 3 4 M - 14T/M
92	R.K. BLUE METALS	BLUE METAL STONES - 650T/M
93	SARAVANA BLUE METALS	BLUE METALS JELLY - 600T/M
94	GANESH BLUE METAL	BLUE METAL STONES - 288T/M
95	PRABHU BLUE METALS	BLUE METAL JELLY - 800T/M STONE DUST - 100T/M
96	BHAGAVATHI BLUE METALS	BLUE METAL STONES VARIOUS SIZES - 790T/M STONE DUST - 170T/M
97	Siva Sakthi Blue Metals	STONE JELLY - 1200T/M
98	S.K. Blue Metal	Blue Metal Stone - 1440T/M
99	SVT Blue Metals Patchapalayam Village	Blue Metal Stones - 790MT/M
100	TRUE SOURCE INDIA PVT LTD UNIT-II	M-Sand - 60T/day
101	ROBO SILICON LIMITED	Blue Metal Stone - 1900 T/M
102	SAKTHI BLUE METALS CRUSHER	Blue Metal Jelly of various sizes - 7500Tons/Month
103	H VETRIVEL QUARRY	Rough Stone - 35514Cum Five Y Gravel - 2812 Cu.m/Five
104	SGA CARS INDIA PRIVATE LIMITED	Servicing of Four Wheeler - 75Nos/day
105	VELUMANI BLUE METALS	Blue Metal Jelly of various sizes - 7500Tons/Month
106	G.S & COMPANY	Manufacturing stone dust - 1600T/M
107	THOMSON GRANITES PRIVATE LIMITED	Various Sizes of Blue Metal Jelly - 110000Tons/Month

108	SLS BLUE METALS CRUSHER UNIT	Manufacturing of Various sizes of Jelly Stone Du - 150000Tons/Month
	4. District: Cuddalore	
1	VALLALAR BLUE METALS	Blue metal chips of various size - 600 Ton/month
2	KSP EARTH WORKS	Dust - 72t/day Latterite - 2700Kg/day Pebbles- 1620Kg/day Gravel/ 4500Kg/day M Sand- 168T/day
	5. District: Dharmapuri	
1	SRI BAGIYALAKSHMI ENTERPRISES	Blue Metal jelly - 43T/day
2	SRI VENKATESWARA JELLY CRUSHING UNIT	Blue Metal jelly - 600T/M
3	TRANSCRUSHER MATADHAHALLI-VILLAGE VENKATADARAHALLI-POSTPAPPIREDDIPATTI	Blue Metal Jelly - 22T/Day
4	Sree Amman Blue Metals	Blue Metal Aggregates of various sizes - 100000T/Month
5	CITY BLUE METAL	Blue metal jelly - 60000cft/d
6	SRI VELAVAN BLUE METALS	BLUE METAL JELLY - 1800T/M
7	GOLDEN BLUE METALS	Blue Metal jelly 20 mm 12 mm 6mm size - 200T/Hr
8	MULLAI BLUE METAL	Blue Metal jelly - 15T/day
9	KRISHNA BLUE METALS	BLUE METAL JELLY - 90T/DAY
10	SASI ROAD FINISHERS -STONE CRUSHER	Blue Metal Jelly - 220 T/Day
11	ARUL MRUGAN BLUE METAL	Blue Metal Jelly - 100T/M
12	KEERTHIGA BLUE METALS	Blue Metal Jelly - 44T/day
13	SRI ELUMALAIYAN BLUE METALS	Blue Metal Jelly - 125000Cft./M
14	KUPPAMMAL BLUE METALS	Blue Metal Jelly - 1800T/M
15	P R P BLUE METALS	Blue Metal Jelly - 500T/Day M Sand - 350 T/Day
16	SRI VINAYAGA BLUE METALS	BLUE METAL 20MM - 1800 T/M BLUE METAL 40MM - 4000 T/M BLUE METAL 12MM- 1700 T/M
17	Sree Amman Blue Metals	Blue Metal Jelly - 1500Cu.ft/Day
18	SRI ANJANEYA BLUE METALS	Blue metal jelly - 160T/day M Sand - 80T/day
19	Ke Ve Arr and Co Blue Metals	Blue Metal Jelly - 315 T/D
20	SRI LAKSHMI BLUE METALS	Blue Metal Jelly - 2400T/Day Crushed Mineral Sand - 480 T/Day P Sand and others- 600 T/Day
21	ARUN BLUE METAL	Blue Metal Jelly - 1200 T/Day M-Sand and P Sand - 800 T/Day
22	SENDRAYAPERUMAL BLUE METALS	Blue Metal Jelly - 300T/Day M-Sand and P Sand - 200 T/Day
23	SHRI PONGURU BLUE METAL	Blue Metal Jelly-40,20,12,6 mm - 1700T/Day M-Sand and P Sand - 1900 T/Day
24	KUMAR BLUE METALS	Blue Metal Jelly - 1150 T/M
25	SRI AMMAN BLUE METAL	Blue Metal Jelly - 15T/Day
26	V T R V BLUE METALS	Blue Metal Jelly - 500T/Day
27	SRI VENKATACHALAPATHY BLUE METALS	Blue Metal Jelly - 3800T/Day
28	S M BLUE METALS	Blue Metal Jelly - 1600T/Day
	6. District: Dindigul	
1	S.K. Blue Metals	3/4 - 50MT/M 1/2 - 40MT/M 1/4 - 25MT/M
2	Sri Saravana Blue Metals	Various sizes of Jelly - 400T/Day
3	Nageswari Metals	Stone Jelly - 19T/M
4	Diamond Blue Metals	Stone Jelly - 28T/Day Dust - 3T/Day

5	Esha Blue Metals P Ltd	Blue Metal Jelly - 4800T/M
6	Sakthi Murugan Blue Metals	Blue Metal Jelly - 216T/Day Stone Dust - 24 T/day
7	RR INFRAA CONSTRUCTION	Blue Metal Jelly of Various Sizes - 45T/Day
8	Jothi Crusher	Blue Metal Jelly - 50T/Day
9	Sri Ragavendra Crushers	Blue Metal Jelly 1 1 2 - 80T/Day Soling - 160T/Day
10	AKMG Blue Metals	Blue Metal Jelly - 2700T/M Stone Dust - 300T/M
11	SVS BLUE METALS	Various types of jelly stones - 1125T/M
12	Kumaran Blue Metals	3-4 Jellies - 18T/day 1-2 Jellies - 18T/day 1-4 Jellies- 9T/day Fine/ 4.95T/day
13	Sri Sakthi Blue Metals	Stone Metal Jelly - 45T/Day
14	Sri Balaji Blue Metal Industries	Stone Metal Jelly - 18 T/day
15	SRI AATHITHYA BLUE METALS	Stone Jelly - 6000T/M
16	Sri Palani Andavar Diamond Blue Metals	Stone Metal Jelly - 30T/Day
17	UTHRAKALIAMMAN INFRASTRUCTURE P LTD	Various sizes of Blue Metal Jelly - 900T/day
18	Sree Malleswara Blue Metals	Various size of jelly - 450T/M
19	SRI PARVATHAKANNA BLUE METALS	Stone Jelly - 200T/M
20	M. ROCKS	Various sizes of Stone Jelly - 18T/day
21	Siva Sakthi Blue Metals	Various sizes of Stone Jelly - 250T/M
22	Sakthi Blue Metals	Blue Metal Jelly - 4800T/M
23	Malar Blue Metals	Various size of stone Jelly - 2400T/M
24	Sri Rathinam Blue Metals	Stone Jelly - 100T/day
25	Sri Kumaraguru Blue Metals	Blue Metal Jelly - 270T/day
26	R R BLUE METAL	BLUE METAL JELLY OF VARIOUS RANGING SIZE FROM - 3500T/M
27	MSR Crusher	Stone Boulders - 100T/M
28	Kumaran Blue Metals	Various sizes of Jelly - 80T/Day
29	VELAVAN BLUE METALS	Blue Metal Jelly - 40T/Day
30	SIVANESAN BLUE METALS	Various sizes of stone jelly 1/4 - 700T/Day M-sand - 80 T/Day
31	S A BLUE METAL INDUSTRIES	Stone Jelly - 275T/M
32	ROCK BLUE METALS	Stone Jelly - 9340cu.m Fines -Stone Dust - 860cu.m
33	VSR BLUE METALS	Blue Metal Jelly - 2400T/M
34	MAHALAKSHMI BLUE METALS	Various sizes of jelly - 1080T/Month
35	SRI SREENIVASA BLUE METALS	Stone Jelly of varouos size - 7900 T/m Hot dry mix - 200 T/M
36	SRI AMMAN BLUE METALS	Blue Metal Jelly - 80 T/day
37	Om Sakthi Blue Metal	Various size of Blue Metal Jelly - 225T/Day
38	SRIRAM NALLAMANI BLUE METALS	Stone boulders - 11.8T/M Blue metal jelly - 12.1T/M
39	SREE SOUNDAR RAJ BLUE METALS	Various size of jelly - 40 T/day
40	SRI VIRUMANDI BLUE METALS	Blue Metal Jelly - 125 T/M
41	Diamond Blue Metal Works	Stone Metal Jelly - 65T/M
42	SRI VENKATESWARA CRUSHER	Blue Metal Jelly - 1125 T/M
43	Sri Palaniyappa Blue Metals	Blue Metal Jelly - 1080 T/M
44	SL BLUE METAL	Blue Metal Jelly - 650 T/M
45	Sakthi Murugan crusher B Unit	Various size of Stone Jelly - 450T/day
46	SHREE THEVAR BLUE METALS	Various Sizes of Blue metal Jelly M sand & P sand - 8126T/M

47	PREMIUM GRANITES	Various size of Blue Stones - 125T/M
48	Sakthi Murugan crusher	Various sizes of Stone Jelly - 45T/M
49	Swamy Blue Metals	Stone Jelly - 240T/M
50	UV BLUE META (SURYA BLUE METAL)	BLUE METAL JELLY - 1400T/M STONE DUST - 100T/M
51	Chithara Blue Metals	Blue Stone - 240T/M
52	SIVA CRUSHERS	Stone Jelly - 200T/M
53	MS Ve Blue Metal	3 4 - 1200T/M 1 2 - 900T/M 1 4- 300T/M
54	Chenthur Crusher Works	Various sizes of Stone Jelly - 240T/M
55	Kalanjiya Blue Metals	Stone Jelly - 1115T/M
56	Ramco Blue Metals	3/4" Stone Jelly - 426T/M 1/2" Stone Jelly - 360T/M 1/4" Stone Jelly- 234T/M
57	ARV Blue Metals	BLUE METAL JELLY OF VARIOUS SIZES - 6100T/M DUST - 400T/M
58	VINAYAGA BLUE METAL	Stone Jelly - 90T/day Stone Dust - 10T/day
59	VELA CRUSHER	Blue Metal Jelly - 90T/day
60	Narasima Blue Metals	Various size of Stone Jelly - 90T/day Stone Dust - 10T/day
61	WINNER BLUE METALS	Various sizes of stone jelly - 270T/day Stone dust - 30T/day
62	SIVA BLUE METALS	Blue Metal Solings and chips of various ranging - 1000T/M
63	KTR BLUE METALS	Various sizes of stone jelly - 100T/D M-Sand - 98T/D
64	SRI CHAKKRA BLUE METALS	Various sizes of Blue metal stone jellies - 1000T/D M-Sand - 294T/D Dust- 6MT/day
65	DRN INFRASTRUCTURE PRIVATE LIMITED	Various size of stone jelly - 2000T/day
66	S R M SANDS	Various sizes of stone jelly - 1000T/day M Sand - 475T/day
67	SENTHUR BLUE METAL M SAND	Various Sizes of Stone Jelly 1/4,1/2,3/4,1 1/2, Ch - 1000T/day M-Sand - 475T/day
68	RUBAN M SAND UNIT	Various Sizes of stone jelly - 1000T/day
69	VSI SAND	M SAND - 15000T/MONTH
70	SRI SAI RATHINAM BLUE METALS	Blue Metal Jelly S VARIOUS SIZES - 800T/d M SAND AND P SAND - 1200T/D
71	K T R BLUE METALS	Various Size of Stone Jelly - 1000T/D
72	DRN INFRA STRUCTURE PVT LTD	Various Sizes of Stone Jelly - 1000T/D
	7. District: Erode	
1	SRI SRINIVASA BLUE METALS	Blue Metal Jelly and Powder - 625T/Day
2	SHANMUGHATHITHAN BLUE METALS	Blue metal and stone powder - 17000T/M M sand - 7000T/M P sand- 3000T/M
3	SHRI GANGA MINES - FORMERLY K.K.T. BLUE	Blue Metal Jelly - 40mm, 20mm, 12mm and 6mm - 2200T/M
	8. District: Hosur	
1	Global Blue Metal Pvt Ltd	Blue metal jelly - 150T/Day
2	MAHALAKSHMI BLUE METALS UNIT I POONNAGARAM VILLAGE	BLUE METAL JELLY - 2000T/DAY
3	MAHALAKSHMI BLUE METALS UNIT II KAMANDHODDI VILLAGE	BLUE METAL JELLY - 3000T/DAY M-SAND - 2000T/DAY
4	ANAND GRANITE WORKS BLUE METAL	BLUE METAL JELLY - 2000T/DAY M-SAND - 2000T/DAY

5	G M STONES AND ROCKS	BLUE METAL JELLY - 3500T/DAY M-SAND - 1500T/DAY
6	SRI VENKATESHWRA BLUE METALS	Blue Metal Jelly - 1975T/Day M Sand - 3000T/Day Crushed Rock Fines - 1000T/Day
7	GRACE BLUE METAL	Blue Metal Jelly - 2000T/Day M Sand - 1250T/Day Crushed Rock Fines CRF- 740T/Day
8	Puja Blue Metal	Blue metal jelly - 1975T/Day M Sand - 3000T/Day Crushed Rock Fines- 1000T/Day
9	SRI SIVA SAKTHI CRUSHERS	Blue metal jelly - 270T/day
10	Sri Jayam Blue Metal	Blue metal jelly - 490T/Day M Sand - 2500T/Day Crushed Rock Fines- 1000T/Day
11	Sri Sanjeevini Blue Metals	Blue Metal Jelly - 2200T/Day M sand - 2000T/Day
12	AVS Tech Building Solutions India Pvt lt	Blue Metal Jelly - 1500T/Day M Sand - 1925T/Day Crushed Rock Fines- 140T/Day Concrete Block/ 400T/Day
13	Sree Lakshmi Blue Metals	Blue Metal Jelly - 2000T/Day M sand - 2000T/Day
14	S and S Crushers	Blue metal jelly - 3500Tons/Day M Sand - 1500 Tons/Day
15	FOUSIA BLUE METALS	Blue Metal jelly - 150T/M
16	THAI BLUE METALS	Blue Metal jelly - 412.5T/M
17	OM SAKTHI BLUE METAL	Blue Metal jelly - 750T/M
18	TRANSTONE BLUE METAL	Blue Metal jelly - 750Cum M/M
19	SRI BHAVANI BLUE METALS	Blue Metal jelly - 40T/M Powder - 5T/M
20	QUALITY BLUE METALS	Blue Metal jelly - 50000Mt/M Robo Sand - 25000Mt/M Jelly Powder- 24750Mt/M
21	SRI RAM M SAND	M SAND - 31500T/M CRUSHED ROCK FINES - 3150T/M
22	BHARANI BLUE METAL AND CRUSHING UNIT	Blue Metal jelly - 425T/M
23	Sri Venkateswara Blue Metals	Blue Metal jelly - 450T/month
24	Sri Devaraajaa M sand Kothapetta Krishnagiri Tk-	Blue Metal jelly - 1000T/month
25	DEVI BLUE METALS	Blue Metal jelly - 300T/month
26	JEEVAN BLUE METALS	Blue Metal jelly - 900T/month
27	R.K.BLUE METALS	Blue Metal jelly - 80T/day
28	MAHALAKSHMI BLUE METALS	Blue Metal jelly - 1500T/month
29	SRI ANJANEYA BLUE METALS INDUSTRIES	Blue metal jelly - 300T/d
30	JAVEED BLUE METALS	Blue Metal jelly - 3.5T/day
31	ARADHANA GRANITE WORKS 2	Blue Metal Jelly - 1975Tons/Day M Sand - 3000Tons/Day Crushed Rock Fines CRF- 1000Tons/Day
32	SRI VENKATESHWARA BLUE METAL	Blue metal jelly - 1250T/M
33	SRI MARUTHI BLUE METALS	Blue metal jelly - 13T/d
34	BHARAT BLUE METALS	Blue Metal jelly - 250T/day
35	MANI BLUE METALS	Blue Metal jelly - 300T/month
36	Vinay Blue Metals Previously K.C.M BLUE METALS	Blue Metal jelly - 1800T/month
37	XEC Blue Metals Pvt. Ltd	Blue Metal Jelly - 12T/Day
38	TRRANS GRANITES	Blue metal jelly - 60T/d
39	ELUMALAI SRINIVASA BLUE METALS	Blue Metal jelly - 6.5T/Day
40	SRI VENKATESWARA BLUE METALS	Blue Metal jelly - 1110T/month
41	SRINIVASA BLUE METALS	Blue Metal jelly - 4000Tons/Day
42	M.G.BLUE METALS	Blue Metal jelly - 20T/day
43	TEJA BLUE METAL	Blue Metal jelly - 16T/day

44	SRI SRINIVASA BLUE METALS Thorapalli Agraharam Hosur Tk-	Blue Metal jelly - 50T/day
45	SREE SIVASAKTHI BLUE METALS	Blue Metal jelly - 50T/day
46	SRI SIVA METAL SUPPLIERS	Blue Metal jelly - 17T/day
47	SHREE RAMAJEYAM BLUE METALS	Blue Metal jelly - 12T/day
48	THIRUMALA BLUE METALS	Blue metal jelly - 12T/d
49	SRI KAMATCHI BLUE METALS	Blue Metal jelly - 10T/day
50	SUMUKHA BLUE METALS AND BLOCKS LLP UNIT	Blue Metal jelly - 1975T/day M Sand - 3000 T/Day Crushed Rock Fines (CRF)- 1000 T/Day
51	KPT BLUE METALS	Blue Metal jelly - 12T/day
52	SRI BALAJI BLUE METALS	Blue Metal jelly - 15T/day
53	TPS BLUE METALS	Blue Metal jelly - 12T/day
54	A V S TECH BUILDING SOLUTIONS INDIA P LT	Blue Metal jelly - 15000T/month
55	SARVAH INFRA PVT LTD	Blue Metal jelly (Graded Gravels) - 54000T/M M Sand - 90000T/M Granular Sub Base- 4500 T/M
56	INFRA BLUE METAL	Blue Metal jelly - 1200T/M
57	PERIASAMY BLUE METALS	Blue Metal jelly - 12T/day
58	V.V GRANITE STONE CRUSHER UNIT I SRI VENKATESWARA ENTERPRISES	Blue Metal jelly - 50T/day
59	SREE RAMA BLUE METAL	Blue Metal jelly - 12T/day
60	ASWINI BLUE METALS	Blue Metal jelly - 12T/day
61	SINGH AND SHEIK BLUE METALS	Blue Metal Jelly - 12T/day
62	NANDHI INFRA (PREVIOUSLY VISHWAS CONCRET	Blue Metal jelly - 79800T/M Crushed rock fine - 36900 T/M
63	SEVEN HILLS BLUE METALS	Blue Metal jelly - 55T/day
64	CHANAKYA CRUSHERS	Blue Metal jelly - 12T/day
65	Sri Vinayaka Stone Crusher Previously VV Achettipalli	Blue Metal jelly - 2000Tons/Day M sand - 2000 Tons/Day
66	ARULJOTHI BLUE METALS	Blue Metal jelly - 12T/day
67	ROYAL BLUE METALS (PREVIOUSLY BARKATH BL	Blue Metal jelly - 70MT/Day
68	OM NAMACHIVAYA BLUE METALS	Blue Metal jelly - 12T/day
69	Sri Lakshmi Venkateshwara Blue metals Unit I Previously G.V. BLUE METALS	Blue Metal jelly - 12T/day
70	LAVANYA BLUE METALS	Blue metal jelly - 12T/d
71	SRI MURUGAN BLUE METALS	Blue metal jelly - 12T/d
72	SELVI BLUE METAL	Blue Metal jelly - 12T/day
73	VETUVANAM YELLAMMA THUNAI BLUE METALS	Blue Metal jelly - 650Ton/Day
74	SRI DURGA STONE CRUSHER	Blue Metal jelly - 70T/day
75	SRINIDHI GRANITES	Blue Metal jelly - 15T/day
76	SREE KALAIMAGAL CRUSHERS	Blue Metal jelly - 36T/day
77	SRI KRISHNA BLUE METALS	Blue Metal jelly - 15T/day
78	THRIVENI EARTH MOVERS PRIVATE LIMITED	Blue Metal jelly - 1000T/day M.Sand - 4000 T/day
79	NAFA BLUE METALS	Blue Metal jelly - 16T/day
80	SRT BLUE METALS	Blue metal jelly - 15T/d
81	SRI HARI BLUE METALS	Blue Metal Jelly - 12T/day
82	FINE SANDS LLP (PREVIOUS SAPTHAGIRI BLUE	Blue Metal Jelly - 16T/day
83	SREE REDDY BLUE METALS	Blue Metal Jelly - 16T/day
84	LBM Minerals Previously KRISHNA BLUE METALS	Blue metal jelly - 16T/d

85	G K Blue Metal	Blue Metal Jelly of various sizes - 100T/Day
86	M.S.P CRUSHER	Blue Metal jelly - 68000Ton/Month
87	SREE CHOWDESHWARI BLUE METALS	Blue Metal Jelly - 16T/day
88	SRIVARI INFRASTRUCTURE UNIT II	Blue Metal Jelly - 1975T/day M Sand - 3000 T/Day Crushed Rocks Fines- 1000 T/Day
89	Seven Hills Blue Metals Previously Ganesh Blue Metals	Blue Metal Jelly - 37T/day
90	SRI SAI NANJUNDESWARA BLUE METALS	Blue Metal Jelly - 18T/day
91	NRL ENTERPRISES	Blue Metal Jelly - 3500T/day M Sand - 1500T/day
92	SUMUKHA BLUEMETALS AND BLOCKS LLP UNIT I	Blue Metal Jelly(Graded gravels) - 3750T/Day M Sand - 3375 T/Day Crushed Rock Fines (CRF)- 370 T/Day
93	SANJEEVINI BLUE METALS	Blue Metal Jelly - 700T/day
94	SHRI CHENNAI MINES	Blue Metal jelly - 375MT/Month
95	VEDIAPPA BLUE METALS	Blue Metal jelly - 16T/day
96	TRRANSTONES	Blue Metal Jelly - 20T/day
97	A AND R CRUSHERS	Blue Metal jelly - 12T/day
98	SANKARAN BLUE METALS	Blue Metal Jelly - 15T/day
99	ANGALAPARAMESWARI BLUE METALS	Blue Metal Jelly - 12T/day
100	ARASU BLUE METALS	Blue metal jelly - 18T/d
101	J.R.S CRUSHER (Previously HANUMAN BLUE M	Blue Metal jelly - 1500T/day M Sand - 2500T/day
102	SURYA ROCKS PRODUCTS	Blue Metal jelly - 18T/day
103	MAHALAKSHMI BLUE METALS	Blue Metal Jelly - 17T/day
104	SOORYA BLUE METALS	Blue Metal Jelly - 15 T/day
105	G.P.T BLUE METALS	Blue Metals jelly - 1700T/day M.Sand - 700T/day
106	A B Rock Products	Blue Metals jelly - 45T/day
107	K.M.P.BLUE METALS	Blue Metals jelly - 17T/day
108	MSB BLUE METALS	Blue metal jelly - 18T/d
109	THIRUMALA BLUE METALS	Blue Metals jelly - 1700T/day M.Sand - 700 T/day
110	BALAJI BLUE METALS	Blue Metal Jelly - 1000MT/M
111	LAKSHMI BLUE METALS	Blue metals jelly - 16T/Day
112	S.A.B.M BLUE METALS (PREV SRI AMMANBLUE)	Blue Metal jelly - 4000Tons/Day
113	ALTIMA BLUE METALS	Blue Metal Jelly Graded Gravels - 1975T/day M Sand - 3000T/day Crushed Rock Fines CRF- 1000T/day
114	MAHALAKSHMI BLUE METALS UNIT- II	Blue Metal jelly - 24T/day
115	RAMACHANDRA CRUSHING CO P LTD	Blue metal jelly - 67t/d
116	SRINIVASA BLUE METALS	Blue Metals jelly - 475Tons/Month
117	SRI BABA BLUE METALS PVT LTD	Blue metal jelly - 1400mt/m
118	LAKSHMI METAL SUPPLIERS	Blue metal jelly - 416T/M
119	ANAND BLUE METALS	Blue Metal Jelly - 1500Ton/M
120	KONKAN AGGREGATES PVT LTD	Blue Metal jelly - 1200T/month
121	SRI PARVATHAMMA GRANITES	Blue metal jelly - 1350T/Day
122	SRI MAHALAKSHMI BLUE METAL	Blue Metal Jelly - 800T/day
123	SRI SAI KESHAVA ENTERPRIESES	Blue Metal Jelly - 1700T/day M.Sand - 700T/day
124	SHREE LAKSHMI VENKATESWARA BLUE METALS	BLUE METAL JELLY - 1100T/M
125	GMR BLUE METALS	stone jelly - 43T/day
126	VINAYAGA BLUE METALS	Blue Metal Jelly - 35T/day
127	ASWINI BLUE METALS	Blue Metal Jelly - 55T/day

128	SRI VENKATESWARA BLUE METALS	Blue metal jelly - 52t/d
129	KRS BLUE METALS	Blue Metal jelly - 35T/day
130	SRI LAKSHMI VENKATESHWARA BLUE METAL	Bluemetal Jelly - 500T/day M Sand - 400T/day
131	SRI RANGA BLUE METALS	Blue Metal Jelly 40mm 20mm 12mm 6mm - 200T/Day M-Sand - 100T/Day
132	ASHOK BLUE METALS	Blue Metal Jelly - 45T/Day
133	V.M.BLUE METALS	Blue Metal jelly - 30T/day
134	SRI RAGAVENDRA BLUE METALS	Blue Metal jelly - 15T/day
135	SRI MARUTHI BLUE METALS	Blue Metals jelly - 24T/day
136	PARVATHY BLUE METALS	Blue Metal jelly - 450T/M
137	S S V BLUE METALS	Blue Metal Jelly - 5500T/Day Crushed Rock Fines CRF - 500T/Day
138	PRAKASH BLUE METALS AND M SAND	Blue Metal jelly - 2000T/Day M Sand - 2000T/Day Crushed Rock Fines CRF- 1000T/Day
139	MANIAN BLUE METAL	Blue metal jelly - 1000Tons/Day M Sand - 550Tons/Day
140	SHREE SURYA BLUE METALS	Blue metal jelly - 100T/Day
141	JAI HANUMAN BLUE METALS	Blue Metals jelly - 1990T/DAY M Sand - 3000 T/Day Crushed Rocks Fines CRF- 1000 T/Day
142	AVS CONSTRUCTIONS PRECAST	
143	KIRAN BLUE METALS	Blue metal jelly - 70T/Day
144	PRAVEEN BLUE METALS	Blue metal jelly - 44T/day
145	Aradhana Granites Works Unit II	Blue metal jelly - 600T/D
146	SRI THIRUMALAIVASAN BLUE METALS	Blue metal jelly - 75T/d
147	SRI VENKATESA BLUE METALS	Blue metal jelly - 400M/m
148	SRI OM SAKTHI BLUE METALS	Blue Metal jelly - 53T/d
149	SREE PACHIAMMAN BLUE METALS	Blue metal jelly - 24T/m
150	SRI THIMMARAYASAMY BLUE METALS	Blue metal jelly - 80T/d
151	SRI BALAJI BLUE METALS	Bluemetal jelly - 55T/d
152	VENKATESWARA STONE CRUSHER	Blue metal jelly - 45T/D
153	A.V.S TECH. BUILDING SOLUTIONS	Crush Max 40mm - 4000MT/Month Blue Metal jelly 8mm,10mm,20mm,40mm - 43250 MT/Month M.Sand- 27000 MT/Month CRF crushed rock fines/ 13475 MT/Month Wet mix gravel- 24775 MT/Month
154	STONE MARK ENGIEERING PVT LTD	Blue Metal Jelly - 50T/M
155	Sri Balaji Blue Metals	Blue Metral Jelly - 450T/Month
156	SINGH AND SHEIK BLUE METALS	Blue metal - 3T/Da
157	LARSEN AND TOUBRO LIMITED ECC DIVISION DT	Blue Metal jelly - 1760T/Day
158	A V S TECH BUILDING SOLUTIONS DHARAVENDRAM-VILLAGE	Blue metal jelly - 27184.5T/M M.Sand - 27000 T/M Crushed Rock Fines- 13455 T/M Jelly powder/ 13.75T/M Bituman Mix Gravel- 20250T/M Wet Mix Gravel- 24963.75T/M
159	GUNIN INFRASTRUCTURER - LLP (PREVIOUSLY KARIYASANDRAM-VILLAGE SHOOLAGIRI	Blue Metal Jelly - 100000T/M Stone dust - 1250T/M M.Sand- 98750 T/M
160	TRANSSTROY INDIA LTD	AGGREGATES - 200T/hr
161	SRIVARI INFRASTRUCTURE UNIT I	Blue Metal Jelly - 1975T/day M Sand - 3000T/day Crushed Rock Fines- 1000 T/Day
162	SRI HARI BLUE METAL BATLAPALLI VILLAGE	BLUE METAL JELLY - 700T/DAY
163	SRI MALLESHWARA BLUE METALS	Blue Metal Jelly - 1600 T/Day
164	Prism Surface Coatings Pvt Ltd	M S Sheet Metal Fabrication - 70MT/M M S Structural Fabrication - 70MT/M G I Sheet Metal Fabrication- 70 MT/M S S Sheet Metal Fabrication/ 23.25MT/M

165	Sakthi Blue Metals	Blue metal jelly - 50T/m
166	Star Silicates	Blue Metal Jelly - 1475T/Day M Sand - 2500T/day Crushed Rock fines - 1000Ton/day
167	BHAVANI SHANKAAR BLUE METALS	Blue Metal Jelly - 2500Tons/Day M Sand - 2500 Tons/Day
168	SRI KRISHNA BLUE STONE	Blue Metal Jelly - 3000T/Day M Sand - 1500 T/Day
169	POOJA ENTERPRISES BLUE METAL	Blue Metal Jelly in different sizes - 4000Tons/Day M Sand - 3000 Tons/Day Crushed Rock Fines CRF- 1000 Tons/Day
170	VRIDHIS BLUE METALS AND MINERALS	Blue Metal Jelly - 1975T/Day M Sand - 3000 T/Day Crushed Rock Fines CRF- 1000 T/Day
171	SRI KUMARAN BLUE METAL AND SANDS UNIT I	Blue Metal Jelly - 4000Tons/Day M Sand - 4000 Tons/Day
172	ANJANEYA BLUE METAL	Blue Metal Jelly - 1990T/Day M Sand - 3000T/Day Crushed Rocks Fines- 1000T/Day
173	NANDHEESWARA BLUE METAL	Blue Metal Jelly - 2500T/Day M Sand - 1500T/Day
174	ANNANMAR BLUE METALS	Blue Metal of size - 300Tons/Month
175	MMR ENTERPRISES	Watch Cases - 2000Nos/Day
176	V R V BLUE METALS	Blue Metal Jelly - 1750T/Day M Sand - 3000T/Day Crushed Rocks Fines (CRF)- 1240T/Day
177	JR MINES CRUSHER UNIT	Blue Metal Jelly in Various Sizes - 4800T/Day Crushed Mineral Sand (M Sand) - 3200T/Day
178	SRT STONES AND ROCKS	Blue Metal Jelly in different sizes and Stone Dust - 3000Tons/Day M Sand - 2000 Tons/Day
179	SKS BUILDERS AND PROMOTERS	Blue Metal Jelly - 3200Tons/Day M Sand - 2800 Tons/Day
180	NMR BLUE METALS	Blue Metal Jelly - 2500T/Day M Sand - 2490T/Day Crushed Rock Fines- 1000T/Day
181	SRI VENKATESHWARA BLUE METALS	Blue Metal Jelly in Various Sizes with stone dust - 2500Tons/Month M Sand - 2000Tons/Month
182	VMR ASSOCIATESS	Blue Metal Jelly in Various Sizes - 5000Tons/Day M Sand - 3000Tons/Day Crushed Rocks Fines- 2000 Tons/Day
183	BEST MINERALS	Blue Metal Jelly - 2200T/Day M Sand - 2000 T/Day
184	PR MINES	Blue Metal Jelly - 2000T/Day M Sand - 2000 T/Day Crushed Rocks Fines - 1990 T/Day
185	S S BLUE METAL	Blue Metal Jelly - 3500T/Day M Sand - 1500 T/Day
186	VAR BLUE METAL	Blue Metal Jelly - 2500Tons/Day M Sand - 1500 Tons/Day
187	SOBHA DEVELOPERS PUNE LIMITED	Blue Metal Jelly - 3000T/Day M Sand - 2000 T/Day
188	R S BLUE METAL	Blue Metal Jelly - 2100T/Day M Sand - 1000 T/Day
189	STONEAGE BLUE METALS	Blue Metal Jelly - 1975T/Day M Sand - 3000 T/Day Crushed Rocks Fines- 1000 T/Day
190	SRI KUMARAN BLUE METAL	Blue Metal Jelly - 2500Tons/Day M Sand - 4500 Tons/Day
191	AGGARAM BLUE METALS	Blue Metal Jelly - 2000T/Day M Sand - 1000T/Day
192	L.K. Stones	Blue Metal Jelly of Various sizes & stone dust - 250Tons/Day Msand and P sand - 125Tons/Day
193	S.R.BLUE METALS	Blue Metal Jelly - 40000Tons/Month M-sand - 30000Tons/Month
194	SRI S R R BLUE METALS	Blue Metal Jelly - 250Tons/Day M Sand - 250Tons/Day

195	BLUE STONE CO	Blue Metal Jelly of Various sizes - 1400Tons/Day M-Sand - 1000 Tons/Day Stone Dust- 75Tons/Day
	9. District: Karur	
1	AMMAN BLUE METALS	Blue Metal Jelly of various Sizes - 40000T/M Blue Metal M Sand - 10000T/M
2	K R K BLUE METALS	Blue Metal Jelly of Various sizes - 40000T/M Blue Metal M Sand - 10000T/M
3	KCP ENGINEERS PRIVATE LIMITED VELLAKOVIL	Manufacturing of various sizes of Jelly - 20000T/M M Sand - 10000T/M
4	Shri Selva Vinayaga Blue Metals	Blue Metal Jelly of Various Sizes - 30000T/M Blue Metal Boulders - 10000T/M
5	SAI BLUE METALS	Blue Metal Jelly of Various Sizes - 40000 T/month Bule Metal M-Sand & P-Sand - 10000T/month
6	VAIGAI BLUE METALS	40mm 20mm 12mm 6mm - 2800T/month
7	SAKTHI BLUE METALS	40mm 20mm 12mm 6mm - 900T/month
8	KURINJI BLUE METALS	20mm 10mm 6mm - 2000T/month
9	SRI VETRIVELAN BLUE METALS	20mm 12mm 6mm - 640T/month
10	TPK SAND CRUSHERS PVTLTD	40mm 20mm 12mm 6mm - 1600T/month
11	PKT BLUE METALS	20mm 12mm 6mm - 800T/month
12	TERUMURUGAN BLUE METAL	20mm 12mm 6mm - 1560T/month
13	SRI RAGAVENDRA BLUE METALS	40mm 20mm 12mm 6mm - 800T/month
14	REENA CRUSHER UNIT	40mm 20mm 12mm 6mm - 800T/month
15	GOODLINES ASSOCIATES	40mm 20mm 12mm 6mm - 800T/month
16	Ambigai Blue Metals	Blue metal chips of sizes 20mm 12mm 6mm - 520 T/M
17	BEST BLUE METALS	Blue Metal Jelly of various sizes - 70000 T/M Blue Metal M Sand and P Sand - 10000T/M
18	Sri Ganesh Murugan Blue Metals	Blue metal chips of sizes ranging from - 800 T/M
19	Aravindh Blue metaal	Blue metal chips of size ranging from - 20000 T/M Blue Metal M Sand- 900T/M
20	R N Blue metals	Blue metal chips of sizes - 2100 T/M
21	VAT Blue metals	Blue mtal soling and chips of sizes - 800 T/M
22	Kousic and Co blue metals	Blue Metal Jelly of various sizes ranging 6mm, - 100T/M
23	Sri Ganesh blue metals	20mm Blue Metal Jelly - 825T/M 12mm Blue Metal Jelly - 200 T/M 6 mm Blue Metal jelly- 100 T/M
24	SEVEN HILLS BLUE METALS	Blue metal soling and chips of various sizes - 3800 T/M
25	Sujatha jelly crusher unit II	Blue metal of various sizes - 1300 T/M
26	KUMARAN BLUE METAL	Blue metal solings and chips of sizes - 2000T/M
27	SRI ARUN BLUE METALS	Blue metal jelly of sizes varies from 6mm,12mm,2 - 150 T/M
28	KTR BLUE METAS	BLUE METAL CHIPS OF SIZES - 800 T/M
29	SRI MURUGAN BLUE METALS	BLUE METAL JELLY OF SIZES - 650 T/M
30	RAJARAJESWARI BLUE METALS	BLUE METAL CHIPS OF SIZES 20MM 12MM 6MM - 800 T/M
31	SRI VENKATESWARA BLUE METAL	Blue Metal Jelly - 150T/month
32	SIVAN BLUE METALS	BLUE METAL JELLY - 200T/month
33	ARAVIND BLUE METALS	solings and units of sizes varying from40MM 20MM - 1600T/month

34	MARAGATHEESWARAN BLUE METALS	Blue metals jelly of size 20MM 12MM 6MM - 150T/month
35	CHOLA BLUE METALS	solizs and units of varying sizes 20MM 12MMM 6MM - 480T/month
36	PALANI ANDAVAR STONE CRUSHER	Blue metal jelly 20MM 12MM 6MM - 150T/month
37	SIVA SAKTHI BLUE METALS	Blue metal jelly 20mm,12mm,6mm - 520T/month
38	ANNAI BLUE METALS	Blue metal chips ranging from 6mm,12mm, 20mm - 750T/month
39	SELVAKUMAR BLUE METALS	Granite jelly - 120T.month
40	NEW MARAGADEESWARAR BLUE METALS	40MM 20MM 12MMM 6MM - 1300T/month
41	BALAA BLUE METALS	40mm 20MM 12MM 6MM - 800T/month
42	SRI ARUL MURUGAN BLUE METALS	20MM 12MM 6MM - 640T/month
43	SRI VENKATARAMANASAMY BLUE METALS	40MM 20 12MM 6MM - 700T/month
44	SRI GANGAI BLUE METALS	20MM 12MM 6MM - 400T/month
45	NTC Blue Metals LLP	Blue metal jelly ranging from 40MM 12MM 20MM 6MM - 800T/month
46	S S M BLUE METALS	40mm 20mm 12mm 6mm - 240T/month
47	SHREE DHANAM BLUE METALS	Blue metal chips of size 20MM 12MM 6MM - 640T/month
48	INDIAN BLUE METALS	Blue metal chips of various sizes 20MM 12MM 6MM - 640T/month
49	SRI DHANAM BLUE METALS	Blue metal chips of size 20MM 12MM 6MM - 800T/month
50	BALAVINAYAGA BLUE METALS	Blue metal chips size 40mm 20mm 12mm 6mm - 1100T/month
51	SKP BLUE METALS	Blue metal chips of size - 70000T/M Blue metal M sand and P sand - 10000T/month
52	KARUR BLUE METAL	40MM 20MM 12MM 6MM - 2100T/month
53	SAKTHI VINAYAGAR BLUE METALS	40MM 20MM 12MM 6MM - 1000T/month
54	SRI NAVALADI BLUE METALS	20MM 12MM 6MM - 800T/month
55	SRI BALAJI BLUE METALS	6MM 12MM 20MM - 674T/month
56	SRI SARAVANA STONE CRUSHER	ranging from 40MM 20MM 12MM 6MM - 2300T/month
57	S K T BLUE METAL	Blue metal chips of sizes ranging from - 1200T/month
58	SRI RAAM BLUE METALS Formerly ANDAVAR BLUE METALS	Granite Blue Metal Jelly - 150T/month Blue Metal solings and chips of various sizes - 2500 T/M
59	SRI BAGAVATHIAMMAN BLUE METALS	40MM 20MM 12MM 6MM - 1600T/month
60	RAVI BLUE METALS	ranging from 40MM 20MM 12MM 6MM - 1600T/month
61	NEW MARTUHI BLUE METALS	Blue metal jelly 20MM 12MM 6MM - 200T/month
62	VELAVA BLUE METALS	ranging from 40MM 20MM 12MM 6MM - 1200T/month
63	KARUR BLUE METALS	Granite jelly - 150T/month
64	THIRUMALAI BLUE METALS	40MM 20MM 12MM 6MM - 800T/month
65	RAM BLUE METALS	40MM 20MM 12MM 6MM - 1800T/month
66	SRI BALAMURUGAN BLUE METALS	20MM 12MM 6MM - 800T/month
67	K P S BLUE METALS	20MM 12MM 6MM - 640T/month
68	K.S.R. BLUE METALS Formerly ARULMANIVEL BLUE METALS	Blue metal chips of various size 20MM 12MM 6MM - 560T/month
69	ARULMANIVEL BLUE METALS Unit -II	Blue metal jelly of various sizes - 560T/month
70	SRI MAHALAKSHMI BLUE METALS	20MM 12MM 6MM - 640T/month
71	SRI PALANIMURUGAN BLUE METALS	40MM 20MM 12MM 6MM - 800T/month
72	SRI MURUGAN BLUE METALS	40MM 20MM 12MM 6MM - 1200T/month
73	AMMAN ARUL CRUSHER	Granite jelly - 150T/month
74	ARULMURUGAN BLUE METALS	Blue metal chips of sizes - 480T/month

