CIN : U24110AP1989PLC009723

HETERO LABS LIMITED (UNIT-III)

Sy. No. : 120 & 128, 150 (PART), 150/1, 151/2, 158/1, N. Narasapuram (Village),
Nallamattipalem (V), Nakkapalli (Mandal), Visakhapatnam (Dist.) - 531 081, A.P., INDIA.
Tele Phone : +91-891-2877900, Fax : +91-891-2877933
E-mail : contact@heterodrugs.com. URL : http//www.heterodrugs.com.

29th December 2022

Letter NO: HLL-III/EHS/MoEF&CC/2022-23/04

Dr. Suresh Babu Pasupuleti
Joint Director (S)
Integrated Regional Office (IRO),
Ministry of Environment, Forest & Climate Change,
Green House complex, Gopala Reddy Road,
Vijayawada - 520010,
Andhra Pradesh.

Dear Sir,

Sub : Submission of six-monthly compliance report of Environmental Clearance issued to M/s Hetero Labs Ltd,Unit-III Nakkapalli, Visakhapatnam – Certified by third party -Regarding

Ref :

1. **Environmental Clearance No: J-11011/398/2010-IA II (I) Dated 10/09/2012**
2. **Transfer of Environmental Clearance dated 27th January 2020**

With reference to the above, please find enclosed six-monthly compliance report of Environmental clearance of M/s Hetero Labs Ltd, (Formerly Hetero Drugs Ltd, Unit-VI) certified by third party approved by MoEF&CC (NABL & NABET Accredited Lab) for the period April 2022 to September 2022 with all necessary attachments for your kind information and perusal.

Kindly acknowledge the receipt.

Thanking you,

Yours faithfully,
For Hetero Labs Ltd, Unit-III

S. Kullayi Reddy
Associate Vice President -EHS

Enclosures : As above

SV ENVIRO LABS & CONSULTANTS

(Environmental Engineers & Consultants in Pollution Control)

Corporate Office & Laboratory : Enviro House, B-1, Block-B, IDA, Autonagar, Visakhapatnam-530012
www.svenvirolabs.com, Ph:0891-2755528, Cell: +91 9440338628
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Branch Office : 2-53, Mahipala Street, Yanam - 533464.

Recognized by Govt.of India-MoEF & CC, New Delhi, Accredited by : NABL & NABET

Date: 14.12.2022

To

Sr. General Manager -EHS,

M/s. Hetero Labs Limited

(Formerly Hetero Drugs Limited-Unit VI)

N. Narasapuram Village, Nallamattipalem Village,

Nakkapalli Mandal,

Visakhapatnam.

Sir,

Sub: Certified Compliance report for Environmental Clearance of **M/s. Hetero Drugs Limited (Unit-VI)** Audited by SV Enviro Labs & Consultants, NABL Accredited third party- Reg

Ref: 1) EC F. No. J-11011/253/2006-IA.II (I). Date: 22.09.2006

2) EC Expansion F. No.: J-11011/398/2010-IA II (I) Date: 10.09.2012.

We wish to inform you that, we SV Enviro Labs & Consultants, accredited by NABET/NABL located at Enviro House, B1, Block 'B'-IDA, Auto Nagar, Visakhapatnam herewith submit audited report for M/s. Hetero Drugs Limited -Unit-VI (Formerly Unit-IX), at Nallamattipalem Village, Nakkapally Mandal, Visakhapatnam for Environmental Clearance obtained from Ministry of Environment and Forests for the period of 01st April 2022 to 30th September 2022 (as on December 2022) after completing site visit.

With reference cited above, we have prepared certified compliance report for Environmental Clearance for the orders mentioned above vide reference numbers (1 &2).

Thanks and Regards,

SV Enviro Labs & Consultants

Authorized Signatory

CERTIFIED COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE
ISSUED BY SV ENVIRO LABS & CONSULTANTS
M/S. HETERO DRUGS LIMITED-UNIT-VI
NO. J-11011/398/2010-IA II (I) DATED 10TH SEPTEMBER 2012
EC COMPLIANCE PERIOD – 01ST APRIL 2022 TO 30TH SEPTEMBER 2022

A. Specific Conditions

S. NO	Description of Condition	Compliance Status
I.	All the specific conditions and general conditions specified in the environmental clearance letter accorded vide ministry no. J-11011/253/2003-la.II (I) dated 22nd September, 2006 shall be implemented.	**Complied.** The industry is implementing conditions of Environmental Clearance letter accorded vide ministry no. J-11011/253/2006-lA.II (I) dated 22ndSeptember, 2006. EC Compliance report is attached as **Annexure -I** for your kind information.
II.	National Emission standards for organic chemicals manufacturing Industry issued by the ministry vide G.S.R.608 (E) dated 21st July, 2010 and amended time to time shall be followed by the unit.	**Complied.** The Industry has engaged third party agency for monitoring of Ambient Air Quality and noise level monitoring for the parameters mentioned in this order. All the parameters are within standards as directed by the board. The Ambient Air Quality monitoring Reports are attached as **Annexure -II** for your perusal.
III.	Permission and recommendation shall be obtained from the state forest department regarding the impact of the proposed expansion on the surrounding reserve forests (2 Nos.)	**NOT APPLICABLE** There is no reserve forest in the surrounding area.
IV.	Multi-cyclone followed by bag filter shall be provided to the boiler to control particulate emissions within permissible limit. The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/APPCB guidelines.	**Complied.** Boilers are installed in the premises of M/s Hetero Infrastructure SEZ Ltd and required steam for the unit is being supplied by M/s Hetero Infrastructure SEZ Ltd. The industry has provided stack height as per the CPCB/APPCB guidelines and Air pollution Control devices provided to the Boiler stacks are as below: Boiler Capacity / Stack Height / APCB 45 TPH / 53 m / Electrostatic Precipitator 20 TPH / 33 m / Multi cyclone and Bag filter 12 TPH / 30 m / Bag Filter 10 TPH / 30 m / Bag Filter
V.	Adequate scrubbing system shall be provided to the process vents to control process emissions. The scrubbing media shall be sent to effluent	**Complied.** **Complied.**

	treatment plant (ETP) for treatment. Efficiency of scrubber shall be monitored regularly and maintained properly. At no time, the emission levels should go beyond the prescribed standards. Scrubbers vent shall be provided with on-line detection and alarm system to indicate higher than permissible value of controlled parameters.	Adequate scrubbing system is provided to all the reactors where acidic reactions are being carried. The industry is sending scrubbing media to effluent treatment plant (ETP) for treatment and provided with on-line pH meters and alarm system for effective operation of Scrubbers. The industry is maintaining the records of in-house regular monitoring of the scrubbers. List of scrubbers installed is enclosed as **Annexure –III.**
VI.	Ambient air quality data shall be controlled as per NAAQES standards notified by the ministry vide G.S.R. No. 826(E) 16th September, 2009. The levels of $PM_{10,}$ SO2, NOX, CO and VOC shall be monitored in the Ambient air and emissions from the stacks and displayed at a convenient location near the main gate of the company and at important public places. The company shall upload the results of monitored data on its website and shall update the same periodically. It shall simultaneously be sent to the regional office of MOEF, the respective Zonal office of CPCB and the AP Pollution Control Board (APPCB)	**Complied** The industry has installed 03 no's Continuous Ambient Air Quality Monitoring stations at site and are connected to APPCB website. The data is being displayed at Main entrance Gate. The industry has engaged third party for monitoring of Ambient Air Quality monitoring for the parameters mentioned. The monitoring reports are submitting to AP Pollution Control Board on monthly basis and submitting to regional office of MoEF, along with six monthly compliances Ambient Air Quality report is enclosed as **Annexure –II**.
VII.	To Eliminate/reduce odour problem, the effluent before going to ETP shall be treated in stripper for removal of VOC. VOC shall be monitored in ETP area.	**Complied.** The industry has installed 03 nos of Strippers for removal of VOCs before sending effluent to MEE of ETP and VOC is being monitored in ETP area by online as well as portable instruments and records are being maintained. Online VOC meter is connected to APPCB website.
VIII.	Specific VOC to be monitored for the specific solvents using proper sampling and analysis protocols.	**Complied.** At present VOC is being monitored through portable and online VOC meters and records are being maintained.
IX.	In plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fugitive emissions Controlled by providing closed storage, closed handling & conveyance of chemicals/materials, multi cyclone	**Complied.** The industry is taking all possible precautions for controlling fugitive emissions from all sources by way of: • Storing solvents in closed tanks with vent condensers in dedicate area.

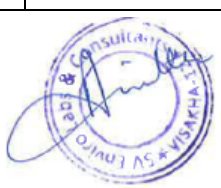
	separator and water sprinkling system. Dust suppression system including water sprinkling system shall be provided at loading and unloading areas to control dust emissions. Fugitive emissions in the work zone environment, product, raw materials storage area etc. shall be regularly monitored. The emission shall conform to the limits stipulated by the APPCB	• Transfer of solvents & chemicals through closed pipelines. • Vents of reactor in which acidic reactions are being carried are connected to scrubbers • Dual stage condensers are provided to the vents of all reactors, ANFDs and Solvent Recovery units. • Water sprinkler system to Ammonia storage & solvent storage yard. • Fugitive emissions are being regularly monitored and records are in place. All emissions are confirming to the limits prescribed by the APPCB.
X.	For further control of fugitive emissions, following steps shall be followed: 1. Closed handling system shall be provided for chemicals. 2. Reflux condenser shall be provided over reactor. 3. System of leak detection and repair of pump/pipeline based on preventive maintenance. 4. The acids shall be taken from storage tanks to reactors through closed pipeline. Storage tanks shall be vented through trap receiver and condenser operated on chilled water. 5. Cathodic protection shall be provided to the underground solvent storage tanks.	**Complied.** 1. All chemicals & solvents are being transferred through closed pipelines. 2. Dual stage Reflux condensers are provided over the reactors (Vents of reactors). 3. Preventive maintenance of all major equipment is in place and is being followed. 4. Acids are being transferred through closed pipeline from storage to reactors. The vents of storage tanks are connected to the scrubber. 5. There are no underground storage tanks in the factory. 6. Regarding Leak detection and repairs, the industry has conducted LDAR studies by third party. Copy of the report is enclosed as **Annexure –IV.**
XI.	The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution.	**Complied.** The industry has provided DG sets with adequate stack height as per CPCB guidelines and also provided with Acoustic Enclosures to reduce noise levels.
XII.	Solvent management shall be carried out as follows: i. Reactor shall be connected to chilled brine condenser system. ii. Reactor and solvent handling pump shall have mechanical seals to prevent leakages.	**Complied by the industry.** i. All reactors vents are connected to the dual stage Chilled brine condenser system. ii. All Reactors and solvent handling pumps are provided with Mechanical Seals. iii. All condensers are provided with sufficient HTA residence time to

	iii. The condensers shall be provided with sufficient HTA residence time so as to achieve more than 95% recovery. iv. Solvents shall be stored in a separate space specified with all safety measures. v. Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done. vi. Entire plant shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses. vii. All the solvent storage tanks shall be connected with vent condensers with chilled brine circulation.	achieve maximum recovery. The installed condensers are designed based on the flow of vapour quantity. iv. All solvents are stored in a separate space (Premises approved by the Department of Explosives) with all safety precautions. v. Ensured double earthing for all the equipments installed in the factory. vi. All electrical fittings inside the factory are Flame proof only. All solvent storage tanks are provided with Breather valves & Flame arresters. vii. All vents of low boiling solvent storage tanks have been provided with vent condensers with chilled brine circulation.
XIII.	Total fresh water requirement from desalination plant will be 958 m^3/day after expansion and prior permission shall be obtained from the concerned authority. No ground water shall be used.	**Complied.** The industry is using water as per the permissions given by A.P.Pollution Control Board. Complete water demand of the industry is being met through Sea Water Desalination Plant.
XIV	Trade effluent shall be segregated into high COD/TDS and low COD/TDS effluent streams. High COD/TDS shall be passed through stripper followed by MEE and agitated thin film drier (ATFD). Low TDS effluent stream shall be treated in ETP and then passed through RO system. The unit will have common effluent treatment facilities to treat the effluent generated from two units by name Hetero Labs Ltd. Unit-III and Hetero Drugs Ltd. Unit-VI in the neighbouring SEZ owned by a group company. The treated effluent shall be disposed off to marine outfall after conforming to the standards prescribed for the effluent discharge and obtaining permission from the APPCB. Water quality of treated effluent shall be monitored regularly and monitoring report shall be submitted to the APPCB. No process effluent shall be discharged in and around the project site. Sewage shall be treated in sewage treatment plant.	**Complied by the industry.** The industry is all High TDS/COD effluents is being treated in Stripper, MEE and ATFD and the condensate of MEE is further treated in Bio tower followed by Dual stage aerobic treatment plant. All Low TDS/COD streams are being treated in Biological System along with condensate of MEE. The treated effluent is being regularly monitored and the reports are being submitted to APPCB regularly on monthly basis. The treated effluents are being disposed into Sea under the supervision of APPCB Officials and there is no discharge of effluents around the project site. The domestic waste water is being treated in Sewage treatment plant of 300 KLD Capacity.