75	MAHAGANAPATHI BLUE METALS KUPPAM VILLAGE	solving and chips of sizes varying - 3200T/month
76	ANDAVAR BLUE METALS KUPPAM VILLAGE	Blue metal chips of sizes varying - 640T/month
77	VANGALAMMAN BLUE METALS KUPPAM VILLAGE	40MM 20MM 12MM 6MM - 800T/month
78	ARUNGARAI AMMAN BLUE METAL NANDANTHI	40mm 20mm 12mm 6mm - 800T/month
79	Lakshmi Blue Metal	Blue metal chips ,Jelly of size20MM 12MM 6MM - 650T/month
80	PONNSANKAR BUILDING MATERIALS SUPPLIERS	40MM 20MM 12MM 6MM - 1600T/month
81	NEW STAR BLUE METALS	20MM 12MM 6MM - 1260T/month
82	SRI GURU BLUE METALS Formerly KUMARAN BLUE METALS	20MM 12MM 6MM - 480T/month
83	VRG BLUE METALS	BLUE metal Solings and chips of sizes ranging from - 1280T/month
84	PVK BLUE METALS	40mm 20mm 12mm 6mm - 480T/month
85	PSP BLUE METALS (FORMELY SRI SAKTHI MUR	20MM 12MM 6MM - 640T/month
86	KANDHAN BLUE METALS	20MM 12MM 6MM - 640T/month
87	SRI AZHAGAR BLUE METALS	40MM 20MM 12MM 6MM - 800T/month
88	VIGNESHWARA BLUE METALS	Blue metals chips of size ranging from - 640T/month
89	SRI SARAVANA BLUE METALS	solvings and chips of sizes varying - 480T/month
90	PONVINAYAGA BLUE METALS	Blue Metal soling and chips of various sizes - 3200T/Month
91	SENTHIL BLUE METALS	Blue metal jelly - 150T/month
92	SRI SHANMUHA BLUE METALS	40MM 20MM 12MM 6MM - 8000T/month
93	VST BLUE METALS PUNNAM VILLAGE	40mm 20mm 12mm 6mm - 1750T/month
94	R.N.KUNGUMAYEE BLUE METALS	Solvings and chips of sizes varying 40MM 20MM - 3200T/month
95	MOON BLUE METALS	GRANITE JELLY - 150T/month
96	SRI VENKATACHALAPATHY BLUE METALS	Blue metal chips of sizes varying - 623T/month
97	VINAYAGA BLUE METALS UNIT II	Blue metal solings and chips of size - 1600 T/M
98	New Five Star Crusher	Blue metal solings and chips of size - 50000 T/M Blue Metal M Sand and P Sand- 10000T/M
99	Diamond blue metal	Blue metal soling and chips of various sizes - 2110 T/M
100	SREE BHARANIMURUGAN BLUE METALS	Blue metal solings and chips of sizes - 3200T/month
101	Sun Blue Metals	Blue metal Soling chips of 40mm 20mm 12mm 6mm - 3200T /Month
102	Maruthi Blue Metals	Blue metal soling and chips of 40mm 20mm 12mm - 1250T/Month
103	Sri Ganesh Murugan Blue Metals	Blue Metal soling and chips various sizes - 1210 T Months
104	SRI PUTHUKALIAMMAN BLUE METALS	Blue metal solings and chips of sizes - 3200 T/Month
105	New Arungaraiamman Blue Metals	BLUE METAL CHIPS OF SIZE - 800T/M
106	ANT BLUE METALS	Blue Metal soling and chips of various sizes from - 3200T/month
107	SRI SENTHIL MURUGAN BLUE METAL	Blue Metal soling and chips of various sizes from - 3200 T month
108	SRI SURYA BLUE METAL	Blue Metal soling and chips of various sizes from - 3200T Month
109	THIRUMALAI BLUE METALS	Blue Metal soling and chips of various sizes from - 3200T Month
110	RAJAVINAYAGA BLUE METALS	Blue Metal soling and chips of various sizes from - 3200T/month
111	CAUVERY BLUE STONES LLP	Blue Metal Jelly of sizes 40MM, 20MM, 12MM ,6MM - 15000 T/M

112	SRI BLUE METAL VENGINDAPURAM VILLAGE	BLUE METAL SOLING AND CHIPS OF VARIOUS SIZES - 1500T/M
113	VETRI VINAYAKAA BLUE METALS	Blue Metal soling and chips of various sizes rang - 3200 T/Month
114	Sri Rathinagiriswarar Blue Metals	Blue Metal Jelly and chips of various size - 3400T/Month
115	SHREE SHAKTHI BLUE METALS	Blue Metal Jelly of Various Sizes - 70000T/M Blue Metal M-Sand & P-Sand - 10000T/M
116	SKP CONSTRUCTIONS	Blue Metal Jelly of Various Sizes - 70000T/M Blue Metal M-Sand & P-Sand - 10000T/M
117	SRI NAVALADIYAR BULE METALS	Blue Metal Jelly of Various Sizes - 60000For Constr Blue Metal M Sand & P Sand - 10000For Constr
118	I SAND QUALITY ROCK PRODUCTS PVT LTD	Blue Metal Jelly of Various Sizes - 70000T/M Blue Metal M Sand and P Sand - 10000T/M
119	NAVAMANI MINES PRIVATE LIMITED	Blue Metal Jelly of Various Sizes - 70000T/Month Blue Meat Msand & P Sand - 10000T/Month
	10. District: Kumarapalayam	
1	R G BLUE METALS	Blue Metal Jelly - 200T/M
2	DIAMOND BLUE METALS	Blue Metal Jelly - 1000T/M
3	S.R. BLUE METALS	Stone Jelly - 20T/Day
4	SRI SAKTHI BLUE METALS	Broken Metal - 50T/M
5	G.S.ENTERPRISES- CRUSHER DIVISION FORMELY SRI LAKSHMI BLUE METALS	Blue Metal Jelly - 80000T/M
6	SRI BANNARI AMMAN BLUE METALS	Blue Metal Jelly - 580T/Month
7	SPS BLUE METALS	Blue Metal Jelly - 720T/M
8	SRI SAKTHI BALAMURUGAN BLUE METAL	Stone Jelly - 100T/Month Quarry Grit - 5T/Month
9	SARASWATHI BLUE METALS	Blue Metal Jelly - 400T/M
10	RAJA BLUE METALS	Metal Jelly - 250MT/Month
11	SRI RAJ BLUE METAL	Stone Jelly - 30T/Day
12	RAJ BLUE METALS	Metal Jally - 1560T/M
13	RAJ CRUSHER BLUE METAL	Blue Metal Jelly - 250T/Month
14	SSS BLUE METALS	Blue Metal Jelly - 200T/M
15	RAMAYEE BLUE METALS	Blue Metal Jelly - 270T/Month
16	MAHARAJA BLUE METALS	Metal Jelly - 200T/M
17	KANDASAMY GOUNDER BLUE METALS	Blue Metal Jelly - 580T/Month
18	SRI PONKALIAMMAN BLUE METALS	Blue Metal Jelly - 1750MT/Month
19	MANOJ BLUE METALS	Granite Jelly - 100T/Month
20	SENTHILRAJA BLUE METALS	Blue Metal Jelly - 250T/Month
21	S.K.M. BLUE METALS	Blue Metal Jelly - 400T/M
22	VMT BLUE METALS Formerly SRI VELMURUGAN BLUE METALS,	Blue Metal Jelly - 200T/M
23	BALAJI BLUE METALS	Blue Metal Jelly - 1000T/M
24	GANESAN BLUE METALS	Blue Metal Jelly - 1000T/M
25	SRI KALIAMMAN BLUE METALS	Blue Metal Jelly - 100T/M
26	SRI PON SENTHIL RAJA BLUE METALS	Blue Metal Jelly - 15000T/M
27	JAYAMURUGAN BLUE METALS	Metal Jelly - 250T/Month
28	SELLANDIYAMMAN BLUE METALS	Blue Metal Jelly - 400T/M

29	Karthikeya Blue Metals	Blue Metal Jelly - 480t/m
30	PACHIAMMAN BLUE METALS Formely MARIAMMAN BLUE METALS	BLUE METAL JALLY - 4000T/M
31	SRI ANDAVAR CRUSH AND INDUSTRIES	LIME STONE POWDER - 295T/M
32	SIVAKAMI BLUE METALS	Blue Metal Jelly - 480MT/M
33	R.S. Blue Metal	Blue Metal Jelly - 2100T/M
34	VINAYAGA BLUE METALS	Blue Metal Jelly - 9000 MT/M
35	Sri Bhagavathi Blue Metals	Blue Metal Jelly - 15000 T/M
36	SRINIVASA BLUE METALS	Blue Metal Jelleyof size 40mm 20mm 12mm 6mm - 3000T/M
37	K.R.S. BLUE METALS	Blue Metal Jelly & Blue Metal Powder - 1000T/M
38	S.V.T. CRUSHER	Blue Metal Jelly size of 20, 12,6mm and Blue Meta - 2500 T/Month
39	M.K.M. BLUE METALS	Various size of blue metals - 1350T/M
40	THANGAM BLUE METALS AND MSAND	Blue Metal Jelly, M.Sand & P.Sand - 40000T/M
41	SREE BHADRA BLUE METALS	Blue Metal Jelly - 2125Ton/Month
	11. District: Madurai	
1	SENTHIL RAJA BLUE METALS	BLUE METAL STON JELLY - 1250T/M BABY STONE METAL - 250T/M
2	GOPALSAMY BLUE METAL	STONE JELLY - 450T/M
3	SVK INTERNATIONAL BLUE METAL	BLUE METAL JELLY VARIOUS SIZES - 700T/M
4	MOHAN BLUE METAL	BLUE METAL JELLY - 700T/M
5	SRI KANDASAMY BLUE METALS	BLUE METAL JELLY - 450T/M
6	KALAI SELVI BLUE METAL	BLUE METAL JELLY - 1020T/M
7	PALANI KUMARESAN BLUE METAL	BLUE METAL JELLY - 1450T/M
8	R G BLUE METALS	BLUE METAL JELLY - 2950T/M
9	CONCRETIA ROCK PRODUCTS PVT LTD	BLUE METAL JELLY - 3500T/M GRANULAR SUB BASE - 150T/M
10	YOGA SAND AND STONES COMPANY	3/4" & 1/2" STONE JELLY - 700T/M 1/4"STONE JELLY - 250 T/M
11	SAI RAM STONE METAL	VARIOUS SIZE OF BLUE METALS - 3000T/M
12	SHANMUGA BLUE METAL	BLUE METAL JELLY - 450T/M
13	SRI MAHENDRA BLUE METAL	BLUE METAL JELLY - 1170T/M
14	SAPTHAGIRI BLUE METAL	BLUE METAL - 975T/M
15	MPS BLUE METALS	STONE JELLY - 875T/M
16	SRI SAIRAM STONE METAL	BLUE METAL - 3000T/M
17	SRI UPPUKAMATCHI BLUE METAL	BLUE METAL JELLY - 450T/M
18	STAR BLUE METALS	BLUE METAL JELLY - 1470T/M
19	ANNAI ARUL BLUE METALS	BLUE METAL JELLY - 650T/M
20	G R BLUE METALS	BLUE METAL JELLY - 500TONS/MONTH
21	ABA ENTERPRISES	BLUE METAL - 60T/DAY
22	SRI AYYANAR BLUE METALS	BLUE METALS - 500T/M
23	K.P.BLUE METALS	BLUE METAL JELLY - 1150T/M
24	MARANADU KARUPPASAMY BLUE METALS	BLUE METAL JELLY - 1500T/M
25	SOLAI BLUE METALS	BLUE METAL JELLY - 500T/M

26	ELAKKIA BLUE METAL FORMERLY SUBBULAKSHMI BLUEMETAL	BLUE METAL JELLY - 600T/M
27	P.K.M. CRUSHER	BLUE METALJELLY - 745T/M
28	VELMURUGAN BLUE METALS	BLUE METAL JELLY - 1450T/M
29	PETCHIAMMAN BLUE METAL	BLUE METAL JELLY - 600T/M
30	VIGNESH BLUE METALS	GRANITE BLUE METAL JELLY - 300T/M
31	ESWAR STONE METAL	BLUE METAL JELLY - 450T/M
32	NGP BLUE METAL	BLUE METAL JELLY - 1035T/M
33	ANNAI BLUE METALS	BLUE METAL JELLY - 1450T/M
34	BALAJI BLUE METAL	BLUE METAL JELLY - 980T/M
35	SUNDARAVALLI BLUE METALS	VARIOUS SIZE OF BLUE METAL JELLY - 950T/M
36	LORD VENKATESWARA BLUE METAL	BLUE METAL JELLY - 700T/M
37	MOHANA BLUE METAL	BLUE METAL JELLY - 450T/M
38	PERIYANACHIYAAR BLUE METALS	3/4",1/2", and 1/4", jelly - 500T/M
39	PONMANI BLUE METALS	BLUE METAL JELLY - 2400SQFT/M
40	AMMAN BLUE METALS	BLUE METAL JELLY - 1250T/M
41	YAGAPPA INDUSTRIES	BLUE METAL JELLY - 2400T/M
42	BASKARAPANDIAN BLUE METAL UNIT II	STONE METAL JELLY - 1215T/M
43	SHRI KAMACHI BLUE METALS	1/4 STONE JELLY - 200T/M 1/2 STONE JELLY - 300T/M 3/4 STONE JELLY- 500T/M
44	PATIL RAIL INFRASTRUCTURE P LTD	BLUE METAL JELLY - 450T/M
45	SATHISH SASI BLUE METAL	BLUE METAL JELLY - 500T/M
46	ALAGAMMAI BLUE STONE METAL	BLUE METAL JELLY - 450T/M
47	VETRI BLUE METAL	BLUE METAL JELLY - 1050T/M
48	MANIVEL BLUE METAL	BLUE METAL JELLY - 550T/M
49	AMSAVALLI BLUE METALS	BLUE METAL JELLY - 1050T/M
50	RAJA RAJAN BLUE METALS	STONE METAL JELLY - 1000T/M
51	SANGU SUNAI BLUE METAL	BLUE METAL JELLY AND M SAND - 700T/M
52	PALANICHAMY BLUE METAL	BLUE METAL JELLY - 1150T/M
53	RAVI BLUE METALS	BLUE METAL JELLY - 1000T/M
54	KANDEEPAN BLUE METAL	BLUE METAL JELLY - 80TONNE
55	SACHIN BLUE METALS	METAL JELLY OF VARIOUS SIZES - 40T/M
56	SRI MEENAKSHI BLUE METALS	BLUE METAL JELLY - 1000T/M
57	MAHARAJA BLUE METALS	BLUE METAL JELLY - 1140T/M
58	C R BLUE METALS	BLUE METAL JELLY - 2000T/M
59	RAJ INDUSTRIES	STONE AGGREGATE - 250T/M
60	PANDIAN BLUE METAL	BLUE METAL JELLY - 36T/DAY
61	MATHA BLUE METAL	BLUE METAL JELLY - 36T/DAY
62	SANKARA BLUE METALS	BLUE METAL JELLY AND M SAND - 300TONS/DAY
63	MATHA STONE CRUSHER	BLUE METAL JELLY - 750T/M
64	MINU BLUE METALS	BLUE METAL JELLY - 45T/DAY CRUSHER DUST - 5 T/DAY
65	K P S BLUE METAL	BLUE METAL JELLY - 72T/M
66	LAKSHA BLUE METALS	BLUE METAL JELLY - 92T/D
67	SRI SENTHUR MURUGAN BLUE METALS	BLUE METAL JELLY - 92T/DAY

68	ATHEES BLUE METAL	BLUE METAL JELLY - 92T/DAY
69	JEYA KARTHI BLUE METALS	BLUE METAL JELLY - 68T/D BLUE METAL DUST - 7T/D
70	SRI MAHALAKSHMI BLUE METALS	BLUE METAL JELLY - 90T/DAY
71	VIVEK BLUE METALS	BLUE METAL JELLY - 92T/DAY
72	P K BLUE METAL	BLUE METAL JELLY - 500T/D
73	SUGANYA BLUE METAL	BLUE METAL JELLY - 270T/D STONE DUST - 30T/D
74	GAJENDRA BLUE METALS	BLUE METAL JELLY AND STONE DUST - 50T/D
75	ANNAI PERIYANAYAKI ENTERPRISES	BLUE METAL JELLY - 24T/DAY STONE DUST - 1T/DAY
76	YASMIN BLUE METAL	BLUE METAL JELLY AND/OR M SAND - 45T/DAY
77	GRACE BLUEMETAL	BLUE METAL JELLY OF VARIOUS SIZES - 700 T/M
78	KALYANI M SAND	M SAND - 60T/D M SAND DUST - 10T/D
79	SRI SANJAY BLUE METAL	BLUE METAL JELLY AND/OR M SAND - 95T/DAY
80	MVS BLUE METALS	BLUE METAL JELLIES VARIOUS SIZES AND OR M SAND P S - 950T/D
81	ATHEES BLUE METALS	BLUE METAL JELLIES VARIOUS SIZES AND OR M SAND P S - 92TONS/DAY
82	THANGAM BLUE METALS	BLUE METAL JELLY OF VARIOUS SIZES - 15000T/M MANUFACTURED SAND (M SAND) - 9500T/M
83	ATHEES BLUE METALS	BLUE METAL STONE JELLIES OF VARIOUS SIZE AND OR M - 2000T/DAY
84	VEERA BLUE METALS	STONE JELLIES VARIOUS SIZE AND OR M SAND AND P SAN - 950T/D
85	Vinayagar Blue Metal	STONE BOULDERS - 750TONS/MONTH
86	JEYAM BLUE METALS	Blue Metal one point five inch Jelly - 11T/day Blue Metal ¾" Jelly - 5 T/day Blue Metal ½" Jelly- 3 T/day
87	NCC LIMITED MOBILE CRUSHER	Blue Metal Jelly Including Dust Wet Macadam Mix G - 1000T/day
88	HARI BLUE METAL	Stone Metal Jelly - 800T/M
	12. District: MM Nagar	
1	SAKTHI BLUE METALS	Blue metal aggregates of various sizes - 900T/day M SAND - 800 T/day Stone dust - 200 T/day
2	VELA VENDHAN AGENCIES	Various Sizes of Blue Metal Jelly and M Sand - 470T/Day
3	VENUS BLUE METAL	Various sizes of Blue Metal jelly - 600T/Month
4	ARUNADEVI BLUE METAL	Various sizes of Blue Metal jelly - 1000T/Month
5	AYOTHIAMMAN BLUE METAL	Various sizes of Blue metal jelly - 530T/Month
6	TV BLUE METAL	Various sizes of Blue metal jelly - 600T/Month
7	Uma Blue Metals	Blue metal jelly of various sizes - 1570T/MONTH Stone dust - 80T/MONTH
8	SRI THANDUMARIAMMAN BLUE METAL	Various sizes of Blue Metals - 750 T/m
9	ATHILAKSHMI BLUE METAL	Various sizes of Blue metal jelly - 630 T/Month
10	R.V.S. sons BLUE METAL	Various sizes of Blue Metals - 720 T/m
11	J.A.S BLUE METALS	Various sizes of blue metal jelly - 650T/Month
12	RAMACHANDRA BLUE METALS	Various sizes of blue metal jelly - 620T/Month
13	SRI JAKKAMMAL BLUE METAL	Various sizes of Blue Metal - 650T/Month

14	MUTHARAMMAN BLUE METALS	Various sizes of blue metal jelly - 710T/M
15	Srinivasa Blue Metal	Blue Metal Aggregates of various sizes - 620T/Month Stone Dust - 30T/Month
16	LARSEN and TOUBRO LTD ECC CN. GROUP	40mm aggregate (22%) - 4400T/Month 20mm aggregate (25%) - 5000T/Month 10mm aggregate (19%)- 3800T/Month 4.75mm aggregate (34%)/ 6000T/Month
17	MYLAN SUPPLIERS	Various sizes of blue metal jelly - 800T/dayday
18	J.K.ENTERPRISES	Blue Metal Jelly in various sizes 20mm size - 5000T/month 12 mm size - 3125T/month 6 mm size- 1875T/month stone dust powder / 1250T/month
19	HINDUSTAN CONSTRUCTION CORPORATION CO LT	40mm Blue Metal Jelly - 1200 T/month 20mm Blue Metal Jelly - 800 T/month 10mm Blue Metal Jelly- 680 T/month Chips/ 280 T/month
20	JL MINES AND MINERALS PVT LTD	Various sizes of blue metal jelly - 470 T/day Stone dust powder - 3T/day
21	R.R.BLUE METAL	Various sizes of Blue Metal jelly - 600T/m
22	KS TRADERS	Various sizes of blue metal jelly - 800T/Month
23	R.JAYARAMAN CRUSHER	Various sizes of Blue Metal jelly - 470T/day Stone dust powder - 30T/day
24	KBS BLUE METAL	Various sizes of Blue Metal jelly - 1000T/month
25	Srinivasa Blue metals	Various sizes of Blue Metal - 390T/month
26	MONISHA BLUE METAL	Various sizes of Blue Metal jelly - 600T/Month
27	SRI VINAYAGAM SUPPLY	BLUE METAL JELLY IN VARIOUS SIZES AND MSAND - 700T/Month
28	SRI MURUGAN BLUE METAL	Various sizes of Blue metal jelly - 700T/Month
29	KRISHNA BLUE METAL	Various sizes of Blue Metal jelly - 600T/Month
30	KISHORE AND COMPANY	Various sizes of blue metal jelly - 700T/Month
31	AARTHI BLUE METAL	Various sizes of Blue metal jelly - 640T/Month
32	CHELLIAMMAN BLUE METAL	Various sizes of blue metal jelly - 590T/Month
33	R.S.BLUEMETAL	Various sizes of Blue Metal jelly - 700T/Month
34	SATHYA BLUEMETAL	Various sizes of Blue Metal jelly - 4590T/Month
35	MERCURY BLUE METAL	Various sizes of Blue Metal jelly - 590T/Month
36	VIJAY BLUE METAL	Various sizes of Blue Metal jelly - 600T/Month
37	PETER BLUE METAL	Stone Jelly 12mm,20mm and 40mm - 475 T/Month
38	RAGAVENDRA BLUE METAL	Various sizes of Blue Metal jelly - 600T/Month
39	ANBU BLUE METAL	Various sizes of Blue metal jelly - 700T/Month
40	JANANI BLUE GRANITES	Various sizes of Blue metal jelly - 700T/Month
41	Sri Srinivasa Bluemetal	Various sizes of Blue Metal - 390T/mONTH
42	Sugam Bluemetal	Various sizes of Blue Metal jelly - 550T/month
43	BHARATH ENTERPRISES	Various sizes of Blue Metal - 500T/Month
44	DHIVYA BLUE METAL	Various sizes of Blue Metal - 640T/Month
45	KAMADENU BLUEMETAL	Various sizes of Blue metal jelly - 610T/Month
46	WILSON BLUE METALS	Various sizes of Blue Metal Jelly - 620T/Month
47	SINDHUJA BLUE METALS	Various sizes of Blue Metal Jelly - 650T/Month
48	shree brindavan biuemetals	Various sizes of blue metals - 640T/M

49	AROKIYA MATHA BLUE METALS	Various sizes of Blue Metal - 700T/Month
50	WINCI BLUE METAL	Various sizes of Blue Metal - 700T/Month
51	KAVASAM BLUE METAL	Various sizes of Blue Metal - 600T/Month
52	XAVIER BLUE METAL	Various sizes of Blue Metal - 600T/Month
53	AMIRTHAM BLUE METAL	Various sizes of Blue Metal - 500T/Month
54	JOHNSON BLUE METAL	Various sizes of Blue Metal - 500T/Month
55	INDIA BLUE METAL	Various sizes of Blue metal jelly - 6000T/Month
56	K.G.CONSTRUCTIONS	Various sizes of Blue metal jelly - 50T/ Day
57	J.K.R.BLUE METAL	Various sizes of Blue Metal jelly - 300T/day
58	THANUSHIYA BLUE METAL	Various sizes of Blue Metal jelly - 280T/day
59	LASCKER BLUE METAL	Various sizes of Blue Metal jelly - 610T/Month
60	G.D. SONS BLUE METAL	Blue Metal Jelly in Various sizes - 700T/M
61	arun kumar blue metal	Blue Metal Jelly in Various sizes - 600T/M
62	SRI BHUVANESWARI BLUE METAL	Blue Metal Jelly in Various Sizes - 600T/M
63	Vijayaraja Mines	Blue Metal Jelly in various sizes - 600T/M
64	SRI LAKSHMI BLUE METAL	Stone Boulders - 100t/month
65	QUALITY BLUE METAL	VARIOUS SIZE OF BLUE METAL - 750T/M GRANITE POWER - 30T/M
66	SHREE RIDHA BLUE METAL	VARIOUS SIZE OF BLUE METAL - 730T/M GRANITE POWER - 20T/M
67	SENTHIL BLUE METAL	VARIOUS SIZES OF BLUE METAL JELLY - 600T/Month
68	PONMANAM BLUE METAL UNIT I	VARIOUS SIZES OF BLUE METAL JELLY - 720T/Month
69	PONMANAM BLUE METAL UNIT II	VARIOUS SIZES OF BLUE METAL JELLY - 650T/Month
70	MAHALAKSHMI BLUE METAL	Blue metal - 40T/day
71	GEETHA BLUE METALS	VARIVOUS SIZES OE BLUE METAL JELLY - 630T/Month STONE DUST - 20T/Month
72	SIVAGAMI BLUE METAL	VARIVOUS SIZES OE BLUE METAL JELLY - 600T/Month
73	SUBAM BLUE METAL	VARIVOUS SIZES OE BLUE METAL JELLY - 630T/Month
74	BRAMHASAKTHI BLUE METALS	VARIVOUS SIZES OE BLUE METAL JELLY - 620T/Month STONE DUST - 30T/Month
75	SRIRAM BLUE METAL	VARIVOUS SIZES OE BLUE METAL JELLY - 720T/Month STONE DUST - 30T/Month
76	V.S.T BLUE METAL	VARIVOUS SIZES OE BLUE METAL JELLY - 650T/Month
77	VISWANATHAN BLUE METAL	BLUE METAL JELLY IN VARIOUS SIZES AND M SAND - 720T/Month
78	PONNEE BLUE METAL	VARIOUS SIZE OF BLUE METAL - 650T/Month STONE DUST - 20T/Month
79	RATHINAM BLUE METAL	Various sizes of Blue Metals - 640T/Month
80	SANKARAN BLUE METAL	Blue Metal Jelly of various sizes and stone dust - 650T/Month
81	SRI RAMAJAYAM BLUE METAL	Various sizes of Blue metal jelly - 650 T/Month
82	SIVA BLUE METAL	VARIOUS SIZE OF BLUE METAL - 640T/Month STONE DUST - 10T/Month
83	ANNAMALAIYAR BLUE METALS	VARIOUS SIZE OF BLUE METAL - 700T/Month STONE DUST - 10T/Month
84	AMMAN ARUL BLUE METAL	Various sizes of Blue Metal - 620T/Month

85	SARAVANA BLUE METAL	Various sizes of Blue Metal - 610T/Month
86	LAVANYA BLUE METAL	Various sizes of Blue Metal - 630T/Month
87	S.M.T. BLUE METAL	Various sizes of Blue Metal - 600T/Month
88	SRI LAKSHMI BLUE METAL	Blue metal Jelly in various Sizes & M Sand - 660T/Month
89	SWAMINATHAN BLUE METAL	Blue Metal Jelly of various sizes and stone dust - 600T/Month
90	K.K.BLUE METAL	VARIOUS SIZE OF BLUE METAL - 620T/Month
91	SRI AMMAN BLUE METAL	VARIVOUS SIZES OE BLUE METAL JELLY - 650T/Month
92	MARAGATHAM BLUE METAL	Various sizes of Blue metal jelly - 710 T/Month
93	ABIRAMI BLUE METAL	VARIOUS SIZES OF BLUE METAL JELLY - 630T/Day
94	SRIDHARAN BLUE METAL	Blue Metal Jelly of various sizes and stone dust - 630T/Month
95	SRI RAMAJAYAM AYYA THUNAI BLUE METAL	Blue Metal Jelly of various sizes and stone dust - 700T/Month
96	AYYA BLUE METALS - UNIT IV	VARIOUS SIZE OF BLUE METAL - 640T/Month
97	PRAVEENA BLUE METALS	Various sizes of Blue Metals - 720T/M
98	D.R. AND SONS BLUE METAL	Various sizes of Blue Metals - 700T/Month Granite Dust - 50T/Month
99	AYYA BLUE METALS - UNIT III	VARIVOUS SIZES OE BLUE METAL JELLY - 640T/Month
100	G.K BLUE METAL	Various sizes of blue metal jelly - 650T/Month
101	BRINDHAVAN BLUE METAL	VARIOUS SIZE OF BLUE METAL - 710T/M GRANITE POWER - 15T/M
102	M.R.S.BLUE METALS	Blue Metal jelly of various sizes - 1100T/Month Stone dust powder - 100T/Month
103	SANDHYA BLUE METAL	Various sizes of Blue Metal jelly - 700 T/month
104	PAVALAVALLI BLUE METAL WORKS	Blue Metal jelly - 600T/Month
105	AMMAN BLUE METAL	Blue Metal Jelly - 1000t/month
106	R K CRUSHERS	Blue Metal Jelly in various sizes - 600T/Month
107	SRI RAJENDRAN BLUE METAL	Blue Metal Jelly of various sizes - 600 T/month
108	CONSTRUCTION MINING RESOURCES COMPANY	Blue metal jelly of sizes 10mm,20mm,40mm - 13500T/month
109	KNS BLUE METAL	Blue metal jelly of variuos sizes - 4750T/Month Stone dust powder - 250T/Month
110	SGP Enterprises Unit-III	Blue metal jelly of variuos sizes - 5760T/Month Stone dust powder - 1440 T/Month
111	SRI SAKTHI BLUE METALS	Blue metal jelly of various sizes - 475 T/month Stone dust powder - 25 T/month
112	SUSILA DEVI BLUE METAL	Stones of sizes upto 8" size - 3200 T/month
113	MARK ROAD CONSTRUCTIONMADRASPVT LTD BLUE METAL DIVISION	Blue metal jelly of variuos sizes - 150T/day Granite stone dust powder - 10 T/day
114	SREE GANESH BLUE METAL	Blue Metal jelly of various sizes- 40 mm size - 625T/Month Blue Metal jelly of various sizes-over 20 mm size - 1250T/Month Blue Metal jelly of various sizes- 20 mm size- 2500T/Month Blue Metal jelly of various sizes- 12mm size/ 625T/Month Blue Metal jelly of various sizes- 6 mm size- 1000T/Month Granite dust powder-1500T/Month

115	STEM BLUE METAL	Blue Metal jelly of sizes- 40 mm size - 100T/day Blue Metal jelly of size- 20 mm size - 200T/day Blue Metal jelly of sizes- 12 mm size- 75T/day Blue Metal jelly of size- 6 mm size / 75 T/day Stone dust- 50T/day
116	VISWAKARMAA BLUE METAL	Blue Metal Jelly 40mm size - 400T/day Blue Metal Jelly 20mm size - 700T/day Blue Metal Jelly 10mm size- 300T/day Blue Metal Jelly 6mm size/ 200T/day Stone dust- 400T/day
117	BARANI BLUE METAL	Various sizes of Blue metal jelly - 600 T/Month Granite dust Powder - 50 T/Month
118	SARAVANAN BLUE METAL	Various sizes of Blue metal jelly - 700T/Month Granite dust Powder - 50 T/Month
119	D.R.AND SONS BLUE METAL	Various sizes of Blue metal jelly - 650 T/Month Granite dust Powder - 50 T/Month
120	SURYANARAYANA BLUE METAL	Various sizes of Blue metal jelly - 700 T/Month Granite dust Powder - 10 T/Month
121	AMMA BLUE METAL	Blue Metal jelly in various sizes - 600T/month
122	UDHAYAM BLUE METALS	Blue Metal Jelly - 160 T/month
123	DEEJAY CONSTRUCTIONS	Crushed blue Metals - 13000T/Month
124	D.S.RAVI KUMAR BLUE METALS	Blue metal jelly 40mm- 20mm -12mm Stone dust - 250 T/day
125	SUNDARAJ BLUE METALS	Blue Metal jelly & Blue metal powder - 200T/day
126	Arul Udhayam Primary Crusher - Unit I	Blue Metal Jelly - 1499.08 MT/day
127	Arul Udhayam Primary Crusher - Unit II	Blue Metal Jelly - 1499.08 MT/day
128	Sri Bhuvaneswari Blue Metal	Various sizes of Blue Metals - 720 T/m
129	SRI AMBIGAI BLUE METAL	Various sizes of Blue metal - 630 T/Month
130	Sri Kamatchi Blue Metal	Various sizes of Blue metal - 620 T/Month
131	Maheswari Blue Metal	Various sizes Blue metal - 620 T/Month
132	Sri Hemavarshini Blue Metal	Various sizes of Blue Metal - 630 T/Month
133	PAVAL BLUE METAL	Various sizes Blue metal - 640T/Month
134	Karthik Blue Metal	Various sizes of Blue metal - 720 T/Month
135	Jayasakthi Blue Metal	Various Sizes of Blue metal - 630 T/Month
136	Rani Blue Metal	Various sizes of Blue metal - 730 T/Month
137	V.K.S. Blue metal	Various sizes of Blue Metals - 600 T/m
138	Subramanian Blue Metal	Various sizes of Blue Metals - 620 T/m
139	Sri Vetrivelan Blue Metal	Various sizes of Blue Metals - 630 T/Month
140	S.P.T.Blue Metal	Various sizes of Blue Metals - 630 T/Month
141	Devi Karumariamman Blue Metal	Various sizes of Blue Metals - 600 T/Month
142	SRI RAJALAKSHMI BLUE METAL	Various sizes of Blue Metals - 700 T/Month
143	Thiruvakkarai Blue Metal	Various sizes of Blue Metals - 630 T/Month
144	New Sivakami Blue Metal	Various sizes of Blue Metals - 700 T/Month
145	Subalakshmi Blue Metal	Various sizes of Blue Metals - 600 T/Month
146	Sakthi Priya Blue Metal	Various sizes of Blue Metals - 700 T/Month
147	SHREE LOKANAYAKI BLUE METAL	Various sizes of Blue Metals - 670 T/Month
148	Sri Ayya Thunai Blue Metal	Various sizes of Blue metal - 700 T/M
149	M.M.Blue Metal	Various sizes of Blue metal jelly - 650 T/Month
150	D.G.Star Blue Metal	Various sizes of Blue metal jelly - 620 T/Month

151	Pachaiamman Blue Metal	Various sizes of Blue metal jelly - 630 T/Month
152	A.Annai Blue Metals	Various sizes of Blue metal jelly - 700 T/Month
153	Sivagami Natesh Blue Metal	Various sizes of Blue metal jelly - 640 T/Month
154	J.R.Vimala Blue Metal	Various sizes of Blue Metal - 630 T/M
155	Yashwanth Blue Metal	Various sizes of Blue metal - 700 T/M
156	Sanjay Blue Metal	Various sizes of Blue Metal - 730 T/M
157	Vasudevan Blue Metal	Various sizes of Blue Metal - 650 T/M
158	New Mahalakshmi Blue Metal	Various sizes of Blue metal - 650 T/M
159	SALEM MINES & AGGREGATES (SUN BLUE METAL	Blue metal aggregates of various size and powder - 100T/day
160	KARUMARI BLUE METAL	various sizes of blue metals - 700T/M
161	MOHAN BLUE METAL	Various sizes of blue metal jelly - 670T/M
162	RAJASTHAN TRADING CORPORATION	Various sizes of blue metal jelly - 45T/D Stone Dust - 5 T/D
163	NIRMALA BLUE METALS	VARIOUS SIZES OF BLUE METAL JELLY STONE DUST M SA - 500T/ MONTH
164	BRINDA BLUE METAL	various sizes of blue metals - 620T/M
165	RAMYA BLUE METAL	various sizes of blue metal - 600T/Month
166	KING BLUE METAL	Various sizes of Blue Metals - 580T/Month
167	AYYA BLUE METALS	Various sizes of Blue Metal Jelly - 580T/Month
168	TCD BHASKARA BLUE METAL	Various size of Blue Metal Jelly and M Sand - 640T/M
169	VISHWAKARMAMINESBUILDINGMATERIALS PVTLTD	Blue Metal in various sizes - 1200T/Year
170	SUNMAX CONSTRUCTIONS BLUE METAL DIVISION	Various sizes of blue metal jelly - 90T/day
171	VIGNESHWARA BLUE METAL	various sizes of blue metals - 620T/M
172	R.JAYARAMAN	Blue metal Boulders - 100T/day
173	SARASWATHI BLUE METALS	Blue Metal Jelly of various sizes and stone dust - 1550T/M
174	RVS BLUE METAL	Blue Metal Jelly of various sizes and stone dust - 2500T/M
175	TCM BLUE METALS	Blue Metal Jelly of various sizes and stone dust - 2000T/M
176	KKM BLUE METALS	Blue Metal Jelly of various sizes and stone dust - 2000 T/M
177	SREE JAYAKAMATCHI BLUE METAL	Blue Metal Jelly of various sizes and stone dust - 2000T/Month
178	SRI SUSEE BLUE METAL	various sizes of blue metals - 550T/M
179	SS BLUE METAL	various sizes of blue metals - 2000T/Month
180	SREE JAYAMARUTHI BLUE METALS	various sizes of blue metals - 2000T/Month
181	SRI KARPAGAM BLUE METAL	various sizes of blue metals - 2000T/Month
182	NEW STAR BLUE METALS	various sizes of blue metals - 2000T/Month
183	SRI SABARI BLUE METAL	various sizes of blue metals - 2000T/Month
184	MANIMARAN BLUE METALS	various sizes of blue metals - 600T/Month
185	SAP FOUNDATIONS PVT LTD	Various sizes of blue metal jelly - 470T/day
186	JEPPIAAR READYMIX CONCRETE -Blue Metal	Various sizes of blue metal jelly - 158T/day
187	ELLAMMAL BLUE METAL	Various Sizes of Blue Metal - 500 T/Month
188	Venkateswara Blue Metal	blue metals - 15
189	Vinsor Blue Metal II	Blue Metal Aggregates of various sizes - 21T/Day
190	Kankaria Trading Co	Blue Metal Aggregates - 45 T/D Stone Dust - 5 T/D
191	Praveen Blue Metal I	Blue Metal Aggregates of various size - 685 T/Month

192	Praveen Blue Metal II	Blue Metal Aggregates of various size - 620 T/Month
193	S K T Blue Metal	Blue Metal Aggregates of various size - 550 T/Month
194	Paul Durai Blue Metal	Blue Metal Aggregates of various size - 675 T/Month
195	Vinoth Blue Metal	Blue Metal Aggregates of various size - 650 T/Month
196	Arokia Madha Blue Metals Unit - I	Blue Metal Aggregates of various size - 610T/M
197	Kalaiselvi Blue Metals Unit - I	Blue Metal Aggregates of various size - 635T/M
198	Kalaiselvi Blue Metals Unit - II	Blue Metal Aggregates of various size - 655T/M
199	Karpaga Vinayaga Blue Metal	Blue Metal Aggregates of various size - 580T/M
200	Sivakumar Blue Metal	Blue Metal Aggregates of Various Size - 610 T/Month
201	Ayothiyamman Bul Metal	Blue Metal Aggregates of Various Size - 620 T/Month
202	K.R. Blue Metal	Blue Metal Aggregates of Various Size - 525 T/Month
203	MA BALAJI BLUE METALS	Blue metal aggregates of various sizes - 1710t/m
204	Dhana Blue Metal	6mm - 1500T/Month 12mm- 1500T/Month
205	Arihant Blue Metal	Various Size of Blue Mewtal jelly - 2500T/M
206	Srikanth Blue metal	Various Size of Blue metal Jelly - 2500T/M
207	SRI ATHINATHA BLUE METALS	Various size of blue metals - 2000 T/M Stone dust - 30T/M
208	VELAVAN BLUE METALS	Various Sizes Of Blue Metals jelly - 9000T/MONTH Stone dust - 85T/Month
209	MBM Blue Metal Industries	various Sizer of blue Metals Jelly - 6250 T/m
210	Saradha Blue Metal	Blue Metal Aggregates of various sizes - 900T/Month Stone dust Powder - 100T/Month
211	Rajeswari Blue Metal	Blue Metal Aggregates of various sizes - 900T/Month Stone dust Powder - 100T/Month
212	Kaladevan Blue Metal	Blue Metal jelly - 630T/m
213	Xavier Blue Metal Unit II	Blue Metal Aggregates of various sizes - 21 Dust - 4
214	P S N Blue Metal	Various size of blue metal jellys - 1500 T/m
215	R P Blue Metals	Blue Matel Aggregates of Various Sizes - 1100 T/month stone Dust - 100T/month
216	Annai Parasakthi Blue Metals	Variom Size of Blue metal jelly - 2500 T/m Stone Dust - 500 T/m
217	B Deenan Blue Metal	Blue Metal Aggregates of Various Sizes - 900T/M Stone dust Powder - 100T/M
218	M. Elumalai Blue Metal	Blue Metal Aggregates of Various Sizes - 810 T/M Stone dust Powder - 90T/M
219	Sindhuri Blue Metal	Jelly Blue Metal - 250 T/M Blue Metal - 175 T/M
220	kiran Enterprises	Jelly Blue Metal - 250T/m Blue Metal - 700 T/M
221	Mohanambal Blue Metal Solai Blue Metal	Blue MEtal aggregates of various sizes - 900T/Month Stone dust powder - 100 T/Month
222	CRB Blue Metal	Blue Metal aggregates of various sizes - 900T/Month Stone dust Powder - 100T/Month
223	Velco Blue Metal	Blue Metal Aggregates of Various Size - 900 T/MONTH Stone Dust Power - 100 T/Month
224	karuni Enterprises	Blue Metal Aggregates of Various Sizes - 900 T/Month Stone dust Powder - 100 T/Month