XV	The effluent containing solvent going to bioreactor (ETP) shall be removed by steam stripping. Unit shall ensure that no solvent enters the biological ETP; there it is toxic to the biomass.	**Complied.** The industry is removing all low boiling solvents from the effluents in the stripper itself. For more effective separation of solvents, the industry has installed one additional stripper in series with the existing stripper. After stripping the HTDS effluent is going to MEE and the condensate of MEE is subjected to biological treatment.
XVI	The treated effluent having TDS above 7000-8000 mg/lt shall be passed through separate RO. Permeate of RO shall be reused/recycled in the process.	**Complied.** The industry has obtained Environmental Clearance with Marine disposal of Effluents after treatment and not with recycling option. At present TDS of treated effluent is less than 6000 mg/l and the treated effluent is being discharged into the sea under the supervision of APPCB officials after treatment and meeting the standards.
XVII	Treated industrial effluent shall be passed through guard pond. The guard pond shall have online PH, TOC analyser and flow meter and data shall be online transmitted to the APPCB website.	**Complied.** The industry is passing treated effluent in guard ponds before discharging into Sea and it is having online Effluent monitoring system for Flow, pH, TSS, TOC, BOD & COD and the data is connected to CPCB & APPCB websites.
XVIII	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm. Solvent transfer shall be by pumps.	**Complied by the industry.** All solvents are being stored in the Tanks and the tanks are provided with Flame arresters. Hazardous solid chemicals are being stored in drums, Carboys etc in solid raw material warehouses. Solvents are being transferred through pumps from solvent yard to Production area.
XIX	As proposed, process organic residue and spent carbon shall be sent to cement industries. ETP sludge process inorganic & evaporation salt shall be disposed off to the TSDF. The ash from boiler shall be sold to brick manufacturers.	**Complied.** The industry is disposing hazardous wastes as per the guidelines of MOEF & APPCB as mentioned below. • Inorganic Process salts are being disposed to TSDF, Ramky, Visakhapatnam. • Organic residue and spent carbon is being sent to either TSDF or cement Industries for incineration purpose as per latest CFO conditions • Boiler ash is being sent to brick manufactures

XX	Waste organic residue having very high calorific value which is being sent to cement plant for co processing requires complete audit. The study shall include how waste are fed into the kiln and other associated problems. The study report shall be submitted to ministry's regional office at Bangalore, APPCB and CPCB within three months.	**Complied.** The industry has carried audit at one cement industry M/s Sagar Cement Industries and the report has already submitted to the RO, MoEF&CC.
XXI	The salt from drier contains 3-4% organic matter. A study shall be carried out to treat it in a rotary kiln (above 800^0C) to remove organics and utilization of salt shall be explored. The study report shall be submitted to ministry's regional office at Bangalore, APPCB and CPCB within six months.	**Complied.** The industry has initiated action for the recycling of salt in the paper industry. Accordingly, the industry has supplied salt to some of the vendors and the vendors are refusing to take salts because of unknown reasons. Further, R&D of Hetero labs Limited tried to reuse the salt for process after drying and they couldn't succeed. Report already submitted to the Ministry. Hence, the industry is sending these salts to TSDF for disposal purpose
XXII	The company shall obtain authorization for collection storage and disposal of hazardous waste under the hazardous waste (management, handling& trans boundary movement) rules, 2008 and amended as on date for management of hazardous wastes and prior permission from APPCB shall be obtained for disposal of solid/hazardous waste in the TSDF. Measures shall be taken for fire fighting facilities in case of emergency.	**Complied.** Industry obtained authorization for collection, storage, and disposal of hazardous waste under the Hazardous waste (Management, handling& trans boundary movement) rules, 2016 and amended as on date for management of hazardous wastes from APPCB. Well-designed firefighting facilities are in place for firefighting purpose.
XXIII	The company shall strictly comply with the rules and guidelines under manufacture, storage and import of hazardous chemicals (MSIHC) rules 1989 as amended time to time. All transportation of hazardous chemicals shall be as per the motor vehicle act (MVA), 1989.	**Complied.** The industry is complying with all the rules and guidelines under MSHIC rules 1989 as amended from time to time. The industry is taking care of transportation of hazardous chemicals as per Motor Vehicle Act 1989.
XXIV	Fly ash shall be stored separately as per CPCB guidelines so that it shall not adversely affect the air quality becoming air borne by wind or water regime during rainy season by flowing along with the storm water. Direct exposure of workers to fly ash & dust shall be avoided.	**Complied by the industry.** Boilers are installed in the premises of M/s Hetero Infrastructure SEZ Ltd and required steam for the unit is supplied by M/s Hetero Infrastructure SEZ Ltd. Fly ash is being stored in a silo to avoid spreading of ash in the surrounding

		environment and to avoid flowing along the storm water during rainy season. Required PPEs are provided to all the workers working in Boiler area.
XXV	The company shall under take following waste minimization measures: a. Metering and control of quantities of active ingredients to minimize waste. b. Reuse of by –products from the process as raw materials or as raw material substitutes in other processes. c. Use of automated filling to minimize spillage. d. Use of close feed system into batch reactors. e. Venting equipment through vapour recovery system. f. Use of high pressure hoses for equipment clearing to reduce wastewater generation.	**Complied by the industry.** The industry is complying with the conditions mentioned a. Having control of quantities of active ingredients. b. Using distilled solvents as raw material in processes as substitutes. c. Closed system for filling is being followed d. Closed filling into tanks/ receivers and feeding system to batch reactors is in place. e. Venting of vapors through condensers only f. Using high pressure jet pumps with hoses for cleaning.
XXVI	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.	**Complied.** The industry has provided adequate firefighting systems as per the norms prescribed by the AP State Disaster Response and Fire services department. Fire NOC issued by APSDRFR department is in place. Copy of Fire NOC is enclosed as **Annexure-V** for your information. Some of the fire protection equipment's installed at the facility are as below: • Fire hydrant network with Jackey pump, Main electrical Pump & Diesel driven pump. • Adequate no. of portable fire extinguishers (more than 400 Nos). • Sprinkler systems for all reactors, solvent storage tanks • In house fire tenders (02 Nos) etc. • Details of firefighting equipment available at site are enclosed as **Annexure -VI**.
XXVII	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the factories act.	**Complied.** The industry is conducting pre-employment and post-employment medical check-ups to all employees at



		regular intervals. The records of medical examinations are being maintained as per the Factories Act 1948.
XXVIII	The recommendation of the study conducted by NIO should be implemented in a time bound manner.	**Complied.** The industry has implemented recommendations of the study NIO.
XXIX	All the issues raised during the public hearing/consultation meeting held on 19th May, 2011 shall be satisfactorily implemented.	**Complied.** The industry has implemented all the issues raised during the public hearing meeting on 19th may, 2011.
XXX	As proposed, green belt shall be developed in 20 acres out of total land 60 acres. Selection of plant species shall be as per the CPCB guidelines.	**Complied.** The industry has already developed green belt in 30 acres and still it is going on. Greenbelt photographs are enclosed as **Annexure VII.**
XXXI	As for CSR Activity, two ponds near temple shall be upgraded.	**Complied by the industry.** The industry has prepared proposals for development of two ponds near the temple. In the first phase as per the request of the villagers and the industry has constructed two temples adjacent to the ponds and installed one RO plant for the pilgrims & Villagers. The development proposal which was prepared by the industry includes: • Temples construction • Green belt development around the pond including lawns/ flowering plants. • Development road etc. But after preparation of proposals, the Temple was taken over by Tirumala Tirupati Devasthanams (TTD). The budget allocated for the purpose is diverted for other CSR activities for the villages situated in and around the factory premises. At present the complete development is being taken care by Tirumala Tirupati Devasthanam (TTD).
XXXII	Provision shall be made for the housing for the construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile sewage treatment plant, safe drinking water , medical health care, crèche etc. The housing may be in the form of	**Complied.** At present there are no major construction activities at site area. The industry has provided housing for the construction labour with cooking fuel, drinking water, toilets etc and Full-fledged

	temporary structure to be removed after the completion of the project. All the construction wastes shall be managed so that there is no impact on the surrounding environment.	Occupational Health Centre cum first aid Centre for the workers. Further, the industry has provided two ambulances of mini trauma type for shifting the people during any medical emergencies.

B. General Conditions

S.NO	Description of Condition	Compliance Status
I.	The project authorities shall strictly adhere to the stipulations made by the Andhra Pradesh State Pollution Control Board.	**Complied.** The industry is strictly adhering to all norms stipulated by APPCB.
II.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to the Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	**Complied.** The industry will intimate in the MoEF&CC if any expansion or modifications and changes in the plant.
III.	The locations of ambient air quality monitoring stations shall be decided in consultation with the state pollution control board(SPCB)and it shall be ensured that at least one station is installed in the upwind and down wind direction as well as where maximum ground level concentrations are anticipated.	**Complied.** The industry are installed Ambient air quality stations in consultation with APPCB i.e in all three directions. All stations are connected to APPCB website.
IV.	The overall noise level in and around the plant area shall be kept well within the standards (85 dBA) by providing noise controlling measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall confirm to the standards prescribed under EPA rules, 1989 viz. 75 dBA (daytime) and 70 dBA (night time)	**Complied.** The industry is monitoring Noise levels regularly by using in house portable instruments and records are being maintained. The noise levels are well within the norms stipulated.
V.	The company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.	**Complied.** Collecting rainwater in the ponds within the premises of the industry for improving ground water level in the area. The same water is being recycled for various uses (if required).

VI.	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be under taken on regular basis. Training to all employees on handling of chemicals shall be imparted.	**Complied.** ➢ New Hire Orientation training (NHO) for newly joined employees. ➢ Monthly trainings as per the schedule ➢ Safety trainings as per the training calender. ➢ Live demo on Firefighting & Chemical handling activities etc. Regular medical examination of all employees is being undertaken as per the Factories Act 1948. Records of all employees are in place.
VII.	Usage of personnel protection equipments (PPEs) by all employees/ workers shall be ensured.	**Complied.** The industry is providing PPE's to all employees/workers working in the factory. The PPE is being issued based on the activities performed by the employees. The details of PPEs are as below: ➢ Safety Shoe, Helmet, Apron & Goggles to all employees. ➢ Respiratory protection to all the employees working in hazardous areas. ➢ Special protection like Head caps, Nose mask, Antistatic aprons for the workers working in powder processing areas. ➢ Fire retardant suits are provided to all the employees working on Solvent chargings etc. The activity wise PPE matrix is enclosed as **Annexure -VIII.**
VIII.	The company shall also comply with all the environmental protection measures and safeguards proposed in the documents submitted to the ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing relating to the project shall be implemented.	**Being implemented.**
IX.	The company shall under take all relevant measures for improving the socio-economic conditions of the surrounding area.CSR activities shall be	**Complying.** The industry is carrying out CSR activities in the nearby villages by way of:

	under taken by involving local villages and administration.	• Providing safe drinking water by installing RO plants • Conducting Medical Camps • Maintaining Eye hospital/Vision Centre at Nakkapalli for the welfare of Villagers. • Piped water supply to few villages. • Construction of temples/ community halls as per the request of Villagers. • Helping the public during natural calamities etc. • Provided plants & LED lights to nearby villages. • Infrastructure facilities in the Villages like Roads, Compound walls to temples & Schools, Toilets in the Schools etc. Provided School infrastructure like Furniture in nearby 20 Schools.
X.	The company shall under take eco-development measures including community welfare measures in the project area for the overall improvement of the environment.	**Complied** Details of CSR activities carried by the industry are attached as **Annexure-IX.**
XI.	A separate environmental management cell equipped with full-fledged laboratory facilities shall be set-up to carry out the environmental management and monitoring functions	**Complied.** The industry is having separate environmental management cell with laboratory facilities.
XII.	As proposed, the company shall earmark adequate funds towards capital cost and recurring cost to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/pollution control measures shall not be diverted for any other purpose.	**Complied.**
XIII.	A copy of clearance letter shall be sent by the project proponent to concerned panchayat, zilla parisad/municipal corporation, urban local body and the local NGO, if any, from who suggestions /representations, if any were received while processing the proposal.	**Complied.** The industry has submitted the Copy of clearance letter to Panchayat and District administration.
XIV	The project proponent shall also submit six monthly reports on the status of	**Complied.**

	compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MOEF, the respective Zonal office of CPCB and the A.P. pollution control board. A copy of environmental clearance and six monthly compliance status reports shall be posted on the website of the company.	The industry is submitting the compliance report on six monthly basis to Regional Office, MoEF and APPCB. The industry is posting its six monthly EC compliance report in hetero website www.hetero.com .
XV	The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned state pollution control board as prescribed under the environment(protection) rules,1986, as amended subsequently, shall also be put on the website of the company and shall also be sent to the respective Regional Office of MOEF by e-mail.	**Complied.** The industry is regularly submitting Environmental statement to APPCB before 30th September of every year. The same has been posted in hetero website www.hetero.com Environmental statement is enclosed as **Annexure-X.**
XVI	The project proponent shall inform the public that the project has been accorded Environmental Clearance by the Ministry and copies of the clearance letter are available with the SPCB/ Committee and may also be seen at website of the Ministry at http://envfor.nic.in. this shall be advertised with in the seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forward to the concerned regional office of the ministry	The industry has informed public that, the project has been accorded environmental clearance by the Ministry by way of publishing in local news papers. Copy of newspaper clippings has already submitted to Regional Office, MoEF&CC.
XVII	The project authorities shall inform the regional office as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the Project.	Own Funds and therefore no date of financial closure. The same has been informed to Regional Office, MoEF&CC

ANNEXURE-I

CERTIFIED COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE
ISSUED BY SV ENVIRO LABS & CONSULTANTS
M/S. HETERO DRUGS LIMITED-UNIT-VI
NO. J-11011/253/2006-la.II (I) dated 22nd September, 2006