225	Krishna Blue Metal	Blue Metal Aggregates of Various Sizes - 900 T/M Stone dust Powder - 100 T/M
226	Manickam Blue Metal	Blue Metal Aggregates of Various Sizes - 900 T/M Stone dust Powder - 100 T/M
227	Velco Blue Metal Unit II	Blue Metal aggregates of various sizes - 900T/Month Stone dust Powder - 100T/Month
228	Rajasekar Blue Metal	Blue Metal aggregates of various sizes - 900T/Month Stone dust Powder - 100T/Month
229	Velco Blue Metal Unit III	Blue Metal aggregates of various sizes - 900T/Month Stone dust Powder - 100T/Month
230	Geetha Blue Metal	Blue Metal aggregates of various sizes - 900T/Month Stone dust Powder - 100T/Month
231	Pavazhavalli Blue Metal Unit II	Blue Metal aggregates of various sizes - 900T/Month Stone dust Powder - 100T/Month
232	Pavazhavalli Blue Metal Unit I	Blue Metal aggregates of various sizes - 900T/Month Stone dust Powder - 100T/Month
233	Vee Yes Blue Metal	Various Sizes of Blue Metal Jelly - 1200T/Month Stone dust - 300T/Month
234	Thanushiya M Sand Unit	M Sand - 250 T/day
235	Rajalakshmi Blue Metal	Blue Metal aggregates of various sizes - 900T/Month Stone dust Powder - 100T/Month
236	S P Bhagwandoass Blue Metal	Blue metal Aggregates of various sizes - 900T/Month Stone dust powder - 100T/Month
237	N Arunasree Blue Metal	Blue Metal Aggregates of various sizes - 1500T/Month Stone dust powder - 100T/Month
238	RAMAKRISHNA BLUE METALS	BLUE METAL JELLY - 1500 T/M STONE DUST - 300 T/M
239	SRI ANGAMMAL BLUE METALS	blue metal - 1100 T/M stone dust - 200 T/M
240	GOPI BLUE METALS	BLUE METAL - 1600 TPM STONE DUST - 200 TPM
241	MANIKANDAN BLUE METALS	BLUE METALS - 1030 TM STONE DUST - 170 TM
242	SRI EAZHUMALAIYAN BLUEMETALS	BLUE METALS - 1400 T/M STONE DUST - 100 T/M
243	RAVI BLUEMETALS	BLUE METALS - 1000 T/M STONE DUST - 200 T/M
244	V S BLUE METALS	BLUE METALS - 1500 T/M STONE DUST - 300 T/M
245	RAJA RAJESWARI BLUEMETALS	BLUE METAL JELLY - 1500T/M STONE DUST - 300 T/M
246	BHARATH BLUE METALS	VARIOUS SIZE OF BLUE METALS JELLY - 1200 T/M STONE DUST - 300 T/M
247	GS BLUE METALS AND AGENCIES	BLUE METAL DIFFERENT SIZES - 190 TONS DUST GSP - 10 TONS
248	JVS BLUE METAL	VARIOUS SIZES OF BLUEMETAL JELLY - 650 T/M STONE DUST - 50 T/M
249	SHRI MOOGAMBIkAI BLUE METALS UNIT II	BLUE METALS OF VARIOUS SIZES - 900 T/M STONE DUST - 100 T/M
250	V S R M BLUE METALS	VARIOUS SIZES OF BLUE METAL - 900 T/M STONE DUST - 100 T/M

251	R R CONSTRUCTIONS (N R BLUE METALS)	VARIOUS SIZES OF BLUE METAL JELLY - 650 T/M STONE DUST - 50 T/M
252	GALANKI ANKULU BLUE METAL	BLUE METAL JELLY - 40 T/DAY
253	JSRD BLUE METAL	VARIOUS SIZE OF BLUE METAL JELLY - 500 T/M STONE DUST - 50 T/M
254	SRINIVASA BLUE METAL	BLUE METAL AGGREGATES OF VARIOUS SIZES - 370T/DAY STONE DUST POWDER - 30 T/DAY
255	KNS BLUE METAL	VARIOUS SIZES OF BLUE METAL JELLY - 450 T/M DUST - 50 T/M
256	S PONNURANGAM BLUE METAL	BLUE METAL - 400T/M BLUE METAL - 250 T/M BLUE METAL- 300 T/M CRUSHER POWDER/ 250 T/M
257	SAPTHAGIRI BLUE METAL	VARIOUS SIZES OF BLUE METAL JELLY - 450 T/M DUST - 50 T/M
258	KBS BLUE METALS	VARIOUS SIZES OF BLUE METAL JELLY - 450 T/M VARIOUS SIZES OF BLUE METAL JELLY - 50 T/M
259	VAS BLUE METALS	STONE AGGREGATES 40 MM METAL - 1125 T/A STONE AGGREGATES 20 MM METAL - 3375 T/A STONE AGGREGATES 12 MM METAL- 1125 T/A STONE AGGREGATES 6 MM METAL/ 1125 T/A STONE DUST- 750 T/A
260	SRI GOKULAM BLUE METALS	STONE AGGREGATES 40 MM METAL - 1125 T/A STONE AGGREGATES 20 MM METAL - 3375 T/A STONE AGGREGATES 12 MM METAL- 1125 T/A STONE AGGREGATES 6 MM METAL/ 1125 T/A STONE DUST- 750 T/A
261	H P BLUE METALS	STONE AGGREGATES 40 MM METAL - 1125 T/A STONE AGGREGATES 20 MM METAL - 3375 T/A STONE AGGREGATES 12 MM METAL- 1125 T/A STONE AGGREGATES 6 MM METAL/ 1125 T/A STONE DUST- 750 T/A
262	GANESH BLUE METALS	VARIOUS SIZE OF BLUE METAL JELLY - 450 T/M DUST - 50 T/M
263	CHANDRIKA BLUE METALS	VARIOUS SIZES OF BM JELLY - 450 T/M DUST - 50 T/M
264	JK BALAJI BLUE METALS	VARIOUS SIZE OF BLUE METALS JELLY - 450 T/M DUST - 50 T/M
265	RAVICHANDRAN BLUE METAL	VARIOUS SIZES OF BLUE METALS JELLY - 450 T/M DUST - 50 T/M
266	SRI LAXMI NARAYANA BLUE METALS	VARIOUS SIZE OF BLUE METAL JELLY - 400 T/M DUST - 50 T/M
267	SREE KRISHNA BLUE METALS	VARIOUS SIZE OF BLUE METALS JELLY - 450 T/M STONE DUST - 50 T/M
268	SRI RAM BLUE METALS	VARIOUS SIZE OF BLUE METAL JELLY - 4 T/M
269	SRI SAKTHI BLUE METALS	VARIOUS TYPE OF BLUE METAL JELLY - 600 T/M
270	SPM BLUE METAL	variou8s sizes of blue metal jelly - 450 t/m dust - 50 t/m
271	SELVAM BLUE METALS	VARIOUS SIZE OF BLUE METAL JELLY - 450 T/M DUST - 50 T/M
272	RANI BLUE METALS	VARIOUS SIZE OF BLUE METAL JELLY - 450 T/M Stone DUST - 50 T/M
273	HARINI BLUE METALS	Various Sizes Of Blue Metal Jelly and M Sand - 450T/month

274	B K S Blue metal	Various sizes of blue metal jelly - 450 T/M Stone dust - 50 T/M
275	Sakthi Priya blue metal	various sizes of Bluemetal jelly - 450 T/M Stone dust - 50T/M
276	Add Bluemetal	various sizes of blue metal jelly - 550 T/M stone dust - 50 T/M
277	Sri Vigneshwara bluemetal	various sizes of blue metal jelly - 400 T/M Stone dust - 50 T/M
278	KSN Enterprises Blue metal	Various sizes of blue metal jelly - 450 T/M stone dust - 50 T/M
279	K S D Blue metals	various sizes of Blue Metal Jelly - 450 T/M Dust - 50 T/M
280	P M R Blue metal	various size of blue metal jelly - 400 T/M Stone dust - 50 T/M
281	PJR BLUE METAL	various sizes of blue metal - 650 T/M Stone dust - 50 T/M
282	MAILAM MURUGAN MINES FORMERLY BARANI B BLUE METAL	BLUE METAL JELLY OF 40 MM SIZE - 300T/DAY BLUE METAL JELLY OF 20 MM SIZE - 500T/DAY BLUE METAL JELLY OF 12 MM SIZE- 240T/DAY BLUE METAL JELLY OF 6 MM SIZE/ 200T/DAY STONE DUST- 140T/DAY M SAND CRUSHED SAND- 300T/DAY P SAND PLASTERING SAND- 220T/DAY
283	KASTHURI HOSPITAL	Hospital with - 50Beds Outpatients - 30Nos/Day
284	MRS BLUE METAL	Various sizes of blue metal jelly - 1500T/Month Stone Dust - 300T/Month
285	PSK BLUE METALS	Various Sizes of Blue Metal Jelly - 1200T/Month Stone Dust - 200T/Month
286	MAX BLUE METALS	Various sizes of Blue Metal Jeely - 16000T/Month Stone Dust - 2000T/Month
287	GANAPATHY BLUE METALS	Blue metal jelly of various sizes - 1200T/day Stone dust - 200T/day
288	R P Blue metals	Various sizes of blue metal jelly - 6750T/M Stone dust - 750T/M
289	SREE VENKATESWARA CONSTRUCTIONS	BLUE METAL JELLY - 450T M STONE DUST - 50T M
290	Star Enterprises	Verious sizes of blue metal jelly - 450T/m Stone Dust - 50 T/m
291	vijaidoss blue metal	VARIOUS SIZE OF BLUE METAL JELLY - 190 MT/MONTH STONE DUST - 10 MT/MONTH
292	EASY ACCESS FINANCIAL SERVICES LIMITED	IT park with total bulit up area of 8417 sq.m - 20649.49sqm
293	SRI SRINIVASA ENTERPRISES	Varies Sizes Of Blue Metal Jelly - 2000T/Month Stone Dust - 100 T/Month
294	BHAVANI M SAND UNIT	M sand - 250 Tons Day
295	PCS INDUSTRIES PVT LTD	Blue metal aggragates and dust - 1500T/month
296	PRASANNA BLUE METAL UNIT II	BLUE METAL WITH VARIOUS SIZE - 500TONS/DAY
297	BHARATH BLUE METALS	Blue metal aggregates of various sizes & powder - 6000T/M
298	DHANA UDHAYAM CRUSHER	Blue metal aggregates of 40mm etc powder - 600T/M
299	DIAMOND BLUE METAL WORKS	Blue Metal Aggregates 20mm 40mm 12mm 10mm - 150MT/Month
300	SSK Blue Metal Pre -SSUKUMAR BLUE METAL	crushed blue metal stone - 600T/M
301	SATHYA BLUE METALS	Blue metal aggregates of various sizes & powder - 600T/M
302	SMS BLUE METALS	Various type of BG aggregates - 59M3/day

303	Srinivasa Blue Metal	BLUE METAL AGGRAGTES OF VARIOUS SIZES - 200T/D STONE POWDER - 5T/D
304	GMR BLUE METALS	Blue metal aggregates - 190 T/m Stone dust Powder - 10 T/m
305	PRADEEP BLUE METALS	Blue Metal jelly in various sizes - 600T/Month
306	SARAVANA BLUE METALS	Blue Metal jelly in various sizes - 600T/Month
307	DHANA UDHAYAM CRUSHER UNIT	Blue metal aggregates of various sizes and powder - 1500T/D
308	KANAGASALAPATHY BLUE METALS	Blue metal jelly of various sizes - 600T/month
309	P.A.INFRASTRUCTURES PRIVATE LIMITED	Blue metal Aggregates of various sizes - 700T/Month Stone dust powder - 20T/Month
310	JAYA AND CO -BLUE METAL	Various sizes of blue metal jelly - 570T/day Stone dust - 30T/day
311	KEERTHANA BLUE METALS	Blue metal of various sizes - 600T/M
312	VLS Rock Sand Pvt Ltd	Blue metal aggregates of various sizes - 32000 T/month
313	DEEJAY CONSTRUCTIONS	Blue metal aggregates of various sizes - 27000 T/month Stone dust powder - 3000 T/month
314	R.S.Enterprises Metal Sand	Metal sand - 49 T/day
315	JAYA AND CO	Blue metal in various sizes 12,20,40mm etc., - 2400 T/day
316	AALAYAM ENTERPRISES PVT LTD	Blue Metal Aggregates of various sizes - 500 Ton/Day
317	PRASANNA BLUE METAL S	Blue Metals of various size - 500T/Day
318	KAVERI BLUE METAL	Various sizes of Blue Metal aggregates - 1350T/Day Stone dust - 150T/Day
319	RAR LOGISTICS AND INFRA LLP	IT PARK WITH PLOT ARE OF 8471 Sq.mts - 20649.49Sq.m
320	TRIWAY WARE HOUSE AND HOLDINGS PVT LTD	Blue Metal Aggregates of Various Sizes - 1800T/Day M Sand - 1400 T/Day P Sand- 1400 T/Day Stone Dust/ 200 T/Day
321	M/S. PETER BLUE METAL INDUSTRIES	STONE JELLY TWELVE mm TWENTYmm FORTY mm and M SAND - 475T/MONTH
322	SARAVANAN BLUE METALS AND M SAND UNIT	Various Sizes of Blue Metal Jelly fourty mm twenty - 700Tonnes/Mon
323	SBBM TRADERS	M Sand and P Sand - 1000T/Day
324	SARASVATHI BLUE METAL	Blue Metal Jelly - 300 T/Day M Sand - 300 T/Day
325	MADRAS MINES	BLUE METAL AGGREGATES OF VARIOUS SIZES - 1800T/DAY M SAND - 2000 T/DAY P SAND- 800 T/DAY STONE DUST/ 200 T/DAY
326	OM SAKTHI ENTERPRISES	BLUE METAL AGGREGATES OF VARIOUS SIZES - 50000T/M M SAND - 100000 T/M P SAND- 50000 T/M STONE DUST/ 2000T/M
327	KANNADASAN BLUE METALS	Blue metal Jelly in various Sizes - 350Tons/Month M-SAND & P-Sand - 300 Tons/Mont
328	SRI VENGATESWARA ROAD CONSTRUCTIONS PRIV	Various Sizes Of Blue Metal Jelly - 3000Tons/Month
329	R G MINERALS AND METALS	Blue metal jelly of different sizes - 1000Tons/day M Sand - 1000 Tons/day
330	KIRAN BLUE METAL	VARIOUS SIZES OF BLUE METAL JELLY - 2000T/MONTH
	13. District: NAGERCOIL	
1	Sathya Blue Metal	Stone Jelly - 900T/M M Sand - 3500T/M

2	RAJKUMAR BLUE METAL	BLUE METAL JELLY - 3T/
3	AKRAM BLUE METAL	BLUE METAL JELLY - 1250T/M
4	Lizthome Infrastructure Pvt Limited	BLUE METAL JELLY - 1600T/M M Sand - 1000T/M
5	A V J BLUE METALS	Blue Metal Jelly of Various Sizes - 600T/M M Sand - 600T/M
6	GODWIN BLUE METAL	STONE JELLY - 500T/M
7	SRI. NARAYANA BLUE METALS	STONE JELLY - 10T/D
8	Anbu Blue Metal	STONE JELLY - 100T/M
9	SATYA KAMALA BLUE METAL	STONE JELLY - 1200T/M
10	LAKSHMI GRANITE INDUSTRIES	Aggregates of 20mm, 12mm, and 8mm sizes - 700T/M
11	VMV BLUE METALS	STONE JELLY - 35T/M
12	Sathiya Kamala Stone Crusher	STONE JELLY - 1000T/M
13	K.C.N. BLUE METAL	STONE JELLY - 500T/M
14	GEETH ROCK METALS	BLUE METAL JELLY - 350T/M STONE DUST - 150 T/M
15	ST. JOSEPH BLUE METALS	BLUE METAL JELLY - 125T/M
16	B.G.M. PRODUCTS	BLUE METAL JELLY - 350T/M
17	S.A. BLUE METAL	BLUE METAL JELLY - 350T/M
18	Lawrence Blue Metal Hillview Blue Metal	BLUE METAL JELLY - 350T/M
19	Poabs Granite Products Pvt. Ltd	Stone jelly - 30000T/M Manufactured Sand - 30000T/M
20	S.S. BLUE METAL	STONE JELLY - 1250T/M
21	GANGA BLUE METAL	20 mm jelly - 1500T/M 6 mm jelly - 1000T/M 12 mm jelly- 750T/M
22	Blue Metal Industries	STONE JELLY - 500T/M
23	KUMARESAN BLUE METAL	STONE JELLY - 900T/M
24	Karthikeyan Blue Metal Industry	BLUE METAL JELLY - 360T/M
25	BHAGYALAKSHMI BLUE METAL	BLUE METAL JELLY - 1000T/M
26	AMALARANI BLUE METAL	BLUE METAL JELLY - 800T/M Stone dust - 80 T/M
27	FATHIMA BLUE METAL	BLUE METAL JELLY - 500T/M
28	JSJ CONSTRUCTIONS PRIVATE LIMITED	BLUE METAL JELLY of various sizes - 6000T/M M Sand - 3500T/M Stone Dust- 300T/M
29	Fathima Blue Metal	BLUE METAL JELLY - 1300T/M
30	SRI BHAGAVATHI BLUE METAL	BLUE METAL JELLY - 40T/M
31	WISE BLUE METAL	BLUE METAL JELLY - 250T/M
32	SAV BLUE METAL	BLUE METAL JELLY - 350T/M
33	SK Blue Metal and M Sand	STONE JELLIES - 350T/M Stone dust - 150T/m
34	ST.ANNIES BLUE METAL FORMERLY PANDIAN BLUE METAL	BLUE METAL JELLY - 250T/M
35	SAKTHIVEL BLUE METAL	AGGREGATES - 800T/M STONE DUST - 200T/M
36	KRISHNA BLUE METALS	BLUE METAL JELLY - 500T/M QUARRY DUST - 100T/M
37	KM BLUE METAL	CRUSHED BLUE METAL JELLY - 400T/M QUARRY DUST - 25T/M
38	SUBRAMANIAM BLUE METAL	STONE JELLY - 300T/M
39	Maruthi Blue Metal	BLUE METAL JELLY - 250T/M
40	SHIBU BLUE METAL	BLUE METAL JELLY - 10T/D

41	Perumal Metals	BLUE METAL JELLY - 10T/M
42	DAVID BLUE METAL	BLUE METAL JELLY - 1200T/M
43	Deepak Blue Metals	Blue Metal Jelly - 54T/DAY
44	K.K. Rocks and Granites India Pvt Ltd	STONE JELLY - 4500T/M
45	A.V.J. BLUE METALS	BLUE METAL JELLY - 4500T/M
46	MOHAN BLUE METALS	Stone jelly of various sizes - 20000Tonnes/Mon Stone Dust - 3000Tonnes/Mon M Sand- 10000Tonnes/Mon
47	LAX BLUE METALS P LTD	BLUE METAL JELLY - 39000TONE/MONTH Stone dust - 6000 T/M
48	CANAAN BLUE CHIP	BLUE METAL JELLY - 1150T/M one and half size aggregate - 250 Three fourth size size aggregate - 500 Half size aggregate/ 250 one fourth size aggrgate- 150
49	ST. XAVIER BLUE METALS	BLUE METAL JELLY - 700T/M
50	LAX MICRONS	12mm size stone aggregates - 5000T/m 6 mm Size stone aggregates - 5000T/m 4 mm Size stone aggregates- 7000T/m Washed blue metal dust/ 9000T/m
51	SUNDARAVEL BLUE METAL	CRUSHED STONE 40 mm, - 7300T/M
52	SRI SHANMUGA BLUE METAL	STONE JELLY - 1000T/M STONE DUST - 100T/M
53	Elgin Blue Metal	Stone Jelly - 1650T/month M Sand - 750T/month
54	SATHYA BLUE METALS	BLUE METAL JELLY - 2500T/M
55	CLINDON BLUE METALS	BLUE METAL JELLY - 7500T/M
56	APJ BLUE METAL	BLUE METAL JELLY - 20000T/M
57	RVD Blue Metal	Blue Metal Jelly of various sizes - 1500T/M
58	SKS Blue Metal	BLUE METAL JELLY - 1300T/M
59	K.S.R. BLUE METAL	BLUE METAL JELLY - 1500TONE/MONTH
60	KK Granites	Blue Metal Jelly - 4200T/M Plaster Sand - 700T/M
61	Valsala Kumari Blue Metal	Blue metal jelly - 800 T/m Stone dust - 200 T/m
62	RRM Blue Metals	Blue Metal Jelly of various sizes - 7500T/M
63	LARSEN AND TOUBRO LIMITED	Stone jelly of various sizes - 2000Tonnes/Day M Sand - 550Tonnes/Day Stond Dust- 550Tonnes/Day
64	MJD Blue Metals	Blue metal jelly of various sizes - 1500T/M Stone dust - 15T/M
65	K.K.M. Crusher	Blue Metal Jelly of various sizes - 7500T/M M.Sand - 2500T/M
66	JASPER ENTERPRISES	Blue Metal Jelly of various sizes - 1300Tonnes/Mo
67	SIVA BLUE METALS	Stone Jelly of various sizes - 300Tonnes/Day M Sand - 100Tonnes/Day Stone Dust - 30Tonnes/Day
68	REES BLUE METALS AND M SAND	Stone Jelly of Various Sizes - 200T/D M Sand - 200 T/D Stone Dust- 25 T/D
69	MAHA LAKSHMI M-SAND CRUSHER	Aggregate M Sand - 1490T/D
	14. District: NAMAKKAL	
1	RANA BLUE METALS	Blue Metal Jelly - 200T/M
2	SRI VENKATESWARA BLUE METALS	Blue Metal Jelly - 580T/Month
3	PALANI MURUGAN BLUE METALS	Metal Jell - 275T/Month
4	M.R.S.BLUE METALS	BLUE METAL JELLY - 275T/Month
5	ENKAY CRUSHERS	Blue Metal Jelly - 275T/M

6	G.P BLUE METALS	Blue Metal Jelly - 225T/M
7	PALANI ANDAVAR BLUE METALS	Blue Metal Jely - 250T/Month
8	V.R. BLUE METALS	Blue Metals of Size 40mm 30mm 20mm 12 mm and 6mm - 25000T/Month M Sand - 5000T/Month
9	SRINIVASA BLUE METALS	Metal Jelly - 300T/Month
10	M K P BLUE METALS	Blue Metal Jelly - 275T/Month
11	CRESENT INDUSTRIES	Blue Metal Jelly - 200T/M
12	KKP CRUSHER	Blue Metal Jelly - 750T/M
13	RADHA BLUE METALS	Blue Metal Jelly - 830T/M
14	SAKTHI BLUE METALS	Blue Metal Jelly, M sand and P sand - 2000T/M
15	MAHALAKSHMI BLUE METALS	Blue Metal Jelly - 225MT/M
16	MYTHILI BLUE METALS	Broken Jelly - 270T/M
17	NAMAKKAL BLUE METALS	Blue Metal Jelly - 400T/M
18	SKS BLUE METALS	Blue Metal Jelly - 6000MTons/M
19	JAYAMANI BLUE METALS	Blue Metal Jelly - 1000T/M
20	S R STONE CRUSHER	Blue Metal Jelly - 41000T/M
21	K.S.BLUE METALS	Blue Metal Jelly - 600M.Tons/M
22	SHRI MAHALAKSHMI BLUE METALS	Blue Metal Jelly, M sand and P sand - 12000T/M
23	GOWRI SHANKER BLUE METAL	Blue Metal Jelly - 200T/Month
24	G.K. BLUE METALS	Blue Metal Jelly - 275T/Month
25	KUMARAN BLUE METALS	Blue Metal Jelly - 500T/Month Granite Powder - 50T/Month
26	ASTALAKSHMI BLUE METALS	Jelly - 25Ton
27	MYTHILI BLUE METALS	Blue Metal Jelly - 300T/M
28	JAI GANESH ENTERPRISES	Hard Blue Granite Metal - 60T/Month
29	M.S.E.Blue Metals	Blue Metal Jelly - 3000T/M
30	V.I.P. BLUE METALS	Blue Metal Jelly, M sand and P sand - 70000MT/Month
31	GPM Blue Metals	Blue Metal stones of vrious sizes - 7500MT/Month
32	SAKTHI INDUSTRIES	BLUE METAL JELLY - 24000MT/Month
33	SRI NANDHAN MINERALS	BLUE METAL JELLY - 15000 M.T/MONTH
34	GOKUL BLUE METALS	BLUE METAL JELLY - 9000MT/M
35	P.K.K. EXPORTS	Multi Colour Granite - 12064Cum/two ye
36	ARUN BLUE METALS	Blue Metal Jelly M sand & P sand - 9000T/Month
37	VENKATESWARA BLUE METAL	Blue Metal Jelly of various size - 12000MT/Month
38	T. PREETHI CONSTRUCTIONS P LTD	Blue Metal Jelly - 3000T/Month
39	GOWRI SHANKAR BLUE METALS	Blue Metal of size 40mm 20mm 12mm 6mm and M sand - 27000T/Month
40	PONNER SANKAR BLUE METAL JELLY AND M SAND	Blue Metal Jelly of various sizes M sand - 100000T/Month
41	JAYAMURUGAN BLUE METALS	Blue Metal Jelly of various sizes - 1000Tons/day M-Sand - 1000Tons/day
42	S.R. STONE CRUSHERS	Blue Metal of size - 5400T/Month
43	KARTHIK BLUE METALS	Blue metal aggregates all sizes - 41000Tons/Month
	15. District: PERUNDURAI	
1	Sri Naga Construction Jelly Crusher	40 mm Jelly - 1000T/M 20 mm Jelly - 2000 T/M 20 mm Jelly - 1000T/M 4 mm Jelly/ 500T/M CRUSHER POWDER - 500T/M

2	Balaji Stone Crusher	3by4 - 375T/m 1by2 - 250T/m 1by4- 100T/m Powder/ 25T/m
3	Bannari Amman Blue Metals	Blue Metal Jelly 3 4, 1 2, 1 4, stone dust - 800T/Month
4	Bharath Blue Metals	3/4 - 600T/Month 1/2 - 400T/Month 1/4- 200T/Month Powder / 100T/Month
5	Chinnamman Construction	Stone Jelly 1by4 1by2 3by4 - 220T/Month Stone Powder - 30T/Month
6	C.M.P. Blue Metals	3by4 JELLY - 150T/Month 1by2JELLY - 150T/Month 1by4 JELLY- 50T/Month Powder/ 25T/Month
7	Deccon Blue Metals	Diff size of jelly - 900T/M
8	Indian Blue Metal	3by2 - 750T/m 3by4 - 500T/m 1by2- 500T/m 1by4/ 250T/m Stone Powder - 50T/m
9	Jaya Sakthi Blue Metals	3by4 - 200T/Month 1by2 - 150T/Month 1by4- 150T/Month Powder / 25T/Month
10	K S S Stone Crusher and Company P Ltd	1 1by2 - 2000T/M 3by4 - 1750T/M 1by2- 1500T/M 1by4/ 750T/M Stone powder- 250T/M Wet mix Macadam-500 T/M Manufactured Sand- 2500 T/M Plastering Sand- 1000 T/M
11	K.S.S. Blue Metals	Building Material Jelly Stone Powder - 625T/m
12	Kamadhenu Blue Metal	3by4 Jelly - 200Mts/m 1by2 Jelly - 100Mts/m 1by4 Jelly- 50Mts/m Powder/ 25Mts/m
13	Karthikeya Blue Metals	Stone Chips - 200T/m
14	SRI MARIYAMMAN BLUE METALS	Manufacturing of 1 1/2", 3/4", 1/2", 1/4" & Stone - 1050T/m
15	Manoj Blue Metal Unit I	Blue Metal Jelly - 850 T/day
16	Manoj Blue Metals Unit II	Blue Metal Process - 1200T/Month
17	R.K. Blue Metals	Blue Metal Jully - 900T/m
18	Ramajayam Blue Metals	Blue Metal Jelly - 800T/m
19	S.S.Blue Metals	Blue metal stones and stone powder - 5000 MT/Mon
20	S T R Blue Metals	3 by 4 - 300T/M 1 by 2 - 300T/M 1 by 4- 125T/M Jelly Powder/ 25T/M
21	Sakthi Blue Metals	Blue Metal Jelly 1by4, 1by2, 3by4 AND STONE POWDER - 500T/M
22	Sakthi Murugan Blue Metals	Stone Jelly 6MM 12MM 20MM 40MM - 800T/Month
23	Sapthagiri Blue Metals	Stone Gelly 3by4 - 10T/d Stone Gelly 1by2 - 10T/d Stone Gelly 1by4- 5T/d
24	Galaxy Blue Metal India Pvt Ltd	3/4" Jelly, 1/2" Jelly, 1/4" Jelly, Stone Dust - 1500T/M
25	Shri Periyanayagi Amman Blue Metals	40 mm JELLY - 10000T/M 20 mm JELLY - 15000T/M 12 mm JELLY- 13000T/M 6 mm JELLY/ 14000T/M Manufactured Sand- 22400T/M
26	Siva Sakthi Blue Metal	3 by4, 1by2, 1by4 Blue Metal Jelly stone powder - 1250 T/Mon
27	Siragiri Blue Metals	Blue Metal Jelly - 800T/m
28	SHRI RANGANATHAR CRUSHER PLANT	40mm Jelly - 5000T/m 20mm Jelly - 15000T/m 12mm Jelly- 6000T/m 6mm Jelly/ 6000T/m Stone Powder- 18000T/m Manufacturing Sand-14400T/m
29	Sree Mahalakshmi Jally Stone Crusher	Blue Metal Jelly - 800T/M
30	Sri Amman Blue Metals	3 by 4 Jelly - 150 T/M 1 by 2 Jelly - 50 T/M 1 by 4 jelly- 50 T/M Stone Powder/ 12.5 T/M
31	Sri Ganesha Hollow Brick And Crusher	Jelly and Fine dust - 4500 T/M

32	Vela Blue Metal	40 mm Jelly - 3000T/M 20 mm Jelly - 2500T/M 12 mm Jelly- 1000T/M 6 mm Jelly/ 500T/M Stone Powder- 500 T/M
33	Shri Senthur Velan Infras - Jelly Crusher	3by4 - 1050T/m 1by2 - 442t/m 1by4- 208T/m Powder/ 58.5T/m
34	Sri Murugan Bluee Metal	Blue Metal Jelly - 500T/m
35	Sri Palani Andavar Blue Metals	Blue Metal Jelly and Powder - 1625T/Month
36	Sri Ambal And Co (Stone crusher Unit)	Blue metals jelly - 650T/Month Stone powder - 100T/Month
37	Sri Ramakrishna Blue Metals	1.5 Inch Jelly - 5000T/Month 3by4 inch Jelly - 8375T/Month 1by2 inch Jelly- 5250T/Month 1by4 inch Jelly/ 4600T/Month Jelly Powder- 50T/Month Manufacutred Sand-15000T/Month
38	SRI SAKTHI BLUE METAL	Stone Jelly, Stone Powder - 3000 T/Month
39	Sri Sakthi Bule Metals	Various Sizes Of Jelly - 1500T/Month M. Sand - 1000T/Month
40	SRI SELLIAMMAN BLUE METALS	ROUGH STONE BOULDERS - 2500T/M
41	Sri Selva Nayaki Amman Blue Metal	Stone Jelly and Stone Powder - 75000T/Month
42	Sri Selvamariamman Blue Metals	Jelly 1-1/2, 3/4, 1/2, 1/4 and Stone Powder - 1600T/Month Manufacturing Sand - 1600 T/Month
43	Sri Selvanayagi Amman Crusher- Unit I	3by4 inch jelly - 12 T / M 1by2 inch Jelly - 13 T / M 1by4 inch jelly- 5 T / M Jelly powder/ 2 T / M
44	STAR BLUE METALS UNIT II	Blue Metal Stone Jelly 1½" ¾" ½" ¼" & Stone Powder - 1500T/Month
45	Star Blue Metals	Jelly products - 875T/Month
46	STR AND CO	Blue Metal Jelly - 700Tone/Month
47	TAM Blue Metals	Blue Metal Jelly - 700T/m
48	Vaikai Blue Metals	1 1/2", 3/4", 1/2", 1/4", Size Jelly, Stone Powder - 7500T/Month
49	Venkateshvara Building Material Supplier	1 1/2 Crushed Stone - 3000T/M 3/4 Crushed Stone - 3000T/M 1/2 Crushed Stone - 2000 T/M 1/4 Crushed Stone / 1000 T/M
50	Vinayaga Blue Metal	Stone jelly - 500T/M
51	Vinayaga Blue Metals	Blue Metal Jelly 3by4 1by2 1by4 & Powde and Powder - 650T/Month
52	Sri Krishna Blue Metals	1 1by2 Jelly - 1000t/m 3by4 Jelly - 300 t/m 1by2 Jelly- 250 t/m 1by4 Jelly/ 100 t/m Stone Powder- 100 t/m
53	Bannari Amman Mines	Blue Metal - 900T/Month
54	Sri Bannari Amman Blue Metals	Jelly 40mm,20mm,12mm,6mm - 7600 T/M
55	SAI BLUE METALS	Manufactured Sand - 200 T/day 40mm blue metal - 40 T/day
56	Blue Star Aggregatess	Various Sizes of Jelly - 3000 T/M Manufactured Sand - 1000 T/M
57	PSP Blue Metals	Types of Jelly - 9600 T/month Manufactured Sand - 2100 T/M Stone Dust- 300 T/Month
58	SRK Blue Metal	Manufacturing of various sizes of jelly - 10000 T/M Manufactured Sand - 20000 T/M
59	SHREE LAKSHMI BLUE METALS	Various size of blue metals jelly - 1800T/Day Granular Sub Base - 150 T/Day Wet Mix Macadam - 150 T/Day M Sand/ 800 T/Day P Sand- 400 T/Day

60	STAR VSI MANUFACTURING SAND UNIT	Manufactured sand - 10000T / M
61	SRI RAMAKRISHNA BLUE METALS UNIT - II	Manufactured sand - 15000T / M Jelly powder - 50 T/m Diff size of jelly- 23225 T/m
62	MSS & CO	Diff size of jelly - 1500T / M Stone Powder - 500T/m Manufactured Sand- 13000T/m
63	SRI VELAVAN BLUE METALS	Various size of blue metals - 4500T / M M Sand - 4500 T/m
64	SVEM BLUE METAL	Various size of blue metals - 5000T / M M Sand - 5000 T/m
65	OM MURUGA BLUE METALS	1-1/4 Jelly - 270T/M 1/4 Jelly - 400 T/M Stone Powder- 400 T/M
	16. District: PUDUKKOTTAI	
1	SRI MUTHUMARIAMMAN BLUE METAL	Stone Jelly - 2100Tons/Month Stone Dust - 21Tons/Month
2	P R BLUE METALS	Blue Metal Jellies (Various Sizes 1/4",1/2",3/4",1 - 1800 Ton/Day M. Sand & P. Sand - 600 Ton/Day
3	AMMAN BLUE METAL	Stone Jelly 40mm 20mm 12mm 6mm - 3700Tons/Month
4	SAHAYAMATHA CRUSHER	Jelly of 20mm. - 200Tons/Month
5	SRI DHANDAYUTHAPANI BLUEMETAL INDUSTRIES	STONE JELLY 0.25 0.5 0.75 - 1000Tons/Month STONE JELLY 1 0.5 - 450Tons/Month STONE DUST- 350Tons/Month
6	GPR ENTERPRISES	Stone Jelly - 600Tons/Month
7	KANAGAMMAN CRUSHER	STONE JELLY of 20mm SIZE - 600Ton/Month
8	R. M. K. BLUE METAL INDUSTRIES	Stone Jelly - 1500Ton/Month
9	GANI BLUE METAL INDUSTRIES	Blue Metals Jelly - 1750T/Month Stone Chips - 750T/Month
10	ESWAR ENTERPRISES	BLUE METAL JELLIES (Various sizes ranging from 12 - 9000 Ton/Month M-SNAD - 14500 Ton/Mont
11	SAI HRIDHAM INFRAA PVL	STONE JELLIES (Various Size) - 2500TONS/DAY M SAND & P SAND - 1500 TONS/DAY
12	PVM BLUE METAL INDUSTRIES	Stone Jelly - 1625Tons/Month Stone Dust - 275Tons/Month
13	S. K. M. BLUE METAL	Stone Jelly of 20 mm.,12 mm.,6 mm. - 700Tons/Month
14	SSB CRUSHER INDUSTRIES	Stone Jelly - 700Tons/Month
15	KANAGAMMAN CRUSHER UNIT III	Stone Jelly - 600Tons/Month
16	JEYA BLUE METALS	BLUE METAL JELLY OF VARIOUS SIZES - 870TONS/DAY
17	SRI BHUVANESWARI CRUSHER	Stone Jelly of 20mm, 12mm, 6mm. - 700Tons/Month
18	SRI MOOKAMBIGAI CRUSHER INDUSTRIES	Stone Jelly - 600Tons/Month
19	M P N CRUSHER BISMI CRUSHER	Stone Jelly of 20mm.,12mm.,6mm.,40mm., - 1000Tons/Month Stone Dust - 150Tons/Month
20	V R S CRUSHER	Stone Jelly of 20 mm. - 200Tons/Month Stone Jelly 12 mm. - 250Tons/Month Stone Jelly 6 mm.- 150Tons/Month Stone Jelly 40 mm./ 200Tons/Month
21	S.M.S. CRUSHER	Stone Jelly - 600Tons/Month Stone Dust - 300 Tons/Mont
22	A C M CRUSHER	Stone Jelly - 700Tons/Month Stone Dust - 50 Tons/Mont
23	SRI SENTHIL CRUSHER	Blue metal jelly of various sizes - 800Ton/Day M-sand - 600Ton/Day
24	MALLIKA BLUE METALS	Stone Jelly 40 mm. - 500T/Month Stone Jelly 20 mm. - 500T/Month Stone Jelly 12 mm.- 450T/Month Stone Jelly 6 mm/ 225T/Month Stone dust- 150T/Month

25	K S P CRUSHER	Stone Jelly - 300Tons/Month Stone Jelly - 200Tons/Month Stone Dust and Chips- 100Tons/Month
26	CAUVERY CRUSHER	Stone Jelly - 630Tons/Month
27	P.V.R. BLUE METALS	Stone Jelly - 550Tons/Month
28	SAHUL HAMEED CRUSHER UNIT	Stone Jelly 6mm., 12mm., 20mm. - 500Tons/Month Stone Jelly 40mm. - 600Tons/Month Stone Dust and Chips- 200Tons/Month
29	K P S CRUSHER	Stone Jelly - 600Tons/Month
30	R.V. INDUSTRIES	Stone Jelly - 280Tons/Month
31	PARVATHY BLUE METAL	Stone Jelly - 550Tons/Month
32	ANNAI CRUSHER	Stone Jelly 1/4,"1/2,"3/4"&1 - 45Ton/Day Stone Dust - 5Ton/Day
33	KANAGAMMAN CRUSHER	Stone Jelly - 600Tons/Month
34	ROYAL BLUE METAL	Stone Jelly - 425Tons/Month Stone Chips Dust - 200 Tons/Mont
35	VAIRAM BLUE METAL	Stone Jelly 20mm., 12mm., 6mm., - 500Tons/Month Stone Dust - 20Tons/Month
36	PUNITHA AROCKIA ANNAI STONE CRUSHER	Blue Metals Jelly of 6mm., 12mm., 20mm. - 550Tons/Month
37	ANNAI CRUSHER	Stone Jelly - 280Tons/Month
38	SENTHIL KUMAR BLUE METAL	Stone Jelly of 6 mm., 12 mm., 20 mm. - 550Tond/Month Stone Chips and Stone Dust Powder - 50Tons/Month
39	R.M.K. SHANTHI BLUE METAL INDUSTRIES	VARIOUS SIZES OF STONE JELLY - 300T/DAY
40	SRI AMBAL CRUSHER	Various Sizes of Stone Jelly 1/4,1/2,3/4,1 1/2 - 1000TONS/DAY M-Sand - 700TONS/DAY
41	GANGA CRUSHER	Stone Jelly - 20Tons/Day Stone Chips - 8Tons/Day Stone Dust- 4Tons/Day
42	SRI AMBAL BLUE METAL INDUSTRIES	Stone Jelly - 325Tons/Month Stone Dust - 50Tons/Month
43	NEW UDHAYAM BLUE METAL	Stone Jelly - 2000TONS/DAY
44	AYYANAR BLUE METAL	Blue Metal jelly of Various Sizes - 200Tons/Day M-Sand - 180Tons/Day
45	JANANI BLUE METALS	Stone Jelly - 37.5Tons/Day Stone Dust - 5Tons/Day
46	BEST STONES	Stone Jelly - 18T/Day Stone Dust Chips - 2T/Day
47	JEYAM BLUE METALS	Stone Jelly - 275Tons/Month Stone Dust Chips - 25Tons/Month
48	JEEVAN ENTER PRISES	Stone Jelly - 21Tons/Day Stone Dust - 4Tons/Day
49	BAGAVATHY AMMAN CRUSHER	BLUE METAL JELLY OF VARIOUS SIZES - 500Tons/Day M SAND & P SAND - 125Tons/Day
50	SRI BALAMURUGAN BLUE METALS	BLUE METAL JELLY OF VARIOUS SIZES - 500Tons/Month
51	THENTRAL CRUSHER	Stone Jelly of 6mm,12mm,20mm,40mm. - 21Tons/Day Stone Dust - 4Tons/Day
52	SRI JEYAMURUGAN CRUSHER	Stone Jelly of Various Sizes - 3000Tons/Day Stone Dust - 250Tons/Day
53	SRI BAGAVATHI BLUE METALS	Stone Jelly Stone Dust - 20Tons/Day
54	N.R.K. CRUSHER	Stone Jelly and Stone Dust - 20Tons/Day
55	SRI SWETHA INDUSTRIES	Stone Jelly - 25Tons/Day Stone Dust - 5 Tons/Day
56	MOHAN CRUSHER INDUSTRIES	Stone Jelly and Stone Dust - 30Tons/Day
57	RAJA CRUSHER	Stone Jelly - 67Tons/Day Stone Dust - 8Tons/Day
58	VIZARNAR CRUSHER	Blue Metals Jelly - 8Tons/Day Stone Dust - 2Tons/Day
59	MADHUCON PROJECTS LIMITED	Stone Jelly - 800Tons/Day Stone Dust and Chips - 100Tons/Day

60	M.M.R. BLUE METALS UNIT	Stone Jelly - 275Tons/Month Stone Dust Chips - 25Tons/Month
61	G.M. STONES AND CRUSHER PRIVATE LIMITED	Various Sizes of Stone Jelly - 150Tons/Day M-Sand - 150Tons/Day
62	SSB BLUE METAL FORMELY SRI JUPITER CRUSH	STONE JELLY OF VARIOUS SIZES - 1500Tons/Day M SAND & P SAND - 500Tons/Day
63	R.J.R. CRUSHER	Various Sizes of Blue Metal Jelly - 355TONS/DAY Stone Dust - 45TONS/DAY
64	BHASKARAN CRUSHER	Stone Jelly of 6mm., 12mm., 20mm., 40mm. - 300Tons/Month Stone Dust Chips - 900Tons/Month
65	MINNUS BLUE METAL	Stone Jelly - 275Tons/Month Stone Dust Chips - 25Tons/Month
66	RASI BLUE METALS	Stone Jelly of 40mm., 20mm., 12mm. - 53518Tons/Month M Sand - 18000Tons/Month Stone Dust- 3111Tons/Month
67	SRI MUTHU MARIAMBAL BLUE METAL	Stone Jelly - 275Tons/Month Stone Dust and Chips - 25TonsMonth
68	PARVATHY CRUSHER	Stone Jelly - 1000 Tons/Day Stone Dust Chips - 500Tons/Day
69	NEW GEMINI PROJECTS	Stone Jelly of various Sizes - 21000 Ton/Month Blue Metal M-Sand - 9000 Ton/Month
70	CHENDHUR BLUE METAL	STONE JELLY OF VARIOUS SIZES - 1000TONS/DAY M SAND & P SAND - 500TONS/DAY
71	SRI PERIYASWAMY BLUE METALS	Blue Jelly - 650 Ton/Day Stone Dust and Chips - 100Ton/Day
72	P.K.L BLUE METAL WORKS	Stone Jelly - 240 Ton/Day Stone Dust - 40 Ton/Day
73	K.S. STONES AND CRUSHER INDUSTRIES	Stone Jelly of 6mm, 12mm, 20mm, 40mm. - 60 Ton/Day Stone Dust and Chips - 15 Ton/Day
74	SANDHIVEERAN CRUSHER	Stone jelly - 300 Ton/Month Stone Dust and Chips - 50Ton/Month
75	MSA CRUSHER	Blue metal Jelly - 300 Ton/day Stone Dust and Chips - 40 Ton/day
76	HARINI CRUSHER	Stone Jelly - 1350Ton/Month Stone Dust and Chips - 150Ton/Month
77	V.N.M. BLUE METALS	Stone Jelly - 75Ton/day Stone Dust and Chips - 10Ton/day
78	M M BLUE METALS	Stone jelly - 32000Tons/year Stone dust Chips - 8000Tons/Year
79	R.K.V. BLUE METALS	Stone Jelly - 1050Ton/Month Stone Dust - 200Ton/Month
80	NILLA BLUE METALS	Stone jelly - 75T/Day Stone dust - 10T/Day
81	S.S.B. CRUSHER INDUSTRIES	STONE JELLY OF VARIOUS SIZES - 1000Tons/Day STONE DUST - 200 TONS/DAY
82	SRI ALAGU KARUPPAR BLUE METAL	Various Sizes of Stone Jelly 1/4,1/2,3/4,1 1/2, Ch - 1400T/Day M-Sand - 800T/Day
83	R.R. BLUE METALS	BLUE METAL JELLY OF VARIOUS SIZES - 1500 T/Day M SAND & P SAND - 500T/Day
84	JUBITER MINES AND METALS	Blue metal jelly of various sizes - 1000 T / Day M-sand - 400 T / Day
85	VEERAM STONES PRIVATE LIMITED	Blue metal jelly of various sizes - 20800T/Month M-sand & P-sand - 11440T/Month
86	R.R. CRUSHER	Stone Jelly of Size 40mm, 20mm, 12mm & 6mm - 12000 Ton/Day M Sand - 1000 Ton/Day
87	K.R.N. BLUE METAL	Stone Jelly - 300Tons/Day Stone Dust and Chips - 100Tons/Day

88	TRANSSTROY INDIA LIMITED STONE CRUSHER	Blue Metal Jelly of 40 MM - 5040 Ton/Month Blue Metal Jelly of 20 MM - 7840Ton/Month Blue Metal Jelly of 10 MM - 6160T/MonthTon Blue Metal Jelly of 6 MM / 8960T/MonthTon
89	THIRU MURUGAN BLUE METALS	Various Sizes of Stone Jelly 1/4,1/2,3/4,1 1/2 Chi - 950Tons/Day M-Sand - 400Tons/Day
90	SUPREME SAND	BLUE METAL JELLY OF VARIOUS SIZES - 100TONS/DAY M SAND - 70TONS/DAY
91	MD CRUSHER	Blue metal jelly of various sizes - 300T/Day M-sand - 250T/Day
92	SR BLUE METALS	STONE JELLY OF VARIOUS SIZES - 3000TON/DAY M-SAND & P-SAND - 800TON/DAY
93	RAJA RAJA CHOLAN CRUSHER	Stone Jelly of 6 mm, 12 mm 20 mm and 40 mm - 700Tons/Month Stone Dust - 50Tons/Month
94	MOOKAMBIGAI BLUE METALS	Stone Jelly - 600Tons/Month
95	SR BLUE METALS	BLUE METAL JELLY OF VARIOUS SIZES AND M-SAND, P-SA - 7600T/DAY
96	ANGALAMMAN BLUEMETALS	Blue Metal Jelly of Various Sizes - 400T/Day
97	PRATHESH SANMUGAVASAN CRUSHER	Stone Jelly of various Sizes - 220T/Day Stone Dust - 20 T/Day
	17. District: RAMANATHAPURAM	
1	AMBALAM BLUE METAL	BLUE METALS 3 BY 4 INCH - 200T/M BLUE METALS ONE BY TWO INCH - 175T/M BLUE METALS ONE BY FOUR INCH- 75T/M
2	MURUGA CRUSHER	M-SAND - 680T/D
	18. District: SALEM	
1	N.V.T Blue metals	Blue Metal Jelly of various sizes - 550 T/M
2	P.P.S.CRUSHER	Blue Metal Jelly and Blue metal Powder 40mm20mm12m - 5000T /M
3	SRI MARUTHI STONE CRUSHER	Blue Metal aggregates all sizes 40mm,20mm,12mm,6mm - 63000T /M
4	M.S.C. AND P.V. BLUE METAL JELLY	Metal Jelly - 200T/M
5	V.R.S BLUE METALS	Blue metal jelly of size 40mm, 20mm, 12mm, 6mm and - 15000T/Month
6	VARSHA BLUE METALS	Blue Metal Jelleyof size 40mm 20mm 12mm 6mm - 10000 T/Month
7	T.P.S. BLUE METALS	Blue Metal Jelly Size of 40 20 12 6mm and - 10000T/M
8	SRI AMMAN BLUE METALS	BLUE METALS - 5000T/M
9	SA BLUE METALS	Jelly of size 40mm 20mm 12mm and powder - 2000 T / M
10	SAKTHI VINAYAKAR BLUE METALS	Blue Metal Jelly size of 40mm,20mm,12mm,6mm - 2000 T/M
11	SRI THANGAVEL BLUE METALS	Blue metal jelly of size 40,20,12,6mm metal powder - 50000 T/M M-Sand - 25000T/M
12	RAMALINGAM BLUE METALS	BLUE METAL JELLY - 2000 T/M
13	T.P.S BLUE METALS AND CRUSHING UNIT	Blue Metal Jelly and powder - 10000T/M
14	J.B. STONE CRUSHER	Blue metal Jelly of 40mm,20mm,12mm,6mm and - 5000T/Month
15	TIMES BLUE METAL	Blue Metal Jelly size of 40mm 20mm 12mm 6mm - 2000T/Month
16	SRI JAYAMURUGAN METALS	BLUE METAL JELLY - 180T/M
17	BALAJI BLUE METALS	METAL JELLY 6mm 12mm 20mm 40mm - 200T/M
18	SRI DWARAGANATH BLUE METALS	BLUE METAL JELLY AND STONE POWDER - 1000T/M

19	KANDASAMY BLUE METAL - UNIT II	Blue metal aggregates all sizes 40mm, 20mm, 12mm - 82000 T/Month
20	SAKTHI BLUE METAL SUPPLIERS	JELLY - 250T/M JELLY - 350T/M JELLY - 650T/M
21	SRI VENKATESWARA BLUE METALS	METAL JELLY - 400T/M
22	JOTHIMURUGAN BLUE METALS	BLUE METAL STONES - 80T/M
23	M/s Sellandiamman blue metals	Blue metal jelly,Powder,M-Sand & P-Sand - 250T/M
24	SENTHIL BLUE METAL	METAL JELLY 6mm, 10mm, 20mm sizes - 650T/Month
25	SRI RAJAGANAPATHY METAL CRUSHER	Blue metal aggregates all sizes (6-100mm) - 550T/M
26	BHARATH BLUE METALS	Blue Metal Jelly of size 40,20,12,6mm and Blue Met - 250T/M
27	SRI JPS BLUE METALS	BLUE METAL JELLY - 500T/M
28	SRI SAKTHI VINAYAKA BLUE METALS	Blue Metal Jelly 40mm, 20mm, 12mm, 6mm - 1000T/M
29	K.M.BLUE METALS	BLUE METAL - 250T/M
30	T.R.K. BLUE METALS	Blue Metal Jelly 40mm, 20mm, 12mm, 6mm - 500 T/M
31	K.R.M.S. BLUE METALS	BLUE METALS STONES - 200T/M
32	RAJA BLUE METALS	BLUE STONE JALLY - 250T/M
33	SRI SHANMUGA BLUE METALS	Blue Metal Jelly of Size 40mm, 20mm, 12mm, 6mm - 2000T/M
34	T.P.S. BLUE METALS	BLUE METAL JELLY - 400T/M
35	C.N.N.P. BLUE METALS	METAL JELLY - 200 T/M
36	K.S.S.R. BLUE METAL	BLUE METAL JELLY - 200 T/M
37	SRI DHANALAKSHMI BLUE METAL	BLUE METAL JELLY - 1200T/M
38	VIGNESWARA BLUE METALS	BLUE METAL JELLY 40mm 20mm 12mm 6mm - 200T/M
39	SURIYA BLUE METALS	BLUE METAL JELLY (1/4, 1/2 & 3/4) - 400T/M
40	R.G. BLUE METALS	BLUE METAL JELLY 40mm 20mm 12mm 6mm - 300T/M
41	PADMA & CO	Blue metal aggregates all sizes (6-100mm), - 500T/M
42	ANDAVAR BLUE METAL	METAL JELLY - 200T/M
43	SIVAM and Co	Blue Metal Jelly of various sizes 40mm 20mm 12mm 6 - 2000T/D M-SAND - 2000T/D
44	METTUR S.P.R. BLUE METAL AND CONSTRUCTIO	6mm,12mm 20mm,40mml Jelly - 200T/M
45	M.S.P. BLUE METALS	Blue Metal Jelly Chips Powder - 500 T/M
46	SRI MAHALAKSHMI BLUE METALS	METAL JELLY size of 6mm 12mm 20mm 40mm - 200T/M
47	SRI PACHIAMMAN BLUE METAL	Blue Metal Jelly 40mm 20mm 12mm 6mm and - 30000T/Month
48	SENTHIL RAJA BLUE METAL	METAL JELLY - 250T/M STONE POWDER - 25T/M
49	R.K. BLUE METAL	Blue metal Jelly - 225T/M STONE POWDER - 25T/M
50	SRI DEVI ENTERPRISES	METAL JELLY - 250T/M STONE POWDER - 50T/M
51	SANTHANA LAKSHMI BLUE METALS	BLUE METAL JELLY - 200T/M
52	PONNU STONE CRUSHER INDUSTRY	BLUE METAL JELLY - 225T/M
53	P.M. BLUE METALS	BLUE METAL JELLY - 110T/M
54	SHRE PARASAKTHI CRUSHER PVT LTD	Blue metal Jelly of sizes 40mm,20mm,12 mm,6mm - 10000T/Month
55	SRI OM V.R.S. BLUE METAL	BLUE METAL JELLY - 250T/M
56	S.M.R BLUE METAL	METAL JELLY - 200T/M
57	S.K.S. BLUE METAL	BLUE METAL JELLY - 250T/M
58	ATTUR BLUE METAL WORKS	Blue metal jelly - 275T/M
59	SRI SENTHIL BLUE METAL	Blue metal jally - 225T/M
60	VIJAY BLUE METAL	BLUE METAL JELLY - 225T/M
61	EVEREST BLUE METALS-CRUSHER DIVISION	DOlOMITE FRACTIONS - 150T/M

62	SUN BLUE METAL	BLUE METAL JELLY 40mm20mm12mm6mm and - 6250T/M
63	ANBU BLUE METALS	METAL JELLY - 200T/M
64	T.S. BLUE METALS	Blue Metal Jelly of size 40,20,12,6mm and Blue Met - 12500T/M
65	SRI SAKTHI BLUE METALS	40mm 20mm 12mm 6mm Jelly and Blue metal Powder - 2500T/Month
66	S.P. AND CO BLUE METALS	METAL JELLY - 400T/M
67	SRI PERUMAL BLUE METALS	METAL JELLY - 700T/M
68	S.R.C. PROJECTS PVT LTD	BLUE METAL OF SIZE 40mm 20mm 6mm and - 27000T/Month
69	UNIVERSAL BLUE METALS	BLUE METAL JELLY - 1100T/Month
70	SHRI JAYALAKSHMI CRUSHER	Blue Metal Jelly and Powder - 15000 Ton/Month
71	SRI DHANALAKSHMI BLUE METALS	Blue Metal Jelly and powder - 10000T/M
72	V.S. BLUE METALS	Blue Metal Jelly size 40,20,12,6mm - 2000T/Month
73	N.S.K. CRUSHER	40mm20mm12mm6mm Jelly and Blue Metal Powder - 5000 Ton/Month
74	RANI BLUE METALS	BLUE METAL JALLY, (1.1/2", 3/4", 1/2", 1/4") BLUE - 1250T/M
75	M/s VAAS INFRA,	BLUE METAL JELLY (40mm, 20mm, 12mm, 6mm) - 2500T/M
76	GIRI SAHAJANYA PROJECTS	BLUE METAL JELLY 40mm 20mm 12mm 6 mm - 25000T/M
77	S.R. BLUE METALS	BLUE METAL JALLY (1 1/2, 1/4, 1/2, 3/4) & BLUE - 2500T/M
78	VIJAY BLUE METALS -II	BLUE METAL JELLY - 2000T/M
79	MVR INFRASTRUCTURE AND TOLLWAYS P.LTD	Blue Metal Jelly Size of 40mm, 20mm, 12mm, 6mm - 100000T/M
80	S.S. BLUE METALS	Blue Metal Jelly & Blue Metal Powder - 1000T/M
81	SRI MURUGAN BLUE METALS	BLUE METAL JELLY 40 20 12m 6mm - 1000T/M
82	BALAMURUGAN BLUE METAL	BLUE METAL JELLY 40mm 3mm 12m 6mm - 1000T/M
83	SRI VENKATESWARA BLUE METALS	BLUE METAL JELLY 40mm, 20mm, 12mm, 6mm - 2500T/M
84	JAYASAKTHI BLUE METALS	BLUE METAL JELLY 40mm, 20mm, 12mm, 6mm - 2500T/M
85	KANDASAMY BLUE METALS	BLUE METAL JELLY 40mm, 20mm, 12mm, 6mm - 3000T/M
86	ARTHANARI BLUE METALS	BLUE METAL JELLY 40mm, 20mm, 12mm, 6mm - 3000T/M
87	SATHYA BLUE METALS	BLUE METAL JELLY - 2500T/M
88	SRI BHAGAVATHI AMMAN BLUE METAL	BLUE METAL JELLY size of 40mm20mm12mm6mm and - 2500T/M
89	SAKTHI BLUE METAL	BLUE METAL JALLY 1.1/2, 3/4, 1/2, 1/4 BLUE METAL - 4000T/M
90	IVRCL INFRASTRUCTURE AND PROJECTS LTD	BLUE METAL JALLY, SIZE 40MM, 20MM, 12MM, 6MM - 50000T/M
91	ANNAMALAI BLUE METAL	BLUE METAL JALLY, SIZE 40MM, 20MM, 12MM, 6MM - 3000T/M
92	VELA BLUE METAL	BLUE METAL JELLY - 3000T/M
93	K.P.G. BLUE METALS	BLUE METAL JELLY OF SIZE 40MM, 20MM, 12MM 6MM AND - 3000T/MONTH
94	SRI RAJALAKSHMI BLUE METALS	Blue metal jelly size of 40mm,20mm,12mm,6mm andBMP - 5000Tons/Month
95	K.S.A. BLUE METAL	BLUE METAL JALLY, 40MM, 20MM, 12MM 6MM BLUE - 10000T/M
96	ANNAI SUNDARAMBAL BLUE METALS	BLUE METAL JELLY SIZE 40mm 20mm 12mm6mm - 10000T/M
97	KAYAL BLUE METALS	BLUE METALS 40mm 20mm12mm 6mm BLUEMETAL POWDER - 3750T/M

98	MAYTAS INFRA LTD-STONE CRUSHING UNIT	Blue Metal Jelly Size of 40,20,12,6mm - 60000 T/Month
99	OM MURUGAA CRUSHER	Blue Metal Jelly, M.Sand & P.Sand - 75000 Ton/Month
100	SRI VELAVAN STONE CRUSHER	Blue Metal Jelly of various sizes, Stone Dust, M- - 5000T/M
101	VENUS BLUE METALS	Blue Metal Jelly and Blue Metal Powder - 8750 T/M
102	SRI VENKATESWARA BLUE METALS	BLUE METAL JELLY - 15000T/M
103	SURYYA BLUE METALS	Blue metal jelly of size 40mm, 20mm, 12mm, 6mm, b - 17350T/Month
104	HONEY CRUSHING UNIT	Blue Metal Jelly size of 40 20 12 6mm and - 1000T/Month
105	M.P.S. BLUE METALS	Blue Metal Jelly size of 40 20 12 6mm and - 1000Ton/Month
106	SRI AMMAN BLUE METALS	Blue Metal Jelly and Blue Metal Powder - 2500 Ton/Month
107	SELVAM BLUE METALS	Blue metal jelly - 74750 Ton/Month
108	METTUR S.P.R. BLUE METAL & CONSTRUCTION	Blue Metal Jelly,Blue Metal Powder, M.Sand & P.Sa - 12000 Ton/Month
109	SRI BALAJI BLUE METAL CRUSHING INDUSTRY	40mm 20mm 12mm 6mm Jelly Blue Metal Powder - 5000 T/M
110	Senthur Murugan Blue Metals	Blue Metal all sizes - 27000T/M
111	ARK BLUE METALS	Blue metal jelly size of 40mm,20mm,12mm,6mm, - 8600T/M
112	KAVITHA BLUE METALS	40mm 20mm 12mm 6mm BLUE METAL JELLY - 15000T/M
113	SRI JAYAMURUGAN BLUE METALS	40mm 20mm 12mm 6mm Jelly Blue Metal Powder - 8750 T/M
114	SRI AYYANARAPPAN BLUE METALS	Blue Metal Jelly size of 4020 126mm and Blue Meta - 8750 T/Month
115	SRI VENKATESWARA BLUE METALS	Blue metal aggregates of size 40mm20mm 12mm6mm - 18000T/Month
116	HINDUSTAN STONE CRUSHER	40mm20mm12mm6mm Jell Blue metal Powder - 100000T/Month M Sand - 30000 T/M
117	SRI VIJAYALAKSHMI BLUE METALS	Jelly size 40mm20mm12mm6m and Jelly Powder - 100 T/day
118	JAYAMURUGAN BLUE METALS	Blue metal jelly of size 20mm12mm6mm and - 1000 T/M
119	ASHOK BLUE METAL	Blue metal jelly of size 40mm, 20mm, 12mm, 6mm, Bl - 199500T/Month
120	SRI VINAYAGA BLUE METALS	Blue Metal Jelly size of 40mm. 20mm, 12mm, 6mm and - 7500T/M
121	SJ BLUE METALS	Blue metal Jelly and powder - 5000t/m
122	K.U.S.BLUE METALS	Blue metal Jelly siza 40 mm,20mm metal powder - 2500t/m
123	RAJAN BLUE METALS	40 10 5 mm jelly and stone powder - 2500 T/d
124	MRS BLUE METALS	Blue Metals jelly of Size 400mm.20mm,12mm,600 - 2500 T/M
125	BANNARIAMMAN BLUE METALS	Blue Jelly 40 20 12 6MM metel Powder - 1000 t/m
126	VENKATESHWARA BLUE METALS	Blue Jelly 40 20 12 6MM metel Powder - 1000 T/M
127	MPS BLUE METALS CRUSHER DIVISION	Blue Metal and M Sand - 27000T/M
128	SRI ANNAMAR BLUE METALS	Blue metal jelly and blue metal powder - 10000T/M
129	ROYAL STONES	Blue Metal Jelly - 4000T/Day
130	GOVERNMENT PRIMARY HEALTH CENTRE	No Of Bed - 6Nos In Patient - 6 Nos Out Patient- 150 Nos/day
	19. District: SIVAGANGAI	
1	ADAIKALAM CRUSHER	BLUE METAL JELLY OF VARIOUS SIZES - 20TONS/DAY
2	XAVIER DOSS	3-4 JELLY - 1800T/MONTH 1-2 JELLY - 1500T/MONTH 1-4 JELLY- 900T/MONTH FINES/ 300T/MONTH M SAND- 4500T/MONTH
3	SHENBAGAM METAL INDUSTRIES	STONE METAL JELLY - 390T/month
4	SELVARAJ BLUE METALS	BLUE METAL JELLY - 430T/M

5	SRI PERIYAKARUPPASAMY FIVE STAR BLUE MET	Various Sizes of Stone Jally - 700T/M
6	Thiyalnayaki Blue Metal	Blue Metal Jelly of various sizes - 430T/month
7	STAR BLUE METALS	Blue Metal Jally - 550T/M M sand - 400 T/month
8	KARPAGA VINAYAGAR BLUE METALS	BLUE METAL JELLY OF VARIOUS SIZES - 9000TONS/MONTH
9	V.M.BLUE METALS	GSB - 10000T/MONTH WMM - 15000T/MONTH 3-4 JELLY- 2000T/MONTH 1-2 JELLY/ 2000T/MONTH 1-4 JELLY- 2000T/MONTH FINES-1500T/MONTH M SAND- 4000T/MONTH
10	SRI PALANIAMMAN BLUE METAL	Blue Metal Jally with various sizes - 1500T/M
11	MEGA BLUE METALS	M SAND - 350TONS/MONTH VARIOUS SIZE OF STONE JALLY - 850TONS/MONTH
12	SHRI VAARI BLUE METALS	JELLY OF VARIOUS SIZES - 270T/M
13	GOKUL BLUE METALS	Various Sizes of Stone Jally - 725.2T/month
14	Sri Rajeswari Associates	Blue Metal Jally with various sizes - 3500T/M
15	YOGASRI BLUE METALS	BLUE METAL JELLY OF VARIOUS SIZES - 1000TON/MONTH STONE POWDER - 200TON/MONTH
16	A.V.VALLIAMMAL METAL UNIT - II	STONE METAL JELLY - 1350TONS/MONTH FINES - 165TONS/MONTH
17	BALAJI STONE CRUSHER	BLUE METAL JELLY OF VARIOUS SIZES - 1300TONS/MONTH
18	YOGA SRI BLUE METALS M SAND UNIT	M SAND - 1000TONS/MONTH
19	R.V.K.BLUE METALS	MANUFACTURE OF VARIOUS SIZES OF BLUE METAL JELLY - 4200TONS/MONTH FINES - 300TONS/MONTH M.SAND- 4500TONS/MONTH
20	SRI ANGALAMMAN CRUSHER	STONE METAL JELLY - 750T/M
	20. District: SRIPERUMBUDHUR	
1	PA Properties and Developers Private Ltd Unit II	Blue Metal Jelly of various sizes - 350T/day
2	AAlAYAM ENTERPRISES PRIVATE LIMITED	BLUE METAL JELLY OF VARIOUS SIZES - 200Tons/d
3	R S MINES	BLUE METAL JELLY IN VARIOUS SIZE - 4000 T/Month M SAND - 900T/Month
4	NAMASKAR BLUE METAL INDUSTRIES P LTD	Blue Metal small lamps,aggre.of var.sizes&Powder - 1000T/day
5	R.S.ENTERPRISES-UNIT-V	20mm size Blue Metal - 220T/Day 12mm size Blue Metal - 50T/Day 6mm size Blue Metal- 50T/Day
6	A ANNAI BLUE METALS	Blue Metal Jelly of Differnt Sizes - 450 Ton/Month
7	R.S.ENTERPRISES	Various size of Blue Metal Jelly - 320T/Day
8	R.S.ENTERPRISES	Various size - 320T/Day
9	ANNAI BLUE METALS	Blue Metal aggregates various sizes - 7500 Ton/Month
10	R.S.ENTERPRISES	Blue Metal 20mm size - 220T/M Blue Metal 12mm size - 50T/M Blue Metal 6mm size- 50Tm
11	R.S.ENTERPRISES UNIT - IV	20mm Size - 220T/Day 12mm Size- 50T/Day 6mm Size/ 50T/Day
12	V S R ENTERPRISES	Blue Metal Jelly - 1350 Ton/Month
13	SRI VIGNESH AGENCIES	Blue metal aggregates of various sizes 20mm - 100T/day 12mm size - 30t/day 6mm size- 25t/day 40 mm size/ 25t/day
14	VIGNESH BLUE METAL	Stone Jelly 1-4 1-2 3-4 - 80T/Month
15	AARUPADAI GROUPS	Blue Metal jelly 20mm,12mm,6mm,40mm,stone dust - 195T/day
16	VINAYAKAR BLUE METALS	Blue Metal jelly &Blue metal powder - 400T/day

17	R.S.BLUE METALS	Blue metal - 80T/day
18	SRI VENKATESWARA MINERALS	Pulverising feldspar & bentonite - 200MT/Month
19	PONRAM BLUE METALS	Blue Metal jelly in various sizes - 600T/M
20	ESSOR BLUE METAL	Crushed Blue Meal (20mm,12mm,6mm) - 60000CFT/Month
21	SUPAM BLUE METAL	Blue metal (6,12 & 20 mm) - 275T/Month
22	MSP Blue Metal	Blue metal jelly - 600T/m
23	G.Tech Blue Metals	Blue metal jelly - 1350T/Month
24	BALAMURUGAN BLUE METAL	Various sizes of Blue Metal Jeely - 600 MT/month
25	MARUTHI BLUE METAL	Various sizes of Blue Metal Jeely - 600 T/month
26	PBM BLUE METALS	Various sizes of jelly - 610 T/month
27	SRI BALAJI BLUE METAL	Various sizes of Jeely - 610 T/month
28	SATHISH BLUE METAL	Blue metal jelly of various sizes M Sand P San - 800 T/month
29	VIG BLUE METAL	Various sizes of Blue Metal jelly - 610 T/month
30	KAUVERY BLUE METALS	Various sizes of Blue Metal Jelly - 800 T/month
31	Vijjis Blue Metal (SIVA BLUE METALS)	Blue metal -jelly various sizes - 500T/M Stone dust - 2T/m
32	MALAIKOLUNDU BLUE METALS	Blue Metal jelly - 325T/Month
33	KUMARAN CRUSHER	Stone Jelly of various sizes - 600T/M
34	SRI VENKATESWARA BLUE METAL	Stone Jelly - 80T/Month
35	P J P BLUE METAL	Various size of Jelly - 600T/Month
36	ALEX BLUE METAL	Various size of Jelly - 45T/Month
37	PA Properties and Developers Private	Blue metal aggreagtes of 20mm 12mm 06mm - 470T/day Stone dust powder - 30T/day
38	S V S BLUE METAL S No	Blue Metal Jelly - 700T/Month
39	VELMURUGAN BLUE METAL	Blue Metal Jelly - 600T/Month
40	GLS Blue Metals	Blue metal jelly in various sizes - 610T/Month
41	R S ENTERPRISES UNIT - I	20mm size - 220T/Month 12mm size - 50T/Month 6mm size- 50T/Month
42	R S ENTERPRISES UNIT II	Blue Metal Aggregates 20mm size - 220T/day Blue Metal Aggregates 12mm size - 50T/day Blue Metal Aggregates 6mm size- 50T/day
43	JANANI BLUE METAL	Blue metal jelly in varoius sizes - 810T/Month
44	RAGAVENDRA BLUE METAL	Blue metal -jelly various sizes & M sand - 25T/day
45	SRI GEETHALAKSHMI BLUE METAL	Stone jelly - 150T/month
46	JJJ Blue Metals	Stone Jelly - 80T/Month
47	RDS PROJECTS LTD	Blue metal jelly of various sizes - 600T/month
48	SRI KUMARAN BLUE METALS	Stone jelly & M sand - 80T/month
49	KPT BLUE METAL	Blue metal jelly of various sizes - 600T/month
50	Arupadai Infrastructure	Blue metal aggragates of various sizes - 7500T/month
51	S.V.Blue Metal	Blue Metal jelly - 600T/m
52	Arul Murugan Blue Metal	Blue Metal Jelly - 610T/m
53	Susila Blue Metal	Blue Metal Jelly - 600T/m
54	SSS Blue Metal	Blue Metal Jelly - 700T/m
55	Manikandan Blue Metal	Blue Metal Jelly - 610T/m
56	Mahalakshmi Blue Metal	Blue Metal Jelly - 610T/m

57	Sagayamary Blue Metal	Blue Metal Jelly - 610T/m
58	SANDRU BLUE METALS	Blue metal aggregates of various sizes and powder - 200T/day
59	Dhana Udhayam crusher unit 1	Stone jelly - 80T/M
60	VSR Blue Metals	BLUE METAL JELLY OF VARIOUS SIZES - 95T/d stone powder - 5T/day
61	SRI KAMAKSHI BLUE METAL	Stone Jelly 1 4 1 2 3 4 - 80T/Month
62	NAGAMMAL BLUE METAL	Blue Metal 6 mm 20mm size - 1000T/Month
63	Madasamy Blue Metal Industries	Blue Metal Jelly - 700T/m
64	Bhuvaneswari Blue Metals	Blue Metal jelly of various sizes - 598T/month
65	SRI BALAJI CRUSHER	Various sizes of blue metal jelly - 200T/d
66	PRIME CRUSHER	Aggreagtes of various sizes - 200Tons/d
67	AKS Blue metal	BLUE METAL JELLY OF VARIOUS SIZES - 500t/M
68	Sri Sabarinathan Blue Metal	Various sizes of blue metal jelly - 610T/Month
69	Sri Venkateswara Blue Metals	Various sizes of blue metal jelly - 610T/Month
70	S R I Blue Metal -I	Various sizes of Blue Metal Jelly - 800T/Month
71	S R I Blue Metal -II	Various sizes of blue metal jelly - 610T/Month
72	Divya Dharshini Blue metal	Various sizes of blue metal jelly - 610T/Month
73	S R I Blue Metal -III	Various sizes of Blue Metal - 610T/Month
74	R M Blue metal	Various sizes of Blue Metal jelly - 610T/M
75	Bhuvana Blue Metal	Various sizes of blue metal jelly - 610T/Month
76	SRI LCR Blue Metal	Various sizes of blue metal jelly - 610T/Month
77	Sahayamatha blue metal	Various sizes of blue metal jelly - 610T/Month
78	D S P Blue metal	Various sizes of blue metal jelly - 610T/Month
79	DRL BLUE METAL	Various sizes of blue metal jelly - 610T/Month
80	Jai Radhika Blue Metal	Blue Metal Jelly in various sizes - 700T/Month
81	Sri Vari Blue Metal	Various sizes of blue metal jelly - 610T/Month
82	TSR Blue metal	Various sizes of blue metal jelly - 610T/Month
83	Indhumathy Blue Metal	Various sizes of blue metal jelly - 610T/Month
84	Prashanth Blue Metal	Various sizes of blue metal jelly - 610T/Month
85	Santhiamman Blue Metals	Various sizes of blue metal jelly - 600T/Month
86	Sai Baba Blue Metals	Various sizes of blue metal jelly - 610T/Month
87	STAR BLUE METAL	Various sizes of blue metal jelly - 610T/Month
88	Chennai Blue Metal	Various sizes of blue metal jelly - 610T/Month
89	Priya Blue Metal unit I	Various sizes of blue metal jelly - 610T/Month
90	Sri ram blue metal	Various sizes of blue metal jelly - 610T/Month
91	Priya Blue Metal unit II	Various sizes of blue metal jelly - 610T/Month
92	Anandhi Blue Metal	Various sizes of blue metal jelly - 610T/Month
93	vinoth blue metal	Various sizes of blue metal jelly - 610T/Month
94	S S S Blue Metal	Various sizes of blue metal jelly - 610T/Month
95	STAR MINERALS AND NATURALS	Blue Metal Aggregates of various sizes - 900Ton/day M Sand - 800 Ton/Day
96	SRI BALAJI BLUE METAL	Various sizes of blue metal jelly - 600T/m
97	ARUL UDHAYAM PRIMARY CRUSHERS	Blue metal aggregates of varioues sizes - 1100 T/month
98	ATHILAKSHMI BLUE METAL	Various sizes of blue metal jelly - 700T/M
99	Seven Hills Blue metal	BLUE METAL PRODUCTS OF VARIOUS SIZES - 90T/d BLUE METAL DUST - 10T/d

100	SR Blue Metals	Blue metal jelly of various sizes - 700T/M
101	S.R.R. BLUE METALS	Various siszes of blue metal - 650 T/M Dust - 50t/m
102	MARUTHI BLUE METALS	Various siszes of blue metal - 600T/M Dust - 50T/M
103	VASUDEVAN BLUE METALS	Various siszes of blue metal - 650T/M
104	KPN SILICON	Blue metal aggregates of various sizes - 1200 T/Day M SAND - 1100 T/day Stone Dust- 100 T/Day
105	EKR BLUE METALS	Crushing of various sizes of blue metal - 650T/M
106	SSS Enterprises (SANKAR BLUE METALS)	Various sizes of Blue Metal Jelly - 500T/Month Stone dust - 50 T/Month
107	DHARMA DEV BLUE METALS	Blue metal aggregates of various sizes - 1200 T/Day Stone dust - 100 T/Day M SAND- 1100 T/Day
108	Chandru Blue Metals	Blue Metal Jelly of various sizes - 145T/day Blue metal dust - 5T/day
109	NAPC Limited STONE CRUSHING UNIT	Different size of stone metal jelly - 22500cu.m/m
110	S ELRED KUMAR CRUSHER UNIT	Blue metal jelly of various sizes - 470T/Day Stone dust powder - 30T/day
111	SRI RAMACHANDRA BLUE METALS UNIT-II	various sizes of blue metal - 700 T/ month
112	SRI RAMACHANDRA BLUE METALS UNIT-I	various sizes of blue metal - 700 T /month
113	Great Foundation	Various sizes of Jelly and Stone dust - 1000 T/day
114	Krishna Blue Metals	Blue Metal Jelly of various sizes - 100T/day
115	Sri Srinivasa Blue Metal	Blue Metal Jelly of various sizes - 2000T/m
116	MAG BLUE METALS	Blue metal jelly of 20mm - 3500 T/month Blue metal jelly of 12mm & Msand - 2000T/month Blue metal jelly of 6mm - 1250T/month Blue metal dust / 1250T/month
117	SKD Blue metal	Blue metal - 99T/d quarry dust - 1T/d
118	SRI GOVINDAPERUMAL ENTERPRISES	Blue metal jelly of various sizes - 26000T/m
119	RCS Infrastructure Pvt Limited	crushed stone of different sizes - 700T/m
120	TRANSTONNELSTROY AFCONS JV BLUE METALS	Blue metal aggregates of 20mm,10mm and stone dust - 1500 T/day
121	ROBO SILICON PRIVATE LIMITED	Blue Metal Aggregates of size 12 mm - 200T/Day Blue Metal Aggregates of size 20 mm - 900T/Day M Sand- 900 T/Day
122	Sri Latha Blue Metals	Blue metal aggregates of varioues sizes - 800T/M
123	Sri Baghyalakshmi Blue metal	Sone Jelly - 80 T/month
124	A.ANNAI BLUE METALS	Blue metal jelly of different sizes - 450 T/month Stone dust - 50 T/month
125	SANKAR BLUE METALS	Blue metal jelly - 500 T/month
126	Ashok Mining and Aggregates India PvtLtd	stone jelly - 2000T/M
127	SRI KANNIAMMAL BLUE METAL	Stone Jelly - 1000 T/month
128	RCM INFRASTRUCTURE LTD Crusher Division	Stone jelly 40mm - 8500T/month 20mm - 17500T/month 10mm- 10000T/month
129	R.S.ENTERPRISES METAL SAND	Metal sand - 49 T/day
130	(AARUPADAI BLUE METALS)LITEROOF HOUSING	Stone Jelly - 1800 T/month Stone Dust - 200 T/month
131	R.K.V. BLUE METALS	Stone Jelly - 900 T/month Stone Dust - 100 T/month
132	SRI KARPAGA VINAYAGAR BLUE METAL	Stone Jelly - 900 T/month Stone dust - 100 T/mon

133	THIRUVAKARAI BLUE METAL INDUSTRIES	Various sizes of Blue Metal jelly - 600 T/month Stone dust - 10 T/month
134	SIVA BLUE METAL INDUSTRIES	Various sizes of Blue Metal jelly - 590 T/month Stone Dust - 10 T/month
135	SHANMUGHA BLUE METAL	Blue metal jelly in various sizes - 500 T/month Stone Dust - 10 T/month
136	SARAVANA BLUE METALS	Blue Metal jelly - 500 T/month Stone dust - 10 T/month
137	MEENAKSHI BLUE METALS	Stone Jelly 1 4, 1 2, 3 4 - 80 T/month
138	Sri Subramanya Blue Metal	Stone Jelly 1 4, 1 2, 3 4 - 80 T/month
139	RSM BLUE METALS	Various sizes of Blue Metal jelly - 500 T/month Stone Dust - 10 T/month
140	Bramma Sakthi Blue Metals	Various sizes of Blue Metal sizes - 500 T/month Stone dust - 10 T/month
141	UDHAYAM BLUE METAL	Blue metal in various sizes - 12.5 T/day
142	SRI MOOKAMBIGAI BLUE METAL	BLUE METAL JELLY OF VARIOUS SIZES - 12.5 T/day
143	GLITZ (SRI BHARANI BLUE METAL	BLUE METAL JELLY OF VARIOUS SIZES - 12.5 T/day
144	RAASI INDUSTRIES UNIT I AND II	Stone Jelly - 400 T/month Stone dust - 200 T/month
145	AARUPADAI INFRASTRUCTURE	Blue metal jelly of various sizes - 24 MT/day
146	E.K.RAYAN BLUE METALS	Stone Jelly in various sizes - 1350 T/month
147	R.SRINIVASAN STONE CRUSHER	Stone jelly in various sizes - 400 T/month Stone Dust - 200 T/month
148	Om Sakthi Blue Metals	Stone Jelly - 900 T/month Stone Dust - 100T/month
149	ROYAL MINES AND AGGREGATE	Blue Metal jelly of Various sizes M SAND P SAND - 600T/Month
150	R.S.BLUE METAL	Blue metal Aggregates of various sizes - 900 T/month M Sand - 1200 T/month
151	JAYACHANDRAN BLUE METAL	Stone jelly 1-4, 1-2, 3-4 - 60 T/month
152	ULTRATECH CEMENT LTD	AGGREGATES - 1600 T/day CRUSHER DUST - 400 T/day
153	SURYA NARAYANA BLUE METALS	Stone Jelly 1 4 1 2 3 4 - 100 T/Month
154	S M LULLA INDUSTRIES WORLDWIDE	LEATHER GARMENTS - 2500 Nos/month
155	S.S.R.BLUE METAL	Blue metal jelly of various sizes - 200 T/DAY
156	JSK BLUE METALS	BLUE METAL AGGREGATES OF VARIOUS SIZES - 2000 T/Day STONE DUST - 100 T/Day M SAND- 1200 T/Day
157	BHUVANESHWARI BLUE METAL	Blue Metal Jelly - 1400Tons/Day Stone Dust - 150 Tons/Day M Sand- 1200 Tons/Day P Sand/ 500 Tons/Day
158	S R BLUE METALS	Blue Metals Jelly of various sizes (40mm, 20mm, 1 - 2000 Tons / da M-Sand - 2000 Tons / da
159	D.R. & SONS	Blue metal jelly of forty mm size - 300T/Day Blue metal jelly of twenty mm size - 500 T/Day Blue metal jelly of twelve mm size- 240 T/Day Blue metal jelly of six mm size/ 200 T/Day Stone Dust- 240T/Day M Sand- 300T/Day P Sand- 220 T/Day
160	SRI LATHA BLUE METAL	Blue metal aggregates of various sizes and M SAND - 800 T/Month
161	S ARUMUGASAMY	BLUE METAL AGGREGATES OF VARIOUS SIZES - 1000Tons/ Day M SAND - 900Tons/ Day

162	SGT STONES	Blue Metal Aggregates of Various sizes - 2000T/Day M SAND - 1200 T/Day P SAND- 1200 T/Day
163	MARS ENTERPRISES	BLUE METAL AGGREGATES OF VARIOUS SIZES - 2000 T/Day M SAND - 1200 T/Day P SAND- 1200 T/Day STONE DUST/ 200 T/Day
164	BOKAR BLUE METALS	Blue Metal Aggregates of Various sizes - 2000T/Day M SAND - 1200 T/Day P SAND- 1200 T/Day Stone Dust/ 200T/Day
165	KANCHI MINING PROJECTS PRIVATE LIMITED	Blue Metal Aggregates of Various sizes - 2000T/Day M SAND - 1300 T/Day P SAND- 1300 T/Day Stone Dust/ 200 T/Day
166	OM SAKTHI ENTERPRISES	Blue Metal Aggregates of Various sizes - 50000T/Month M SAND - 100000 T/Month M SAND- 50000 T/Month Stone Dust/ 2000 T/Month
167	K P A BLUE METALS	Blue Metal Aggregates of Various sizes - 2800T/Day Stone Dust - 200T/Day
168	NEW KING BLUE METALS	BLUE METAL AGGREGATES OF VARIOUS SIZES - 2300T/Day STONE DUST - 200 T/Day
169	C K S BLUE METALS	BLUE METAL AGGREGATES OF VARIOUS SIZES - 2300T/Day STONE DUST - 200 T/Day
170	SRIDHAR BLUE METALS	BLUE METAL AGGREGATES OF VARIOUS SIZES - 2000T/Day M SAND - 1500 T/Day P SAND- 1000 T/Day
171	AARUPADAI BLUE METAL	Blue Metal Jelly in various sizes - 19000T/Month
172	FOXCONN HON HAI TECHNOLOGY INDIA	Dining Hall with seat capacity - 1500Seats Ware house for storage of finished goods - 4000 SQM
173	PRAGATHI BLUE METALS	Blue Metal Jelly of Various Sizes - 1500Tons/Day M SAND - 2600 Tons/Day P SAND- 500 Tons/Day
174	RAMALINGAM CONSTRUCTION COMPANY PRIVATE	BlueMetal - 220Tonne/Day BlueMetal - 50 Tonne/Day BlueMetal- 50 Tonne/Day
175	TKM BLUE METALS UNIT II	Blue Metal Jelly - 1500T/day Stone Dust - 150 T/day M Sand- 900 T/day P Sand / 400 T/day
	21. District: THANJAVUR	
1	SRI GANESH INDUSTRIES	Stone Jelly Of Size 12mm and 20mm - 150T/Monty
2	SRI SHWETHA INDUTRIES	Stone Jellies - 6T/Day Stone Chips - 2T/Day Stone Dust- 2T/Day
3	SRI SAKTHI INDUSTRIES	Stone metal Jelly of size half an inch stone chip - 6T/D
	22. District: THENI	
1	K JEGANATHAN ROUGH STONE AND GRAVEL QUAR	Rough stone - 69400Cub/meters Weathered rock - 5586cum/meters Gravel- 12064cum/meters
2	TRANSSTROY DINDIGUL STONE CRUSHER	BLUE METAL OF SIZES 40mm,20mm,10mm - 1000Cum/day STONE DUST - 250Cum/day
3	PAVITHRA BLUE METALS	Various size of jelly - 600 T/M
4	KNP Blue Metal Works	20mm Size Jelly - 17.5 J/D 12mm Size Jelly - 15 J/D 6mm Size Jelly- 5 J/D Fine Dust/ 2.45 J/D
5	Jeya Blue Metals	Various sizes of Stone Jelly - 18T/Day
6	Lakshmi Blue Metals	3 4 Jelly 1 2 Jelly - 50 T/D 1 4 Baby Jelly - 8 T/D
7	Easwari Murugan Blue Metals	20mm Size Jelly - 21T/Day 12mm Size Jelly - 18T/Day 6mm Size Jelly- 6T/Day
8	Sri Ayyappan Blue Metal Industries	Various sizes of Stone Jelly - 600T/M