A. Specific Conditions

S. NO	Description of Condition	Compliance Status
I.	The gaseous emissions (SO2, NOx, & HCI) and particulate matter form various process units shall conform to the standards prescribed by the concerned authorities from time to time. VOCs shall also be monitored along with other parameters. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit shall not be stared until the control measures are rectified to achieve the desired efficiency.	**Complied.** The industry has installed all pollution control devices to bring down the gaseous emissions below the prescribed norms. VOCs have been included in the monitoring of air quality. Portable VOC monitors have been procured and started monitoring VOC regularly. Records are being maintained In case of any failure of Pollution control system, the respective plant will be made operational only after rectifying the same
II.	Ambient air quality monitoring stations shall be set up in the downwind direction as well as where maximum ground level concentration are anticipated in consultation with the A.P.P.C.B.	**Complied.** The industry having 03 No CAAQM stations and installed at site in consultation with APPCB.
III.	For control of process emissions, the reactors shall be provided with ventury scrubbers to scrub gaseous emissions of HCl and SO2 and stacks of appropriate height as per the CPCB guidelines. The Scrubbed water after neutralization shall be sent to ETP for future treatment. Company shall provide bag filters & multi cyclones to control the particulate emissions from the boilers.	**Complied.** The industry has installed scrubbers to scrub gaseous emissions and all waste water is being routed to ETP. Installed Bag filters to the boilers to control the particulate emissions from the boiler and also installed ESP for 45 TPH Capacity boiler.
IV.	Spent solvents shall be recovered as far as possible & recovery shall not be less than 95 percent. During purification process, solvent vapors are emitted from purification tanks as fugitive emissions. Action shall be taken to reduce the emissions as far as possible. Use of toxic solvents like Methylene Chloride (M.C.) etc. Shall be minimum and Benzene shall be replaced with alternate solvents. Industry shall make effort to switch over the aqueous based	**Complied.** The Industry has installed distillation column for recovery of solvents and is recovering 90-95% solvents. The industry is taking all measures to control gaseous emissions to the maximum possible extent. The industry has already reduced Halogenated compounds to the maximum possible extent and Hetero R&D is still

	coating film in place of use of Methylene Chloride in Coating operation and to non-halogenated solvents in place of the halogenated solvents in a phased manner. All venting equipment shall have vapour recovery system.	working on reducing the halogenated solvents. The industry has installed dual stage condensers at various stages to arrest and recovery of solvent emissions.
V.	Hazardous and toxic waste generated during the process like distillation residue, spent carbon. Spent mixture solvents, process organic residue shall be treated properly in the Common Effluent Treatment Plant (CETP) Located in the campus of M/s Hetero Drugs Limited. (Unit IX).	**Complied.** The industry is having authorization to send Hazardous & Toxic waste to Ramky TSDF, Vizag & also to cement Industries for co-incineration issued by APPCB. Accordingly we are disposing hazardous waste.
VI.	The company shall undertake following Waste Minimization measures:- • Mastering and control of quantities of active ingredients to minimize waste. • Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. • Use of automated filling to minimize spillage. • Use of "Close Feed" system into batch reactors. • Venting equipment through vapour recovery system. • Use of high pressure hoses for equipment clearing to reduce waste water generation.	The industry is complying with the conditions mentioned • Having control of quantities of active ingredients • Using distilled solvents as raw material in processes as substitutes. • Closed filling into tanks/receivers and feeding system to batch reactors is in place. • Venting of vapours through dual stage condensers only. • Using high pressure jet pumps with hoses for cleaning of floors to reduce waste water generation.
VII.	Fugitive emissions in the work zone environment. Product, raw materials storage area shall be regularly monitored. The emissions shall conform to the limits imposed by SPCB. Vent condensers shall be provided to reactors, distillation columns, dryer and centrifuge etc. to reduce fugitive emissions from reactors, centrifuge, dryer, filter press etc.	**Complied by the industry.** The industry is taking all possible measures for controlling fugitive emissions in the work zone environment by following means: ➢ Vent condensers have been provided to the reactors at all places. ➢ Distillation columns have been installed to recover the solvents. ➢ ANFDs are being installed for replacing Centrifuges & Tray Driers.
VIII.	Total water requirement form the ground water or Yeluru Left Bank Canal (YLBC) Shall NOT EXCEED 238 m 3/day and prior permission from the	**Complied by the industry.** The industry is using water consumption within the stipulated norms.

	SGWB/CGWB/IWSCO shall be obtained. Use of maximum canal water should be ensured as mentioned in the 'Consent for Establishment 'accorded by the APPCB instead of using ground water. The effluent shall be segregated into high TDS and low TDS streams. All the high TDS x high COD effluent shall be forced evaporated in Multi-Effect Evaporator (MEE) system and resultant solid from MEE shall be sent to TSDF, Vizag. The low TDS x low COD effluent shall be treated in ETP. All the effluent generated by the four drug units to be set be up by the Hetero Group in the nearby area shall be treated in the Common Effluent Treatment Plant (CETP) and treated effluent shall be discharged at the point recommended by the National Institute of Oceanography into the Sea after meeting the marine disposal standards as per guidelines of APPCB. Effort shall be made to recycle and reuse maximum treated wastewater in the process. The domestic wastewater shall be sent to the septic tank followed by the soak pit and used for green belt development.	Permission from CGWB is not applicable as the industry is not using Ground water. The industry is segregating waste streams based on TDS and COD levels. Solid waste is being sent to either TSDF, Vizag or To cement Industries as per the authorization issued by APPCB. The industry has installed full-fledged CETP for treating effluents of all units located at Nakkpalli and treated effluent is being discharged discharged at the point recommended by the National Institute of Oceanography into the Sea after meeting the marine disposal standards as per guidelines of APPCB. Complete Sewage is being treated in STP of 300 KLD Capacity and treated sewage is being recycled for gardening purpose.
IX.	All the recommendations of the National Institute of Oceanography (NIO) particularly related to the marine disposal of the treated effluent into the Sea at a depth of 40 ft. and at a distance of the 980 meter and post-project monitoring regarding impacts of marine disposal of the treated effluent on the marine life of the Sea should be implemented.	**Complied.** The industry has implemented recommendations of the study NIO as per rule. Post project monitoring is being conducted and report is being submitted to RO, MoEF regularly.
X.	The solid waste generated in the form of organic solvent residue, inorganic salts from MEE, ETP sludge shall be disposed off into TSDF at Visakapatnam. The fly ash and bottom ash generated from the boiler shall be sold to brick manufacturers. Waste/Used oil and used batteries shall be sold to authorized recyclers / reprocessors. The solvent from mother liquor shall be recovered and reused in the plant operations. All the high TDS x high TDS x high COD effluent and soled from MEE shall be incinerated in the incinerator	**Complied.** ➢ The industry is disposing inorganic hazardous waste to TSDF, Visakhapatnam and Organic Residues to either TSDF or Cement industries as per the conditions of CFO issued by APPCB. ➢ Waste Oils are being disposed to authorized recyclers and ➢ Boiler ash to brick manufacturers. The industry has not installed independent incinerator for disposal of Effluents.

	installed at the TSDF, Vizag and no independent incinerator shall be installed.	
XI.	The Company shall adopt surface as well as roof top rain water harvesting measures to harvest the runoff water for recharge of ground water. Methods shall also be adopted for the conservation of water through and recycling and reusing the treated waste water.	**Complied.** The industry is collecting surface as well as roof top rain water in collection pond created within the premises for improving ground water level in the area. The same water is being recycled for our process if required..
XII.	Green belt shall be provided in an area of 17 ha. Out of total 32.4 ha. to mitigate the effect of fugitive emissions all around the plant. Development of green belt shall be as per the Central Pollution Control Board guidelines.	**Complied.** The industry has developed green belt in more than 30 acres and still it is going on.
XIII.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	**Complied by the industry.** Occupational health surveillance of the workers is being done on a regular basis and records are being maintained as per the Factories Act
XIV	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment. The eco-developmental plan shall be submitted to the APPCB within three months of receipt of this letter for approval.	**Complied.** The company is undertaking eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment. The eco-developmental activities are being carried as per the recommendations of APPCB.

B. General Conditions

S.NO	Description of Condition	Compliance Status
I.	The project authorities shall strictly adhere to the stipulations made by the Andhra Pradesh Pollution Board.	**Complied.** The Industry has followed strictly adherin all the norms stipulated by APPCB.
II.	At no time, the emissions shall exceed the prescribed limits. In the event of failure of any pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.	**Complied.** The industry is following the emissions are not exceeding the prescribed limits. In the event of failure of any pollution control system adopted by the unit, the unit will put out of operation and will not be restarted until the desired efficiency has been achieved.
III.	No further expansion or modifications in the plant shall be carried out without	**Complied.**

	prior approval of the Ministry of Environment and Forests. In case of deviations or alternations in the project proposal form those submitted to this Ministry for clearance, a fresh reference shall be madder to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	The Industry will not carry out any expansions or modifications without the prior approval of MoEF & CC.
IV.	The project authorities shall strictly comply with the rules and regulations under Manufacture, Storage and import of Hazardous Chemicals Rules, 1989 as amended in October 1994 and January 2000. Authorization from the SPCB shall be obtained for collection, treatment, storage, and disposal of hazardous wastes.	**Complied.** The industry is complying with the rules and regulations under Manufacture, Storage and import of Hazardous Chemicals Rules, 1989 as amended in October 1994 and January 2000. Obtained Authorization from the SPCB for collection, treatment, storage, and disposal of hazardous wastes.
V.	The project authorities strictly comply with the rules and regulations with regard to handling and disposal of hazards wastes in accordance with the Hazardous Wastes (Management and Hazardous) Rules, 2003. Authorization from the A.P. Pollution Control Board must be obtained for collections / treatment/storage/disposal of hazardous wastes.	**Complied.** The industry is complying with the rules and regulations with regard to handling and disposal of hazards wastes in accordance with the Hazardous Wastes (Management and Hazardous) Rules, 2003.
VI.	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, Rules, 1989 viz, dBA (day time) and 70 bBA (night time).	**Complied by the industry.** The noise levels are being monitored regularly and it well within the norms stipulated. The ambient noise levels are conforming to the standards prescribed under Environment (Protection) Act, Rules, 1989 viz, dBA (day time) and 70 bBA (night time).
VII.	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	**Complied.** The industry is having separate Environmental Management Cell with laboratory facilities.
VIII.	As proposed in EIA/EMP, Rs. 3.10 Cores and Rs.1.00 Cores/annum earmarked towards capital cost and recurring cost / annum for environmental pollution control measures shall be judiciously utilized to implement the conditions stipulated by the Ministry of Environment and Forests as well as the	**Complied.** The industry has invested Rs.140.0 Crores as capital investment for pollution control devices and incurring Rs. 10.00 Crores as recurring expenditure per annum.

	State Government along with the implemented schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	
IX.	The implementation of the project vis-à-vis environmental action plans shall be monitored by Ministry's Regional Office at Bangalore /SPCB / CPCB. A six monthly compliance status report shall be submitted to monitoring agencies.	**Complied.** The industry has submitted six monthly compliance report to RO,, MoEF &CC as condition.
X.	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	**Not Applicable.** Own funds are being utilised for the project.

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Ref Code	: SVELC/HLL3/22-11/001	**Date : 21-11-2022**
Name and Address	: **M/s. HETERO LABS LIMITED (UNIT-III)** Nallamatipalem Village, Nakkapally Mandal, Visakhapatnam (Dt).	
Sample Particulars	: Ambient Air Quality	
Source of Collection	: Near Canteen Area	
Sample Code	: SVELC/22/AAQ/1392	
Date and Time of Start	: 07-11-2022 10:45hr	
Duration of Sampling	: 24 Hours	
Atmosphere Condition	: CLEAR SKY	

TEST REPORT

S.NO	PARAMETER	UNIT	RESULT	METHOD	NAAQ STANDARD
1	Particulate Matter – PM_{10}	$\mu g/m^3$	65.4	IS : 5182 – P-23	100
2	Particulate Matter – $PM_{2.5}$	$\mu g/m^3$	26.2	IS : 5182 – P-24	60
3	Sulphur Dioxide – SO_2	$\mu g/m^3$	14.6	IS : 5182 – P-2	80
4	Oxides of Nitrogen – NO_X	$\mu g/m^3$	13.5	IS : 5182 – P-6	80

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Ref Code	: SVELC/HLL3/22-11/002	**Date : 21-11-2022**
Name and Address	: **M/s. HETERO LABS LIMITED (UNIT-III)** Nallamatipalem Village, Nakkapally Mandal, Visakhapatnam (Dt).	
Sample Particulars	: Ambient Air Quality	
Source of Collection	: Near Production Area (Block-A)	
Sample Code	: SVELC/22/AAQ/1393	
Date and Time of Start	: 07-11-2022 11:00 hr	
Duration of Sampling	: 24 Hours	
Atmosphere Condition	: CLEAR SKY	

TEST REPORT

S.NO	PARAMETER	UNIT	RESULT	METHOD	NAAQ STANDARD
1	Particulate Matter – PM_{10}	$\mu g/m^3$	66.4	IS : 5182 – P-23	100
2	Particulate Matter – $PM_{2.5}$	$\mu g/m^3$	25.3	IS : 5182 – P-24	60
3	Sulphur Dioxide – SO_2	$\mu g/m^3$	14.2	IS : 5182 – P-2	80
4	Oxides of Nitrogen – NO_X	$\mu g/m^3$	12.5	IS : 5182 – P-6	80

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Ref Code	: SVELC/HLL3/22-11/003	**Date : 21-11-2022**
Name and Address	: **M/s. HETERO LABS LIMITED (UNIT-III)** Nallamatipalem Village, Nakkapally Mandal, Visakhapatnam (Dt).	
Sample Particulars	: Ambient Air Quality	
Source of Collection	: Near Production Block	
Sample Code	: SVELC/22/AAQ/1394	
Date and Time of Start	: 07-11-2022 11:15 hr	
Duration of Sampling	: 24 Hours	
Atmosphere Condition	: CLEAR SKY	