9	Quality Crushers & Rollers	3 4 Store Jelly - 375T/M 1 2 Dtore Jelly - 300T/M 1 2 baby Jelly- 120T/M
10	VSV Blue Metals	20mm Size Blue metal Jelly - 30T/Day 12mm Size Blue Metal Jelly - 12T/Day 6mm Size Blue metal Jelly- 6.5T/Day
11	Velmani Stones	Blue Metal Jelly of various sizes - 48.5 T/day
12	Pandian Blue Metals	Bluemetal Jullly ofVarious sizes - 7000T/M Stone Dust - 500T/M
13	Lotus Cartons P Ltd	Various size of jelly - 5000T/M
14	Renga Blue Metal	Various size of jelly - 50T/Day 1 4 Baby Jelly - 8 T/day
15	Velmani Crusher	Various sizes of Jelly - 90T/Day Stone Dust - 30T/Day
16	Durairaj Crusher	Various sizes of Blue Metal Jelly - 45T/Day
17	Oyyandammal Stones	Various sizes of Blue Metal Jelly - 30T/Day
18	Golden Blue Metals	Various size of Blue Metal jelly - 90T/Day
19	M Selvi Blue Metal	Various size of Stone Jelly - 18T/Day
20	Velmani Blue Metal	20mm - 30T/Day 12mm- 12T/Day 6mm/ 6.5T/Day
21	Sundram Blue Metals	Blue Metal Jelly and or M sand - 650T/M
22	Uthayam Blue Metals	Blue Metal Jelly - 750T/M
23	Mass Blue Metals & Contractors	Blue Metal Jelly - 1500T/d
24	Mahendra Blue Metal	Various sizes of Stone Jelly - 1455T/M
25	Valliyammai Blue Metals	Various size of stone Jelly - 875T/M
26	Sri Sakthi Blue Metals	3 4 Stone Jully - 12.5T/Day 1 2 Stone Jully - 10T/Day 1 4 Baby Jully- 4T/day
27	Pushpam Blue Metals	Various sizes of Stone Jelly - 63T/day Stone Dust - 7T/day
28	D D G Blue Metals	Various sizes of Stone Jelly - 75T/day Stone Dust - 25T/Day
29	NCM Blue Metals	Blue Metal Jelly - 2000T/M Quarry Dust - 210T/M
30	Prakash Blue Metals	Stone Jelly - 20T/day Stone Dust - 1T/day
31	Chandra Blue Metals	Various Size of stone Jelly - 16T/day
32	Sarala Blue Metals	Size of stone Jelly - 90T/day Stone Dust - 10T/day
33	NVS Dinesh Blue Metals	Bluemetal Jullly of Various sizes - 650T/M Dust - 100T/M
34	Siva Sakthi Blue Metals	Various size of stone jelly - 45T/Day stone dust - 5 T/day
35	Saravana Blue Metals	Various Size of stone Jelly - 27T/day
36	A.SEKAR BLUE METAL	Stone Jelly - 250T/m
37	Saravana Blue Metals	Various sizes of Blue metal jelly - 42T/day
38	BRIGHT BLUE METALS	3 4 Stone Jelly - 5625 T/M 1 2 Stone jelly - 3125T/M 1 4 Stone Jelly- 2500T/M
39	VBLM BLUE METALS	Blue Metal Jelly - 20 mm - 30T/Day Blue Metal Jelly - 12mm - 12T/Day Blue Metal Jelly - 6mm- 6.5T/day
40	A.P.A Blue Metals	3 4 stone jally - 5625T/m 1 2 stone jally - 3125 T/m 1 4 stone jally- 2500 T/m
41	Ayyanar blue metals	Various sizes of stone jelly - 360T/d Stone dust - 40T/d
42	Star Blue Metals	Stone jelly - 450T/d Stone dust - 50T/d
43	Sri Rajendra blue metals Industries	Stone boulders - 20T/d
44	Jayasudha Blue metals	Various size of stone jelly - 1250T/month
45	Sakthi Blue Metals	Various sizes of stone jelly - 4000T/M Stone dust - 600T/M

46	NCM CRUSHER UNIT	Blue Metal Jelly of 40mm 20mm 10mm etc and dust - 1000T/Day
47	MURUGAPPA BLUE METALS	BLUE METAL JELLY of 40mm,20mm,12mm,Chips Dust - 100MT/day
48	Sekar Blue Metals	Stone aggregate and Dust - 125T Day
49	Sri Lakshmi Narayana Blue Metals	3 4 Stone Jelly - 516 T/m 1 2 Stone Jelly - 450 T/m 1 4 Stone Jelly - 150 T/m Fiines/ 72 T/m
	23. District: THOOTHUKUDI	
1	MADHUCON INFRA LIMITED	Stone jelly in various size - 850T/D Stone dust - 50 T/D
2	STAR & CO	. Blue metal Jellies in various size - 6000T M M. Sand - 11850T M
3	JAYASAKTHI BLUE METALS	Blue Metal Jelly of Various sizes - 2000T/DAY M.Sand - 1000 T/DAY
4	Vasuki Blue Metal	Blue Metal Jellies in Various sizes - 2400 T/Month M Sand - 7540T/Month
5	SELVI BLUE METAL	Blue Metal Jelly - 600TPM
6	PEARL CITY BLUE METALS	Stone jelly - 2250TPM
7	SIVA SAKTHI STONE CRUSHER	Stone jelly - 500TPM
8	S P K BLUE METAL	Blue metal Jelly - 960TPM
9	SRI PRAMMASAKTHI BUILDING MATERIALS	Blue metal jelly - 2000TPM
10	ASHOK BLUE METALS	Blue metal Jelly - 50TPD
11	JAY KAY STONE CRUSHERS	Blue metal jelly - 490TPM
12	S V A LAKSHMI BLUE METAL INDUSTRIES	Blue metal jelly - 2000TPM
13	SRI VINAYAKA BLUE METAL	THREE FOURTH - 1250TPM ONE TWO - 800TPM Baby chips- 300TPM Dust powder/ 150TPM
14	BABU BLUE METAL INDUSTRIES	3-4 - 30TPD 1-4 - 20TPD Baby chips- 7TPD Dust powder/ 3TPD
15	N.P.R. BLUE METAL	Blue metal 1.5 - 15TPD Blue metal 0.75 - 20TPD Blue metal 0.5- 8TPD Blue metal 0.25/ 4TPD
16	BALARAM BLUE METAL	Blue metal jelly 0.75 - 200TPM Blue metal jelly 0.5 - 134TPM Baby chips- 46TPM Dust powder/ 20TPM
17	RAJA BLUE METALS	Blue metal jelly - 250TPM Stone dust - 25TPM
18	SRI Pramasakthi Building Materials	Blue metal jelly - 12000TPM Stone dust - 1500TPM Mineral sand- 6500TPM
19	PRADEEBHA BLUE METALS	Blue metal Jelly nof sizes - 90TPM Stone dust - 10TPM
20	SIVACHITRA CRUSHERS	Blue Metal Jelly - 2000TPM
21	CHERMAN CRUSHERS	Blue Metal Jelly 3-4 - 400TPM Chips baby Jelly - 100TPM Blue Metal Dust- 100TPM
22	IVRCL INFRASTRUCTURES And PROJECTS LTD	Blue Metal Jelly 40mm - 8000TPM Blue Metal Jelly 20mm - 12000TPM Blue Metal Jelly 10mm- 18000TPM Blue Metal Jelly 6mm/ 13200TPM
23	MAIMOON INDUSTRIES	Granite Jelly/M sand - 2400TPM
24	MADHUCON PROJECTS LTD	Blue Metal Jelly - 70000TPM
25	NIRMAL BLUE METAL INDUSTRIES	Blue Metal Jelly - 4000TPM
26	El shaddai Blue metals	Blue Metal Jelly - 750TPM

27	SELVAM CRUSHERS	20mm Blue Metal jelly - 13000TPM 12mm Blue Metal Jelly - 5000TPM 6mm Blue Metal Jelly- 2500TPM M sand/ 14500TPM
28	PAULLINE MINERALS	Quartz Chips 10mm - 1500TPM Quartz chips 5mm - 750TPM
29	FATHIMA BLUE METAL INDUSTRIES	Blue metal - 2800TPM
30	AMMAN BLUE METALS	Blue metal jelly / M Sand - 150TPD
31	K R Crusher and Blue Metals	Blue Metal Jelly/ M sand - 2000T/Day
32	R S MINES AND MINERALS	Blue Metal Jelly/ M sand - 5000TPM
33	SRI MURUGAN STONE CRUSHER	Blue Metal - 240TPM Baby Jelly - 60TPM Blue Metal Dust- 100TPM
34	MUTHUMANI BLUE METALS	Blue Metal - 300TPM Baby Chips - 60TPM Blue metal powder- 40TPM
35	RAJAS MINERALS	Quartz Chips - 4000TPM
36	SIVA BLUE METALS	Blue Metal Jelly - 8000TPM Artificial Sand - 5000TPM
37	R S Mines and Minerals	Blue Metal Jelly - 5000TPM
38	R.S. Geetha Crushers	Blue Metal Jelly - 140TPM Blue Metal Jelly - 100TPM Blue Metal Jelly - 25TPM Blue Metal Jelly / 25TPM Stone dust- 10TPM
39	RNS Infra Structures Ltd	Blue Metal Jelly - 45000T/M
40	IVRCL INFRASTRUCTURE AND PROJECTS LTD	Wet mix - 2000T/Month Concrete Mix - 2000T/Month
41	K.R. Blue Metal	BLUE METAL JELLY IN VARIOUS SIZE - 6400T/Month M. Sand or Weather sand - 13580T/Month
42	M J Blue Metals	20mm Blue Metal jelly - 15000 T/M 12mm Blue Metal Jelly - 5000 T/M 6mm Blue Metal Jelly- 2500 T/M Dust/ 2500 T/M
43	Cherman Blue metal crusher	Blue Metal Jelly/ M.Sand - 400T/Day
44	HCK NAPC MINES AND ORESPVT LTD	Blue metal different sizes - 32000T/M
45	JL Mines and Minerals Pvt Ltd	Blue Metal Jelly 40mm, 20mm, 10mm, 6mm - 5000TPM
46	Malaiyarasan Blue Metals	Blue metal Jelly - 750T/M
47	Transstory India Ltd Stone crusher unit	40, 20, 10, 10, 6 and dust - 1750MT/D
48	M/S. SRI MUTHARAMMAN MINES	BLUE METAL JELLY 1 1/2", 3/4", 1/2", 1/4" - 3700 T/Month M. Sand - 3075 T/Month
49	SASI ENTERPRISES	Blue metal Jelly - 500T/M M Sand - 350 T/M
50	Tamraparani Enterprises and Realty pvt L	Blue metal jelly - 6000T/M
51	Earthstone Natural Resources Private Ltd	Blue Metal Jelly - 30000T/M M.Sand - 9000T/M
52	Arulmigu Sri Subramaniya Swamy Blue Metal	Blue metal jelly - 4000T/M
53	J.V.S Blue Metals	Blue metal Jelly - 12000T/M
54	V.V.Mineral	Blue Metal Jelly in various size - 25000 T/Month M.Sand - 33350 T/Month
55	Megaliths India Company	Blue Metal - 11819 Cu.M/Year
56	S.M.T. Crusher	Blue Metal Jelly in various size - 6000T/Month Mineral Sand - 13950T/Month
57	Gomathi Blue Metals	Blue Metal Jelly in various size - 4000 T/Month M.Sand or Weather sand - 5990 T/Month
58	P. SUNDARAM M.SAND & BLUE METAL	Blue Metal Jellies in Various Sizes - 6000T/M M. Sand or weather sand - 9900 T/M
59	Vijayalakshmi Infrastructure	Blue Metal Jelly - 2000T/M M-Sand - 2800T/M

60	Annai M- Sand	
61	Mahalakshmi Blue Metals	Blue Metal Jelly size - 9000 T/M M -sand - 3000 T/M
62	Asirvatham Blue Metal M Sand	Blue Metal Jelly - 10000T/M M Sand - 4800T/M
63	Chandra Enterprises	Quartz Chips - 1875T/M Quarts Fines - 500T/M Quartz Dust- 125T/M
64	Sulthan Blue Metal	Blue Metal jellies in various size - 6400T/M Mineral Sand or Weather sand - 13580T/M
65	Ganapathy Mining Industries	Crushed Stone Blue Metal Jelly - 2000T/M
66	Amman Blue Metals	Blue Metal Jelly in Various Sizes - 12000T/M M. Sand or Weather sand - 19180T/M
67	K.T.G BLUE METALS	Blue Metal Jelly/ M.Sand - 9997T/Month
68	SRI MALAIYARASAN BLUE METALS M.Sand	M sand or weather sand - 749T/Month
69	R.S. Blue Metals	Blue Metal Jelly - 7.5T/D Blue Metal Jell - 4T/D Baby Chips - 1.5T/D
70	Pappu Blue Metal M Sand Unit	M.Sand or Weather Sand - 1495T/M
71	SHREE SELVI CHAMBERS	Blue Metal Jellies in Various Size - 6400 T/Month M. Sand - 13450 T/Month
72	M/S. SHANMUGA BLUE METALS	Blue Metal Jelly of Various sizes M sand P Sand - 900T/Day
73	SSM BLUE METALS	Blue Metal Jellies in Various Sizes - 6400T/M M. Sand or weather sand - 13450 T/M
74	THE SUN BLUE METALS	Blue Metal Jelly in various sizes - 12000T M Manufacturing sand (M.Sand) or Weather sand - 15900 T/M
75	M/S. SRI MALAIYARASAN BLUE METALS	Blue Metals Jellies in various size and M sand - 900T/Day
76	CHITRA BLUE METALS	Blue Metal Jelly and M sand - 200T/Day
	24. District: TIRUNELVELI	
1	SRI BALAJI CHEMICAL INDUSTRIES	Blue Metal Jellies in Various Sizes - 7500Tons/Month M. Sand - 11150Tons/Month
2	RAK ROCK M SAND AND BLUE METALS	Blue metal jelly of various sizes, M sand - 3800 T/M
3	S.P.N. M-SAND	M SAND - 498.5T/DAY
4	Sri Rajalakshmi Blue Metals And M sand	BLUE METAL JELLY OF VARIOUS SIZE - 125 T/DAY M SAND - 115 T/DAY
5	Balasubramaniyan Blue Metal Works	Blue Stone Jelly - 2000T/Month
6	CAUVERY M SAND	ROUGH STONE BOULDERS - 6000T perMonth
7	HIMALAYA MINERAL PROCESSORS	Blue metal Jelly - 4000T/Month M Sand Or Weather Sand - 10000 T/Month
8	Omkaram Blue Metals	Blue metal Jelly - 800T/Month
9	P.M.S. Blue Metal	Stone Jelly - 750T/Month
10	Hi-Tech M sand industry	Blue metal Jelly - 1200T/Month M. Sand - 1000T/Month
11	ANNAI BLUE METAL UNIT II	BLUE METAL JELLY IN VARIOUS SIZES WITH STONE DUST - 250T PER D WHETHER SAND OR M SAND - 200 T PER D
12	ALPHA CRUSHERS	Blue metal Jelly - 700MT/Month
13	Rajan Blue Metals	Blue metal Jelly - 1000T/Month
14	Blue Mountain Blue Metals	Rough Stone Block - 1000T/Month
15	Janani Crusher	Blue Metal Jelly - 1500T/M
16	Muthuselvam Blue Metals	Blue metal Jelly - 1000T/Month
17	Gani Blue Metal	Blue metal Jelly in various sizes - 500T/Month M. Sand or weather Sand - 900 T/Month
18	R.P.N. Blue Metals	Blue metal Jelly - 100T/Month
19	Arasan Blue Metal	Blue metal Jelly - 150T/Month

20	Niyaz Blue Metal Industries	Blue metal Jelly - 800T/Month
21	S.R.L. Blue Metals	Blue metal Jelly - 480T/Month
22	Sankar Blue Metals	Stone Jelly - 3200T/Month
23	A.R. Blue Metals	Stone Jelly - 500T/Month
24	VERIZON CLASSIC	Blue Metal Jelly in Various Sizes with stone Dust - 100T/D M.Sand or weather Sand - 150T/d
25	Venkateswara Crusher Unit II	Stone Jelly - 7500T/Month
26	Nalakath Blue Metals	Stone jelly of various sizes - 160Ton/ Month
27	Nizam Blue Metals	Stone Jelly - 3000T/Month
28	Rajkumar Blue Metals	Stone Jelly - 675T/Month
29	Guru Blue Metals	Stone Jelly - 400T/Month
30	Sri Vinayaka Blue Metal	Blue metal Jelly - 600T/Month
31	Thedivanthaselvam Blue Metals	Blue metal Jelly - 1140T/Month
32	Sujitha Blue Metal	Blue metal Jelly - 4500T/Month
33	Kumaran Blue Metals	Blue metal Jelly - 700T/Month
34	Sri Vinayaka Blue Metal	Blue Metal Jelly - 950T/Month
35	Marries Blue Metals Unit II	Blue metal Jelly - 2000T/Month
36	Sahaya Arasi Crusher	Blue metal Jelly - 900T/Month
37	Dinesh Blue Metals	Blue metal Jelly - 27000T/Month M Sand - 7000 T/Month
38	Ajantha Blue Metals	Blue Metal jelly - 2250T/Month
39	K.R. Blue Metals	Blue Metal Jelly - 1000Tons/Mon
40	J.J. Crusher	Blue metal jelly - 600Tons/Month M Sand - 1400Tons/Month
41	M.M.A. Blue Metals	Blue metal Jelly - 750Tons/Month
42	Vellammal Blue Metals	Stone Jelly - 270Tons/Mon
43	HIMALAYA MINERAL PROCESSORS	Blue Metal Jelly in Various Sizes - 6000Tons/Month M. Sand or Weather Sand - 11990Tons/Month
44	Muthu Priya Blue Metals	Blue metal Jelly - 900Tons/Mon
45	Raj Blue Metal	Stone Jelly - 500T/Month
46	Sri Sivasakthivel Blue Metals	Blue Metal Jelly - 300T/Month
47	Sri Vinayaga Blue Metals	Blue metal Jelly - 400T/Month
48	Sree Venkateswara Blue Metals	Stone Jelly - 750T/Month
49	Welcome Blue Metals	Blue metal jelly of various sizes - 10000T/Month M. Sand 0r Weather Sand - 14950 T/ Month
50	Binu Crusher	Blue metal jelly of various sizes - 4000T/Month M. Sand or Weather sand - 10000T/ Month
51	Rasa Blue Metal	Blue Stone Jelly - 900T/Month
52	Sri Gomathy Blue Metal Works	Stone Jelly - 800T/Month
53	Roja Blue Metals	Stone Jelly - 270T/Month
54	Arumugasamy Blue Metals	Blue Metal Jelly - 500T/Month
55	Kulayabagavali Stone Crusher	Blue Metal Jelly - 2200T/Month
56	Sha Crushers	Blue Metal Jelly - 2250T/Month
57	Marries Blue Metals	Stone Metal Jelly - 90T/day
58	M.M. Blue Metal	Stone Jelly - 3000T/Month
59	Renuka Blue Metals	Stone Jelly - 400T/Month

60	Almubarak Stone Crusher	Blue Metal - 300T/Month
61	Simon Crusher	Blue Metal Jelly - 800T/Month
62	Gomathy Stone Metal Works	Blue metal Jelly - 3490T/Month
63	Saravana Enterprises	Blue granite jelly - 72T/Month
64	National Blue Metal	Blue Metal Jelly - 1000T/Month
65	Thirumalaikumar Blue Metal Works	Stone Jelly in various sizes - 3900T/Month M. Sand or Weather sand - 6000T/ Month
66	APR Blue Metals	Blue Metal Jelly - 290T/Month
67	Sri Lakshmi Blue Metal Industries	Blue metal jelly of various sizes - 6000MT/Month M. Sand or Weather sand - 13950 T/Month
68	Kani Mine Works	Blue Metal Jelly - 400T/Month
69	G.K.N. Blue Metal and Mines Pvt Ltd	Solings Jally - 37500T/Month
70	Sri Murugan Blue Metals	Blue Metal Jelly - 750T/Month
71	Inigo Blue Metal Industry	Blue Metal Jelly - 2500T/Month
72	Immanuvel Blue Metal	Blue Metal Jelly - 25T/Month
73	SOLOMAN BLUE METAL	Blue Metal Jelly - 6000T/Month M - SAND - 6000
74	Aaryaa Blue Metal	Blue Metal Jelly and chips - 1050Tons/Month
75	Raj Blue Metal	Stone Jelly - 1200T/Month
76	VENKATESWARA CRUSHERS	Blue metal jelly of various sizes - 6400T/Month M. Sand or Weather sand - 13500T/Month
77	Sri A.D.Vee. Raja Blue Metal Industries	Blue Metal Jelly - 6000T/Month
78	Sri Durkambiga Blue Metal	Blue Metal Jelly - 90T/Month
79	Matha Blue Metals	Blue Metal Jelly - 900T/Month
80	Sri Nachiyar Blue Metals	Blue Metal Jelly - 7500T/Month
81	S.G. Granite Industries	Stone Jelly - 900T/Month
82	Sakthivel Blue Metals	Stone Jelly - 1200T/Month
83	VINAYAKA BLUE METAL	Blue Metal Jelly - 625T/Month
84	Retna Blue Metal	Blue metal Jelly - 900T/Month
85	K A M A K Nataraja Nadar and Sons	Blue Metal Jelly - 2800T/Month
86	Joys Metal Industries	Blue Metal Jelly - 1425T/Month
87	Karuppasamy Blue Metal	Stone Jelly - 400T/Month
88	Sri Balaji Blue Metal Works	Blue Metal Jelly - 2600T/Month
89	Grant Metal Industries	Blue Metal Jelly - 450T/Month
90	Sri Ayyappa Blue Metal	Blue Metal Jelly - 800T/Month
91	Sri Ram Blue Metals	Blue Metal Jelly - 1500T/Month
92	V V Stone Industries	Blue metal Jelly in various size - 10000T/Month M Sand - 19990T/Month
93	P B K Blue Metals	Blue Metal Jelly - 3375T/Month
94	Kuruvakal Rocks	Stone jelly - 900T/Month
95	Sri Ram Blue Metals	Blue Metal Jelly - 600T/Month
96	Tamirabarani Blue Metal	Blue Metal Jelly - 400T/Month
97	Grace Blue Metals	Blue Metal Jellies in of various sizes - 6400T/Month M. Sand or Weather sand - 13500T/ Month
98	RS DEVELOPMENT AND CONSTRUCTIONS INDIA	Blue Metal jelly - 2500T/Month
99	K.K. Blue Metal	Blue metal jelly and Chips - 875T/Month
100	Sakthi Devi Blue Metals	Stone jelly - 1000T/Month

101	S P N Blue Metal	Blue Metal Jelley - 2000Ton /Month
102	CITIZEN BLUE METAL	Stone Jelly - 3000T/Month
103	Vallanattar Blue Metals	Blue Metal Jelly - 2000T/Month M Sand - 1000 T/Month
104	Sairam Blue Metals	Stone Jelly - 1600 T/month
105	S A V Blue Metal	Stone Jelly - 6000T/month Stone Dust - 1200 T/month
106	Aswath Blue Metals	Stone jelly - 165T/day
107	Rajas Blue Metal	Stone jelly - 4500T/month
108	A S BLUE METAL	Blue Metal Jelly - 2400 T/month M Sand - 1500 T/month
109	K.K.M Crusher	Blue metal jelly - 2400 T/month M.sand - 1500 T/month
110	SUBHA BLUE METALS	Blue Metal jelly - 2000T/m
111	ANNAI BLUE METALS	Stone Jelly in various sizes - 6400T/month M Sand - 13500 T/month
112	S.A.V. Blue Metal Company	M Sand - 16000 T/month
113	Sarmila Bluemetals	Bluemetal Jelly in various sizes - 5000T/month M. sand or weather sand - 5900T/Month
114	Sundaravel Bluemetal Private Limited	Weathe sand or M. Sand - 150 T/day
115	A.S. Blue Metal and M.Sand	9mm Blue metal jelly - 1900T/M 6mm Blue metal jelly - 950T/Month 3mm Blue metal jelly- 1425T/Month M. Sand/ 1425T/month
116	Muthu Blue Metals	Blue metal jelly of different grades - 450T/M Stone dust - 150T/Month
117	Triveni Real Estate Developers P Ltd	Blue metal jelly of sizes - 5000 T/m M Sand - 4000 T/m
118	S.A.V. Blue Metals M. Sand	Blue metal jelly of various sizes - 650T day M. Sand or Weather sand - 540T Day
119	D.S. TRADERS	Blue metal jelly of various sizes - 8000T/Month M. Sand or Weather sand - 13900T/M
120	Sri Malaiarasi blue Metal	Blue Metal Jellies in of various sizes - 12000T/M M. Sand or Weather sand - 12900T/M
121	Star Industries	Blue metals of various sizes - 15000 T/m M Sand or weather sand - 12700 T/m
122	Shri Karpagavalli Blue Metals	Blue metal jelly of different grade - 9000T/M M. sand or weather sand - 8800T/Month
123	Krishna Blue Metal	Blue metal jelly of different grade - 2400 T/m M Sand - 600 T/m
124	AMIRTH INTERNATIONAL TRADING CO	Blue metal jelly of various sizes - 1500T/Month Stone dust - 300T/ Month
125	Citizen Blue Metal MSand Unit II	M.Sand - 2000Tons/Month Blue Metal Jelly 1.5,0.75,0.5,0.25 Inches - 2900Tons/Month
126	KUMARA KOVIL MURUGAN BLUE METAL	Blue Metal Jellies of Various sizes - 600T/Day M-Sand/Weather Sand - 600T/Day
127	LARSEN AND TOUBRO LIMITED - STONE CRUSHE	AGGREGATES VARIOUS SIZE - 1960MT/DAY
128	Sri Sundarraj Blue Metals	Stone Jelly AND M Sand - 400 T/Day
129	QUALITY STONE CRUSHER	Blue Metal Jellies in Various Sizes - 6000T/MONTH M. Sand or Weather Sand - 9900 T/MONTH
130	SAV MANILAL BLUE METALS	M SAND - 5000Tons/Month Blue Metals Jelly 1 1/4", 3/4", 1/4" - 4500Tons/Month
131	GS. M-SAND BLUE METALS	BLUE METAL JELLY - 500Tons/Month M-SAND - 450 T/Month
132	RPN BLUE METAL& M SAND	Stone aggregates of various sizes - 50T/d M sand - 150 T/day
133	MUTHURAM BLUE METALS	
134	SRI DURGAMBIKA BLUE METALS	Stone Jelly - 3500T/MONTH Stone dust - 500T/MONTH

135	V.P.R. BLUE METAL INDUSTRIES	BLUE METAL JELLY - 900T/M
136	RAJESWARY BLUE METAL	BLUE METAL JELLY - 450T/M
137	SARAVANA BLUE METALS	Blue metal jelly - 1400T/month
	25. District: TIRUPPUR NORTH	
1	S.B. BLUE METALS	Various sizes of Blue Metals - 385T/day
2	Amman and Co Blue Metals	3by4 - 1250T/Month 1by2 - 625T/Month 1by4- 300T/Month Crusher Powder/ 25T/Month
3	Amman Associates	Blue Metal Jelly 3by4 - 300T/Month Blue Metal Jelly 1by2 - 200T/Month Blue Metal Jelly 1by4- 100T/Month Powder/ 50T/Month
4	Amman Stone Cruser	3 by 4 Jelly - 200T/Month 1 by 2 Jelly - 100T/Month 1 by 4 Jelly- 50T/Month Powder/ 25T/Month
5	Amman Thunai Blue Metals	1½" Jelly - 600T/Month ¾" Jelly - 200T/Month ½" Jelly- 100T/Month ¼" Jelly/ 100T/Month Powder- 100T/Month
6	Andavar stone crusher	Blue Metals of Various Sizes - 1100Tons/Month Manufactured Sand - 1350Tons/Month
7	Angalamman Blue Metals	Blue Metal Stone Jelly 3by4 1by2 1by4 - 650T/Month
8	Annamalai Blue Metals	Blue Metal Jelly 12mm 20mm 40mm Powder - 875T/Month
9	Arun Blue Metals	3 by 4 - 500T/month 1by2 - 250T/month 1by4- 100T/month Powder/ 25T/month
10	SEVVEL BLUE METALS	Stone Jelly of sizes 1 1/2", 3/4", 1/2", 1/4" - 15000Tons/Month Manufactured Sand & Plastering Sand - 17000Tons/Month
11	Baby Blue Metals	1-5, 0-75, 0-50, 0-25 inch jelly, stone powder - 500 T/M
12	Baby Stone Crusher	Blue Metal Jelly 3 by 4 - 500T/M Blue Metal 1 by 2 - 400T/M Blue Metal 1by 4- 300T/M Powder/ 50T/M
13	BAIRAVAN BLUE METALS	Blue metal stones 1 by 4 1 by 2 3by4 11by2 - 2500 T/Month
14	Balaji Blue Metals	3 by 4 1 by 2 1 by 4 jelly and stone powder - 1750 T/M
15	BALAMURUGAN BLUE METALS	Jelly 1 1-2 inch size - 250 T/M Jelly 3-4 inch size - 625 T/M Jelly 1-2 inch size- 125 T/M Jelly 1-4 inch size/ 125 T/M Stone powder- 125 T/M
16	Sri Bannari Amman Blue Metals	1 1by 2 Jelly - 1500T/month 3 by 4 JElly - 1250T/Month 1 by 2 Jelly- 625T/Month 1 by 4 Jelly/ 600T/Month Stone Powder- 25 T/M
17	Bharathi Crusher	Blue Metal 3bt4 - 400T/Month Blue Metal 1by2 - 300T/Month Blue Metal 1by4- 200T/Month Powder/ 50T/Month
18	D L M Stone Crusher	Blue Metal 1by2 - 400T/m 3by4 - 300T/m 1by4- 200T/m Powder/ 50T/m
19	Dhanvanth Blue Metals	Blue Metal Jellies 11by2 - 7000T/Month 3by4 - 5000T/Month 1by2- 4000T/Month 1by4/ 2500T/Month Stone Powder- 1500T/Month
20	G K Blue Metals	Blue Metal Jellies 1-1by2 1by4 3by4 1by2 - 1500T/Month
21	Ganesan Blue Metals	¾" Jelly - 500T/Month ½" Jelly - 200T/Month ¼" Jelly- 100T/Month Crushed Powder/ 25T/Month
22	GIRI BLUE METALS	BLUE METALS STONES - 1200T/M Dust powder - 30T/m
23	Gomathi Crusher	3 by 4 Jelly - 200 T/M 1 by 2 Jelly - 100 T/M 1 by 4 Jelly- 50 T/M Powder/ 25T/M
24	Imayam Blue Metals	1½" Jelly - 260T/Month ¾" Jelly - 300T/Month ½" Jelly- 200T/Month ¼" Jelly/ 100T/Month Crusher Powder- 25T/Month M-Sand-5000T/Month P-Sand- 3000 T/M
25	Jayasakthi Blue Metals	Bluemetal Jelly 1by4 3by4 1by2 and Powder - 800T/Month

26	Jothi crusher	Blue Metal 3 by 4 - 200T / M Blue Metal 1 by 2 - 100T / M Blue Metal 1 by 4- 50T / M Blue Metal Powder/ 25T / M
27	KALYAANI BLUE METALS	1by2 Jelly - 600T/Month 3by4 Jelly - 450T/Month 1by2 Jely- 375T/Month 1by4 Jelly/ 200T/Month Jelly Powder- 50T/Month
28	KARTHIK BLUE METALS	BLUE METAL STONES - 1000T/M STONE POWDER - 200T/M
29	Kumar Blue Metals and Crusher	3 by 4 1 by 2 1 by 4 Jellyand s stone pwder - 1250 T/M
30	Mahalakshmi Blue Metals	Stone jelly 1-5 inch size - 250 T/M Stone jelly 0-75 inch size - 300 T/M Stone jelly 0-5 inch size- 250 T/M Stone jelly 0-25 inch size/ 125 T/M Stone powder- 50 T/M
31	Mayilsamy Crusher	3 by 4 1 by 2 1 by 4 Jelly and stone Powder - 500 T/M
32	MC Blue Metals	1 1by 2 3 by 4 1 by2 1 by 4 Jelly Stone Powder - 2500 T/M
33	New Jothi Crusher	3 by 4 - 500T/m 1by2 - 250T/m 1by4- 100T/m Powder/ 25T/m
34	Prabhu Blue Metals	1 1 by 2 - 500 T/M 3 by 4 - 500 T/M 1 by and 1 by 4- 150 T/M Stone Powder/ 75 T/M
35	Raja Blue Metal	1 1 by 2 3 by 4 1 by 2 1 by 4 and stone powder - 1500 T/M
36	Ramakrishna Stone Crusher	Blue Metal Jelly 3by4 1by2 1by4 and powder - 1110T/Month
37	Rani Blue Metals	3 by4 - 200T/Month 1 by2 - 100T/Month 1 by4- 100T/Month Powder/ 10T/Month
38	Himalayan Stone Crusher	3 4,1 4,Jetlly and Stone dust - 200T/Month
39	Rason Crusher	3 by 4 1 by 2 1 by 4 Jelly and stone Powder - 200 T/M
40	RPP BLUE METAL	Stone Boulders and Broken Stones - 380Mts/day
41	SUPER STONE INDUSTRIES	Blue metal of various sizes 1 1by2 3by4 1by2 1by4 - 8000T/M Crushed stone Sand- 6000T/M
42	Senbagam Blue Metals	3by4 Jelly - 200T/Month 1by2 Jelly - 100T/Month 1by4 Jelly- 50T/Month Powder/ 25T/Month
43	Saravana Blue Metals	Blue Metal Jelly 3by4 1by2 1by4 and powder - 1250T/Month
44	SASI BLUE METAL AND EARTH MOVERS	Blue Metal Jelly 3by4 1by2 1by4 and powder - 800T/Month
45	Senthil Stone Crusher	¾” Jelly - 125T/M ½ ” Jelly - 75T/M ¼” Jelly - 37.5T/M
46	Shanmuga Stone Crusher	Blue Metal - 500T/M 1 12 - 500T/M 3 4- 250T/M 1 2/ 250T/M 1 4- 250T/M
47	Shree Nithi Stone and Metal	Bluemetal Jelly 1by4 1by2 3by4 1-1by2 - 2000T/Month
48	Sivaa Blue Metals Siva Garden	Blue metals of various sizes and Manufactured Sand - 3500Tons/day
49	Sivakami Crusher	Blue Metal 3 by 4 - 200T/m 1 by2 - 150T/m 1 by 4- 100T/m Powder/ 50T/m
50	Sivasakthi Stone Crusher	¾" Jelly - 500T/Month ½" Jelly - 250T/Month ¼" Jelly- 150T/Month Powder/ 50T/Month
51	Vasu Blue Metals	Stone Jelly of sizes 1 1by2 3by4 1by2 1by4 Powder - 2500T/Month
52	SRC Projects Private Limited	Stone Jelly 1-1by2 3by4 1by2 1by4 - 2500T/Month
53	Sree Velavan Blue Metals	3 by 4 inch Jelly - 500T/M 1 by 2 inch Jelly - 200T/M 1 by 4 inch Jelly- 100 T/M Stone Powder/ 25 T/M
54	Sri Amman Crushers	3 by 4 Jelly - 1250 T/M
55	Sri Bagiyalakshmi Crusher	Blue Metal Jelly - 950T/Month

56	Sri Bannari Amman Blue Metals	Blue Metal 3-4 - 300T/m Blue Metal 1-2 - 160T/m Blue Metal 1-4- 50T/m Powder/ 25T/m
57	Sri Ganapathy Blue Metals	3by4 - 110T/Month 1by2 - 110T/Month 1by4- 65T/Month Crushed Powder/ 15T/Month
58	Sri Ganesh Lakshmi Blue Metal	Bluemetal Jelly 3by4 1by2 1by4 and Powder - 1250T/Month
59	KCP Engineers Private Limited	Manufacturing of various sizes of Jelly - 20000T/Month M.Sand - 10000T/Month
60	G.S. Blue Metals	Blue Metals of Various Sizes - 3/4 - 100Tons/Day Manufactured Sand - 100Tons/Day
61	VALLAL BLUE METALS	1-1by2 3by4 1by4 stone jelly and stone powder - 1280Mts/Month
62	Sri Raaghavendra Blue Metals	Stone Jelly 20mm - 90T/Month Stone Jelly 12mm - 22.5T/Month Stone Jelly 6mm- 22.5T/Month Stone Powder/ 15T/Month
63	Sony Blue Metals	Blue Metal Jelly 3/2, ¾, ½, ¼ - 404T/day Crushed Stone Dust - 385 T/day
64	CROWN BLUE METALS	1 1/2 Jelly - 5200T/M 3/4 - 10140 T/M 1/2- 10140 T/M 1/4/ 3250 T/M M sand - 10400 T/M Dust Powder-1170 T/M
65	Sri Sakthi Crusher	3by4 1by2 1by4 Jelly Powder - 875T/month
66	Sri Sakthi Velan Blue Metal	3by4 1by2 1by4 stone jelly and stone powder - 1280MT/Month
67	Sri Selvakumar Blue Metal	Blue Metal Jelly 1- 1by2 - 300T/Month Blue Metal 1by2 - 500T/Month Blue Metal 1by4- 250T/Month Blue Metal 3by4/ 500T/Month Stone Powder- 20T/Month
68	Velavan Infrastructures	3by4 1by2 1by4 stone jelly and stone powder - 500MT/Month
69	SRI SRINIVASA INDUSTRIAL CORPORATION	Blue Metal jelly size of 40mm 20mm 8mm Powder - 30T/Day
70	Sri Subha Blue Metals	3by4 1by2 1by4 Jelly and Powder - 400T/Monthj
71	Sri Thirupathi Blue Metals	Blue Metal Process 3by4 1by2 1by4 and stone powder - 750T/Month
72	Sri Vari Blue Metal	3by4 - 200T/Month 1by2 - 100T/Month 1by4- 50T/Month Powder/ 25T/Month
73	Sri Venkateswara Blue Metals	Blue Metal 3 by4 - 200T / M 1 by2 - 100T / M 1 by4- 50T / M Powder/ 25T / M
74	Sri Vinayaga Crushers	Bluemetal Jelly inch 3by4 1by4 1by2 - 1000T/Month
75	Sri Ganapathy Agencies	Jelly and stone dust - 200T/M
76	Thangam Blue Metal	3 by 4 Jelly - 200 T/M 1 by 2 Jelly - 100 T/M 1 by 4 Jelly- 50 T/M Powder/ 25 T/M
77	TSR Crushers	Jelly 3 by 4 - 250T / M 1 by 2 - 150T / M 1 by 4- 75T / M Powder/ 25T / M
78	V.P.R. CRUSHERS	BLUE METAL STONES VARIOUS SIZES - 750T/M
79	Veeraa Blue Metals	1 1by2, 3by4, 1by2, 1by4 Stone Jelly and - 5000MT/M
80	VEL BLUE METALS	Blue Metals of Various Sizes - 1 1/2" , 3/4",1/2", - 7150Tons/Month Crushed Stone Sand - 7480Tons/Month
81	Velmurugan Blue Metals	Quarry 4 - 200T / M Crusher 3 by4 - 100T / M 1by2- 50T / M 1by4/ 37.5T / M Powder- 12.5T / M
82	Visudhan Crusher	Stone Jelly, Stone Powder - 2500 T/Month
83	Wisudhan Stone Industries	Blue Metal 1-4 - 250T/m Blue Metal 1-2 - 150T/m Blue Metal 1-4- 75T/m Powder/ 25t/m
84	A A Crushers	Jelly 11 2, 3 4 1 2 1 4 - 2500T/M
85	SRI BLS STONE CRUSHER	Blue Metal ¾" Jelly - 200Tons/Month Blue Metal ½" Jelly - 100Tons/Month Blue Metal ¼" Jelly- 50Tons/Month Blue Metal Powder / 25Tons/Month
86	Arunkrishna Blue Metals	Blue Metal 3 4 14 1 2 11 2 and Powder - 2100T/M

87	Sri Bharathi Blue Metals	Jellies and Stone dust - 150T/M
88	Sri Arulkumaran Oil Mill	Coconut Oil - 2T/M Groundnut Oil - 1T/M Gingelly Oil- 1.35T/M
89	SRG APPARELS PRIVATE LTD	HOSIERY GARMENTS - 100000P/M
90	Bharathi Kannan Blue Metal	Blue Metal 3-4 1-4 dust - 1400T/M
91	VIIGNESH TRADERS	Manufacturing of various sizes of Jelly and M Sand - 12000T/M
92	SRI KUMARAGURU BLUE METALS	Blue metal of various sizer Stone jelly - 1900T/M
93	VKP ENGINEERING IND PRIVATE LIMITED	Manufacturing of various sizes of Jelly - 50000T/M M.Sand - 5000T/M
	26. District: TIRUPPUR SOUTH	
1	A.G. BLUE METALS	3by4 Jelly - 300Tons/Month 1by2 Jelly - 275Tons/Month 1by4 Jelly- 250Tons/Month Stone Dust/ 175Tons/Month
2	A.G.M.BLUE METALS	BLUE METAL STONES 0.75 INCH - 500T/M BLUE METAL STONES 1.5 INCH - 300T/M BLUE METAL STONES 0.5 INCH- 300T/M BLUE METAL STONES 0.25 INCH/ 300T/M
3	A.G.P. BLUE METALS	Blue Metal Stones 1by2 3by4 1by2 1by4 - 1350T/M
4	AMMAN BLUE METALS	3 by 4 Jelly - 375Tons/Month 1 by 2 Jelly - 200Tons/Month 1 by 4 Jelly- 150Tons/Month Powder/ 25Tons/Month
5	AMMAN BLUE METALS	BLUE METAL JELLY 1by2,3by4, 1by2, 1by4, INCH - 1200T/M
6	ARDHANAREESWAR BLUE METALS	Blue Metal Jelly - 2250Tons/Month
7	P.N.R. BLUE METALS	Blue Metals Various Sizes - 11000 T/M
8	CHERAN BLUE METALS	Blue Metal Stone 3by4 1by2 1by4 inch - 280T/M
9	DINESH KUMAR BLUE METALS	BLUE METAL STONES 3 by 4, 1 by 2, 1 by 4 inch - 1800T/M
10	AKSHAIRAJ BLUE METALS	Blue Metal - 24Tons/Day Chips - 8Tons/Day
11	G.S. CRUSHERS	Blue Metal Stone 3by4 1by2 1by4 inch - 800T/M
12	GUNA BLUE METALS	Blue Metal Stone - 950T/M
13	GURUDHAMAYANTHI INDUSTRIES	Pulverized Limestone, Magnesite , Kankar - 100 Ton/Month
14	GPR SAND AND BLUE METALS PRIVATE LIMITED	Blue Metals Stone of Various Sizes and Dust - 1664Tons/Month
15	K.C.C. BLUE METALS	Blue Metal Stone 3by4 1by2 1by4 inch size - 450 T/M
16	K.K.V. CRUSHER	Blue Metal Stone 1by2 3by4 1by2 1by4 inch size - 1300T/M
17	K.P.M. BLUE METALS	Blue Metal Stone 1.5, 0.75, 0.5, 0.25 inch sizes - 1200T/M
18	KADAIESWARI CRUSHER UNIT	Blue Metal Stone 0.75, 0.5, 0.25 inch - 650T/M
19	KADAIESWARI METAL CRUSHER	BLUE METAL STONES 0.75, 0.5, 0.25 inch sizes - 200T/M
20	KATHIR BLUE METALS	40 mm Size - 21M/Month 20 mm Size - 15M/Month 4 mm Size- 6M/Month Stone Powder/ 6M/Month
21	K.M.T. BLUE METALS	BLUE METAL STONES VARIOUS SIZES - 1900T/M STONE DUST - 100T/M
22	KAVITHA SAND MANUFACTURES INDIA PRIVATE	Blue Metal Stone - 1200T/M Stone Powder - 100T/M
23	MAKESH STONE CRUSHER	Stone Jelly - 750Tons/Month Stone Powder - 25Tons/Month
24	M.S. BLUE METALS	Blue Metal Stone 1by5 0by75 0by5 0by25 inch - 291T/M
25	MUGESH BLUE METALS	Blue Metal Jelly - 300 T/M
26	MURUGA VINAYAGAR BLUE METALS	Blue Metal Stone 3by4 1by2 1by4 inch - 290T/M
27	NEW DIAMOND BLUE METALS	Stone Jelly 6mm, 12mm, 20mm, 40mm and Powder - 1050Tons/Month
28	NEW S K S BLUE METALS	Blue Metal stones - 2000T/Month Manufactured Sand - 500T/Month

29	NIRMAL BLUE METALS	Blue Metal Stone 1by2 3by4 1by2 1by4 inch size - 1300T/M
30	NIRMAL STONE CRUSHERS	BLUE METAL STONES 1BY5 0BY75, 0BY5, 0BY25 INCH - 570T/M
31	OM MURUGA BLUE METAL	Blue Metal Stone 1by5 0by75 0by5 0by25 inch - 570T/M
32	OM MURUGA BLUE METALS	Blue Metal Stone 1.5, 0.75, 0.5, 0.25 inch - 1200T/M
33	P MARUTHACHALAMORTHY STONE CRUSHER	BLUE METAL STONES - 1400T/M STONE POWDER - 100T/M
34	SHRI THANGAMMAN STONE CRUSHER	Blue Metal Stones - 1200T/M Stone Dust - 200T/M
35	P.M.G. STONE CRUSHER	Blue Metal Stone 1.5, 0.75, 0.5, 0.25 Inch size - 280T/M
36	PALANI ANDAVAR BLUE METALS	Blue Metal Stones of various sizes - 550Tons/Month
37	PARAMESWARI BLUE METALS	Blue Metal Stone - 650T/M
38	PERIYANAYAGI AMMAN BLUE METALS	Blue Metal Stone 3by4, 1by2, 1by4, inch sizes - 810T/M
39	PONKALIYAMMAN BLUE METALS	Blue Metal Stone 1by12 3by4 1by2 1by4 - 1300T/M
40	RAJA STONE CRUSHER	STONE JELLY - 450T/M STONE DUST - 100T/M
41	RAJALAKSHMI BLUE METALS	JELLY - 300T/M
42	RAMYA BLUE METALS	Blue Metals Various Sizes - 1200Tons/Month Stone Dust - 200Tons/Month
43	S G K BLUE METAL	Broken Jelly - 32T/Month Stone Powder - 16T/Month Stone Chips- 16T/Month
44	S. K. BLUE METALS	Blue Metal - 19 T/day
45	HARIVARSHA BLUE METALS	Blue Metals of Various sizes - 270Tons/Month Stone Dust - 30Tons/Month
46	S.P.S. CRUSHER	JELLY AND STONE DUST - 500T/M
47	S.R.A. AND CO	BLUE METAL STONES - 1300T/M
48	S.R.A. AND COMPANY	Blue Metal Stone 1by2 3by4 1by2 1by4 - 1300T/M STONE DUST - 100T/M
49	SANTHI BLUE METALS	Blue Metal various size - 38 T/d Stone Dust - 2 T/d
50	SANTHOSH BLUE METALS	Blue Metal Stone 1.5, 0.75, 0.5, 0.25 inch - 750T/M
51	SARAVANA BLUE METALS	CRUSHED STONE OF 3BY4 1BY2 1BY4 INCH - 310T/M
52	SELVA VINAYAKA BLUE METALS	BLUE METAL STONES VARIOUS SIZES - 1000 MT/M
53	SELVAM BLUE METALS	Blue Metal Stone 3by4 1by2 1by4 inch - 650T/M
54	SELVARAJA BLUE METALS	STONE JELLY - 550T/M
55	SRI MURUGAN BLUE METAL	Blue Metal Stones 1.5 inch, 0.75inch, 0.5inch, 0.2 - 450T/M
56	SENTHUR MURUGAN BLUE METALS	STONE JELLY OF SIZE 1by2, 1by4, 3by4 inch - 450T/M STONE JELLY OF SIZE 1by4 inch - 120T/M STONE DUST - 30T/M
57	SRI IYYAPPA BLUE METALS	Blue Metal Jelly - 19Tons/Day
58	SHRI PRAVEEN AND CO	Blue Metal Stone 1by2 3by4 1by2 1by4 - 1300T/M
59	S.K. BLUE METALS	STONE JELLY-VARIOUS SIZES OF JELLY AND STONE DUST - 450T/M
60	SIVASAKTHI BLUE METALS	BLUE METAL STONES 3BY4 1BY2 1BY4 INCH SIZE - 650T/M
61	SIVASAKTHI BLUE METALS	Blue Metal Stone 3by4 1by2 1by4 inch - 280T/M
62	SKY BLUE METALS	Blue Metal Stone - 650T/M
63	S.R. BLUE METALS	BLUE METAL STONES - 810T/M STONE POWDER - 190T/M

64	SREE LAKSHMI BLUE METALSS	1 1by2 - 1000Mt/M 3by4 - 900Mt/M 1by2- 750Mt/M 1by4/ 500Mt/M Stone Powder- 250Mt/M
65	SRI ALAGU NACHIAMMAN BLUE METALS	1 1by2 Jelly - 500Tons/Month 3 by 4 Jelly - 375Tons/Month 1 by 2 Jelly- 250Tons/Month 1 by 4 Jelly/ 125Tons/Month Powder- 50Tons/Month
66	SRI AMMAN BLUE METALS	Blue Metal Jelly 3by4 1by2 1by4 and Powder - 375Tons/Month
67	SRI AMMAN JELLY CRUSHER	3 by 4 - 750Tons/Month 1 by 2 - 450Tons/Month 1 by 4- 225Tons/Month Powder / 100Tons/Month
68	SRI ARUNAGIRI BLUE METALS	Blue Metals of Various Sizes - 1400 T/M Stone Dust - 100 T/M
69	SRI BAGAVATHI AMMAN STONE CRUSHER	Blue Metal Stone 1.5 0.75 0.25 inch - 790T/M
70	THAI MOOGAMBIGA BLUE METAL	Blue Metal stones and chips of Various sizes - 3600Tons/Month
71	RAMALINGAM CONSTRUCTION COMPANY PRIVATE	Crushing of Stone into 3/4 - 125T/m Crushing of Stone into 1/2 - 50T/m Crushing of Stone into 1/4- 50T/m Stone Powder/ 50T/m
72	SRI GANESHA BLUE METALS	BLUE METAL JELLY 1BY5 0BY75 0BY5 0BY25 INCH - 650T/M
73	SRI GURUVAYURAPPAN BLUE METALS	Blue Metal Stones 1by2 3by4 1by2 1by4 - 1200T/M
74	SRI KADESWARAN BLUE METALS	Crushing of Screening of Stones into different siz - 60Tons/Day Stone Powder - 3Tons/Day
75	SRI MURUGAN BLUE METALS	Jelly 1 1by2, 3by4, 1by2, 1by4 and Stone Powder - 750Tons/Month
76	SRI MURUGAN BLUE METALS	BLUE METAL STONES 1by2 3by4 1by2 1by4 inch - 1200T/M
77	SRI MUTHUKUMAR BLUE METALS	1 1by2 - 500Tonnes/Mon 3by4 - 375Tonnes/Mon 1by2- 200Tonnes/Mon 1by4/ 100Tonnes/Mon Powder- 40Tonnes/Mon
78	SRI PALANIANDAVAR BLUE METALS	Blue Metal and Stone Powder - 1500Tons/Month
79	SRI PALANIANDAVAR STONE CRUSHER	CRUSHED STONES SIZES AND STONE DUST - 318T/M
80	SRI PALANIAPPA BLUE METALS	STONE JELLY - 450T/M STONE JELLY - 120T/M STONE DUSTS- 30T/M
81	SRI RAJESH STONE CRUSHER	Blue Metal Stone 1by5 0by75 0by5 0by25 inch - 1740T/M
82	SRI SAKTHIVEL STONE CRUSHER	JALLY STONES 1BY2 3BY4 1 INCH - 450T/M
83	ELHIL BLUE METAL	BLUE METAL STONES 1BY5 0BY75, 0BY5, 0BY25 INCH - 1300T/M
84	SRI SARAVANA BLUE METALS	Blue Metal Stone 1.50, 0.75, 0.50 and 0.25 inches - 1300T/M
85	SRI SURYA BLUE METALS	Blue Metal Various Sizes - 1350 T/M Stone Dust - 150 T/M
86	SRI VEERAKUMAR BLUE METALS	Blue Metal Stone 0.75 0.50 and 0.25 inches - 1200T/M Stone Dust Powder - 100T/M
87	SRI VEERASUNDARI BLUE METALS	Blue Metal Jelly 3 by 4 1 by 2 1 by 4 and Powder - 850Tons/Month
88	S.V.A BLUE METAL	0.75 inch size stone jelly - 450T/M 0.25 inch sizes stone jelly - 120T/M Stone dust- 30T/M
89	SRI VIJAYALAKSHMI BLUE METALS	BLUE METAL STONES - 1300T/M
90	SRI VINAYAKA STONE CRUSHER	STONE JELLY OF SIZES - 600T/M
91	S S BLUE METALS	BLUE METAL STONES - 1200T/M DUST POWDER - 100T/M
92	SRI BLUE METALS	Blue Metal Stone 3/4, 1/2, 1/4 - 720T/M
93	SWAMY CRUSHER	11 2 Jelly - 500T/Month 3 4 Jelly - 750T/Month 1 2 Jelly- 750T/Month 1 4 Jelly/ 250T/Month Stone Powder- 250T/Month
94	TAMILNADU BLUE METALS	Jelly 3by4, 1by2, 1by4, Chips and Fine Powder - 1500Tons/Month
95	THAMBI BLUE METALS	Blue Metal Stone 1.5, 0.75, 0.5, 0.25 inch size - 1400T/M

96	THANGANAYAGI STONE CRUSHER S	METAL JELLY - 500T/M
97	K.M.T.STONE CRUSHER	CRUSHED STONE OF - 278T/M
98	V.G.V. BLUE METALS	Blue Metal Stone - 1500T/M
99	V.R.T. BLUE METALS	Stone Jelly 1/2, 1/4, 1/2, 1/4 Inch - 1200T/M
100	S.G. BLUE METALS	Blue Metal Stone of Various Sizes - 5000T/M
101	VASANTHAM BLUE METALS	BLUE METAL STONES 3 by 4 1 by 2 1 by 4 - 790T/M
102	VENKATESH STONE CRUSHER	Crushed Stone of 3/4, 1/2, 1/4 inch & stone dust - 272T/M
103	VIJAY STONE CRUSHER	BLUE METAL STONES 1 1by2 3by4 1by2 1by4 - 1200T/M
104	VMT BLUE METALS	STONE JELLY 3 BY 4 INCH - 35T/M STONE JELLY 1 BY 2 INCH - 17.5T/M STONE JELLY 1 BY 4 INCH- 7.5T/M
105	VMT STONE CRUSHER	Blue Metal Stone 0.75inch 0.50inch and 0.25inch - 650T/M
106	WILLPOWER BLUE METALS	BLUE METALS STONES - 750T/M
107	BOGAR CRUSHER	Various Sizes of Blue Metals Jally 1-2, 3-4, 1-2, - 5000T/M Stone Dust - 500T/M
108	SRI VINAYAGA BLUE METALS	Various Sizes of Blue Metals - 5000T/M Stone Dust - 500T/M
109	SRI THANGANAYAGI BLUE METALS	Blue Metal Stones - 520MT/M
110	JAYAM BLUE METALS	Various Sizes of Blue Metals Jally - 5000T/M Stone Dust - 500T/M
111	SRI ALAGU NACHIAMMAN BLUE METALS	Blue metal Stones 1.5 inch, 0.75 inch, 0.25 inch - 790T/M
112	K.A.S. STONE CRUSHER	Various Sizes of Blue Metals - 1200T/M Stone Powder - 100T/M
113	SARASWATHI BLUE METALS	Various Sizes of Blue Metals - 1200T/M Stone Powder - 100T/M
114	KOVAI SANDS PRIVATE LIMITED	Stone Jelly - 1100T/M Stone Dust - 100T/M
	27. District: TIRUVALLUR	
1	S R BLUE METALS	Blue metal jelly various sizes - 730Mt/day M-Sand - 550Mt/day P Sand- 200Mt/day
2	MURUGAN BLUE METAL	Blue Metal Jelly of Various Sizes and M-Sand - 1500 T/day
3	R S ENTERPRISES	Blue Metal Jelly of Various Sizes M-Sand - 1500 T/day
4	NAGASWAMY BLUE METAL WORKS	BLUE METAL - 900T / M BLUE METL CHIPS - 125T / M BLUE METAL POWDER- 200T / M
5	E M R STONE CRUSHERS	CRUSHED STONE 20MM - 1200T / M CRUSHED STONE 12MM - 850T / M CRUSHED STONE 6MM- 250T / M
6	E K MINES AND MINERALS PRIVATED LIMITED	BLUE METAL JELLY OF VARIOUS SIZES - 470 T/D
7	SRI VINAYAKA ENTERPRISES	VARIOUS SIZES OF BLUE METAL JELLY - 420T/DAY M SAND - 180 T/DAY
8	V4 MODERN CRUSHERS (CRUSHER & M-SAND)	Blue Metal Aggregates of various sizes - 1000Tons/Day M-Sand - 700 Tons/Day P-Sand- 250 Tons/Day
	28. District: TIRUVANNAMALAI	
1	RMK SANDS PVT LTD	Blue Metal Jelly - 500Tons/Day Stone Dust - 150 Tons/Day M Sand- 2300 Tons/Day P Sand / 500 Tons/Day
2	VISHNU SURYA PROJECTS AND INFRA PVT	Blue Metal Jelly - 28000T/M Stone Dust - 2000T/M M Sand- 15000T/M P Sand/ 9000T/M
3	OM SAKTHI BLUE METALS	Bule Metal Jelly - 100t/m
4	Krishna Blue Metals	Blue Metal Jelly - 550T/M

5	SELLIAMMAN BLUE METALS	Blue Metal Jelly - 1050T/M
6	Sri Vinayaga Mines Stone Crusher Unit	Bule Metal Jelly - 2000T/M
7	ARUMUGAM BLUE METALS	Bule Metal Jelly - 400T/day
8	SRI LAKSHMI NARAYANA BLUE METALS	Bule Metal Jelly - 60T/Month
9	SRI PALANIANDAVAR BLUE METALS	Blue Metal Jelly - 450T/M
10	Raja Blue Metals	Bule Metal Jelly - 250T/M
11	SRI SUNDARAM BLUE METALS	Bule Metal Jelly - 500T/M
12	SRI ANNAMALAIYAR BLUE METALS	Bule Metal Jelly - 600T/M
13	MALAI APPAN BLUE METALS	Bule Metal Jelly - 540T/M
14	SOUNDARI BLUE METALS	Bule Metal Jelly - 650T/M
15	Moorthy Blue Metals	Bule Metal Jelly - 540T/M
16	NAVANEETHAM BLUE METALS	Bule Metal Jelly - 650T/M
17	CHEZHIAN BLUE METALS	Blue Metal Jelly 6 to 100mm, M-Sand, P-Sand, Ston - 650T/M
18	Rama Lakshmi Blue Metals	Bule Metal Jelly - 750T/M
19	Anburaj Blue Metals	Bule Metal Jelly - 500T/M
20	T.S.R. and Sons Blue Metals	Bule Metal Jelly - 550T/M
21	Gold Blue Metals	Bule Metals of size 20mm 12mm and 6mm - 200T/M
22	M.G.R.BLUE METALS	Bule Metal Jelly - 450T/M
23	Shri BalaJi Blue Metal	Bule Metal Jelly - 285T/M
24	JAYALAKSHMI BLUE METALS	Granite Stone Quarries - 600T/M
25	SUN BLUE METALS	Bule Metal Jelly - 400T/M
26	J V Stones	Bule Metal Jelly - 550t/m
27	Siva Blue Metals	Bule Metal Jelly - 600T/M
28	V K R BLUE METALS	Bule Metal Jelly - 700T/M
29	Mala Blue Metals	Bule Metal Jelly - 700T/M
30	AMMAN BLUE METALS	Bule Metal Jelly - 550T/M
31	J S Blue Metals	Blue Metal Jelly - 500 T/M Stone Powder - 100 T/M
32	Sri Ragavendra Blue Metals	Bule Metal Jelly - 550T/M
33	SRI SAKTHI BLUE METALS	Bule Metal Jelly - 500T/M
34	Radha Blue Metals	Blue Metal Jelly - 500T/M
35	Saravana Blue Metals	Bule Metal Jelly - 850T/M
36	K.K.S.Blue Metals	Bule Metal Jelly - 500T/M
37	K.S.B.BLUE METAL INDUSTRIES	Bule Metal Jelly - 700T/M
38	Thirumala Blue Metals	Bule Metal Jelly - 650T/M
39	THIRUMAGAL BLUE METALS	Bule Metal Jelly - 650T/M
40	SRI KRISHNA BLUE METALS	Bule Metal Jelly - 650M/T
41	SRI AMMAN BLUE METALS	Bule Metal Jelly - 650T/Monrh
42	Arunai Blue Metals	Bule Metal Jelly - 600T/M
43	ARUL JOTHI BLUE METALS	Bule Metal Jelly - 700t/m
44	Astalakshmi Blue Metal	Blue Metal Jelly - 100T/M
45	Jayam Blue Metal	Bule Metal Jelly - 600T/M
46	JEEVA BLUE METALS	Bule Metal Jelly - 550T/M
47	Sri Ponniyamman Blue Metal	blue metal jelly - 600T/M
48	MRV Blue METALS	Bule Metal Jelly - 650T/M

49	Sri Elumalaiyan Blue Metals	Bule Metal Jelly - 800T/M
50	Sri Ganesh Blue Metals	Bule Metal Jelly - 800T/M
51	R S Blue Metals	Bule Metal Jelly - 750T/M
52	Gangatharan Blue Metals	Bule Metal Jelly - 700T/M
53	Annai Arul Enterprises Unit - I	Bule Metal Jelly - 750T/M
54	Annai Arul Enterprises Unit - II	Bule Metal Jelly - 750T/M
55	Vijayraj Aggregate Engineering	Bule Metal Jelly - 700T/M
56	SIVA SAKTHI BLUE METALS	Bule Metal Jelly - 700T/M
57	SARASWATHI BLUE METALS	Bule Metal Jelly - 700T/M
58	M S BLUE METALS	Bule Metal Jelly - 725T/M
59	Sri Dhanush Balaji Blue Metal	Bule Metal Jelly - 700T/M
60	J C K Blue Metals	Bule Metal Jelly - 700T/M
61	N R M Sons Blue Metals	Bule Metal Jelly - 940T/M
62	Sri Ragavendra Blue Metals	Bule Metal Jelly - 950t/m
63	Thirumalai Blue Metals	Bule Metal Jelly - 600T/M
64	DEEPAM BLUE METALS	Bule Metal Jelly - 600T/M
65	LOGA LAKSHMI BLUE METALS	Bule Metal Jelly - 250T/M
66	SRI MURUGAN THUNAI BLUE METALS	Blue Metal Jelly - 850T/Month
67	Ezhumalai Blue Metals	Blue Metal Jelly - 800T/M
68	Sri Vari Blue Metals	Blue Metal Jelly - 750T/M
69	G T P BLUE METALS	Blue Metal Jelly - 850T/M
70	SANGEETHA BLUE METALS	Blue Metal Jelly - 850T/M
71	G J Minerals	Blue Metal Jelly - 700T/M
72	S M Blue Metals	Blue Metal Jelly - 750T/M
73	Sri Sai Blue Metals	Blue Metal - 700T/M
74	VINOTH BLUE METALS	Bule Metal Jelly - 1400T/M
75	Annamalaiyar Blue Metals	Blue Metal Jelly - 850T/M
76	RayMix Concrete India Pvt.Ltd	Blue Metal Jelly - 6000T/M
77	NEMBIAN BLUE METALS	Blue Metal Jelly - 750T/Month
78	Aruna Blue Metals	Blue Metal Jelly - 600T/Month
79	SRI RAGHAVENDRA BLUE METALS	Blue Metal Jelly - 750T/Month
80	KPR BLUE METALS	Blue Metal Jelly - 1200T/M
81	INDIRA BLUE METALS	Blue Metal Jelly - 750T/Month
82	Karthick Blue Metals	Blue Metal Jelly - 500T/M
83	PALANIAPPA BLUE METALS	Blue Metal Jelly - 700MT/M
84	Sri Sai Blue Metals	Blue Metal Jelly - 1450MT/M
85	Mohana Blue Metals	Blue Metal Jelly - 1450T/M
86	Balamurugan Blue Metals	Blue Metals - 1450MT/M
87	SELLIAMMAN BLUE METALS	Blue Metal Jelly - 900T/Month
88	N P Blue Metals	Blue Metal Jelly - 1450mt/m
89	Sri Balaji Blue Metals	Blue Metal Jelly - 1500MT/M
90	B R K Blue Metals	Blue Metal Jelly - 1450MT/M
91	Sri Gopalakrishnan Blue Metals	Blue Metal Jelly - 1450MT/M
92	K.K.R Blue Metals	Blue Metal Jelly - 1100 T/month

93	S P Blue Metals A unit of S P Builders	Blue Metal Jelly of Size 20mm 12mm and 6mm Chips - 1450MT/M
94	Anitha Arun Blue Metals	Blue Metal Jelly - 700MT/M
95	Kalpana Blue Metals	Blue metal jelly - 1100T/M
96	SRT Blue Metals	Blue Metal Jelly - 1450MT/M
97	Vinoth Blue Metals	Blue metal jelly - 1150T/Month
98	SUBAM BLUE METALS	Blue metal jelly - 1500MT/M
99	R.S.K. BLUE METAL	BLUE METAL JELLY - 150T/M
100	SELVA BLUE METALS	Bule metal Aggregates of various sizes - 1100T/M
101	M R A BLUE METALS	BLUE METAL JELLY - 1450MT/M
102	Arunachala Blue Metals	Blue Metal Jelly - 1450T/M
103	KAK Blue Metals	Bule Metals Jelly 6 mm 12 mm 20 mm - 1500T/M
104	K N S Blue Metals	Blue Metal Jelly - 1450T/M
105	TMS BLUE METALS	Bule Metals Jelly - 1150T/M
106	SANKARI BLUE METALS	Blue Metal Jelly - 850T/M
107	Arunai Blue Metals	Blue metal Jelly - 1300T/M
108	S R C Projects Private Limited	Blue Metal Jelly 53mm 20mm 12mm and 6mm, Wet - 40000T/M
109	TAJ BLUE METALS	Blue Metal Jelly - 1100T/M
110	Shantha Blue Metals	Blue metal jelly - 1500 MT/m
111	Thillai Nataraja Blue Metals	Blue Metal Jelly - 20mm,12mm,6mm - 1900 MT/m
112	Sri Vinayaga Blue Metal	Blue Metal Jelly 20mm, 12mm, 6mm - 1900 T/M
113	Arul Murugan Metals	Aluminium ingots - 80 T/m
114	S R I Blue Metals	Blue Metal Jelly and Stone Dust - 400 Ton/Day
115	Karuppusamy blue Metals Unit II	Blue Metal jelly - 250 T/m
116	Transstory India Limited	Stone Boulders - 600000 T/m
117	G.K.S BLUE METALS	Blue metal - 300 T/m
118	M.M.S BLUE METALS	Blue Metal Jelly - 850 T/m
119	SRI KRISHNA BLUE METALS	Blue metal jelly - 850T/m
120	SRI VENKATACHALAPATHY BLUE METALS	Blue Metal Jelly - 1500T/M
121	Gopi Blue Metals	Blue metal jelly - 950T/m
122	KAYAL BLUE METALS	Blue metal jelly - 1450MT/m
123	BARATHI BLUE METALS	Blue metal Jelly - 1580T/m
124	G.S.ENTERPRICES	Blue metal jelly - 950T/m
125	Durai Stones	Blue metal jelly - 1450MT/m
126	ANNAI BLUE METALS	Blue metal jelly - 1100 T/m
127	Om Sakthi Blue Metal	Blue Metal Jelly of Various Sizes - 1100T/M
128	Sri Arul Nayagi Blue Metals	Blue Metal Jelly - 1400 T/M
129	PBS Blue Metals of PBS Mining Pvt Ltd	Blue Metal Jelly and Blue Metal Dust - 1000T/D
130	Sri Mugambigai Blue Metals	Blue Metal Jelly and Stone Dust - 700T/D
131	Velmurugan Blue Metals	Blue Metal Jely 40mm, 20mm, 12mm and 6mm - 1450 T/M Stone Dust - 50 T/M
132	Vidya Ramakrishnan Blue Aggregates	Aggregate Block - 500M/T
133	M S Blue Metals Unit II	Blue Metal Jelly - 325 MT/M
134	Ultratech Cement Ltd	
135	Patil Constructiion Infrastructure Stone	

136	Sri Ganesh Blue Metals Unit II	
137	Sri Balamurugan Blue Metals	Blue Metal Jelly 100MM Dia - 16T/D Blue Metal Jelly 40MM Dia - 34T/D Blue Metal Jelly 20MM Dia- 34T/D Blue Metal Jelly 12MM Dia/ 34T/D Blue Metal Jelly 6MM Dia- 66T/D Stone Dust-16T/D M Sand- 200T/D P Sand- 100T/D
138	Golden Sands	Blue Metal 100MM Dia - 50TD Blue Metal 40 MM Dia - 100TD Blue Metal 20 MM Dia- 100 TD Blue Metal 12 MM Dia/ 100 TD Blue Metal 6 MM Dia- 200 TD Stone Dust-50 TD M-Sand- 900 TD
139	SRC Perojects P Ltd	
140	KMV Blue Metals	
141	Vetrivel Blue Metal	
142	SKT Mines	Blue metal jelly - 325Tons/Day Stone Dustt - 75 Tons/Day Blue metal jelly- 200 Tons/Day Blue metal jelly/ 100 Tons/Day M sand- 200 Tons/Day P sand -100 Tons/Day
143	SMK Blue Metals And M Sand	
144	AARUPADAIYAPPA BLUE METALS	Blue Metal jelly of Various Sizes(40MM,20MM,12MM - 4800 Ton/Day
145	Suganya Blue Metals	
146	GKS Blue Metals	
147	KALPANA BLUE METALS II	Blue Metal Jelly(6 TO 100mm) - 290Tons/Day Stone Dust - 10 Tons/Day
148	SRINIVASA BLUE METAL	Blue Metal Jelly MM - 50Ton/Day Blue Metal Jelly 20 MM - 50 Ton/Day Blue Metal Jelly 12 MM- 80 Ton/Day Blue Metal Jelly 6 MM/ 30 Ton/Day
149	PJR BLUE METALS	
150	S R BLUE METAL	Blue Metal jelly of various sizes - 1500Tons/Day M-sand - 1500 Tons/Day
151	SRI LAKSHMI STONES	Blue Metal jelly of various sizes - 5100MT/Month Stone Dust - 150MT/Month
152	N R M SONS BLUE METALS	Blue metal jelly for various sizes - 880T/Day M - Sand - 900 T/Day P - sand- 200 T/Day
153	J C K MINES	Blue Metal Jelly Various Sizes - 1250MT/DAY M - Sand - 800 MT/DAY P - Sand- 400 MT/DAY
154	PNA AGGREGATES	Blue Metal Jelly for various Sizes - 730T/D M Sand - 550T/D P Sand- 200T/D
155	S V S MINES	Blue Metal Jelly - 1250T/D M Sand - 800 T/D P Sand- 400 T/D Stone Dust/ 45 T/D
156	KANJI MINES	Blue Metal Aggregates for various Sizes - 2000T/D M Sand - 1000 T/D P Sand- 950 T/D Stone Dust/ 40 T/D
157	JCK MINES	Blue Metal Jelly - 1500T/D M Sand - 1000 T/D P Sand- 450 T/D Stone Dust/ 45 T/D
158	S S BLUE METALS AND M SAND MANUFACTURING	Blue Metal Jelly - 1200T/Day M - Sand - 1000T/Day Stone Dust- 70T/Day P Sand/ 700T/Day
159	AROKIANATHAN BLUE METALS	Blue Metal Aggregates for various Sizes - 2000T/D M Sand - 1300 T/D P Sand- 1300 T/D Stone Dust/ 200 T/D
160	SRI DEEEPAM BLUE METALS	Blue Metal Aggregates for various Sizes - 800T/D M Sand - 1000 T/D Stone Dust- 150 T/D
161	P S T MINES	Blue Metal Jelly - 2000T/Day Stone Dust - 120 Tons/Day P - Sand- 300 Tons/Day M Sand/ 700 Tons/Day
162	SRI MAHALAKSHMI BLUE METALS	Blue Metal Jelly Various Sizes - 50T/Month M - Sand - 100 T/Month

163	STAR BLUE METALS	Blue Metal Jelly - 600T/D Stone Dust - 40T/D M Sand- 300T/D P Sand/ 100 T/D Blue Metal Jelly- 1500 T/D Stone Dust-100 T/D M Sand- 750 T/D P Sand- 250 T/D
164	T BHARATH BLUE METALS	Crushed stone aggregates of various sizes - 920Ton/Day M sand - 900 Ton/Day P Sand- 460 Ton/Day Crushed Stone Dust/ 100 Ton/Day
165	POABS ENTERPRISES PVT LTD	Blue Metal Jelly of various sizes - 1500Tons/Day M Sand - 2000 Tons/Day P Sand- 500 Tons/Day
166	JVS BLUE METALS	Blue metal Jelly - 2400T/Day M sand and P sand - 1640T/Day
167	P.R.A CONTRACTOR (STONE CRUSHER UNIT)	Blue Metal Jelly - 1100Tons/Day M Sand - 1100 Tons/Day P Sand- 1100 Tons/Day
168	RENUGAMBAL BLUE METALS AND M SAND	Blue Metal Jelly - 1000Tons/Day M Sand - 600 Tons/Day P Sand- 250 Tons/Day stone Dust/ 100 Tons/Day
169	M/S.GLITZ	Crushed Stone - 1500Tons/Day M Sand - 600Tons/Day P Sand- 250Tons/Day Crushed Stone Dust/ 150Tons/Day
170	S V S MINES	Blue Metal Jelly of Various size - 1200Ton/Day
171	VARDHINI BLUE METAL	Blue Metal Jelly - 300Ton/Day m sand - 700 Ton/Day
172	SRI RAGAVENDIRA BLUE METALS AND M SAND	Blue Metals - 1000Ton/Day m sand - 750 Ton/Day p sand- 240 Ton/Day Slit/ 10 Ton/Day
	29. District: TRICHY	
1	KNR CONSTRUCTIONS LTD	Blue Metal Jelly of Various Sizes - 304416T/Year M-Sand - 108720T/Year Sand Slurry- 21744 T/Year
2	SRI BALAJI BLUE METAL Sakthi Crusher	Blue metal jelly 40mm,20mm,12mm,6mm - 1000T/Month
3	SARAVANA BLUE METAL	Blue metal jelly of size 1 2 - 900T/M
4	NAG DEV BLUE METALS	Stone Jelly of size 20mm,12mm,6mm and chips - 1200MT/M
5	KING CRUSHER	Stone jelly - 2200T/month
6	PARAM ENTERPRISES	Blue metal jelly of various sizes 40mm and 20mm - 2000T/Day M-Sand - 2000T/Day
7	GOLDEN BLUE METAL	Blue metal jelly - 150T/M
8	UDAYAM CRUSHER	Stone jelly 20mm - 650T/M Stone chips 6mm - 70T/M
9	SRI PONNALAGU BLUE METAL INDUSTRIES	Stone Jelly - 200T/M
10	ANDAVAR CRUSHER	Blue metal jelly 20mm,12mm,6mm - 1000T/M
11	STS CRUSHER	Blue metal stone jelly - 800T/M
12	BMS BLUE METALS	Blue metal stone jelly - 2700T/M
13	SRI PANCHANATHAN BLUE METAL	Stone jelly - 800T/M
14	Balamurugan Enterprises	Stone jelly of size 40mm,20mm,12mm,6mm - 1300 T/month
15	SUGANYA AGGREGATES	Stone Jelly of size 40mm 20mm 12mm and 6mm - 1800T/M
16	Kumaran Blue Metals	Blue metal Jelly of size 40mm 20mm 12mm 6mm - 1600T/month
17	SAROJA CRUSHER INDUSTRIES	Stone Jelly 12mm - 1000T/M
18	SRI MARIAMMAN BLUE METAL	Blue Metal Jelly 60mm 12mm 20mm - 1100T/M
19	JUPITER CRUSHER	Blue metal jelly 20mm,12mm,6mm - 1440T/M
20	PARVATHY INDUSTRY	Stone Jelly - 12T/day
21	AKASH BLUE METAL	Blue metal stone jelly 40mm, - 150T/M 20mm - 110T/M 6mm- 100T/M
22	SRI BALAJI BLUE METALS PRECAST CEMENT	Blue Metal Stone jelly - 35T/day
23	VKC CRUSHER	Stone jelly of sizes 20mm,12mm,6mm - 200T/M
24	VENKATESWARA BLUE METALS	Blue metal stones of 11 2 - 39T/day
25	AMMYAPPA BLUE METAL	Stone jelly - 2750T/M
26	MMBH CRUSHER	Stone jelly - 1225T/M

27	SRI BALAJI BLUE METALS	Blue metal stones of 40mm,20mm,12mm,6mm - 70T/day
28	AKASH BLUE METAL	Stone jelly of sizes 20mm,12mm,6mm - 360T/M
29	LAKSHMI BLUE METAL	Stone jelly Size 40mm,20mm,12mm,6mm - 1700T/M
30	P.K.A.T.BLUE METALS	Stone Jelly of size 20mm,12mm,6mm - 1080T/Month
31	KARUMBU BLUE METAL	Stone Jelly - 800T/Month
32	Sri Veerakumar Blue Metals	Stone jelly of size 40mm,20mm,12mm,6mm - 1000T/month
33	SRI VINAYAGA CRUSHER	Stone Jelly of size 20mm,12mm,6mm - 480T/M
34	RCS Crusher	Blue metal jelly - 1100T/M
35	AROKIA INDUSTRIES	Stone jelly - 1000T/M Stone dust - 50T/M
36	M M BLUE METALS	Blue metal jelly 7mm to 20mm - 25T/day
37	C SIVASAMY FIRM	Blue Metal jelly 20mm - 150MT/M Blue metal jelly 12mm - 110MT/M Blue metal 6mm- 100MT/M
38	THE PARAKTH TRADERS	Stone jelly - 170Units/M
39	SRI MANJUNATHAN INDUSTRIES	Blue Metal Stones of sizes 3 4 - 2250T/M
40	SRI BALAJI INDUSTRIES	Stone Jelly - 600T/m Stone dust - 150T/M
41	YES YEM BLUE METALS	Blue metal jelly 20mm, - 325T/M Blue metal jelly 12mm - 300T/M
42	E R S CRUSHER	Stone Jelly - 800T/M
43	SRI KRISHNA CRUSHER COMPANY	Blue stone metal jelly 3 4 - 750T/M Blue stone metal Jelly 1 2 - 250T/M
44	SELVI CRUSHER	Stone jelly 12mm 20mm - 800T/M
45	RAMESH INDUSTRIES	Broken metal jelly 20mm - 1600T/M
46	DEVARAJAN CRUSHER	Stone jelly - 600T/M Stone dust - 150T/M
47	MURUGAN BLUE METAL INDUSTRIES	Blue metal jelly 12mm 20mm - 350T/M
48	K R N Blue Metal	Stone jelly and chips - 800T/M
49	C R S CRUSHERS	Blue metal jelly 20mm - 1600T/M
50	LRS INDUSTRIES	Stone jelly - 1200T/M
51	AGL IRUDAYARAJ AND CO	Stone Jelly - 170Units/M Stone dust - 20Units/M
52	SRI AMMAN BLUE METAL	Stone jelly size 20mm,12mm,6mm - 930MT/M
53	JEMINI BLUE METALS	Blue Metal Jelly - 15000T/Month
54	SRI PRASANNA VENKATACHALAPATHY CRUSHER	Stone Jelly of size 20mm - 250T/M
55	DHANALAKSHMI BLUE METALS	Blue metal jelly 20mm,12mm,6mm - 1100T/M
56	SRI KUMARAN BLUE METAL	Blue metal stones - 1100T/M
57	SRI KRISHNA BLUE METALS	Stone Jelly of size 12mm,6mm - 630T/M
58	SRI BALAJI BLUE METAL	Blue metal stones of 40mm,20mm,12mm,6mm - 2400T/M
59	SRI RAJASEKAR BLUE METALS	Blue metal jelly 40mm,20mm,12mm,6mm - 2000T/M
60	SRI SANKAR CRUSHER	Blue metal stones of 20mm,12mm,6mm - 420T/M
61	G P S BLUE METALS	Blue metal stones of 40mm,20mm,12mm,6mm - 3500T/month
62	K.M.N.Crusher	Stone jelly of size 40mm,20mm,12mm,6mm and chips - 1900 T/month
63	Rasi Blue Metals	Stone Jelly of size 20mm,12mm,6mm - 1950 T/month
64	SRI BALAMURUGAN BLUE METALS	Stone jelly pf size 150 mm - 1000T/M
65	M B BLUE METAL	Stone Jelly 1 1 2, 3 4, 1 2 and chips - 2700T/Month M sand 100 micron - 4mm - 240T/Month Fine sand 100 micron - 4mm- 60T/Month

66	Sri Murugan Crusher	M sand - 1200 T/Day
67	S.S Blue metal	Stone jelly of size - 1000T/Day M-Sand - 700 T/Day P Sand- 200 T/Day
68	ORIENTAL STRUCTURAL ENGINEERS PVT LTD	STONE JELLY OF VARIOUS SIZES - 4000Tones/Day
69	BEST STAR AGGREGATES	Blue Metals jelly of various sizes - 150T/DAY M Sand - 40 T/Day
70	KRV BLUE METALS	Stone Jelly of Size twenty to forty mm - 10000Tons/Month Stone Jelly of Size sixteen to twenty mm - 15000Tons/Month Stone Jelly of Size twelve to sixteen mm- 10000Tons/Month Stone Jelly of Size six mm/ 2000Tons/Month
	30. District: VANIYAMBADI	
1	C.K.S BLUE METALS	Blue Metal Jelly - 5000MT/M
2	MANGALAM BLUE METALS	Blue Metal jelly - 1400Ton/month
3	SRINIVASA BLUE METALS	Blue metal jelly - 8000 T/month
4	SRI NIDHI BLUE METALS	jelly blue metals - 27T/day
5	V.P.R BLUE METALS	Blue metal jelly - 650T/M
6	EXCEL BLUE METAL INDUSTRIALS	blue metal - 72T/Day
7	SRI YOGALAKSHMI BLUE METAL	strone jelly biue metals - 300T/M
8	SHARP BLUE METAL INDUSTRIES	blue metals 40 mm - 0.825T/day 20 mm - 2.2 T/day 12 mm- 0.55T/day 6 mm/ 0.825T/day
9	SRI BALAJI BLUE METALS WORKS	broken jelly - 32T/day
10	THIRU ANNAMALAIYAR BLUE METALS	blue metal jelly of size 40mm,20mm,12mm,6mm. - 500T/M
11	GEMINI BLUE METALS	jelly - 32T/M
12	N.R.BLUE METALS	Blue metal jelley - 75T/day
13	KASTHURI BLUE METALS	Bule Metal Jelly - 480T/Month
14	NATARAJAN BLUE METALS	Bule Metal Jelly - 470T/Month
15	SRI AYYAPPAN BLUE METALS	Blue Metal Jelly 20mm,12mm - 750Tone/month
16	SRI VENKATESWARA BLUE METAL WORKS	Crushing of rough boulders to 300mm size - 750 T/M
17	SRI VENKATESHWARA BLUE METAL AND CO	Blue metal jelly - 45T/day
18	S AND S BLUE METALS	BLUE METAL JELLY OF 150MM 40MM 20MM 12MM AND 6MM - 7200 T/M
19	S K S Blue Metals	Blue Metal jelly of sizes - 500MT/Month Stone dust - 100MT/Month
20	M/S S K S R BLUE METALS	Blue metal jelly - 600MT/Month Stone Dust - 100 MT/Month
21	AMS BLUE METAL	Blue metal jelly of various sizes - 800MT/Day M Sand and P Sand - 650MT/Day
	31. District: VELLORE	
1	SUN MINERALS	Blue Metal Jelly Various Sizes from 100mm to 6mm s - 80350MT/Day M Sand - 230 MT/Day P Sand- 150 MT/Day
2	DP JAIN AND CO INFRASTRUCTURE PVT LTD	VARIUOS SIZE OF AGREEGATES - 2400TONS/DAY STONE DUST - 600TONS/DAY
3	ELAN ENGINEERING AND CONTRACTORS UNIT-I	Blue Metal Jelly Various Sizes from 100mm to 6mm s - 1000MT/Day M Sand - 3000MT/Day P sand- 950MT/Day
4	SHARANYA BLUE METALS	Blue Metal Jelly - 275T/Month
5	SRI KRISHNA BLUE METALS	Bule Metal Jelly - 1240T/M
6	ADINARAYANA BLUE METALS	Bule Metal Jelly - 550T/Month
7	VENKATESWARA GRANITES	Blue Metal - 550T/Month
8	SHANTHI BLUE METALS	Blue Metal jelly - 720T/Month