TEST REPORT

S.NO	PARAMETER	UNIT	RESULT	METHOD	NAAQ STANDARD
1	Particulate Matter – PM_{10}	$\mu g/m^3$	68.2	IS : 5182 – P-23	100
2	Particulate Matter – $PM_{2.5}$	$\mu g/m^3$	27.4	IS : 5182 – P-24	60
3	Sulphur Dioxide – SO_2	$\mu g/m^3$	16.8	IS : 5182 – P-2	80
4	Oxides of Nitrogen – NO_X	$\mu g/m^3$	14.9	IS : 5182 – P-6	80

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Ref Code	: SVELC/HLL3/22-11/004	**Date : 21-11-2022**
Name and Address	: **M/s. HETERO LABS LIMITED (UNIT-III)** Nallamatipalem Village, Nakkapally Mandal, Visakhapatnam (Dt).	
Sample Particulars	: Effluent Analysis	
Source of Collection	: ETP INLET	
Sample Code	: SVELC/22/EFF/1385	
Date of Collection	: 08-11-2022	
Date of Receipt	: 08-11-2022	

TEST REPORT

S No	Parameter	Unit	Result	Method
1	pH	-	7.34	APHA 4500-H+B, 23rd
2	Suspended Solids – SS	mg/l	186	APHA 2540-D, 23rd Ed,2017
3	Total Dissolved Solids – TDS	mg/l	13774	APHA,2540-C,23rd Ed, 2017
4	Chemical Oxygen Demand – COD	mg/l	11536	APHA 5220-B, 23rd Ed,2017
5	BOD 3d 27^{0}C	mg/l	4590	IS 3025 Part 44
6	Chlorides as Cl^-	mg/l	2977	APHA,4500-Cl B,23rd Ed, 2017
7	Oil & Grease	mg/l	6.2	APHA,5520-D,5-38,23rd Ed, 2017
8	Sulphide as S	mg/l	8.98	APHA,4500S^2 D, 23rd Ed,2017
9	Phenolic Compounds (C_6H_5OH)	mg/l	0.31	APHA,5530-C, 23rd Ed,2017
10	Cyanide as CN	mg/l	BDL	APHA,4500-CN^- E , 23rd Ed,2017
11	Hexavalent Chromium as Cr^{+6}	mg/l	BDL	APHA,3500-Cr B , 23rd Ed,2017
12	Lead as Pb	mg/l	BDL	APHA,3120-B , 23rd Ed,2017

Note: BDL denotes Below Detectable Level

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Ref Code	: SVELC/HLL3/22-11/005	**Date : 21-11-2022**
Name and Address	: **M/s. HETERO LABS LIMITED (UNIT-III)** Nallamatipalem Village, Nakkapally Mandal, Visakhapatnam (Dt).	
Sample Particulars	: Stack Monitoring	
Source of Collection	: 725 KVA Generator	
Sample Code	: SVELC/22/SE/1396	
Date and Time of Start	: 07-11-2022 13:00 hr	
Duration of Sampling	: 30 MINS	

TEST REPORT

STACK DETAILS

S No	Description	Unit	Result
1	Pitot Coefficient	-	0.87
2	Specific Gravity of Fluid	-	1.0
3	Temperature @ DGM	°C	33
4	Stack Temperature	°C	155
5	Nozzle diameter	mm	10
6	Exit Velocity	m/sec	13.0
7	Fuel Used	-	HSD

EMISSION DATA

S.No	Parameter	Unit	Result	Method	Standard
1	Particulate Matter – PM	mg/nm^3	63.6	IS:11255 – P-1	115
2	Sulphur Dioxide – SO_2	mg/nm^3	27.4	IS:11255 – P-2	-
3	Oxides of Nitrogen – NO_x	mg/nm^3	46.2	IS:11255 – P-7	-

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Ref Code	: SVELC/HLL3/22-11/006	**Date : 21-11-2022**
Name and Address	: **M/s. HETERO LABS LIMITED (UNIT-III)** Nallamatipalem Village, Nakkapally Mandal, Visakhapatnam (Dt).	
Sample Particulars	: Stack Monitoring	
Source of Collection	: 1165 KVA DG SET - I	
Sample Code	: SVELC/22/SE/1397	
Date and Time of Start	: 07-11-2022 14:15 Hr	
Duration of Sampling	: 30 MINS	

TEST REPORT

STACK DETAILS

S No	Description	Unit	Result
1	Pitot Coefficient	-	0.87
2	Specific Gravity of Fluid	-	1.0
3	Temperature @ DGM	°C	33
4	Stack Temperature	°C	189
5	Nozzle Diameter	mm	10
6	Exit Velocity	m/sec	15.0
7	Duration of Sampling	minutes	30
8	Fuel Used	-	HSD

EMISSION DATA

S.No	Parameter	Unit	Result	Method	Standard
1	Particulate Matter – PM	mg/nm^3	71.2	IS:11255 – P-1	115
2	Sulphur Dioxide – SO_2	mg/nm^3	45.6	IS:11255 – P-2	-
3	Oxides of Nitrogen – NO_X	mg/nm^3	62.3	IS:11255 – P-7	-

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Ref Code	: SVELC/HLL3/22-11/007	**Date : 21-11-2022**
Name and Address	: **M/s. HETERO LABS LIMITED (UNIT-III)** Nallamatipalem Village, Nakkapally Mandal, Visakhapatnam (Dt).	
Sample Particulars	: Stack Monitoring	
Source of Collection	: 1165 KVA DG SET - II	
Sample Code	: SVELC/22/SE/1398	
Date and Time of Start	: 07-11-2022 14:00 Hr	
Duration of Sampling	: 30 MINS	

TEST REPORT

STACK DETAILS

S.No	Description	Unit	Result
1	Pitot Coefficient	-	0.87
2	Specific Gravity of Fluid	-	1.0
3	Temperature @ DGM	°C	33
4	Stack Temperature	°C	218
5	Nozzle Diameter	mm	10
6	Exit Velocity	m/sec	16.0
7	Duration of sampling	minutes	30
7	Fuel Used	-	HSD

EMISSION DATA

S.No	Parameter	Unit	Result	Method	Standard
1	Particulate Matter – PM	mg/nm^3	73.4	IS:11255 – P-1	115
2	Sulphur Dioxide – SO_2	mg/nm^3	40.2	IS:11255 – P-2	-
3	Oxides of Nitrogen – NO_X	mg/nm^3	57.5	IS:11255 – P-7	-

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Ref Code	: SVELC/HLL3/22-11/008	**Date : 21-11-2022**
Name and Address	: **M/s. HETERO LABS LIMITED (UNIT-III)** Nallamatipalem Village, Nakkapally Mandal, Visakhapatnam (Dt).	
Sample Particulars	: Stack Monitoring	
Source of Collection	: 2030 KVA Generator - I	
Sample Code	: SVELC/22/SE/1399	
Date and Time of Start	: 07-11-2022 15:45 hr	
Duration of Sampling	: 30 MINS	

TEST REPORT

STACK DETAILS

S No	Description	Unit	Result
1	Pitot Coefficient	-	0.87
2	Specific Gravity of Fluid	-	1.0
4	Temperature @ DGM	°C	32
5	Stack Temperature	°C	235
6	Nozzle Diameter	mm	10
7	Exit Velocity	m/sec	18.0
8	Fuel Used	-	HSD

EMISSION DATA

S.No	Parameter	Unit	Result	Method	Standard
1	Particulate matter – PM	mg/nm^3	76.4	IS:11255 – P-1	115
2	Sulphur Dioxide – SO_2	mg/nm^3	44.2	IS:11255 – P-2	-
3	Oxides of Nitrogen – NO_X	mg/nm^3	66.3	IS:11255 – P-7	-

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Ref Code	: SVELC/HLL3/22-11/09	**Date : 21-11-2022**
Name and Address	: **M/s. HETERO LABS LIMITED (UNIT-III)** Nallamatipalem Village, Nakkapally Mandal, Visakhapatnam (Dt).	
Sample Particulars	: Stack Monitoring	
Source of Collection	: 2030 KVA Generator - II	
Sample Code	: SVELC/22/SE/1400	
Date and Time of Start	: 07-11-2022 16:30 hr	
Duration of Sampling	: 30 MINS	

TEST REPORT

STACK DETAILS

S No	Description	Unit	Result
1	Pitot Coefficient	-	0.87
2	Specific Gravity of Fluid	-	1.0
4	Temperature @ DGM	°C	32
5	Stack Temperature	°C	227
6	Nozzle Diameter	mm	10
7	Exit Velocity	m/sec	17.2
8	Fuel Used	-	HSD

EMISSION DATA

S.No	Parameter	Unit	Result	Method	Standard
1	Particulate Matter – PM	mg/nm^3	74.2	IS:11255 – P-1	115
2	Sulphur Dioxide – SO_2	mg/nm^3	43.6	IS:11255 – P-2	-
3	Oxides of Nitrogen – NO_X	mg/nm^3	63.4	IS:11255 – P-7	-

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VISAKHAPATNAM

SV ENVIRO LABS & CONSULTANTS

HETERO LABS LIMITED, UNIT-III
SCRUBBERS LIST

SCRUBBER STATUS

S.NO	BLOCK	SCR No	DESCRIPTION		TANK		ON LINE P^{H} METER	Scrubber Stage
			CAPACITY	MAKE	MAKE	CAP (KL)		
1	PB1	PB1/SCR-001	Ø800*6.1M	HDPE	GLR	2	NO	Single stage
2		PB1/SCR-002	Ø1000*6.1 M	HDPE	inbult	1	YES	**Double Stage**
		PB1/SCR-003	Ø1000*6 M			1	YES	
3		PB1/SCR-004	Ø800*6.1M	PP/FRP	SSR	2	NO	Single stage
4	PB2	PB2/SCR-001	Ø 1000*6.1M	HDPE	GLR	2	YES	**Double Stage**
		PB2/SCR-002	Ø 1000*6.1M	HDPE				
5		PB2/SCR-003	Ø800*6.1 M	HDPE	GLR	3	NO	Single stage
6	PB3	PB3/SCR-001	Ø 1000*6.1M	HDPE	GLR	4	YES	**Double Stage**
		PB3/SCR-002						
7		PB3/SCR-003	Ø800*6.1M	HDPE	GLR	1.6	NO	Single stage
8		PB3/SCR-004	Ø800*6.1M	PP/FRP	GLR	1.5	NO	Single stage
9		PB3/SCR-005	Ø 1000*6.1M	HDPE	GLR	2	NO	Single stage
10	PB4	PB4/SCR-001	Ø800*6.M	PP/FRP	GLR	3	YES	**Double Stage**
		PB4/SCR-001A	Ø300*2M	PP/FRP	SINTEX	0.5	YES	
11		PB4/SCR-002	Ø800*6.1M	HDPE	GLR	1.5	NO	Single stage
12		PB4/SCR-003	Ø800*6.1M	HDPE	GLR	1.5	NO	Single stage
13		PB4/SCR-004	Ø800*6 M	PP/FRP	GL	1	NO	Single stage
14	PB5	PB5/SCR-001	Ø 1000*6.1M	HDPE	HDPE	3	NO	**Double Stage**
		PB5/SCR-002	Ø800*6.1 M	HDPE	HDPE	3	NO	
15	C	C/SCB-01	Ø800*6M	HDPE	GLR	3.0Kl	YES	**Double Stage**
		C/SCB-02	Ø300*3M	PPFRP	Sintex	0.5Kl		
16	C	C/SCB-03	Ø300*3M	PPFRP	Sintex	0.5kl	NO	**Single**
17	C	C/SCB-04	Ø1000*8M	HDPE	inbult	—	YES	**Double Stage**
		C/SCB-05	Ø800*6M	HDPE	GLR	1.0Kl	YES	
18	D	D/SCB-01	Ø800*6M	HDPE	MSGL	3.0KL	YES	Single
19	H	H/SCB-01	Ø1000*8M	HDPE	inbult	—	YES	**Double Stage**
	H	H/SCB-02	Ø1000*8M	HDPE	inbult	—		
20	H	H/SCB-03	Ø800*6M	HDPE	MSGL	1.0Kl	YES	**Double Stage**
	H	H/SCB-04	Ø800*6M	HDPE	MSGL	3.0KL	YES	
21	G	G/SCB-01	Ø800*6M	HDPE	MSGL	3.0KL	YES	**Double Stage**
22	G	G/SCB-02	Ø1000*8M	HDPE	inbult	—	YES	**Double Stage**
23	L	L/SCB-01	Ø1000*8M	HDPE	inbult	—	YES	**Double Stage**
24	L	L/SCB-02	Ø900*6M	HDPE	MSGL	3.0Kl	NO	**Double Stage**
25	L	L/SCB-03	Ø900*6M	HDPE	GLR	5.0Kl	NO	Single
26	L	L/SCB-04	Ø900*6M	HDPE	GLR	2.0Kl	YES	**Double Stage**
27	K	K/SCB-01	Ø1000*8M	HDPE	inbult	—	YES	**Double Stage**
28	K	K/SCB-02	Ø1000*8M	HDPE	Sintex	3.0KL	YES	**Double Stage**

		K/SCB-03	Ø1000*8M	HDPE	inbult	—	YES	
29	E	E/SCB-01	Ø800*6M	HDPE	SS	3.0KL	YES	**Multistage**
		E/SCB-02	Ø800*6M					
		E/SCB-03	Ø800*6M					
30	E	E/SCB-04	Ø800*6M	HDPE	SS	2.0KL	YES	Single
31	E	E/SCB-05	Ø800*6M	HDPE	inbult	—	YES	Single
32	J	J/SCB-01	Ø800*6M	HDPE	Sintex	2.0Kl	YES	Single
33	J	J/SCB-02	Ø800*6M	HDPE	inbult	5.0Kl	YES	**Double Stage**
	J	J/SCB-03						
34	J	J/SCB-04	Ø800*6M	HDPE	inbult	—	NO	Single
35	P	P/SCB-01	Ø800*6M	PP	PP	1.0Kl	No	Single
36	P	P/SCB-02	Ø800*6M	HDPE	MSGL	3.0Kl	No	**Double Stage**
37	I	I/SCB-01	Ø800*6M	HDPE	inbult	—	YES	**Multistage**
		I/SCB-02						
		I/SCB-03						
38	I	I/SCB-04	Ø800*6M	HDPE	GLR	5KL	YES	**Double Stage**
		I/SCB-05						
39	I	I/SCB-07	Ø800*6M	HDPE	inbult	—	NO	**Double Stage**
		I/SCB-08						
40	I	I/SCB-09	Ø800*6M	HDPE	inbult	—	NO	**Double Stage**
		I/SCB-010						
41	IDS	IDS/SCB01	Ø250*1M	PPFRP	Sintex	1KL	NO	**Double Stage**
		IDS/SCB02						
43	HCL Tanks	HCL/SCB-02	Ø800*1M	HDPE	inbult	—	NO	**Double Stage**

Report

On

LEAK DETECTION AND REPAIR PROGRAMME [LDAR]

To

HETERO LABS LIMITED, UNIT-III
Vishakhapatnam, Andhra Pradesh

Conducted By

G Lens Innovation Labs Pvt Ltd.
for a greener tomorrow

GLens Innovation Labs Pvt Ltd
Chennai

1.0 INTRODUCTION

1.1 About LDAR:

Leak Detection and Repair (LDAR) is a program implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment. Several standards such as *Maximum Achievable Control Technology* (MACT) standards, *New Source Performance Standards* (NSPS), *National Emissions Standards for Hazardous Air Pollutants* (NESHAP) and Central Pollution Control Board (CPCB) require the monitoring and reporting of these fugitive emissions from process equipment.

LDAR is a work practice designed to identify leaking equipment so that emissions can be reduced through repairs. A component that is subject to LDAR requirements must be monitored at specified, regular intervals to determine whether it is leaking. Any leaking component must then be repaired or replaced within a specified time frame.

The bulk drug industry has successfully reduced its emissions of total volatile organic compounds (TVOC), one of the precursors to surface level ozone formation, by focusing on reduced venting, vapor recovery and better storage controls. In order make further reductions, the industry is now focusing its efforts on the control of fugitive emissions (leaks) which can contribute up to one third of the remaining site TVOC emissions. Fugitive emissions are generated at plant components which are supposed to be leak-tight (like pump or compressor seals, valve packing, flanges, sample points, etc.). Whilst a typical site would have 10,000+ such components, only a few of these contribute to the bulk of fugitive emissions. Identifying these few leaks for repair is difficult and time consuming, as they are spread out over the entire site, including hard to access locations.

Two methodologies are currently available to detect leaking equipment in so-called LDAR (Leak Detection and Repair) programs in which the present study has been conducted as per the below method.

- Method 21 (i.e. Sniffing), uses a hydrocarbon ionization detector; this methodology was developed by the US-EPA and was the first historically. It is a widely accepted method, key elements of which are adopted in the European Standard EN 15446:2008.

1.2 WHY REGULATE EQUIPMENT LEAKS?

EPA has determined that leaking equipment, such as valves, pumps, and connectors, are the largest source of emissions of volatile organic compounds (VOCs) and volatile hazardous air pollutants (VHAPs) from petroleum refineries and chemical manufacturing facilities. Emissions from equipment leaks exceed emissions from storage vessels, wastewater, transfer operations, or process vents. VOCs contribute to the formation of ground-level ozone. Ozone is a major component of smog, and causes or aggravates respiratory disease, particularly in children, asthmatics, and healthy adults who participate in moderate exercise. Many areas where refineries and chemical facilities are located, do not meet the National Ambient Air Quality Standard (NAAQS) for ozone. Ozone can be transported in the atmosphere and contribute to nonattainment in downwind areas. Some species of VOCs are also classified as VHAPs. Some known or suspected effects of exposure to VHAPs include cancer, reproductive effects, and birth defects. The highest concentrations of VHAPs tend to be closest to the emission source, where the highest public exposure levels are also often detected. Some common VHAPs emitted from refineries and chemical plants include acetaldehyde, benzene, formaldehyde, methylene chloride, naphthalene, toluene, and xylene.

1.3 HOW ARE EMISSIONS FROM EQUIPMENT LEAKS REDUCED?

Facilities can control emissions from equipment leaks by implementing a leak detection and repair (LDAR) program or by modifying/replacing leaking equipment with "leak less" components. Most equipment leak regulations allow a combination of both control methods.

• Leaks from open-ended lines, compressors, and sampling connections are usually fixed by modifying the equipment or component. Emissions from pumps and valves can also be reduced through the use of "leak less" valves and "seal less" pumps. Common leak less valves include bellows valves and diaphragm valves, and common seal less pumps are diaphragm pumps, canned motor pumps, and magnetic drive pumps. Leaks from pumps can also be reduced by using dual seals with or without barrier fluid.

• Leak less valves and seal less pumps are effective at minimizing or eliminating leaks, but their use may be limited by materials of construction considerations and process operating conditions. Installing leak less and seal less equipment components may be a wise choice for replacing individual, chronic leaking components.

1.5 VOLATILE ORGANIC COMPOUNDS (VOCS)

VOC DEFINITION: For the purpose of this study the term VOC is considered to be defined as in the standard EN 15446:2008: "all products of which at least 20% m/m has a vapor pressure higher than 0.3 kPa at 20°C. The streams concerned in these studies do not contain methane so strictly the study addresses non-methane volatile hydrocarbons (NMVOC).

Diffuse VOC Emissions: "Non-channeled VOC emissions that are not released via specific emission points such as stacks. They can result from 'area' sources (e.g. tanks) or 'point' sources (e.g. pipe flanges)" In the descriptive section on VOC monitoring. "Diffuse VOC emissions are emissions arising from direct contact of gaseous or liquid volatile organic compounds with the environment (atmosphere, under normal operating circumstances). These can result from:

- Inherent design of the equipment (e.g., uncovered oil/water separators);

- Operating conditions (e.g., non collected vent of a fixed roof tank during loading); or fugitive emission caused by an undesired gradual loss of tightness from a piece of equipment and a resulting leak. Fugitive emissions are a subset of diffuse emission. Emissions from point sources include leaks from components which are not fully sealed: pipe flanges, valve stems, pump and compressor seals, etc.

2.0 LDAR STUDY

In **M/s Hetero Labs Ltd., Unit -3, ANDHRA PRADESH.** Unit of about 2821 process components points were monitored from 05.10.2021 to 09.10.2021 and covered 2821 components in the process plant.

A typical pharmaceutical unit can emit some Kgs per year of VOCs from leaking equipment, such as valves, connectors, pumps, sampling connections, compressors, pressure relief devices and open-ended lines.

The environmental regulations are prescribed LDAR programs as a means of reducing emissions have very specific standards and applied to a monitoring and repair program. The LDAR study included the following protocols:

- Chemical streams that must be monitored
- Types of components (pumps, valves, connectors, etc.) to be monitored
- Measured concentration in PPM that indicates a leak
- Frequency of monitoring
- Method of monitoring
- Actions to be taken if a leak is discovered
- Length of time in which an initial attempt to repair the leak must be performed
- Length of time in which an effective repair of the leak must be made
- Actions that must be taken if a leak cannot be repaired within guidelines
- Record-keeping and reporting requirements

VOCs are contributed to the formation of ground level ozone. Many of the areas where Refineries are located do not meet the NAAQ standards for ozone. Ozone can be transported in the atmosphere and contribute to nonattainment in downwind areas.

2.1 Affected Sources

Each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, flange and connector that contains or contacts a fluid or gas. That is exceedingly more than 5000ppm of pump and compressor seals and 3000 ppm other components is an affected source.

SOURCES OF EQUIPMENT LEAKS.	
Pumps are used to move fluids from one point to another. Two types of pumps extensively used in petroleum refineries and chemical plants are centrifugal pumps and positive displacement, or reciprocating pumps.	Leaks from pumps typically occur at the seal.
Valves are used to either restrict or allow the movement of fluids. Valves come in numerous varieties and with the exception of connectors, are the most common piece of process equipment in industry.	Leaks from valves usually occur at the stem or gland area of the valve body and are commonly caused by a failure of the valve packing or O-ring.
Connectors are components such as flanges and fittings used to join piping and process equipment together. Gaskets and blinds are usually installed between flanges.	Leaks from connectors are commonly caused from gasket failure and improperly torqued bolts on flanges.
Sampling connections are utilized to obtain samples from within a process.	Leaks from sampling connections usually occur at the outlet of the sampling valve when the sampling line is purged to obtain the sample.
Compressors are designed to increase the pressure of a fluid and provide motive force. They can have rotary or reciprocating designs.	Leaks from compressors most often occur from the seals.
Pressure relief devices are safety devices designed to protect equipment from exceeding the maximum allowable working pressure. Pressure relief valves and rupture disks are examples of pressure relief devices.	Leaks from pressure relief valves can occur if the valve is not seated properly, operating too close to the set point, or if the seal is worn or damaged. Leaks from rupture disks can occur around the disk gasket if not properly installed.

Open-ended lines are pipes or hoses open to the atmosphere or surrounding environment.	Leaks from open-ended lines occur at the point of the line open to the atmosphere and are usually controlled by using caps, plugs, and flanges. Leaks can also be caused by the incorrect implementation of the block and bleed procedure.

2.2 Equipment Leak

A leak is defined as greater than or equal to 3,000 & 5000 ppmv as methane, for organic compounds, as determined by EPA Reference Method 21. Most of the emissions are from valves and connectors because these are most prevalent components and can number in the thousands. The major cause of emissions from valves and connectors is seal or gasket failure due to normal wear or improper maintenance. More than 90% of emissions from the leaking equipment with valves are being the most significant source. The open-ended lines and sampling connections account for as much as 5 – 10% of total VOC emissions from equipment leaks.

2.3 Minimum Requirements for an Acceptable Organic LDAR Program:

- Each affected source is screened initially using Method 21. Sources that are unsafe to monitor is not screened, but documentation is provided to substantiate the unsafe nature.

- Monthly visual inspections have to be performed by industry on each affected source for signs of leakage (e.g. dripping liquid, spraying, misting, clouding, ice formation, distinctive odors, etc.).

- Monitoring of each affected source is to be conducting quarterly using Method 21.

All potential leak points associated with a component must be identified and screened for leaks. The detected leaks by Method 21 test were tagged and repaired. The leak sources are measured after repair and the same is recorded.

3.0 METHODOLOGY OF THE STUDY:

EPA has found significant widespread noncompliance with Leak Detection and Repair regulations and more specifically noncompliance with Method 21 requirements.

Step 1: Preparation of LDAR project

- Information exchange meeting
- Project introduction
- Project scooping
- Coding & naming conventions
- Prepare technical information (medium, stream, drawings,)
- Stream composition
- YTD production time per stream
- Leak definition, repair definition and tag definition per stream
- Detection equipment to use

Step 2: Database preparation:

- Build site structure (unit - sections - drawings - streams)
- Prepare Basic data
- Prepare Customer data

Step 3: Source inventory:

- Project kick-off meeting
- Safety training
- Site visit
- Define monitoring routes
- Start inventory program
- Prepare monitoring phase

Step 4: Unit monitoring phase

- Prepare detection devices and gather relevant information
- Start monitoring program
- Regular status meetings
- Database update

Step 5: First repair attempt

- Prepare tightening lists (sources with leak-rate > repair definition)
- Guide mechanical/operator to leaking sources
- Perform on-line reparation
- Re-monitoring after repair attempt

Step 6: Reporting

- Consolidate all gathered data
- Prepare lessons learned
- Create LDAR report
- Detail list of all leaking sources
- Repair orders
- Equipment overview per EPA source
- Top leakers (in costs and losses)
- Sort on most leaking equipment (EPA sources)

3.1 Sampling Methodology:

Initial Screening: Screening tests must be conducted initially and include:

1. The type of affected source (e.g. pump, compressor, etc.).
2. Site specific ID of each affected source.
3. Date of the Method 21 test.
4. Type of Method 21 detector.
5. Calibration results of Method 21 detector.
6. Screening results in ppmv.

4.0 ELEMENTS OF AN LDAR PROGRAM:

4.1 IDENTIFYING COMPONENTS:

4.1.1 Current Requirements

- Assign a unique identification (ID) number to each regulated component.
- Record each regulated component and its unique ID number in a log.
- Physically locate each regulated component in the facility, verify its location on the piping and instrumentation diagrams (P&IDs) or process flow diagrams, and update the log if necessary. Some states require a physical tag on each component subject to the LDAR requirements.
- Identify each regulated component on a site plot plan or on a continuously updated equipment log.
- Promptly note in the equipment log when new and replacement pieces of equipment are added and equipment is taken out of service.

4.1.2 Best Practices

- Physically tag each regulated equipment component with a unique ID number.
- Write the component ID number on piping and instrumentation diagrams.
- Periodically perform a field audit to ensure lists and diagrams accurately represent equipment installed in the plant.

4.2 LEAK DEFINITION:

4.2.1 Current Requirements

- Method 21 requires VOC emissions from regulated components to be measured in parts per million (ppm). A leak is detected whenever the measured concentration exceeds the threshold standard (i.e., **leak definition**) for the applicable regulation.
- Leak definitions vary by regulation, component type, service (e.g., light liquid, heavy liquid, gas/vapor), and monitoring interval.
- Most NSPS have a leak definition of 10,000 ppm. Many NESHAP use a 500-ppm or 1,000-ppm leak definition.
- Many equipment leaks regulations also define a leak based on visual inspections and observations (such as fluids dripping, spraying, misting or clouding from or around components), sound (such as hissing), and smell.