9	PITCHANDI BLUE METALS UNIT - I	Blue Metal Jelly - 4500T/Month
10	PICHAYANDI BLUE METALS UNIT - II	Blue Metal Jelly - 720T/Month
11	V.R.K. BLUE METALS	Blue metal Jelly - 640T/Month
12	V.M.N. BLUE METALS	Blue Metal Jelly - 650T/M
13	MARUTHI BLUE METALS	Bule Metal Jelly - 650T/Month
14	VENKATESWARA BLUE METALS	Blue Metal Jelly - 700T/Month
15	M.R.S.BLUE METALS	Bule Metal Jelly - 700T/Month
16	VIJAY BLUE METALS	Blue Metal Jelly - 700T/Month
17	MAMITHA BLUE METALS	Blue Metal Jelly - 650T/Month
18	SRI BALARAM BLUE METALS	Blue Metal Jelly - 650T/Month
19	NIRMALA BLUE METALS	Blue Metal Jelly - 650T/M
20	KOTESWARAN BLUE METALS	Blue Metal Jelly - 650T/Month
21	KALAISELVI BLUE METALS	Blue Metal Jelly - 650T/Month
22	SIVAJI BLUE METALS	Blue metal Jelly - 550T/Month
23	SAKTHI BLUE METALS	Blue metal Jelly - 500T/Month
24	RAJENDIRA BLUE METALS	Blue Metal Jelly - 650T/Month
25	ADINARAYANAN AGGREGATES	Blue Metal Jelly - 3450MT/Month M-Sand - 400 MT/Month
26	SAKTHIVEL BLUE METALS	BLUE METAL JELLY - 1300T/M
27	D.K.BLUE METALS	Blue Metal Jelly - 650T/Month
28	SRI GANESAR BLUE METALS UNIT-I	Blue Metal Jelly - 1200T/Month
29	KARUNA BLUE METALS	Bule Metal Jelly - 650T/Month
30	SRI SUBRAMANIYA BLUE METALS	Bule Metal Jelly - 700T/Month
31	SARASWATHI BLUE METALS	Blue Metal Jelly - 750T/Month
32	V.P. BLUE METALS	Blue Metal Jelly - 650T/Month
33	R.S.A. BLUE METALS	Bule Metal Jelly - 650T/Month
34	DHANALAKSHMI BLUE METALS	Bule Metal Jelly - 650T/Month
35	SRI VARSHUN BLUE METALS	Bule Metal Jelly - 650T/Month
36	BALAJI BLUE METALS	Bule Metal Jelly - 25T/day
37	SATHIYA BLUE METALS	Bule Metal Jelly - 650T/Month
38	R.G.S. BLUE METALS	Bule Metal Jelly - 650T/Month
39	SUDHA BLUE METALS	Bule Metal Jelly - 650T/M
40	PRABHU BLUE METALS	Bule Metal Jelly - 700T/Month
41	SUJATHA BLUE METALS	Bule Metal Jelly - 650T/Month
42	V.S. BLUE METALS	Bule Metal Jelly - 650T/Month
43	KANCHANA BLUE METALS	Bule Metal Jelly - 650T/Month
44	SATHIYA BLUE METALS APL	Bule Metal Jelly - 650T/Month
45	PRAKASAM BLUE METALS UNIT - I	Bule Metal Jelly - 650T/Month
46	MANI BLUE METALS	Boarding and Lodging A C Room - 650T/Month
47	V.K.R. BLUE METALS	Bule Metal Jelly - 600T/Month
48	GOPI BLUE METALS	Bule Metal Jelly - 650T/Month
49	BHARANI BLUE METALS	Bule Metal Jelly - 650T/Month
50	SRI LAKSHMI BLUE METAL UNIT I	Blue Metal Jelly - 650T/Month
51	SRI DEVI BLUE METALS	Bule Metal Jelly - 650T/Month
52	SIVA BLUE METALS	Bule Metal Jelly - 750T/Month

53	OM SAKTHI BLUE METALS	Bule Metal Jelly - 650T/Month
54	IYYAPPA BLUE METALS	Bule Metal Jelly - 750 T/Month
55	TAMILARASI BLUE METALS	Blue Metal Jelly - 650T/M
56	DEVENDRA BLUE METALS	Bule Metal Jelly - 650T/Month
57	C.N.P. BLUE METALS	Bule Metal Jelly - 1615T/Month
58	SUN MINERALS	Various Sizes of Blue Metal Jelly - 350MT/day M-Sand - 230 MT/day P-Sand- 150 MT/day
59	R.R.BLUE METALS	Blue Metal Jelly - 650Mt/Month
60	B.S.M.INFRA PVT LTD	Various Sizes of blue metal jelly - 4000T/Month Stone dust - 1000 T/Month
61	AKS BLUE METALS DHANA BLUE MATELS	Blue Metal Jelly 6 mm - 5000MT/Y Blue Metal Jelly 12 mm - 2500 MT/Y Blue Metal Jelly 20 mm- 2500 MT/Y
62	AMMAN BLUE METALS	Blue metal jelly - 650T/M
63	SRI ABARAJITHA BLUE METALS	Blue metal jelly - 750T/M
64	BAVYA BLUE METALS	Bule Metal Jelly - 700T/Monrh
65	PALANI BLUE METALS	Bule Metal Jelly - 700T/Month
66	RAJAM BLUE METALS	Bule Metal Jelly - 650T/Month
67	KUMAR BLUE METALS	Bule Metal Jelly - 700T/Month
68	ARAVIND BLUE METALS	Bule Metal Jelly - 450T/Month
69	DEVI BLUE METALS	Blue metal jelly - 650MT/M
70	ELUMALAI BLUE METALS	Bule Metal Jelly - 650T/Month
71	GEM BLUE METALS	Bule Metal Jelly - 750T/Month
72	FIVE STAR STONE CRUSHING INDUSTRIES	Stone jelly various size - 370T/M
73	SUN BLUES - III	Blue metal jelly - 650T/M
74	Shri Krishna Blue Metal	Stone jelly various size - 300T/M
75	BANNARI CRUSHERS	blue metal jelly - 4000T/M
76	PARTHIBAN STONE CRUSHER	Bule Metal Jelly - 650T/Month
77	SARAVANA BLUE METALS	Bule Metal Jelly - 450T/Month
78	V.P.R. BLUE METALS	Bule Metal Jelly 20 mm,12 mm,6 mm - 990T/M
79	SRI VENKATESWARA BLUE METALS	Blue Metal Jelly 6 mm , 12 mm , 20 mm - 650T/M
80	SRI BALAJI BLUE METALS	Bule Metal Jelly - 990T/M
81	S.R.BLUE METALS	Bule Metal Jelly - 815T/Month
82	S.R.BLUE METALS	Bule Metal Jelly - 300T/Month M SAND - 350 T/M
83	S.R.T BLUE METALS	Blue Metal Jelly 40mm,20mm,12mm - 650T/M
84	SRI RAMAKRISHNA BLUE METALS	Bule Metal Jelly 20 mm - 490T/M
85	SRI RAM BLUE METALS	Bule Metal Jelly 20 mm - 650 T/Month
86	SHALIMAR BLUE METALS	Bule Metal Jelly - 650 T/Month
87	ARUL JOTHI BLUE METALS	Bule Metal Jelly - 650 T/Month
88	DURAI BLUE METALS	Bule Metal Jelly - 200T/Month
89	RAMESH BLUE METALS	Bule Metal Jelly - 750T/Month
90	SARASWATHI BLUE METALS	Blue Metal jelly - 700T/Month
91	SUDARSAN BLUE METALS	Bule Metal Jelly - 650T/M
92	JOTHI LAKSHMI GRANITES	Blue Metal jelly - 650T/M
93	V.P.L.BLUE METALS	Bule Metal Jelly - 700T/M
94	K.J.R BLUE METAL	Blue Metal - 550Mt/Month
95	SRI SRINIVASA BLUE METALS	Bule Metal Jelly - 650T/M

96	KUPPAMMAL BLUE METALS	Bule Metal Jelly - 700T/M
97	RAMAN BLUE METAL STONE	Bule Metal stone - 1200T/M
98	A P L BLUE METALS PERUMAL GRANITE	Blue Metal Jelly - 650T/Month
99	TR PURUSHOTHAMAN BLUE METALS	Bule Metal Jelly - 650T/M
100	TAMIL KRISHNA BLUE METALS	Bule Metal Jelly - 650MT/M
101	AP BLUE METALS	Bule Metal Jelly 20 mm - 650MT/M
102	KUMARAN BLUE METALS	Blue metal jelly - 36t/day
103	LASCKER BLUE METALS	Blue metal jelly of various sizes - 900T/M
104	VINAYAGA BLUE METALS	blue metal jelly - 650T/M
105	P M S BLUE METALS	blue metal jelly - 468MT/M
106	JAYANTHI BLUE METALS	Blue Metal Jelly - 940T/M
107	KALAI BLUE METALS	Blue Metal Jelly - 700T/M
108	A S R BLUE METALS	Blue Metal Jelly - 750T/Month
109	A MANI BLUE METALS	Blue Metal Jelly - 700T/Month
110	SARASWATHI BLUE METALS	Blue Metal Jelly - 10T/day
111	D DEVENDIRAN BLUE METALS	Blue Metal Jelly - 750T/M
112	MAHALAKSHMI BLUE METALS	Blue Metal Jelly - 550T/Month
113	A O A BLUE METALS INDIA P LTD	Blue Metal Jelly - 1400MT/M
114	INDIAN GRANITES MURUGAN BLUE METALS	Blue Metal Jelly - 650T/Month
115	K P BLUE METALS	Blue Metal Jelly - 2000T/M
116	RAYMIX CONCRETE INDIA PVT LTD	Blue Metal Jelly 6mm,12mm,20mm - 9000T/M Stone Dust - 3000 T/M
117	K.V.R.BLUE METALS	BlueMetal Jelly - 680T/Month
118	MANGALAM BLUE METALS	Blue Metal Jelly - 1500MT/M
119	GOPI BLUE METALS	Blue Metal Jelly (40 mm, 20mm,12mm) - 600MT/Month M- Sand - 800MT/MONTH
120	SUBIKSHA BLUE METALS	Blue Metal Jelly - 1100MT/M
121	P.V.R. BLUE METALS	BlueMetal Jelly - 1450MT/Month
122	P V S BLUE METALS	Blue Metal Jelly - 1450MT/Month
123	KVC BLUE METALS	Blue Metal Jelly - 900MT/Month
124	V P M BLUE METALS	Blue Metal Jelly - 1200T/Month
125	SRI PONNIAMMAN BLUE METALS	Blue Metal Jelly - 1300T/Month
126	PICHANDI BLUE METALS UNIT III	Blue Metal Jelly - 1500MT/Month
127	SUN BLUES	Blue Metal Jelly - 2000T/M Stone Dust - 100T/M
128	PADMA BLUE METALS	Blue Metal Jelly - 1100T/Month
129	KAUSALYA BLUE METALS	Blue Metal Jelly - 1900T/M
130	MADHAVAN BLUE METALS	Blue metal of size 20mm 12mm 6mm - 1450MT/Month
131	SUN BLUES-II	Blue Metals 20,12,6 mm - 65000T/M M-sand - 35000 T/M
132	PARASAKTHI BLUE METALS	Blue Metal - 650T/M
133	DEVENDIRAN BLUE METAL UNIT II	Blue metal jelly - 1450MT/M
134	SRI KB BLUE METALS	Various Size of Blue Metal (Jelly) - 1200T/Month M Sand & P Sand - 1750 T/M Stone Dust- 50 T/M
135	SRI MUTHUVINAYAKA CRUSHERS	Blue metal Jelly Varuiys Sizes - 600MT/dat
136	THIRUMURUGAVEL BLUE METALS	BLUE METAL JELLY - 650T/Month
137	SUN BLUES M SAND UNIT	M Sand - 3000T/D P Sand - 1000T/D Stone dust Residue- 199T/D

138	VISHAL BLUE METALS	Blue Metal Jelly - 1450MT/M
139	DHANA BLUE METALS	Blue Metal Jelly - 200T/M M Sand - 1150T/M Crushed Stone Sand (P Sand)- 100 T/M Stone Dust/ 50 T/M
140	ARGUNT AGGREGATES PRIVATE LIMITED	Blue Metal Jelly - 1400MT/M M Sand & P Sand - 1000 MT/M
141	A AND A BLUE METALS MINERALS BLOCKS	Sand - 320T/D Fine Sand - 320T/D Rough Sand- 320T/D
142	JKS FOUNDATIONS PVT LTD	Various size of Blue Metal Jelly - 2000 T/M M Sand - 1500 T/M Crushed Stone Sand (P Sand)- 500 T/M Stone Dust/ 1000 T/M
143	A AND A BLUE METALS MINERANS AND BLOCKS	Blue Metal Segregates - 700MT/M
144	ASO ARCHITECTURAL PRODUCTS INDIA P LTD	Blue Metal - 700T/M M Sand - 350T/M Fine Sand- 350T/M
145	S.R.BLUE METALS	Blue Metal Aggregates of sizes 40mm 20mm and 6mm - 22000 T/month
146	JCS ENTERPRIESES	Various Sizes of blue metal 40,30,20,10mm - 4000 T/M
147	BRISTOL INDUSTRIES LTD	Blue Metal Jelly 40mm,20mm,12mm,6mm - 24000 T/M
148	TRRANSGRANTTES	BLUE METAL JELLY 40MM,20MM,12MM AND 6 MM - 850MT/D
149	GOWTHAM BLUE METAL	Various Sizes of Blue Metal Jelly - 350T/Day M-Sand - 230 T/Day P Sand- 150 T/Day
	32. District: VILLUPURAM	
1	PERIYAMUTHUMARIAMMAN BLUE METALS	Blue metal jelly - 450T/D Stone Dust - 50T/D
2	SRI SELVA VINAYAGAR BLUE METALS	Blue metal jelly - 200T/Day Stone Dust - 20T/Day
3	SRI AMMACHAR AMMAN BLUE METALS	Blue Metal Jelly - 1100Tons/Day Stone Dust - 100 Tons/Day
4	R K M BLUE METALS	Blue Metal Jelly of sizes - 480T/Day Stone Dust - 20T/Day
5	OM SAKTHI BLUE METALS	Blue Metal Jelly of sizes - 1900T/Day Sand dust - 100T/Day
6	SIVA JOTHI BLUE METALS	Blue Metal Jelly of sizes - 450T/Day
7	T.P.R. BLUE METALS	Blue Metal Jelly of sizes - 720T/Day
8	IYYANARAPPAN BLUE METALS	Blue Metal Jelly of Sizes - 450T/day
9	SREE THIRUCHENTHUR MURUGAN BLUE METALS	Blue Metal Jelly - 36T/Day Stone Dust - 4T/Day
10	SRI KARPAGA VINAYAGAR BLUE METALS	Blue Metal jelly of size - 80Tons/Month Stone Dust - 10Tons/Month
11	K K B BLUE METALS & M SAND	Blue Metal Jelly of sizes - 530T/Day
12	TRICHYTOLLWAY PVT LTD	COARSE AGGREGATE - 1350T/D CRUSHER DUST - 150T/D
13	TRICHY TOLLWAY PVT LTD	COARSE AGGREGATE - 1810T/D CRUSHER DUST - 200T/D
14	RAJ BLUE METALS	BLUE METAL JELLY - 720T/M
15	A V S BLUEMETALS	BLUE METAL JELLY - 25T/D
16	ALLAVIN THUNAI BLUE METALS	Blue Metal Jelly 20MM - 200MT/Month Blue Metal Jelly 12MM - 150MT/Month Blue Metal Jelly 6MM- 150 MT/Month
17	JEYAPRADHA BLUE METALS	BLUE METAL JELLY - 25T/D
18	KRISHNA BLUE METALS	STONE JELLY - 368T/M
19	SUPER BLUE METALS	STONE JELLY - 400T/M
20	STAR BLUE METALS	STONE JELLY 3/4, 1/2, 1/4 - 400T/M
21	SRI PACHAI VAZHIYAMMAN BLUE METALS	STONE JELLY 3/4, 1/2, 1/4 - 320T/M

22	LAKSHMI BLUE METALS	Stone Jelly 1/4, 1/2, 3/4 - 480T/Month
23	VEENUS BLUE METALS	STONE JELLY 3/4, 1/2, 1/4 - 350T/M
24	SRI ADHINATH BLUE METAL INDUSTRIES	BLUE METAL JELLY - 800T/M STONE DUST - 100T/M
25	NATIONAL BLUE METAL	STONE JELLY - 640T/M POWDER - 160T/M
26	SRI ANGALAPARAMESWARI BLUE METALS	STONE JELLY - 800T/M CHIPS - 296T/M
27	BANU BLUE METALS WORKS	STONE JELLY - 675T/M
28	SIRANJEEVI D.K.S BLUE METALS	STONE JELLY - 500T/M
29	BOOPAL BLUE METALS	Stone Jelly of 3/4 Size - 375T/Month Stone Jelly of 1/2 Size - 93.75T/Month Stone Jelly of 1/4 Size- 62.5 T/Month Stone Dust/ 93.75 T/Month
30	USHA BLUE METALS	BLUE METAL JELLY - 36T/D
31	AJS BLUE METALS	STONE JELLY - 400T/M
32	N S K BLUE METALS	STONE JELLY - 400T/M
33	SRI AMMAN BLUE METALS	STONE JELLY - 45T/D
34	SAILAJA BLUE METALS	3/4" Jelly - 350T/Month 1/2" Jelly - 250T/Month 1/4" Jelly- 120 T/Month Stone Powder/ 180 T/Month
35	E R E BLUEMETALS	STONE JELLY (3/4 "SIZE) - 500T/Month STONE JELLY (1/2"SIZE) - 250 T/Month STONE JELLY (1/4"SIZE)- 150 T/Month
36	V G BLUE METALS	STONE JELLY - 480T/M STONE DUST - 120T/M
37	PRABU BLUE METALS	STONE JELLY - 480T/M STONE DUST - 120T/M
38	PRIYA BLUE METALS	STONE JELLY 3/4, 1/2, 1/4 - 480T/M
39	G THENMOZHI BLUE METALS	STONE JELLY - 400T/M
40	RAJKUMAR BLUE METALS	STONE JELLY - 640T/M
41	KANNAN BLUE METALS	Blue Metal Jelly in Various Size & M Sand - 270T/D
42	CRN BLUE METALS	BLUE METAL JELLY - 36T/D
43	T S P BLUE METALS	BLUE METAL JELLY - 36T/D
44	GPS BLUE METALS	Jelly (3/4, 1/2) - 750T/M
45	ANNA POORANI BLUE METALS	BLUE METAL JELLY - 600T/M
46	SANJEEVI BLUE METALS	STONE JELLY - 340T/M STONE DUST - 80T/M
47	SRI AMMAN BLUE METAL WORKS	Blue Metal Jelly of various sizes, GSB, wet Mix - 600T/Day M-Sand & P-Sand - 500 T/Day
48	T P M BLUE METALS	BLUE METAL JELLY - 36T/D
49	E B K BLUE METALS	BLUE METAL JELLY - 110T/M
50	MATHI BLUE METAS	BLUE METAL JELLY - 36T/D
51	MURALI BLUEMETALS	BLUE METAL JELLY - 36T/DAY
52	UMA BHARATHI BLUE METALS	BLUE METAL JELLY - 36T/DAY
53	S S V BLUE METALS	BLUE METAL JELLY (6 To 100mm) - 36T/D STONE DUST - 4 T/D
54	OM SAKTHI BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST - 4 T/DAY
55	ATHINATH BLUE METALS	BLUE METAL JELLY - 40T/DAY STONE DUST AND CHIPS - 5T/DAY
56	ORIENTAL STRUCTURAL ENGINEERS P LTD	STONE JELLY - 1300T/D STONE DUST - 200T/D
57	SIVASAKTHI BLUE METALS	BLUE METAL JELLY - 750T/M STONE DUST AND CHIPS - 150T/M
58	SRI RAMAJEYAM BLUE METALS	STONE JELLY - 210MT/M
59	OM NAMACHIVAYA BLUE METALS	BLUE METAL JELLY - 600T/M
60	HUSSAIN BLUE METALS	STONE JELLY - 300T/M STONE CHIPS - 100T/M

61	BHARATH BLUE METALS	Blue Metal Jelly - 750T/MONTH Stone Dust - 250 T/MONTH
62	SOUNDRAVALLI BLUE METALS	STONE JELLY - 400T/M
63	MURUGAN BLUE METALS	STONE JELLY - 900T/M
64	VIJAYALAKSHMI BLUE METALS	BLUE METAL JELLY - 20T/D
65	SRI BALAJI BLUE METALS	BLUE METAL JELLY - 20T/DAY
66	LAKSHMI BLUE METALS	BLUE METAL JELLY - 36T/DAY
67	DEEPA BLUE METALS	BLUE METAL JELLY - 32T/M
68	SRI MUTHUMARIAMMAN BLUE METALS	BLUE METAL JELLY - 36T/DAY
69	SRI THIRUMURUGAN BLUE METALS	BLUE METAL JELLY - 36T/DAY
70	P.S.R BLUE METALS	Blue Metal Jelly of various Sizes - 100T/M
71	MOHAMADIA BLUE METALS	BLUE METAL JELLY - 24T/M
72	VIDYA BLUE METALS	STONE JELLY - 1000T/M
73	ASTALAKSHMI BLUE METALS	BLUE METAL JELLY - 900T/M
74	DEVENDRA BLUE METALS	STONE JELLY - 750T/M
75	SRI HARI GOVINDA BLUE METALS	STONE JELLY - 180T/M
76	MANIMEGALAI BLUE METALS	STONE JELLY - 1200T/M
77	SRI RAM BLUE METALS	Blue Metal Jelly - 200Tons/Month M Sand - 547 Tons/Mont
78	GEMINI BLUE METALS	STONE JELLY - 250T/M
79	SHANTHI BLUE METALS	Jelly 1/4 - 35Units/M Jelly 1/2 - 30 Units/M Jelly 3/4- 45 Units/M
80	SMC BLUE METALS	STONE JELLY - 675T/M
81	SINGARAVELAN BLUE METALS	CRUSHED JELLY - 500T/M JELLY DUST - 50T/M
82	PRABU BLUE METALS	STONE JELLY - 480T/M STONE DUST - 120T/M
83	ARAVIND BLUE METALS	STONE JELLY - 100UNIT/M
84	SRI VINAYAGA BLUE METALS	STONE JELLY - 750T/M
85	A J KANNAKI BLUE METALS	STONE JELLY - 60UNIT/M
86	J K BLUE METALS	STONE JELLY - 675T/M
87	SRINIVASA BLUE METALS	BLUE METAL JELLY - 600T/M
88	DEEPA BLUE METALS	STONE JELLY - 500T/M
89	DEEPAM BLUE METALS	STONE JELLY - 320T/M
90	K BARANI BLUE METALS	BLUE METAL JELLY - 36T/DAY
91	KAVITHA BLUE METALS	METAL JELLY - 890T/M
92	SARANYA BLUE METALS	STONE JELLY - 400T/M
93	SRI BALAJI BLUE METALS	BLUE METAL JELLY - 450T/MONTH STONE DUST - 60 T/MONTH
94	AMUDHA BLUE METALS	BLUE METAL JELLY - 36T/Day
95	SHANMUGHA BLUE METALS	BLUE METAL JELLY - 24T/DAY
96	SAKTHI BLUE METALS	STONE JELLY - 400T/M STONE DUST - 100T/M
97	R G AND SONS BLUE METALS	BLUE METAL JELLY - 36T/D
98	SIVASAKTHI BLUE METALS	STONE JELLY - 38T/M STONE DUST - 7T/M
99	N S R BLUE METALS	BLUE METAL JELLY - 890T/M
100	SRI AMMAN BLUE METALS	Stone Jelly of 3/4 Jelly - 450 T/M Stone Jelly of 1/2 Jelly - 350 T/M Chips- 296 T/M
101	JAHIR HUSSAIN BLUE METALS	STONE JELLY - 300T/M STONE CHIPS - 100T/M
102	PANDIYAN BLUE METALS	STONE JELLY - 350T/M STONE CHIPS - 90T/M

103	MADHURAM BLUE METALS	BLUE METAL JELLY - 660T/M
104	MALINI BLUE METALS	BLUE METAL JELLY - 1096T/M
105	SIVASAKTHI BLUE METALS	STONE JELLY - 390T/M
106	SRI KRISHNA BLUE METALS	STONE JELLY - 800T/M
107	ANNAMALAIYAR BLUE METALS	Blue Metal Jelly - 675T/M Stone Dust - 25T/M
108	ALAYAM BLUE METALS	STONE JELLY - 375T/M
109	SRI LAKSHMI BLUE METALS	STONE JELLY - 480T/M STONE DUST - 120T/M
110	SHANMUGHA BLUE METALS	STONE JELLY - 26T/DAY STONE DUST AND CHIPS - 4T/DAY
111	KUMAR BLUE METALS	Stone Jelly of 3/4 Size - 375T/Month Stone Jelly of 1/2 Size - 93.75T/Month Stone Jelly of 1/4 Size- 62.5 T/Month Stone Dust/ 93.75 T/Month
112	NANDAKUMAR BLUE METALS	Blue Metal Jelly - 36T/Day
113	M S R BLUE METALS	BLUE METAL JELLY - 35T/D STONE DUST - 5T/D
114	TAMILNADU BLUE METALS	BLUE METAL JELLY - 36T/D
115	BISMIHI KALLAI BLUE METALS	BLUE METAL JELLY - 180T/M.
116	SRI LAKSHMI BLUE METALS	BLUE METAL JELLY - 16T/DAY
117	FIVE STAR BLUE METALS	BLUE METAL JELLY - 27T/DAY
118	RENUKADEVI BLUE METALS	BLUE METAL JELLY - 54T/DAY
119	DRG BLUE METALS	STONE JELLY - 531T/M STONE DUST - 94T/M
120	TAMIL ARUVI BLUE METALS	STONE JELLY 3/4", 1/2", 1/4" - 350T/M
121	SRINIVASA BLUE METALS	STONE JELLY - 320T/M
122	SRI VENKATESWARA BLUE METAS	BLUE METAL JELLY - 40T/DAY STONE DUST AND CHIPS - 4T/DAY
123	SRI GANESH BLUE METALS	BLUE METAL JELLY - 36T/DAY
124	SRI VENKATESWARA BLUE METALS	STONE JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
125	GANAPATHY BLUE METALS	BLUE METAL JELLY - 640T/M
126	PUSHPA BLUE METALS	BLUE METAL JELLY - 890T/M
127	GANESAN BLUE METALS	STONE JELLY - 30T/DAY STONE DUST - 5T/DAY
128	SRI MURUGAN BLUE METALS	STONE JELLY - 675T/M
129	LOGENDRA BLUE METALS	BLUE METAL JELLY - 890T/M
130	BAVITHRA BLUE METALS	STONE JELLY - 400T/M STONE DUST - 150T/M
131	SRI BALAJI BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST - 4 T/DAY
132	JEYASAKTHI BLUE METALS	BLUE METAL JELLY - 36T/D BLUE METAL DUST - 4T/D
133	SRI MUTHALAMMAN BLUE METALS	Blue Metal Jelly - 27T/DAY Stone Dust & Chips - 3T/DAY
134	ARM BLUE METALS	STONE JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
135	P A S BLUE METALS	STONE JELLY - 30T/DAY STONE DUST AND CHIPS - 5T/DAY
136	SINGARAVELAN BLUE METALS	STONE JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
137	MARUVUR ARASI BLUE METALS	STONE JELLY - 27T/DAY STONE DUST AND CHIPS - 3T/DAY
138	VISHWAA BLUE METALS	STONE JELLY - 90T/DAY STONE DUST AND CHIPS - 10T/DAY
139	DHANALAKSHMI BLUE METALS	STONE JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
140	V K S BLUE METALS	BLUE METAZL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY

141	PACHAIVAZHIAMMAN BLUE METALS	STONE JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
142	JNA BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST AND CHIPS - 5T/DAY
143	SRI BHAARATH MINES	BLUE METAL JELLY - 67.5T/DAY STONE DUST - 7.5T/DAY
144	SURYA BLUE METALS	STONE JELLY - 30T/DAY STONE DUST AND CHIPS - 5T/DAY
145	KALIKAMBAL BLUE METALS	BLUE METAL JELLY - 37T/DAY STONE DUST AND CHIPS - 3T/DAY
146	PRITHIYANGARADEVI BLUE METALS	STONE JELLY - 27T/DAY STONE DUST AND CHIPS - 3T/DAY
147	MASIKA BLUE METALS	BLUE METAL JELLY - 27T/DAY STONE DUST AND CHIPS - 3T/DAY
148	JAI BLUE METALS	STONE JELLY - 27T/DAY STONE DUST AND CHIPS - 3T/DAY
149	MOHAN BLUE METALS	STONE JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
150	SRI RAGAVENDRA BLUE METALS	STONE JELLY - 400T/M STONE DUST AND CHIPS - 100T/M
151	MGN BLUE METALS	BLUE METAL JELLY - 36T/DAY BLUE METAL DUST - 4T/DAY
152	REETHIKA BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
153	SRI KUMARAN BLUE METALS	BLUE METAL JELLY - 30T/DAY STONE DUST AND CHIPS - 3T/DAY
154	SARANYA BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST AND CHIPS - 5T/DAY
155	ASK M SAND(BLUE METALS UNIT)	BLUE METAL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
156	VINAYAGA BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
157	VETRIVEL BLUE METALS	BLUE METAL JELLY - 45T/M STONE DUST AND CHIPS - 5T/M
158	S S K BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
159	SAI BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
160	SURABI BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST CHIPS - 4T/DAY
161	VIGNESH BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
162	DHANALAKSHMI BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST AND CHIPS - 5T/DAY
163	SRI ABIRAMI BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
164	TRICHY TOLLWAY PVT LTD CRUSHER PLANT II	STONE JELLY - 1800T/DAY CRUSHER DUST - 200T/DAY

165	BABY BLUE METALS	BLUE METAL JELLY - 36T/D STONE DUST AND CHIPS - 4T/DAY
166	JEEVALAKSHMI BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE POWDER - 4T/DAY
167	S R BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST - 4T/DAY
168	LAKSHMI PRASANNA BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
169	VENKATESWARA BLUE METALS	BLUE METAL JELLY - 46T/DAY STONE DUST AND CHIPS - 4T/DAY
170	AYYANARAPPAN BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
171	SRI MURUGAN BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST AND CHIPS - 5T/DAY
172	A B M ARUNA BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST AND CHIPS - 5T/DAY
173	SUBAM BLUE METALS	BLUE METAL JELLY - 45T/DAY STONE DUST AND CHIPS - 5T/DAY
174	ANNAI BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
175	SRI VENKATACHALAPATHY BLUE METALS	BLUE METAL JELLY - 45T/DAY STONE DUST - 5T/DAY
176	K P K BLUE METALS	BLUE METAL JELLY - 46T/DAY STONE DUST AND CHIPS - 4T/DAY
177	ANNAPOORANI CONSTRUCTION	BLUE METAL JELLY - 180T/DAY STONE DUST AND CHIPS - 20T/DAY
178	SRI DURGA BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
179	SANJEEVI BLUE METALS	BLUE METAL JELLY - 90T/DAY STONE DUST AND CHIPS - 10T/DAY
180	ANNAMALAYAR BLUE METALS	BLUE METAL JELLY - 23T/DAY STONE DUST AND CHIPS - 2T/DAY
181	SRI BALAMURUGAN BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 5T/DAY
182	JAI BLUE METALS	BLUE METAL JELLY - 23T/DAY STONE DUST - 2T/DAY
183	A R K BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST AND CHIPS - 5T/DAY
184	RANGANATHA BLUE METALS	BLUE METAL JELLY - 45T/DAY STONE DUST - 5T/DAY
185	SUSILA BLUE METALS	BLUE METAL JELLY - 70T/DAY STONE DUST - 10T/DAY
186	RENUKA DEVI BLUE METALS	BLUE METAL JELLY - 80T/DAY STONE DUST - 10T/DAY
187	BALAJI BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 5T/DAY
188	SAKTHI BALAJI BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY

189	OM SAKTHEESWARI BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST AND CHIPS - 4T/DAY
190	RANI BLUE METALS	BLUE METAL JELLY - 70T/DAY STONE DUST - 10T/DAY
191	SENTHIL MURUGAN BLUE METALS	BLUE METAL JELLY - 70T/DAY STONE DUST - 10T/DAY
192	PDR MINES	BLUE METAL JELLY - 50T/DAY STONE DUST - 10T/DAY
193	MYTAS INFRA LTD CRUSHER PLANT I	DIFFERENT SIZES OF BLUE METALS - 150T/DAY STONE DUST - 20T/DAY
194	MYTAS INFRA LTD CRUSHER UNIT II	DIFFERENT SIZES OF BLUE METALS - 150T/DAY STONE DUST - 20T/DAY
195	KRISHNA BLUE METALS	BLUE METAL JELLY - 30T/DAY
196	SHRI KRISHNA BLUE METALS	BLUE METAL JELLY - 50T/DAY STONE DUST - 10T/DAY
197	DEEPAM BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST - 4T/DAY
198	SARAVANA BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 5T/DAY
199	OM SAKTHI BLUE METALS	BLUE METAL JELLY - 70T/DAY STONE DUST - 10T/DAY
200	JEEVA BLUE METALS	BLUE METAL JELLY - 70T/DAY STONE DUST - 10T/DAY
201	MARIAPPAN BLUE METALS	BLUE METAL JELLY - 30T/DAY STONE DUST - 5T/DAY
202	SRI MUNEESWARAN BLUE METALS	BLUE METAL JELLY - 70T/DAY STONE DUST - 10T/DAY
203	SRI AYYANAR BLUE METALS	BLUE METAL JELLY - 80T/DAY STONE DUST - 10T/DAY
204	SRI VENKATACHALAPATHY BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 5T/DAY
205	R.S.K BLUE METALS	BLUE METAL JELLY - 300T/DAY STONE DUST - 50T/DAY
206	ANNAI SAGUNTHALA BLUE METALS	BLUE METAL JELLY - 60T/DAY STONE DUST - 5T/DAY
207	MUTHULAKSHMI BLUE METALS	BLUE METAL JELLY - 36T/DAY
208	ORIENTAL STRUCTURAL ENGINEERS PRIVATE LT	BLUE METAL JELLY - 1300T/DAY STONE DUST - 200T/DAY
209	NAVEEN BLUE METALS	BLUE METAL JELLY - 50T/DAY STONE DUST - 10T/DAY
210	AEM BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 5T/DAY
211	ORIENTAL STRUCTURAL ENGINEERS PRIVATE LT	BLUE METAL JELLY - 1700T/DAY STONE DUST - 300T/DAY
212	SIVA BLUE METALS	BLUE METAL JELLY - 45T/DAY STONE DUST - 5T/DAY
213	SRI PACHIAMMAN BLUE METALS	BLUE METAL JELLY - 60T/DAY STONE DUST - 6T/DAY
214	K.P.S.BLUE METALS	BLUE METAL JELLY - 175T/DAY STONE DUST - 25T/DAY
215	S R BLUE METALS	BLUE METAL JELLY - 36T/DAY STONE DUST - 4T/DAY
216	OM SAKTHI BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 5T/DAY
217	MARUTHI BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 5T/DAY
218	OM MURUGA BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 5T/DAY

219	SRI ANGALAPARAMESWARI BLUE METALS	BLUE METAL JELLY - 70T/DAY STONE DUST - 10T/DAY
220	THULASI BLUE METALS	BLUE METAL JELLY - 22T/DAY STONE DUST - 3T/DAY
221	EVERSMILE ENTERPRISES LTD	BLUE METAL JELLY - 90T/DAY STONE DUST - 10T/DAY FLY ASH BRICKS- 5000NOS/DAY HALLOW BLOCKS/ 1000NOS/DAY
222	BISMILLAH BLUE METALS	BLUE METAL JELLY - 400T/M
223	M S R BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 5T/DAY
224	ANGALAPARAMESWARI BLUE METALS	BLUE METAL JELLY - 60T/DAY STONE DUST - 10T/DAY
225	R S MINES AND MINERALS	BLUE METAL JELLY - 110T/DAY STONE DUST - 10T/DAY
226	VIJAYALAKSHMI BLUE METALS	BLUE METAL JELLY - 890T/M
227	SRI RAJA RAJESWARI BLUE METALS	BLUE METAL JELLY - 890T/M
228	VAISHNAVI BLUE METALS	BLUE METAL JELLY - 25T/DAY STONE DUST - 5T/DAY
229	GAJALAKSHMI BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 5T/DAY
230	SAKTHI MURUGAN BLUE METALS	BLUE METAL JELLY - 80T/DAY STONE DUST - 10T/DAY
231	ESWARA RAJA BLUE METALS	BLUE METAL JELLY - 4375T/M STONE DUST - 625T/M
232	OM MURUGA BLUE METALS	BLUE METAL JELLY - 110T/DAY STONE DUST - 10T/DAY
233	ATHIPARASAKTHI BLUE METALS	STONE JELLY - 350T/M
234	KEERTHANA BLUE METALS	STONE JELLY - 40T/M
235	N S RAJAN BLUE METALS	BLUE METAL JELLY - 20T/DAY
236	SRI SAKTHI MURUGAN BLUE METALS	STONE JELLY - 3250T/M STONE DUST - 350T/M
237	S.S.K AGENCIES(STONE CRUSHER UNIT)	BLUE METAL JELLY - 60T/DAY STONE DUST - 5T/DAY
238	SRI ATHIBAGAVAN BLUE METALS	BLUE METAL JELLY - 35T/M STONE DUST - 5T/M
239	PERUMAL BLUE METALS	STONE JELLY - 72T/DAY STONE DUST - 8T/DAY
240	SRI RAM TRADERS	BLUE METAL JELLY - 175T/DAY STONE DUST - 25T/DAY
241	SURYA BLUE METALS	BLUE METAL JELLY - 72T/DAY STONE DUST - 8T/DAY
242	SRI PERIYANDAVAR BLUE METALS	Blue Metal Jelly (6 to 100mm) - 1400Tons/Day STONE DUST - 100Tons/Day
243	N S K BLUE METALS	BLUE METAL JELLY - 72T/DAY STONE DUST - 8T/DAY
244	DHANLAKSHMI ENTERPRISES	BLUE METAL JELLY - 108T/DAY STONE DUST - 12T/DAY
245	M R T BLUE METALS	BLUE METAL JELLY - 76T/DAY STONE DUST - 4T/DAY
246	VIJAY SANKAR BLUE METALS	BLUE METAL JELLY - 76T/M STONE DUST - 4T/M
247	ATHIPARASAKTHI BLUE METALS	BLUE METAL JELLY - 76T/DAY STONE DUST - 4T/DAY
248	NBC BLUE METALS	STONE JELLY - 40T/DAY
249	G T B BLUE METALS	BLUE METAL JELLY - 112T/DAY STONE DUST - 8T/DAY
250	PONRAM BLUE METALS	BLUE METAL JELLY - 100T/DAY STONE DUST - 10T/DAY
251	SUN BLUE METALS	BLUE METAL JELLY - 95T/D STONE DUSTS - 5T/D
252	SARAVANA BLUE METALS	BLUE METAL JELLY - 36T/D BLUE METAL CHIPS - 4T/D

253	AMMAN BLUE METALS	BLUE METAL JELLY - 55T/DAY STONE DUST - 5T/DAY
254	OHM SAKTHI BLUE METALS	BLUE METAL JELLY - 76T/DAY STONE DUST - 4T/DAY
255	ANBU BLUE METALS	BLUE METAL JELLY - 110T/D STONE DUST - 10T/D
256	GUNADHANAM BLUE METALS	BLUE METAL JELLY - 130T/D STONE DUST - 20T/D
257	SRI PACHAIAMMAN BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 5T/DAY
258	OM SAKTHI BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 5T/DAY
259	SIVASAKTHI BLUE METALS	BLUE METAL JELLY - 36T/DAY
260	SUDHAKAR BLUE METALS	BLUE METAL JELLY - 531T/M STONE DUST - 94T/M
261	SAMUNDEESWARI BLUE METALS	BLUE METAL JELLY - 100T/DAY STONE DUST - 10T/DAY
262	AMMAN BLUE METALS	BLUE METAL JELLY - 35T/M STONE DUST - 5T/M
263	THIRU AMMAN BLUE METALS	BLUE METAL JELLY - 140T/DAY STONE DUST - 10T/DAY
264	SRI KUMARAN BLUE METALS	STONE JELLY - 140T/D STONE POWDER - 10T/D
265	EASWARA BLUE METALS	BLUE METAL JELLY - 36T/D STONE DUST - 4T/D
266	PERIYANDAVAR BLUE METALS	BLUE METAL JELLY - 35T/D STONE DUST - 5T/D
267	BALAKRISHNA BLUE METALS	BLUE METAL JELLY - 110T/M STONE DUST - 10T/M
268	SRI THANDU MARIAMMAN BLUE METALS	BLUE METAL JELLY - 100T/D STONE DUST - 10T/D
269	MOHAN RAMAN BLUE METALS	BLUE METAL JELLY - 50T/DAY STONE DUST - 10T/DAY
270	SRI SANTHOSE BLUE METALS	BLUE METAL JELLY - 126T/D
271	MANOJ BLUE METALS	STONE JELLY - 70 T/DAY STONE DUSTS - 10T/DAY
272	G T BLUE METALS	STONE JELLY - 130T/DAY STONE DUST - 20 T/DAY
273	SRI SRINIVASA BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 5T/DAY
274	V M K BLUE METALS	BLUE METAL JELLY - 120T/M STONE DUST - 10T/M
275	SAKTHI BALAJI BLUE METALS	BLUE METAL JELLY - 140T/D STONE DUST - 10T/D
276	RAJESH BLUE METALS	BLUE METAL JELLY - 110T/DAY STONE DUST - 10T/DAY
277	SRI VINAYAGA BLUE METALS	STONE JELLY - 110T/DAY STONE DUST - 10T/DAY
278	SRI MOOGAMBIGAI BLUE METALS	STONE JELLY - 60T/D STONE DUST - 10T/D
279	PADMA PRIYA BLUE METALS	BLUE METAL JELLY - 120T/DAY STONE DUST - 10T/DAY
280	THIRU MURUGAN BLUE METALS	BLUE METAL JELLY - 130T/DAY STONE DUST - 10T/DAY
281	SRI PACHAIVAZHIAMMAN BLUE METALS	BLUE METAL JELLY - 72T/DAY STONE DUST - 8T/DAY
282	UDAYAM BLUE METALS	BLUE METAL JELLY - 35T/DAY STONE DUST - 3T/DAY
283	BHUVANESWARAN BLUE METALS	BLUE METAL JELLY - 73T/DAY STONE DUST - 7T/DAY
284	SRI MURUGAN BLUE METALS	STONE JELLY - 60T/DAY STONE DUST - 5T/DAY
285	R.D.M.G BLUE METALS	BLUE METAL JELLY - 60T/DAY STONE DUST - 10T/DAY
286	SRI VAITHEESWARAN BLUE METALS	BLUE METAL JELLY - 70T/D STONE DUSTS - 10T/DAY
287	G M S BLUE METALS	BLUE METAL JELLY - 60T/DAY STONE DUST - 10T/DAY
288	SELVAVINAYAGAR BLUE METALS	BLUE METAL JELLY - 640T/MNTH STONE DUST - 160T/MNTH