Note: The LDAR requirements specify weekly visual inspections of pumps, agitators, and compressors for indications of liquids leaking from the seals.

4.2.2 Best Practices

- Utilize a leak definition lower than what the regulation requires.
- Simplify the program by using the lowest leak definition when multiple leak definitions exist.
- Make the lowest leak definition conservative to provide a margin of safety when monitoring components.
- Keep the lowest leak definition consistent among all similar component types. For example, all valves in a facility might have a leak definition of 500 ppm.

4.3 MONITORING COMPONENTS:

4.3.1 Current Requirements

- For many NSPS and NESHAP regulations with leak detection provisions, the primary method for monitoring to detect leaking components is EPA Reference Method 21 (40 CFR Part 60, Appendix A).
- Method 21 is a procedure used to detect VOC leaks from process equipment using a portable detecting instrument.
- Monitoring intervals vary according to the applicable regulation, but are typically weekly, monthly, quarterly, and yearly. For connectors, the monitoring interval can be every 2, 4, or 8 years. The monitoring interval depends on the component type and periodic leak rate for the component type.

4.3.2 Best Practices

- Although not required by Method 21, use an automatic (electronic) data logger to save time, improve accuracy, and provide an audit record.
- Audit the LDAR program to help ensure that the correct equipment is being monitored, Method 21 procedures are being followed properly, and the required records are being kept.
- Monitor components more frequently than required by the regulations.
- Perform QA/QC of LDAR data to ensure accuracy, completeness, and to check for inconsistencies.
- Eliminate any obstructions (e.g., grease on the component interface) that would prevent monitoring at the interface.
- If a rule allows the use of alternatives to Method 21 monitoring, Method 21 should still be used periodically to check the results of the alternative monitoring method.

4.4 REPAIRING COMPONENTS:

4.4.1Current Requirements

- Repair leaking components as soon as practicable, but not later than a specified number of calendar days (usually 5 days for a first attempt at repair and 15 days for final attempt at repair) after the leak is detected.
- First attempts at repair include, but are not limited to, the following practices where practicable and appropriate:
- Tightening bonnet bolts
- Replacing bonnet bolts
- Tightening packing gland nuts
- Injecting lubricant into lubricated packing
- If the repair of any component is technically infeasible without a process unit shutdown, the component may be placed on the Delay of Repair list, the ID number is recorded, and an explanation of why the component cannot be repaired immediately is provided. An estimated date for repairing the component must be included in the facility records.
- Note: The "drill and tap" method for repairing leaking valves is generally considered technically feasible without requiring a process unit shutdown and should be tried if the first attempt at repair does not fix the leaking valve.
- The component is considered to be repaired only after it has been monitored and shown not to be leaking above the applicable leak definition.

4.4.2 Best Practices

- Develop a plan and timetable for repairing components.
- Make a first attempt at repair as soon as possible after a leak is detected.
- Monitor components daily and over several days to ensure a leak has been successfully repaired.
- Replace problem components with "leakless" or other technologies.

4.5 RECORD KEEPING

4.5.1 Current Requirements

***For each regulated process**:*

- Maintain a list of all ID numbers for all equipment subject to an equipment leak regulation.
- For valves designated as "unsafe to monitor," maintain a list of ID numbers and an explanation/review of conditions for the designation.
- Maintain detailed schematics, equipment design specifications (including dates and descriptions of any changes), and piping and instrumentation diagrams.
- Maintain the results of performance testing and leak detection monitoring, including leak monitoring results per the leak frequency, monitoring leakless equipment, and non-periodic event monitoring.

For leaking equipment:

- Attach ID tags to the equipment.
- Maintain records of the equipment ID number, the instrument and operator ID numbers, and the date the leak was detected.
- Maintain a list of the dates of each repair attempt and an explanation of the attempted repair method.
- Note the dates of successful repairs.
- Include the results of monitoring tests to determine if the repair was successful.

4.5.2 Best Practices

- Perform internal and third-party audits of LDAR records on a regular basis to ensure compliance.
- Electronically monitor and store LDAR data including regular QA/QC audits.
- Perform regular records maintenance.
- Continually search for and update regulatory requirements.
- Properly record and report first attempts at repair.
- Keep the proper records for components on Delay of Repair lists.

5.0 METHOD 21 - Determination Of Volatile Organic Compound Leaks:

5.1 Scope:

This method is applicable for the determination of VOC leaks from process equipment. These sources include, but are not limited to, valves, flanges and other connections, pumps and compressors, pressure relief devices, process drains, open-ended valves, pump and compressor seal system degassing vents, accumulator vessel vents, agitator seals, and access door seals.

5.2 Summary of Method

A portable instrument is used to detect VOC leaks from individual sources. The instrument detector used in this study is PID which will meet the specifications and performance criteria. A leak definition concentration based on a reference compound is specified in each applicable regulation. This method is intended to locate and classify leaks only, and is not to be used as a direct measure of mass emission rate from individual sources.

5.3 Equipment and Supplies

A VOC monitoring instrument meeting the following specifications is required:

- The VOC instrument detector is responding to the compounds being processed. Detector which are used to measure TVOC is photoionization.
- The instrument is capable of measuring the leak definition concentration specified in the regulation.
- The scale of the instrument meter is readable to ±2.5 % of the specified leak definition concentration.
- The instrument is equipped with an electrically driven pump to ensure that a sample is provided to the detector at a constant flow rate. The nominal sample flow rate, as measured at the sample probe tip, shall be 0.10 to 3.0 l/min (0.004 to 0.1 ft 3 /min) when the probe is fitted with a glass wool plug or filter that may be used to prevent plugging of the instrument.
- The instrument is equipped with a probe or probe extension or sampling not to exceed 6.4 mm (1/4 in) in outside diameter, with a single end opening for admission of sample.

The instrument is intrinsically safe for operation in explosive atmospheres as defined by the National Electrical Code by the National Fire Prevention Association or other applicable regulatory code for operation in any explosive atmospheres that may be encountered in its use.

5.4 Sample Collection, Preservation, Storage, and Transport

Instrument Performance Evaluation. Assemble and start up the instrument according to the manufacturer's instructions for recommended warmup period and preliminary adjustments.

Response Factor. A response factor is to be determined for each compound that is to be measured, either by testing or from reference sources. The response factor tests are required before placing the analyzer into service, but do not have to be repeated at subsequent intervals.

Calibrate the instrument with the reference compound as specified in the applicable regulation (Iso-butylene). Introduce the calibration gas mixture to the analyzer and record the observed meter reading. Introduce zero gas until a stable reading is obtained. Make a total of three measurements by alternating between the calibration gas and zero gas. Calculate the response factor for each repetition and the average response factor.

The instrument response factors for each of the individual VOC to be measured is less than 10 unless otherwise specified in the applicable regulation. When no instrument is available that meets this specification when calibrated with the reference VOC specified in the applicable regulation, the available instrument may be calibrated with one of the VOC to be measured, or any other VOC, so long as the instrument then has a response factor of less than 10 for each of the individual VOC to be measured.

6.0 LEAK DETECTION METHODS:

Two main methodologies are currently available to detect the emissions from leaking equipment and presently used this methodology based on Sniffing: the detection is done by drawing an air sample past a hydrocarbon ionization detector to detect the VOC concentration in the vicinity of the leak source (called screening value). This methodology was first developed by the US Environmental Protection Agency (EPA) and is referred to as "Method 21".The European LDAR Standard EN 15446:2008 is a modified version of Method 21 where the frequency of the surveys and the leak repair threshold are not fixed but can be adapted based on analysis of the previous survey

6.1 SNIFFING DETECTION INSTRUMENTS:

Many different types of Sniffing analysers can be used to detect fugitive VOC emissions. The most common types are flame- or photo-ionization detectors (FID, PID) and infrared absorption monitors. The choice of the instrument type should be based on the type of chemical species to be surveyed. In this study has been used Photo Ionization Detector (PID) for the quantification of TVOCs in the fugitive emission.

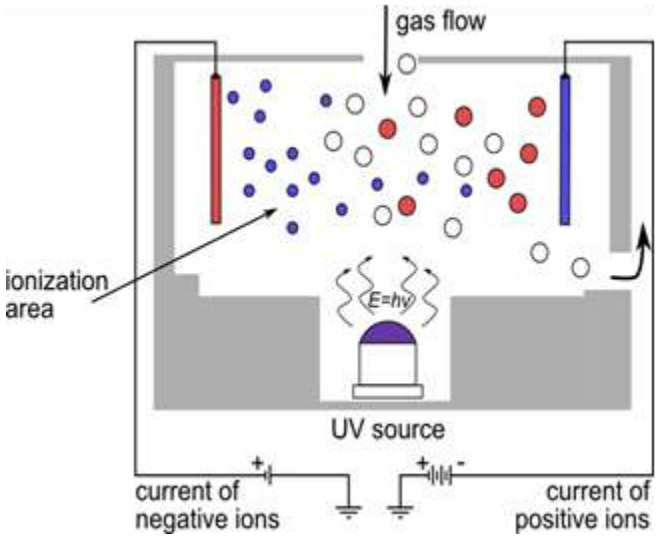
6.2 PHOTO IONIZATION DETECTOR (PID):

The PID consists of a short-wavelength ultraviolet (UV) lamp shining onto a small cell containing the gas sample. The UV light photo ionizes trace organic compounds, in general, any compound with ionization energy (IE) lower than that of the lamp photons can be measured. The PID analyzer are calibrating by using either Isobutylene or Methane and the final result from the PID is to be as Isobutylene.

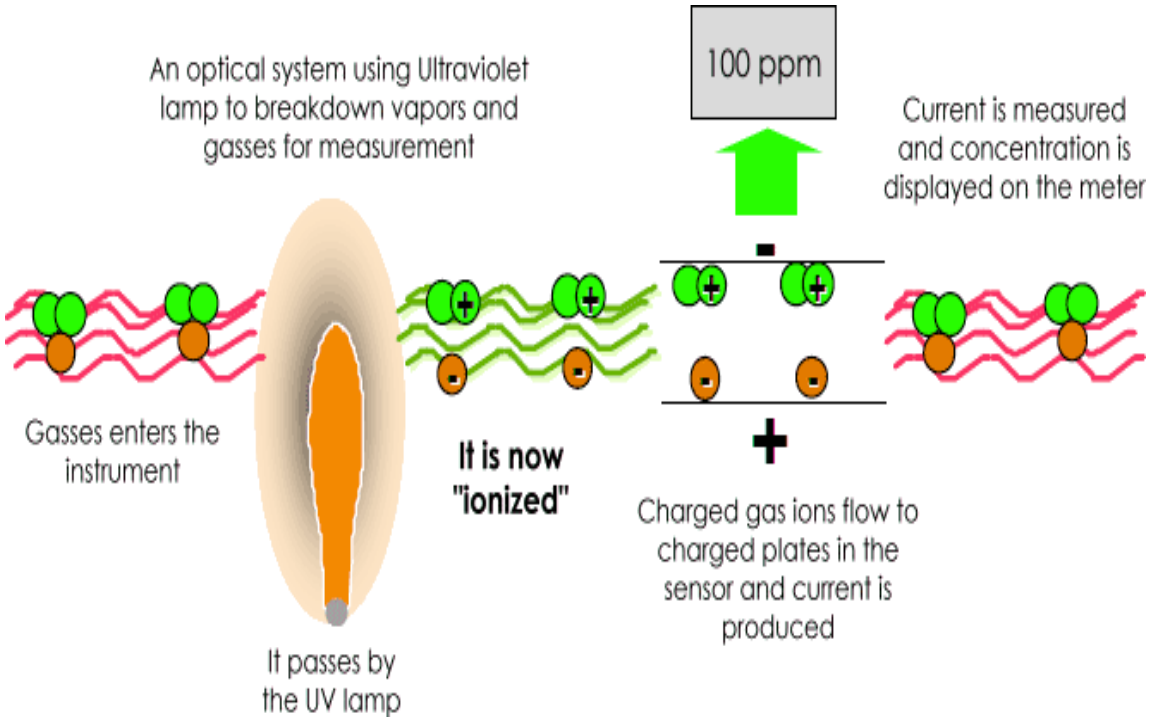
$$VOC + h\gamma \rightarrow VOC^* \rightarrow VOC^{*.} + e^-$$

The Ion-science handheld VOC detector is a handheld gas detection instrument for the rapid, accurate detection of volatile organic compounds (VOCs) within the harshest of environments.

Ion-Science : PhoCheck Tiger TVOC PID Analyser



Basic Principle of Photo Ionization Detector



PID Working Principle

The Ion-Science patented photoionization detection (PID) sensor technology with humidity resistance and anti-contamination design, proven to dramatically extend run time in the field.

A robust VOC detector Ion-science provides a dynamic detection range of 0 to 20,000 parts per million (ppm) with a minimum sensitivity of 0.001ppm (1 ppb)**.** This handheld VOC detector has the fastest response time of two seconds and is just as quick to clear down. The instrument can be connected directly to a PC via the USB offering extremely fast data download capabilities.

Ion-science has been designed for the safe replacement of batteries in hazardous environments. Long-life rechargeable Li-ion batteries give up to 24 hours of use. Fast battery charging allows the instrument to be fully charged in 6.5 hours, while 8 hours of use can be achieved from 1.5 hours charge.

7.0 RESPONSE FACTORS:

The detectors (PID) used to obtain the screening values are calibrated with isobutylene (PID). However, the detector will respond differently to other hydrocarbon compounds and a correction to the calibration is required. Therefore, a response factor has to be applied to adjust an instrument reading from ppmv of Isobutylene equivalent to ppmv of total volatile organic compound(s) before the quantification method correlations are used. Response factors are given below. Use of the response factors might cause some uncertainty to the screening value if the hydrocarbon composition is unknown.

The screening value (SV) concentration in Valves is 2600 ppm

= RF(% of VOC Flow/100)*0.0000023*SV^0.746

RF = Response Factor = 1

Response Factors of Different Volatiles:	
Gasoline Vapours	1.05
Naphta	1.0
Heavy Oil	1.1
Petrol & Diesel	0.8
Gasoline Vapours 2	0.7
Light Oil	1.0

8.0 LEAK QUANTIFICATION/ESTIMATION METHODS:

Leak emission estimation based on the Sniffing techniques:

The Sniffing technique involves placing a detecting instrument probe close to the surface of a piece of process equipment where there is the potential for a leak (e.g. at flange seal). The VOC concentration of the leak is measured by moving the probe along the surface. The maximum instrument reading in ppmv is recorded. This is referred to as the "screening value". A record is also made of the type of equipment device (valve, flange, pump seal etc.). A leak is considered to occur when the screening value measured is above a given concentration (e.g. 10,000 ppmv). The leak definition criterion can vary from one site to another and is usually set in the environmental permit. Above that given concentration threshold the equipment is identified as leaking and must be repaired.

Components which give screening values below the leak definition are considered as non-leakers and repairs are not required. This detection method requires every potential leaking point included in the database (a listing of all sources) to be surveyed and therefore this procedure is very expensive and labor-intensive. The equipment to be monitored by Sniffing is listed in a database and is restricted to:

- Accessible points (e.g. not under insulation, able to be reached without scaffolding).
- The lines containing a light hydrocarbon (20% of the fluid m/m has a vapour pressure higher than 0.3 kPa at 20°C).

According to the EPA "Leak Detection and Repair – A Best Practices Guide" the common problems and factors affecting leak detection by Sniffing are:

- Not following Method 21 properly.
- Failing to monitor at the maximum leak location.
- Not monitoring for long enough to identify a leak.
- Holding the detection probe too far away from the component interface. The reading must be taken at the interface.
- Not monitoring all potential leak interfaces.
- Using an incorrect or an expired calibration gas for the detection instrument.
- Not monitoring all regulated components.

- Not completing monitoring if the first monitoring attempt is unsuccessful due to equipment being temporarily out of service.

The other external influences affecting leak detection by Sniffing are e.g. the ambient temperature and the relative humidity.

8.1 EPA CORRELATION APPROACH (METHOD 21):

The monitoring and emissions estimating methodology 'Method 21' is described in EPA4- 453/R95-017 (US). The correlation equations or factors used to estimate the emissions from leaking components originated from the 1995 US EPA Protocol for Equipment Leak Emission Estimates.

In order to use the correlation equations, the screening value and component type are required. The correlation equation can be applied to leaks with a screening value (SV) in the range of 1 ppmv to 100,000 ppmv. For screening values above 100,000 ppmv, the correlation is not valid and a simple factor (pegged value) is used to determine the leak emission rate. The correlation equation applicable to screening values between 1-100,000 ppmv.

8.2 CALCULATION:

Component Type	Default Zero Factor [Kg/hr]	Correlation Equation [Kg/hr]
Valves	[7.8E-06]	[2.27E-06(SV)^0.747]
Pump Seals	[1.9E-05]	[5.07E-05(SV)^0.622]
Others	[4.0E-06]	[8.69E-06(SV)^0.642]
Connectors	[7.5E-06]	[1.53E-06(SV)^0.736]
Flanges	[3.1E-07]	[4.53E-06(SV)^0.706]
Open-ended Lines	[2.0E-06]	[1.90E-06(SV)^0.724]

The default zero factors apply only when the screening value (SV) corrected for background equals 0 ppmv.

The correlation equations apply for actual screening values, corrected for background.

The "other" component type includes instruments, loading arms, pressure relief valves, vents, compressors, dump lever arms, diaphragms, drains, hatches, meters and polished rods stuffing boxes. This "other" component type should be applied for any component type other than connectors, flanges, open-ended lines, pumps or valves.

% of VOC Flow = material passing on that particular pipe line.

0.00000227 = Correlation factor

SV = Screening Value in ppm

If we will apply all the values in the below formula

= RF (% of VOC Flow/100)*0.0000023*SV^0.746

= 1 (100/100)*0.0000023*2600^0.746

= 0.000815 kg/hr

Total hours of operation per year are 8760 (24 hours x 365 days)

The volatile emission = 7.139 Kg/year.

9.0 BENEFITS OF AN LDAR PROGRAM

When the LDAR requirements were developed, EPA estimated that chemical facilities could reduce VOC emissions by minimum 56% by implementing such a program. Emissions reductions from implementing an LDAR program potentially reduce product losses, increase safety for workers and operators, decrease exposure of the surrounding community, reduce emissions fees, and help facilities avoid enforcement actions.

Reducing Product Losses: In the petrochemical industry, saleable products are lost whenever emissions escape from process equipment. Lost product generally translates into lost revenue.

Increasing Safety for Facility Workers and Operators: Many of the compounds emitted from refineries and chemical facilities may pose a hazard to exposed workers and operators. Reducing emissions from leaking equipment has the direct benefit of reducing occupational exposure to hazardous compounds.

Decreasing Exposure for the Surrounding Community: In addition to workers and operators at a facility, the population of a surrounding community can be affected by severe, long-term exposure to toxic air pollutants as a result of leaking equipment. Although most of the community exposure may be episodic, chronic health effects can result from long-term exposure to emissions from leaking equipment that is either not identified as leaking or not repaired.

Potentially Reducing Emission Fees: To fund permitting programs, some states and local air pollution districts charge annual fees that are based on total facility emissions. A facility with an effective program for reducing leaking equipment can potentially decrease the amount of these annual fees.

10.0 CONCLUSION:

Based on our LDAR study in the Production Block L, Production Block K, Production Block J2, Production Block J1, Production Block E, Production Block G, Production Block H, Production Block C, Production Block D, Production Block I, Production Block P , Production Block N, Production Block 4, Production Block 3, Production Block 2, Production Block 1 were monitored for 2296 points and the sum of total VOC Emissions before Repair was 245.37 kgs/year and after Repair emission of total VOC was 18.82kg/year.

The Solvent Storage Area and Solvent Storage Yard-API were monitored for 170 points and sum of total VOC Emissions is 11.81kgs/year before Repair and after Repair emission for total VOC was 1.25 kg/year.

The Solvent Recovery System, SRS Phase -1 , SRS Phase -1, SRS Phase – 2, and SRS Tank Form Area were monitored for 344 points and sum of total VOC Emissions is 59.66 kgs/year before Repair and after Repair emission for total VOC was 4.87 kg/year.

The PID consists of a short-wavelength ultraviolet (UV) lamp shining onto a small cell containing the gas sample. The UV light photoionized trace organic compounds, in general, any compound with ionization energy (IE) lower than that of the lamp photons can be measured. The PID analyser are calibrating by using either Isobutylene or Methane and the result from the PID is to be as Isobutylene.

$$VOC + h\gamma \rightarrow VOC^* \rightarrow VOC^{*.} + e^-$$

Generally, the background TVOC concentration in the production block and Storage area is around 30ppm.The results are submitted component wise before and after repair.

Based on the calculation and concentrations of VOC in the equipment, we took default value 1 for Response Factor (RF). **M/s. Hetero Labs Ltd., UNIT-3-Vishakhapatnam, Andhra Pradesh** has a yearly emission of VOC before Repair was 316.85 kg/year and after Repair yearly emission of VOC was 24.95 kg/year. The percentage VOC reduction from fugitive emissions is due to LDAR study is around 92.12%.

GLENS INNOVATION LABS PVT LTD, CHENNAI

REPORT ON LDAR STUDY OF HETERO LABS LTD., Unit - III LIMITED- VISHAKHAPATNAM, ANDHRA PRADESH

Production Blocks

S.No	Location/Samples	Sample Name	Type	Screening Value Before Repair (ppm)	RF	% of VOC	Before Repair Kg/hr	Before Repair Kg/year	Screening Value After Repair (ppm)	After Repair Kg/hr	After Repair Kg/year
1	L-Block	L/SSR-003 Reactor	MV	2	2.9	100	0.000011	0.096783	0.2	0.000004	0.036943
2	L-Block	L/SSR-003 Reactor Top Dummy	F	1.9	2.9	100	0.000021	0.181051	0.2	0.000004	0.036943
3	L-Block	L/SSR-003 Reactor Top Dummy	F	0.5	2.9	100	0.000008	0.070546	0.2	0.000004	0.036943
4	L-Block	L/SSR-003 Reactor Top Dummy	F	0.3	2.9	100	0.000006	0.049187	0.1	0.000003	0.022646
5	L-Block	SRV Line	F	1.8	2.9	100	0.000020	0.174270	0.1	0.000003	0.022646
6	L-Block	Vapour Line	F	0.5	2.9	100	0.000008	0.070546	0.1	0.000003	0.022646
7	L-Block	RD Vent	F	0.6	2.9	100	0.000009	0.080237	0.1	0.000003	0.022646
8	L-Block	L/R/VL-03	F	0.7	2.9	100	0.000010	0.089462	0.3	0.000006	0.049187
9	L-Block	Reflux Line	F	0.4	0.55	100	0.000001	0.011429	0.6	0.000002	0.015217
10	L-Block	Reflux Line	Vent	0.8	0.55	100	0.000001	0.007789	0.1	0.000000	0.001728
11	L-Block	Reflux Line	Flange	0.2	0.55	100	0.000001	0.007006	0	0.000000	0.000000
12	L-Block	Reactor Bottom Line	Vent	0.8	0.55	100	0.000001	0.007789	0.1	0.000000	0.001728
13	L-Block	Reactor Bottom Line	Flange	1.6	0.55	100	0.000003	0.030414	0	0.000000	0.000000
14	L-Block	Reactor Bottom Line	Flange	2	0.55	100	0.000004	0.035603	0.2	0.000001	0.007006
15	L-Block	L/SSR-004 (Reactor)	mv	0.7	0.55	100	0.000001	0.008379	0.3	0.000001	0.009329
16	L-Block	L/SSR-004 Reflux Line	Flange	4.5	0.55	100	0.000007	0.063115	0	0.000000	0.000000
17	L-Block	L/SSR-004 Reflux Line	Flange	15.7	2	100	0.000063	0.554546	1.1	0.000010	0.084890
18	L-Block	L/HE Condensor Line	Flange	1.7	2	100	0.000013	0.115433	0.1	0.000002	0.015618
19	L-Block	L/HE Condensor Line	Flange	2.7	2	100	0.000018	0.160020	0.4	0.000005	0.041561
20	L-Block	L/HE Condensor Line	Flange	1.4	2	100	0.000011	0.100647	0.1	0.000002	0.015618
21	L-Block	L/HE Condensor Line	Flange	2	2	100	0.000015	0.129467	0.3	0.000004	0.033922
22	L-Block	Vapour Line	Flange	1.4	2	100	0.000011	0.100647	0.6	0.000006	0.055336
23	L-Block	Side dummy	Flange	1.8	2	100	0.000014	0.120186	0.1	0.000002	0.015618
24	L-Block	RD Vent	Flange	0.6	2	100	0.000006	0.055336	0.6	0.000006	0.055336

25	L-Block	View glass	Flange	0.4	0.8	100	0.000002	0.016624	0.5	0.000002	0.019461
26	L-Block	LR/RTD-04 Line	Flange	0.9	0.8	100	0.000003	0.029471	0	0.000000	0.000000
27	L-Block	Reactor Bottom Line	Vent	2.6	0.8	100	0.000003	0.026594	0.2	0.000000	0.004152
28	L-Block	Reactor Bottom Line	Flange	3.7	0.8	100	0.000009	0.079954	0.3	0.000002	0.013569
29	L-Block	Reactor Bottom Line	Flange	4.6	0.8	100	0.000011	0.093239	0	0.000000	0.000000
30	L-Block	L/SSR-007 Reactor	MV	2.8	0.8	100	0.000004	0.034328	0.2	0.000015	0.130570
31	L-Block	Top Dummy	Flange	5.5	0.8	100	0.000012	0.105776	0.1	0.000001	0.006247
32	L-Block	Reactor Top Dummy	Flange	7.2	0.8	100	0.000015	0.127929	0.1	0.000001	0.006247
33	L-Block	Reactor Top Dummy	Flange	5.6	0.4	100	0.000006	0.053565	0.1	0.000000	0.003124
34	L-Block	SRV Vent	Flange	4.2	0.4	100	0.000005	0.043720	0.1	0.000000	0.003124
35	L-Block	Reflux Line	Flange	17.9	0.4	100	0.000014	0.121668	1.2	0.000002	0.018054
36	L-Block	Reflux Line	Vent	15.3	0.4	100	0.000005	0.047977	1.1	0.000001	0.007133
37	L-Block	Reflux Line	Flange	9.6	0.4	100	0.000009	0.078369	0.7	0.000001	0.012340
38	L-Block	L/HE-12 Condensor Line	Flange	0.4	0.4	100	0.000011	0.100474	0.3	0.000001	0.006784
39	L-Block	L/HE-12 Condensor Line	Flange	1.4	0.4	100	0.000002	0.020129	0.8	0.000002	0.013560
40	L-Block	Vapour Line	Flange	8.2	0.4	100	0.000008	0.070116	0.6	0.000001	0.011067
41	L-Block	Dummy	Flange	8.5	0.4	100	0.000008	0.071917	0.6	0.000001	0.011067
42	L-Block	View glass	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
43	L-Block	RD Vent	Flange	6.2	0.4	100	0.000007	0.057556	0.4	0.000001	0.008312
44	L-Block	View glass	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
45	L-Block	RD Vent	Flange	6.2	0.4	100	0.000007	0.057556	0.4	0.000001	0.008312
46	L-Block	RD Vent	Flange	5.4	0.4	100	0.000006	0.052207	0.3	0.000001	0.006784
47	L-Block	L/R/RTD -07	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
48	L-Block	Reactor Bottom Line	Vent	4	0.4	100	0.000002	0.018164	0.2	0.000000	0.002076
49	L-Block	Reactor Bottom Line	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
50	L-Block	Reactor Bottom Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
51	L-Block	Reactor Bottom Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
52	L-Block	L/SSR-008 Reactor	MV	4.5	0.4	100	0.000003	0.024465	0.3	0.000001	0.006784
53	L-Block	Temp gauge	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
54	L-Block	Vapour Line	Flange	4.1	0.4	100	0.000005	0.042982	0.2	0.000001	0.005096
55	L-Block	Reflux Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
56	L-Block	Reflux Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
57	L-Block	Reflux Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
58	L-Block	SRV Vent	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096