289	P.T.R. BLUE METALS	BLUE METAL JELLY - 60T/DAY STONE DUST - 10T/DAY
290	SRI JEYAMURUGAN BLUE METALS	STONE JELLY - 25T/D STONE DUST - 5T/D
291	B S K BLUE METALS	BLUE METAL JELLY - 35T/M STONE DUST - 5T/M
292	TRANSSTROY INDIA LTD STONE CRUSHER	BLUE METAL JELLY - 6000T/M STONE DUST - 1000T/M
293	SRI AMMA BLUE METALS	STONE JELLY - 30T/DAY STONE DUST - 10T/DAY
294	S.R.BLUE METALS	STONE JELLY - 30T/D STONE DUST - 5T/D
295	CHITRA BLUE METALS	STONE JELLY - 35T/DAY STONE DUST - 5T/DAY
296	T.D.R. BLUE METALS	STONE JELLY - 60 T/DAY STONE DUST - 5
297	MIDHUN BLUE METALS	STONE JELLY - 65 STONE DUST - 5
298	SAI BLUE METALS	Blue Metal Jelly - 30T/DAY Stone Dust - 3T/DAY
299	Senthilmurugan Blue Metals	Blue Metal Jelly - 50T/Day Stone Dust - 5 T/Day
300	N D R Blue Metals	Blue Metal Jelly - 35T/day Stone Dust - 5T/day
301	L and T Limited Constructions	Stone Jelly - 14000T/M Stone Dust - 2000T/M
302	A.R.S.BLUE METALS	20 mm Metal Jelly - 200 T/month 12 mm Metal Jelly - 150 T/month 6 mm Metal Jelly- 150 T/month Stone Dust/ 100T/month
303	Thiru Amman Blue Metals	Blue Metal stone - 200 T/Month Stone dust - 40 T/Month
304	VDB PROJECTS PVT LTD	40 MM JELLY - 300T/DAY 20 MM JELLY - 250T/DAY 12 10 MM JELLY- 150 T/DAY STONE DUST/ 300 T/DAY
305	JSR INFRA DEVELOPERS P.LTD	BLUE METAL JELLY OF VARIOUS SIZES - 15600 CUM/MONTH
306	M K M BLUE METALS	BLUE METAL JELLY - 100T/DAY STONE DUST - 10T/DAY
307	ORIENTAL STRUCTURAL ENGINEERS PVT LTD	Blue metal Jelly of various sizes - 4000T/M
308	SRI BHARATH TRADERS	Jelly - 350TPM Jelly - 250TPM Jelly- 120TPM Stone Powder/ 180TPM
309	A S A BLUE METALS	Blue metal jelly mm - 140T/m blue metal jelly - 360T/M Blue metal Jelly powder- 80T/m Blue metal Jelly Mm/ 100T/M Blue Metal jelly MM- 140T/M
310	DHANAM BLUE METALS AND M SAND UNIT	Blue Metal Jelly - 1500TONS/Day
311	DHANAM BLUE METALS	Blue Metal Jelly - 500TONS/Day
312	SUBIKSHA ENTERPRISES UNIT I (BLUE METAL)	Blue Metal Jelly - 400T/Day Stone Dust - 100T/Day
313	D.A.P BLUE METAL	Blue Metal Jelly - 72T/Day Stone Dust - 8T/Day
314	N.S.K. MINERRALS	Stone Boulders - 55T/Day
315	SRI MUTHAPPAN CRUSHER PLANT	Blue metal jelly of various sizes - 400T/Day
316	SRI MLN PROJECTS	Aggregates of various sizes - 998400MT/ANNUM Dust - 249600 MT/ANNUM
317	SRI BALAJI BLUE METALS UNIT 1	Blue Metal Jelly - 30T/Day Stone Dust - 3T/Day
318	ASK M SAND (STONE CRUSHER CUM M-SAND	Blue Metal Jelly - 3500TONS/Day
319	R P ASSOCIATES BLUE METALS	Blue Metal Jelly - 175T/Day Stone Dust - 25T/Day
320	AMMAN BLUE METAL	Blue Metal Aggregates all sizes (6-100mm) - 28000Tons/Month Stone Dust - 2000Tons/Month M Sand- 15000Tons/Month P Sand/ 7000Tons/Month
321	SRI MALAR BLUE METALS	Blue Metal Jelly - 36T/Day
	33. District: VIRUDHUNAGAR	
1	SRI RAM BLUE METALS	blue metal jelies - 10000TON/Month M-sand - 7000TON/Month
2	UMADEVI M.SAND	M Sand - 9000Ton/Month

3	TIRUPATHI BLUE METALS AND M SAND UNIT 1	STONE JELLY OF VARIOUS SIZES AND DUST - 1500T/M
4	MANOJ BLUE METALS	BLUE METAL JELLY IN VARIOUS SIZES - 1000T/M M SAND - 300 T/M
5	THE CHARNOKITE PRODUCT	Blue emtal jelly - 800t/m
6	O S SUNDARKRISHNA BLUE METAL	BLUE METAL JELLY - 2000 TON/MONTH
7	A A BLUE METALS	BLUE METAL JELLY - 800T/M
8	SRI VENKATESWARA BLUE METAL INDUSTRIES	BLUE METAL JELLY - 240 MT/M
9	SRI VINAYAKA BLUE METAL	BLUE METAL JELLY - 1400T/M
10	SRI AMMAN BLUE METALS	BLUE METALS 3 4 - 300T/M BLUE METALS 1 4 - 240T/M STONE POWDER- 60T/M
11	ARCHANA BLUE METALS	Blue Metal Jelly Different Sizes - 500T/Month
12	SHREE NITHI AND CO	Blue Metal Jellies and M Sand - 570T/M
13	MOSI BLUE METALS	BLUE METAL JELLY - 600T/M
14	SABARI BLUE METALS	BLUE METAL JELLY - 1200T/M
15	S S R BULE METAL CRUSHER	BLUE METAL JELLY - 475T/M
16	S S R BLUE METALS	BLUE METAL - 950T/M STONE DUST - 100 T/M
17	SAI RAM BLUE METAL	BLUE METAL JELLY - 1000T/M
18	SHRI PANKAJAM BLUE METAL INDUSTRIES	BLUE METAL JELLY - 520T/M
19	ALAGAPPA BLUE METALS	BLUE METAL JELLY - 48T/DAY
20	SRI SARAVANA BLUE METALS	BLUE METAL JELLY - 600T/M M -SAND - 480 T/M
21	SHREE JEYAMURUGAN BLUE METALS	BLUE METAL JELLY - 600T/M
22	VNR BLUE METAL INDUSTRIES UNIT I	BLUE METAL JELLY - 540T/M
23	RAM BLUE METALS	BLUE METAL - 240T/M
24	CHANDRAMOHAN BLUE METAL	BLUE METAL JELLY OF VARIOUS SIZES - 1050T/M
25	ABS BLUE METAL	BLUE METAL JELLY - 1250T/M Stone dust - 125 T/M
26	SRI BALAJI BLUE METALS	Blue Metal Jellies - 260T/M M-Sand - 300 T/M
27	SRI KRISHNA BLUE METALS	BLUE METAL JELLY OF VARIOUS SIZES - 450T/M
28	R R CRUSHER	BLUE METAL - 525T/M
29	SRI SEENIVASA BLUE METALS	METAL JELLY - 1000T/M
30	S V S BLUE METALS	BLUE METAL JELLY - 1200T/M
31	BOSE BLUE METALS	BLUE METALS JULLY - 1000T/M
32	LAKSHMI BLUE METAL	BLUE METALS JULLY - 500T/M
33	MEENA BLUE METALS	BLUE METALS JELLY - 1000T/M
34	SRI MURUGA BLUE METALS	BLUE METALS JELLY OF VARIOUS SIZES - 500T/M
35	SELVAKUMAR BLUE METALS	BLUE METALS 1 BY 4 - 112.5T/M
36	JEYAM BLUE METALS	BLUE METAL JELLIES VARIOUS SIZE - 900T/M FINE CHIPS DUST - 100T/M
37	RAVI BLUE METALS	JELLY - 1430T/M
38	SHRI RAGAVENDRA BLUE METALS	BLUE METALS JELLY - 60T/M
39	MAHENDRAN BLUE METALS	BLUE METALS JELLY 1 HALF INCH - 60T/M
40	V K MUTHURAJ BLUE METALS	BLUE METAL JELLY - 800T/M
41	SRI NARAYANA BLUE METAL - UNIT II	VARIOUS SIZE STONE JELLIES - 1500T/M
42	JAY POOJA BLUE METAL	BLUE METAL JELLY - 60 T/M
43	TVS BLUE METALS	STONE JELLY - 2000T/M
44	SRI MURUGAN BLUE METALS	BLUE METAL BOULDERS - 60T/M M -Sand - 18 Ton/month

45	KATHIRAVAN BLUE METALS	BLUE METAL JELLY - 60T/M
46	SRI ANNAN PERUMAL BLUE METAL	BLUE METAL JELLY - 750T/M
47	UNITED BLUE METALS	BLUE METAL JELLIES - 9400T/M M SAND - 8000T/M P SAND- 6000T/M
48	DHANALAKSHMI BLUE METALS	STONE JELLY - 700T/M
49	R.R AND SONS BLUE METAL	BLUE METAL JELLY - 600T/M M SAND - 300 T/M P SAND- 285 T/M
50	SRI KRISHNA BLUE METALS UNIT I	BLUE METAL JELLY - 60 T/DAY
51	SRI KRISHNA BLUE METALS UNIT II	BLUE METAL JELLY - 60T/M
52	SRI MAHALAKSHMI BLUE METALS	STONE JELLY - 750T/M STONE DUST - 250T/M
53	V R BLUE METAL	STONE JELLY - 1000T/M
54	SANKAR BLUE METAL	STONE JELLY - 700MT/M
55	SHRI MUTHUMARIAMMAN BLUE METALS (Unit-II)	STONE JELLY - 275T/M STONE DUST - 85T/M
56	AYYANAR BLUE METAL INDUSTRIES	BLUE METAL JEIIY - 4.5 T/M
57	SRI AMMAN BLUE METALS	BLUE METAL JELLY OF VARIOUS SIZES - 1200 T/M STONE DUST - 100 T/M
58	SRI LAKSHMI BLUE METALS	BLUE METALS JELLY - 600 T/M
59	SPK INFRASTRUCTURE	BLUEMETAL JELLY OF VARIOUS SIZES - 1100 T/M
60	SREE JAYAVILAS MALLEABLE CASTING PVT LTD	BLUEMETAL JELLY AND STONE DUST - 450 T/M
61	SRI KARPAGAVINAYAGA STONE CRUSHER	Blue metal jelly of various sizes - 400 t/m M.SAND - 350T/M
62	ESWARI BLUE METALS	STONE JELLY - 900 MT/M
63	SIVA PALANI BLUE METALS	BLUE METAL JELLY OF VARIOUS SIZES - 450 T/DAY M SAND - 200T/DAY
64	ARUMUGA BLUE METALS	STONE JELLY - 1000T/M M-Sand - 1180 T/M
65	SRI ANDAL BLUE METALS	STONE JELLY - 1200 MT/M
66	A K R BLUEMETAL	STONE JELLY - 765 T/M
67	JAY SRI KRISHNA BLUE METAL	Blue Metal Jellies - 1300 T/M M - Sand - 500T/M
68	MAHARAJA BLUE METALS	BLUE METAL JELLY OF VARIOUS SIZES - 1000 T/M
69	JOTHI RAM BLUEMETAL	BLUEMETAL JELLY OF VARIOUS SIZES - 1000 T/M
70	UMADEVI BLUEMETALS	BLUE METAL JELLY OF VARIOUS SIZES AND STONE DUST - 9000 T/ANNUM
71	MAGIMAI BLUE METAL	STONE JELLY - 600 T/M
72	M P BLUE METAL	BLUE METAL JELLY OF VARIOUS SIZE - 700 T/M
73	S K CRUSHER	STONE JELLY - 650 T/M
74	SRI SASTHA BLUE METALS AND M SAND	Blue Metal Jelly - 650 T/M
75	NAGAJOTHI BLUE METALS	JELLY - 600T/M STONE DUST - 150T/M
76	CLASSIC BLUE METALS	BLUE METAL JELLY - 6400T/M
77	BALAJI SAND CRUSHER	M.Sand - 1800T/M
78	KARTYA CONSTRUCTIONS PVT. LTD	Blue Metal Jellies - 25000 T/M M Sand - 20000T/M
79	MR BLUE METALS	Blue Metal - 1000T/M
80	KNR CONSTRUCTIONS LIMITED	STONE JELLIES - 2720T/MONTH
81	THE SPK BLUE METAL	Blue Metal Jelly Of various sizes and Dust - 1100Tones/Mon
82	R.S.R. BLUE METALS	Blue Metal Jellies - 9500T/M M-Sand - 9500T/M
83	SRI NARAYANA BLUE METAL - UNIT I	Various Size Stone Jellies - 1000T/M Fine Chips and Dust - 100T/M

84	MAHALAKSHMI SAND CRUSHER	STONE JELLIES - 900T/D M SAND - 450T/D STONE DUST- 150T/D
85	CREATIVE INDUSTRIES	BLUE METAL OF SIZES - 1500T/M
86	MOSI SANDS	M SAND - 11T/DAY M SAND DUST - 1T/DAY
87	A K R BLUE METALS - UNIT II	STONE JELLYS OF VARIOUS SIZES - 1800T/M STONE DUST - 200T/M
88	UDHAYAKUMAR ROUGH STONE QUARRY	QUARRYING OF GRAVEL - 151.02CU.M
89	RANJITH BLUE METALS	STONE JELLIES RANGING 40 MM, 20MM, 12MM, 6MM - 200 T/D FINES AND DUST - 40T/D
90	LAKSHMI BLUE METALS	BLUE METAL JELLIES RANGING 20MM 12MM - 400T/D M SAND - 200T/D
91	SEENIYAMMAL BLUE METALS	BLUE METAL JELLIES ranging 40 mm, 20 mm, 12mm, 6mm - 200T/D M-SAND - 100T/D
92	JAYAMURUGA BLUE METALS	BLUE METAL OF SIZES - 500T/M
93	G R BLUE METALS AND M SAND	Stone Jely - 80T/DAY M Sand - 100T/DAY
94	THE POTHIS BLUE METALS	STONE JELLY VARIOUS SIZES - 150T/D M-SAND - 180T/D
95	MK ARASAPPAN BLUE METALS AND M SAND	Stone Jelly - 80Ton/Day M - Sand - 60Ton/Day
96	S R S BLUE METALS AND M SAND	Stone Jelly - 80Ton/Day M - Sand - 60 Ton/Day
97	RENUGADEVI BLUE METALS	Stone Jelly Various Size - 1470T/M
98	R K BLUE METALS	Stone Jelly Various Size - 6000T/M M - Sand - 5500T/M
99	OM MURUGA BLUE METALS	Blue Metal Jelly In Various Sizes - 250T/M
100	LAKSHMI BLUE METALS	Blue Metal Jelly In Various Sizes - 15000T/M M-Sand - 9000T/M
101	SRI SIVA SIVA BLUE METAILS	Blue Metal - 200TON/Month
102	CHENTHUR BLUE METAL	Various Sizes of Blue Metal Jellies - 300Tons/Day M Sand - 400Tons/Day
103	SRI GANAPATHI BLUE METALS	M Sand - 200Tons/Day
104	RENUKA M AND UNIT	M Sand - 7000TON/Month P Sand - 7000 Ton/Month
105	CHENDUR MINERALS	Various Size of Blue Metals 1/4,1/2,3/4,1 1/2 - 600Tons/Day M Sand - 1000Tons/Day
106	VISHNUSURYA PROJECTS AND INFRA PRIVATE L	Various sizes of Blue Metals - 1000tons/day M sand - 600 Tons/Day
107	SRI HARI BALAJI BLUE METALS	Blue Metal Jelly Various sizes - 7000T/M M Sand - 6000 T/M P Sand- 6000 T/M
108	C K N BLUE METALS	Blue Metal Jellys Various Sizes - 125T/Month M Sand - 100 T/Month
109	DHANALAKSHMI M SAND UNIT	M sand - 100TONS/Day
110	SAIRAM M SAND UNIT	M Sand - 1000TON/Month
111	PADMAVATHI BLUE METALS	Blue Metal Jellies various sizes - 4000T/Month M Sand - 4500T/Month
112	ABSARA BLUE METAL	Blue Metal Jellies - 50T/Month M.Sand - 100T/Month

Annexure II

ANNEXURE II

Plate 1. Photography Showing Air Quality Monitoring at Rathana BM (S1), Triusulam

Plate 2. Photography Showing Air Quality Monitoring at DG Star BM (S2), Triusulam

Plate 3. Photography Showing Air Quality Monitoring at Siva BM (S3), Triusulam

Plate 4. Photography Showing Air Quality Monitoring at Ponni BM (S4), Triusulam

Plate 5. Photography Showing Air Quality Monitoring at Karthick BM (S5), Triusulam

Plate 6. Photography Showing Air Quality Monitoring at J.R. Vimala BM (S6), Triusulam

Plate 7. Photography Showing Air Quality Monitoring at Thiruvakkarai BM (S7), Triusulam

Plate 8. Photography Showing Air Quality Monitoring at Sivagami BM (S8), Triusulam

Plate 9. Photography Showing Air Quality Monitoring at Mageshwari BM (S9), Triusulam

Plate 10. Photography Showing Air Quality Monitoring at Viswanathan BM (S10), Triusulam

Plate 11. Photography Showing Air Quality Monitoring at Jayashakthi BM (S11), Triusulam

Plate 12. Photography Showing Air Quality Monitoring at Lakshmi BM (S12), Triusulam

Plate 13. Photography Showing Air Quality Monitoring at Thirughanam BM (S13), Triusulam

Plate 14. Photography Showing Air Quality Monitoring at MAM Residence (R1), Triusulam

Plate 15. Photography Showing Air Quality Monitoring at VST Compound (R2), Triusulam

Plate 16. Photography Showing Air Quality Monitoring at DG Star Residence (R3), Triusulam

Plate 17. Photography Showing Air Quality Monitoring at Backside Karthick (R4), Triusulam

Plate 18. Photography Showing Air Quality Monitoring at Elliputhopu Street (R5), Triusulam

Plate 19. Photography Showing Air Quality Monitoring at Raghu Colony (R6), Triusulam

Plate 20. Photography Showing Air Quality Monitoring at Rajiv Gandhi Nagar (R7), Triusulam

Plate 21. Photography Showing Air Quality Monitoring at Darkar Road (R8), Triusulam

Plate 22: Photography Showing Monitoring of Meteorological Data at Tirusulam Site

Annexure III

ANNEXURE III

Plate 1. Photography Showing Air Quality Monitoring at SVA BM (S1), Tiruppur

Plate 2. Photography Showing Air Quality Monitoring at Kadaieswari BM (S2), Tiruppur

Plate 3. Photography Showing Air Quality Monitoring at Sri Murugan BM (S3), Tiruppur

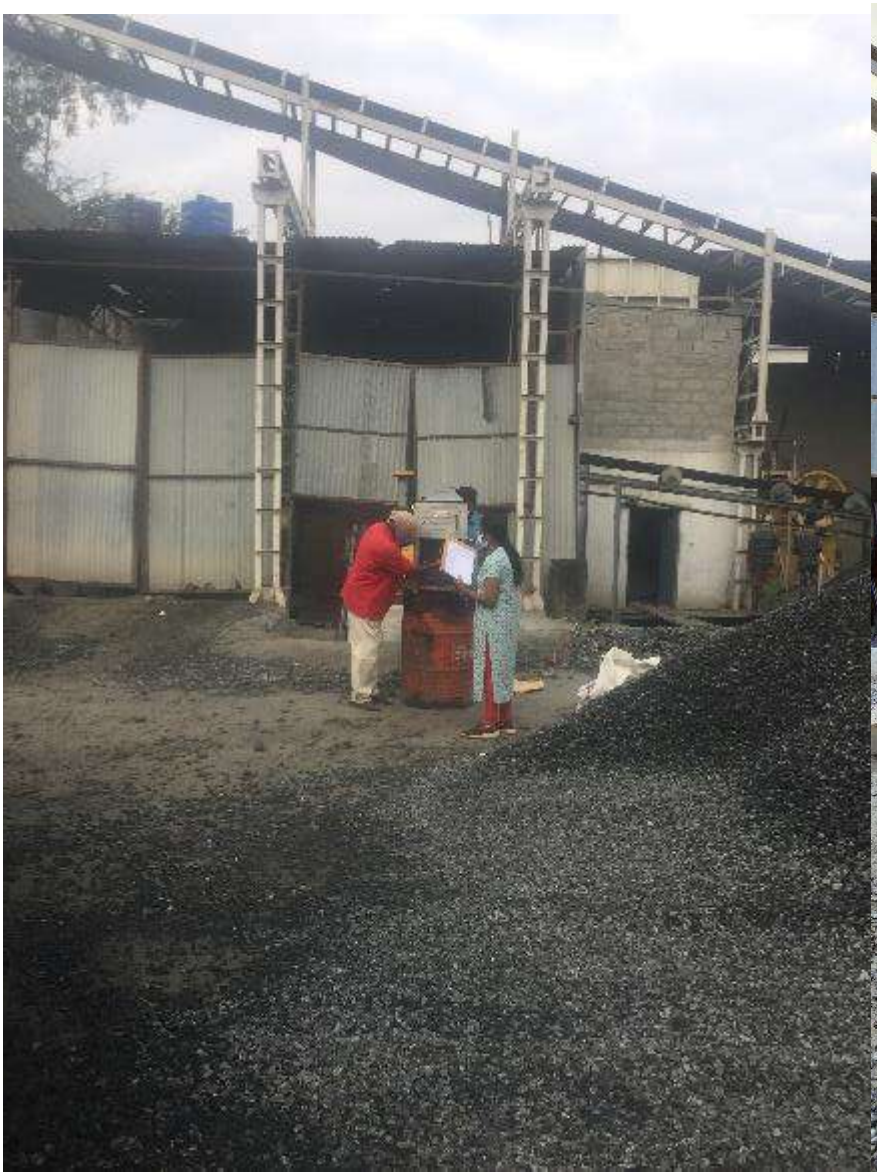


Plate 4. Photography Showing Air Quality Monitoring at Sri Ganesa BM (S4), Tiruppur

Plate 5. Photography Showing Air Quality Monitoring at PMG BM (S5), Tiruppur

Plate 6. Photography Showing Air Quality Monitoring at Vinayaga BM (S6), Tiruppur

Plate 7. Photography Showing Air Quality Monitoring at Rajalakshmi BM (S7), Tiruppur

Plate 8. Photography Showing Air Quality Monitoring at Rajesh BM (S8), Tiruppur

Plate 9. Photography Showing Air Quality Monitoring at Vijayalakshmi BM (S9), Tiruppur

Plate 10. Photography Showing Air Quality Monitoring at OM Muruga BM (S10), Tiruppur

Plate 11. Photography Showing Air Quality Monitoring at Palaniappa BM (S11), Tiruppur

Plate 12. Photography Showing Air Quality Monitoring at Nirmal BM (S12), Tiruppur

Plate 13. Photography Showing Air Quality Monitoring at Sri Saravana BM (S13), Tiruppur

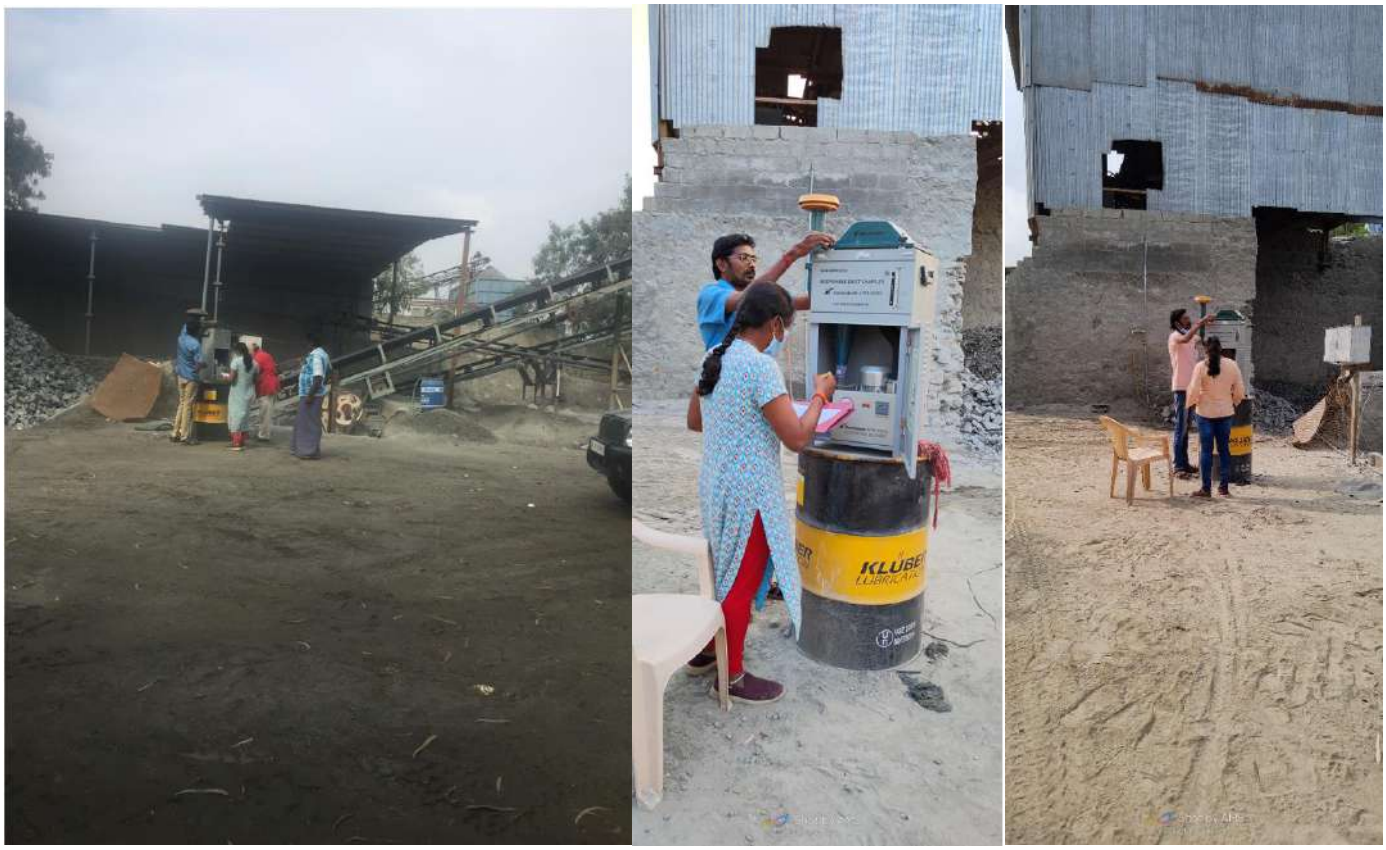


Plate 14. Photography Showing Air Quality Monitoring at Sri Praveen and Co. BM (S14), Tiruppur

Plate 15. Photography Showing Air Quality Monitoring at Santhosh BM (S15), Tiruppur

Plate 16. Photography Showing Air Quality Monitoring at KM Chinasamy Residence (R1), Tiruppur

Plate 17. Photography Showing Air Quality Monitoring at Kanakkam thottam (R2), Tiruppur

Plate 18. Photography Showing Air Quality Monitoring at P.A. Kandasamy Residence (R3), Tiruppur

Plate 19. Photography Showing Air Quality Monitoring at Durai Residence (R4), Tiruppur

Plate 20. Photography Showing Air Quality Monitoring at R Ramakrishnan Residence (R5), Tiruppur

Plate 21. Photography Showing Air Quality Monitoring at Ganesamoorthy Residence (R6), Tiruppur

Plate 22. Photography Showing Air Quality Monitoring at L Sarojini Residence (R7), Tiruppur

Plate 23. Photography Showing Air Quality Monitoring at Manikam Residence (R8), Tiruppur

Plate 24. Photography Showing Air Quality Monitoring at Sankar Residence (R9), Tiruppur

Plate 25. Photography Showing Air Quality Monitoring at K V Palanisamy Residence (R10), Tiruppur

Plate 30. Photography Showing Air Quality Monitoring at Thiru Murugan Nagar (R11), Tiruppur

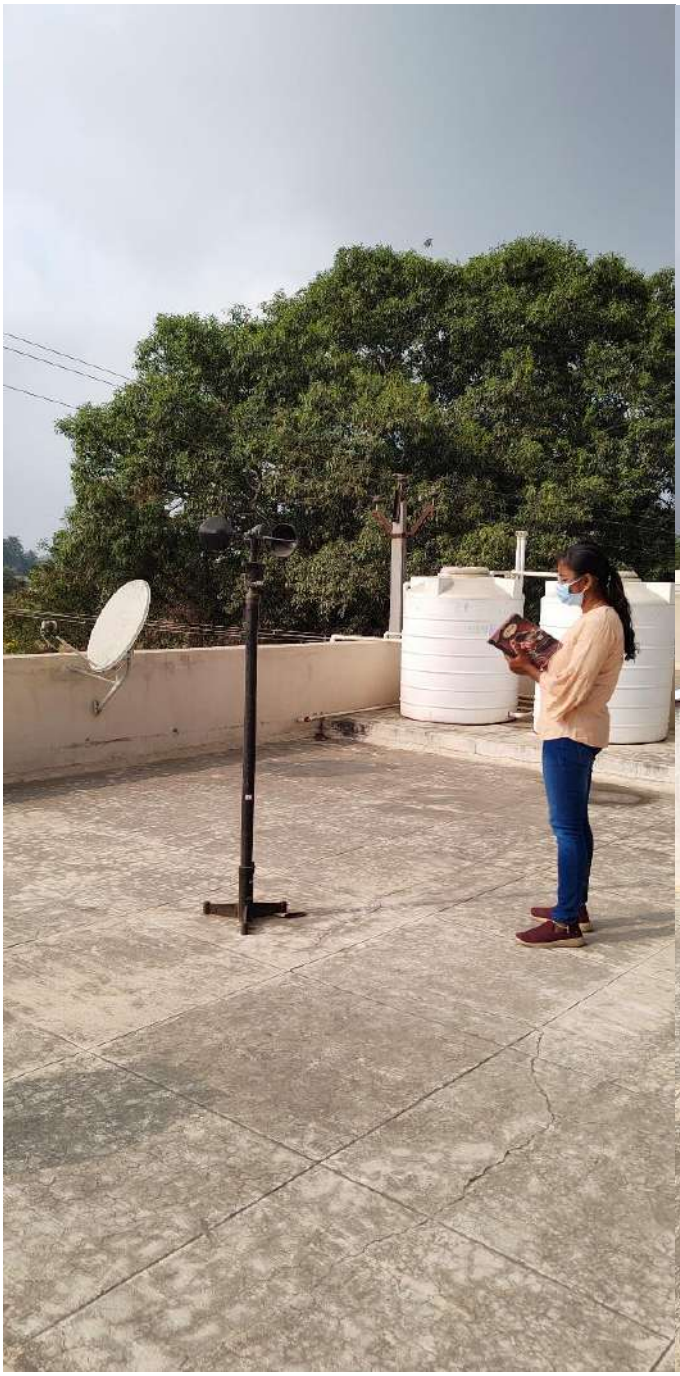
Plate 31. Photography Showing Air Quality Monitoring at R Shanmugam Residence (R13), Tiruppur

Plate 32. Photography Showing Air Quality Monitoring at Valiammal weigh Bridge (R13), Tiruppur

Plate 33. Photography Showing Air Quality Monitoring at Kumar Godown (R14), Tiruppur

Plate 34. Photography Showing Air Quality Monitoring at Crusher Association Office (R15), Tiruppur

Plate 35: Photography Showing Monitoring of Meteorological Data at Tiruppur Site



Annexure IV

रजिस्ट्री सं० डी० एल०-33004/99

REGD. NO. D. L.-33004/99

भारत का राजपत्र
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राष्ट्रीय परिवेशी वायु गुणवत्ता मानक

केन्द्रीय प्रदूषण नियंत्रण बोर्ड

अधिसूचना

नई दिल्ली, 18 नवम्बर, 2009

सं. बी-29016/20/90/पी.सी.आई.-I.—वायु (प्रदूषण निवारण एवं नियंत्रण) अधिनियम, 1981 (1981 का 14) की धारा 16 की उपधारा (2) (एच) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए तथा अधिसूचना संख्या का.आ. 384(ई), दिनांक 11 अप्रैल, 1994 और का.आ. 935 (ई) दिनांक 14 अक्टूबर, 1998 के अधिक्रमण में केन्द्रीय प्रदूषण नियंत्रण बोर्ड इसके द्वारा तत्काल प्रभाव से राष्ट्रीय परिवेशी वायु गुणवत्ता मानक अधिसूचित करता है, जो इस प्रकार है:-

राष्ट्रीय परिवेशी वायु गुणवत्ता मानक

क्र. सं.	प्रदूषक	समय आधारित औसत	परिवेशी वायु में सान्द्रण		
			औद्योगिक, रिहायशी, ग्रामीण और अन्य क्षेत्र	पारिस्थितिकी य संवेदनशील क्षेत्र (केन्द्र सरकार द्वारा अधिसूचित)	प्रबोधन की पद्धति
(1)	(2)	(3)	(4)	(5)	(6)
1	सल्फर डाई आक्साइड (SO_2), $\mu g/m^3$	वार्षिक*	50	20	-उन्नत वैस्ट और गाईक
		24 घंटे**	80	80	-पश्चदीप्ती परिदीप्ती
2	नाइट्रोजन डाई आक्साइड (NO_2), $\mu g/m^3$	वार्षिक*	40	30	-उपांतरित जैकब और हॉवाइजर (सोडियम-आर्सेनाईट)
		24 घंटे**	80	80	-रसायनिक संदीप्ति
3	विविक्त पदार्थ (10माइक्रान से कम आकार)या PM_{10}, $\mu g/m^3$	वार्षिक*	60	60	-हरात्मक विश्लेषण
		24 घंटे**	100	100	-टोयम
					-बीटा तनुकरण पद्धति

4	विविक्त पदार्थ (2.5 माइक्रान से कम आकार या $PM_{2.5}$, $\mu g/m^3$	वार्षिक* 24 घंटे**	40 60	40 60	-हरात्मक विश्लेषण -टोयम -बीटा तनुकरण पद्धति
5	ओजोन (O_3) $\mu g/m^3$	8 घंटे** 1 घंटा**	100 180	100 180	-पराबैगनी द्वीप्तिकाल -रासायनिक संदीप्ति -रासायनिक पद्धति
6	सीसा (Pb) $\mu g/m^3$	वार्षिक* 24 घंटे**	0.50 1.0	0.50 1.0	ई.पी.एम 2000 या समरूप फिल्टर पेपर का प्रयोग करके AAS/ICP पद्धति -टेफलॉन फिल्टर पेपर का प्रयोग करते हुए ED-XRF
7	कार्बन मोनोक्साइड (CO) mg/m^3	8 घंटे** 1 घंटा**	02 04	02 04	-अविपेक्षी अवरक्त (NDIR) स्पैक्ट्रम मापन
8	अमोनिया (NH_3) $\mu g/m^3$	वार्षिक* 24 घंटे**	100 400	100 400	-रासायनिक संदीप्ती -इण्डोफिनॉल ब्लू पद्धति
9	बैन्जीन (C_6H_6) $\mu g/m^3$	वार्षिक*	05	05	- गैस क्रोमेटोग्राफी आधारित सतत् विश्लेषक -अधिशोषण तथा निशोषण के बाद गैस क्रोमेटोग्राफी
10	बैन्जो (ए) पाईरीन (BaP) केवल विविक्त कण, ng/m^3	वार्षिक*	01	01	-विलायक निष्कर्षण के बाद HPLC/GC द्वारा विश्लेषण
11	आर्सेनिक (As) ng/m^3	वार्षिक*	06	06	-असंवितरक अवरक्त स्पैक्ट्रामिती ई.पी.एम. 2000 या समरूप फिल्टर पेपर का प्रयोग करके ICP/AAS पद्धति
12	निकिल (Ni) ng/m^3	वार्षिक*	20	20	ई.पी.एम. 2000 या समरूप फिल्टर पेपर का प्रयोग करके ICP/AAS पद्धति

* वर्ष में एक समान अंतरालों पर सप्ताह में दो बार प्रति 24 घंटे तक किसी एक स्थान विशेष पर लिये गये न्यूनतम 104 मापों का वार्षिक अंकगणीतीय औसत ।

** वर्ष में 98 प्रतिशत समय पर 24 घंटे या 8 घंटे या 1 घंटा के मानीटर मापमान, जो लागू हो , अनुपालन किये जाएंगे । दो प्रतिशत समय पर यह मापमान अधिक हो सकता है, किन्तु क्रमिक दो मानीटर करने के दिनों पर नहीं ।

टिप्पणी:

1. जब कभी और जहां भी किसी अपने-अपने प्रवर्ग के लिये दो क्रमिक प्रबोधन दिनों पर मापित मूल्य, ऊपर विनिर्दिष्ट सीमा से अधिक हो तो इसे नियमित या निरंतर प्रबोधन तथा अतिरिक्त अन्वेषण करवाने के लिये पर्याप्त कारण समझा जायेगा ।

संत प्रसाद गौतम, अध्यक्ष

[विज्ञापन-III/4/184/09/असा.]

टिप्पणी: राष्ट्रीय परिवेशी वायु गुणवत्ता मानक संबंधी अधिसूचनाएँ, केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा भारत के राजपत्र आसाधरण में अधिसूचना संख्या का.आ. 384 (ई), दिनांक 11 अप्रैल, 1994 एवं का. आ. 935 (ई), दिनांक 14 अक्टूबर, 1998 द्वारा प्रकाशित की गयी थी ।

NATIONAL AMBIENT AIR QUALITY STANDARDS

CENTRAL POLLUTION CONTROL BOARD

NOTIFICATION

New Delhi, the 18th November, 2009

No. B-29016/20/90/PCI-L—In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No.14 of 1981), and in supersession of the Notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-

NATIONAL AMBIENT AIR QUALITY STANDARDS

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO_2), $\mu g/m^3$	Annual*	50	20	- Improved West and Gaeke
		24 hours**	80	80	-Ultraviolet fluorescence
2	Nitrogen Dioxide (NO_2), $\mu g/m^3$	Annual*	40	30	- Modified Jacob & Hochheiser (Na-Arsenite)
		24 hours**	80	80	- Chemiluminescence
3	Particulate Matter (size less than 10µm) or PM_{10} $\mu g/m^3$	Annual*	60	60	- Gravimetric - TOEM
		24 hours**	100	100	- Beta attenuation
4	Particulate Matter (size less than 2.5µm) or $PM_{2.5}$ $\mu g/m^3$	Annual*	40	40	- Gravimetric - TOEM
		24 hours**	60	60	- Beta attenuation
5	Ozone (O_3) $\mu g/m^3$	8 hours**	100	100	- UV photometric - Chemilminescence
		1 hour**	180	180	- Chemical Method
6	Lead (Pb) $\mu g/m^3$	Annual*	0.50	0.50	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
		24 hours**	1.0	1.0	
7	Carbon Monoxide (CO) mg/m^3	8 hours**	02	02	- Non Dispersive Infra Red (NDIR) spectroscopy
		1 hour**	04	04	
8	Ammonia (NH_3) $\mu g/m^3$	Annual*	100	100	-Chemiluminescence
		24 hours**	400	400	-Indophenol blue method

(1)	(2)	(3)	(4)	(5)	(6)
9	Benzene (C_6H_6) $\mu g/m^3$	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo(a)Pyrene (BaP) - particulate phase only, ng/m^3	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m^3	Annual*	06	06	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m^3	Annual*	20	20	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note. — Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

SANT PRASAD GAUTAM, Chairman
[ADVT-III/4/184/09/Exty.]

Note: The notifications on National Ambient Air Quality Standards were published by the Central Pollution Control Board in the Gazette of India, Extraordinary vide notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998.

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Annexure V

ANNEXURE V

Dust Fall Measurement at Tirusulam, Chennai

Annexure VI

APPENDIX VI
CPCB STANDARDS FOR SUSPENDED PARTICULATE MATTER FROM STONE CRUSHING UNIT

The standards consist of two parts:

i) Implementation of the following pollution control measures:
ii) Dust contaminant cum suppression system for the equipment.
iii) Construction of wind breaking walls.
iv) Construction of the metalled roads within the premises.
v) Regular cleaning and wetting of the ground within the premises.
vi) Growing of a green belt along the periphery.
vii) Quantitative standard for the SPM:

The suspended particulate matter measured between 3 meters to 10 meters from any process equipment of a stone crushing unit shall not exceed 600 $\mu g/m^3$.