59	L-Block	RD Vent	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
60	L-Block	Hopper Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
61	L-Block	View glass	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
62	L-Block	L/HE-14 Condensor Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
63	L-Block	L/HE-14 Condensor Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
64	L-Block	L/HE-13 Condensor	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
65	L-Block	Reactor Bottom Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
66	L-Block	Reactor Bottom Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
67	L-Block	Reactor Bottom Line	Vent	6.4	0.4	100	0.000003	0.025527	0.4	0.000000	0.003429
68	L-Block	Reactor Bottom Line	Vent	7	0.4	100	0.000003	0.027238	0.4	0.000000	0.003429
69	L-Block	L/GLR-009/01 Reactor	MV	6.1	0.4	100	0.000004	0.030707	0.4	0.000001	0.008312
70	L-Block	Reactor Top Dummy	Flange	11.6	0.4	100	0.000010	0.089571	0.8	0.000002	0.013560
71	L-Block	L/R VL-09	Flange	9.7	0.4	100	0.000009	0.078945	0.6	0.000001	0.011067
72	L-Block	Vapour Line	Flange	7.1	0.4	100	0.000007	0.063336	0.4	0.000001	0.008312
73	L-Block	HE-Condensor Line	Flange	2	0.4	100	0.000003	0.025893	0.1	0.000000	0.003124
74	L-Block	HE-Condensor Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
75	L-Block	RD Vent	Flange	3	0.4	100	0.000004	0.034475	0.2	0.000001	0.005096
76	L-Block	SRV Vent	Flange	3.2	0.4	100	0.000004	0.036083	0.2	0.000001	0.005096
77	L-Block	Reactor Bottom Line	Vent	7.4	0.4	100	0.000003	0.028356	0.5	0.000000	0.004031
78	L-Block	Reactor Bottom Line	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
79	L-Block	Reactor Bottom Line	Vent	4.2	0.4	100	0.000002	0.018817	0.2	0.000000	0.002076
80	L-Block	L/GLR-011 Reactor	MV	4.4	0.4	100	0.000003	0.024057	0.3	0.000001	0.006784
81	L-Block	Temp gauge	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
82	L-Block	RD Vent	Flange	3.2	0.4	100	0.000004	0.036083	0.2	0.000001	0.005096
83	L-Block	SRV Vent	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
84	L-Block	Vapour Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
85	L-Block	Reflux Line	Flange	2.5	0.4	100	0.000003	0.030312	0.1	0.000000	0.003124
86	L-Block	Reflux Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
87	L-Block	View glass	Flange	3.3	0.4	100	0.000004	0.036875	0.2	0.000001	0.005096
88	L-Block	Hopper Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
89	L-Block	Hopper Line	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
90	L-Block	Reactor Bottom Line	Vent	5.4	0.4	100	0.000003	0.022572	0.3	0.000000	0.002785
91	L-Block	Reactor Bottom Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
92	L-Block	Reactor Bottom Line	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000

93	L-Block	L/SSR-012 Reactor	MV	0.4	0.4	100	0.000000	0.004012	0	0.000000	0.000000
94	L-Block	Vapour Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
95	L-Block	RD Vent	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
96	L-Block	SRV Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
97	L-Block	Reflux Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
98	L-Block	Reflux Line	Vent	0.8	0.4	100	0.000001	0.005664	0	0.000000	0.000000
99	L-Block	Reflux Line	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
100	L-Block	L/HE-18 Condensor	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
101	L-Block	L/HE-18 Condensor	Flange	0.5	0.4	100	0.000001	0.009730	0	0.000000	0.000000
102	L-Block	L/HE-19 Condensor	Flange	1.8	0.4	100	0.000003	0.024037	0.1	0.000000	0.003124
103	L-Block	L/HE-19 Condensor	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
104	L-Block	View glass	Flange	3.1	0.4	100	0.000004	0.035283	0.2	0.000001	0.005096
105	L-Block	Reactor Bottom Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
106	L-Block	Reactor Bottom Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
107	L-Block	Reactor Bottom Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
108	L-Block	L/GLR-014/01 Reactor	MV	2.8	0.4	100	0.000002	0.017164	0.1	0.000000	0.003124
109	L-Block	Vapour Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
110	L-Block	RD Line	Flange	2.7	0.4	100	0.000004	0.032004	0.1	0.000000	0.003124
111	L-Block	SRV Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
112	L-Block	View glass	Flange	2	0.4	100	0.000003	0.025893	0.1	0.000000	0.003124
113	L-Block	Reflux Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
114	L-Block	Reflux Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
115	L-Block	Reflux Line	Flange	2.2	0.4	100	0.000003	0.027696	0.1	0.000000	0.003124
116	L-Block	Reactor Top dummy	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
117	L-Block	Reactor Top dummy	Flange	3	0.4	100	0.000004	0.034475	0.2	0.000001	0.005096
118	L-Block	L/HE-61	Flange	3	0.4	100	0.000004	0.034475	0.2	0.000001	0.005096
119	L-Block	L/HE-61	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
120	L-Block	Reactor Bottom Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
121	L-Block	Reactor Bottom Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
122	L-Block	Reactor Bottom Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
123	L-Block	Reactor Bottom Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
124	L-Block	Reactor Bottom Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
125	L-Block	L/GLR-017 Reactor	MV	44.8	0.4	100	0.000016	0.136174	3.1	0.000004	0.035283
126	L-Block	Vapour Line	Flange	37.3	0.4	100	0.000023	0.204310	2.6	0.000004	0.031163
127	L-Block	RD Line	Flange	19.3	0.4	100	0.000015	0.128312	1.3	0.000002	0.019103

128	L-Block	SRV Line	Flange	30.4	0.4	100	0.000020	0.176836	2.1	0.000003	0.026801
129	L-Block	Temp gauge	Flange	23.4	0.4	100	0.000017	0.147004	1.6	0.000003	0.022119
130	L-Block	Reflux Line	Flange	15.8	0.4	100	0.000013	0.111407	1.1	0.000002	0.016978
131	L-Block	Reflux Line	Flange	35.1	0.4	100	0.000022	0.195726	2.4	0.000003	0.029450
132	L-Block	Reflux Line	Vent	30.1	0.4	100	0.000009	0.078307	2.1	0.000001	0.011392
133	L-Block	Reflux Line	Flange	38.4	0.4	100	0.000024	0.208545	2.6	0.000004	0.031163
134	L-Block	View glass	Flange	70.3	0.4	100	0.000036	0.319604	4.9	0.000006	0.048746
135	L-Block	Top Dummy	Flange	13.8	0.4	100	0.000012	0.101255	0.9	0.000002	0.014735
136	L-Block	L/HE-25 Condensor	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
137	L-Block	L/HE-25 Condensor	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
138	L-Block	Reactor Bottom Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
139	L-Block	Reactor Bottom Line	Flange	7	0.4	100	0.000007	0.062705	0.4	0.000001	0.008312
140	L-Block	L/SSR-022 Reactor	mv	2.4	0.4	100	0.000002	0.015297	0.1	0.000000	0.003124
141	L-Block	R/RTD -22	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
142	L-Block	Vapour Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
143	L-Block	SRV Vent	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
144	L-Block	RD Vent	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
145	L-Block	View glass	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
146	L-Block	L/HE-32 Condensor	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
147	L-Block	L/HE-33 Condensor	Flange	3	0.4	100	0.000004	0.034475	0.2	0.000001	0.005096
148	L-Block	Reactor Bottom Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
149	L-Block	Reactor Bottom Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
150	L-Block	L/SSR-023/01 Reactor	MV	3.4	0.4	100	0.000002	0.019843	0.2	0.000001	0.005096
151	L-Block	Reator Top dummy	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
152	L-Block	Vapour Line	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
153	L-Block	Vapour Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
154	L-Block	SRV Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
155	L-Block	RD Line	Flange	2.3	0.4	100	0.000003	0.028579	0.1	0.000000	0.003124
156	L-Block	Reflux Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
157	L-Block	Reflux Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
158	L-Block	Reflux Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
159	L-Block	L/HE-44 Condensor	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
160	L-Block	L/HE-44 Condensor	Flange	5.1	0.4	100	0.000006	0.050143	0.3	0.000001	0.006784
161	L-Block	View glass	Flange	12.9	0.4	100	0.000011	0.096547	0.9	0.000002	0.014735
162	L-Block	Reactor Bottom Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340

163	L-Block	Reactor Bottom Line	Vent	17.4	0.4	100	0.000006	0.052659	1.2	0.000001	0.007597
164	L-Block	Reactor Bottom Line	Flange	15.3	0.4	100	0.000012	0.108907	1	0.000002	0.015873
165	L-Block	L/SSR-029/01 Reactor	MV	2.4	0.4	100	0.000002	0.015297	0.1	0.000000	0.003124
166	L-Block	L/R-RTD	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
167	L-Block	Vapour Line	Flange	5.9	0.4	100	0.000006	0.055576	0.4	0.000001	0.008312
168	L-Block	Reflux Line	Flange	6.2	0.4	100	0.000007	0.057556	0.4	0.000001	0.008312
169	L-Block	Reflux Line	Vent	4.4	0.4	100	0.000002	0.019462	0.3	0.000000	0.002785
170	L-Block	Reflux Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
171	L-Block	Reactor Top dummy	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
172	L-Block	Reactor Top dummy	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
173	L-Block	RD Vent	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
174	L-Block	SRV Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
175	L-Block	L/HE-65 Condensor	Flange	2.3	0.4	100	0.000003	0.028579	0.1	0.000000	0.003124
176	L-Block	L/HE-65 Condensor	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
177	L-Block	Reactor Bottom Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
178	L-Block	Reactor Bottom Line	Vent	8.4	0.4	100	0.000004	0.031081	0.5	0.000000	0.004031
179	L-Block	Reactor Bottom Line	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
180	L-Block	L/GLR-03/02 Reactor	MV	4.5	0.4	100	0.000003	0.024465	0.3	0.000001	0.006784
181	L-Block	View glass	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
182	L-Block	RD Vent	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
183	L-Block	SRV Vent	Flange	3	0.4	100	0.000004	0.034475	0.2	0.000001	0.005096
184	L-Block	Vapour Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
185	L-Block	L/HE-Condensor	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
186	L-Block	L/HE-Condensor	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
187	L-Block	Reflux Line	Flange	3	0.4	100	0.000004	0.034475	0.2	0.000001	0.005096
188	L-Block	Reflux Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
189	L-Block	Reactor Bottom Line	Vent	1.8	0.4	100	0.000001	0.010189	0.1	0.000000	0.001257
190	L-Block	Reactor Bottom Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
191	L-Block	Reactor Bottom Line	Flange	3.3	0.4	100	0.000004	0.036875	0.2	0.000001	0.005096
192	L-Block	L/GLR-035/01	MV	10.4	0.4	100	0.000005	0.045742	0.7	0.000001	0.012340
193	L-Block	RD Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
194	L-Block	SRV Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
195	L-Block	Vapour Line	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
196	L-Block	Reactor Top dummy	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
197	L-Block	Reflux Line	Vent	5.4	0.4	100	0.000003	0.022572	0.3	0.000000	0.002785

198	L-Block	Reflux Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
199	L-Block	Reflux Line	Flange	3.7	0.4	100	0.000005	0.039977	0.2	0.000001	0.005096
200	L-Block	L/HE-70 Condensor	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
201	L-Block	L/HE-70 Condensor	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
202	L-Block	Reactor Bottom Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
203	L-Block	Reactor Bottom Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
204	L-Block	Reactor Bottom Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
205	L-Block	L/SSR-001 Reactor	MV	9.6	0.4	100	0.000005	0.043087	0.6	0.000001	0.011067
206	L-Block	Vapour Line	Flange	7.3	0.4	100	0.000007	0.064590	0.5	0.000001	0.009730
207	L-Block	Temp gauge	Flange	8.1	0.4	100	0.000008	0.069511	0.5	0.000001	0.009730
208	L-Block	SRV Line	Flange	7	0.4	100	0.000007	0.062705	0.4	0.000001	0.008312
209	L-Block	RD Vent	Flange	6.2	0.4	100	0.000007	0.057556	0.4	0.000001	0.008312
210	L-Block	Reflux Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
211	L-Block	Reflux Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
212	L-Block	Reflux Line	Flange	10.9	0.4	100	0.000010	0.085721	0.7	0.000001	0.012340
213	L-Block	View glass	Flange	6.8	0.4	100	0.000007	0.061435	0.4	0.000001	0.008312
214	L-Block	Reactor Top dummy	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
215	L-Block	L/HE-O2 Condensor	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
216	L-Block	L/HE-O2 Condensor	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
217	L-Block	L/HE Condensor	Flange	3.1	0.4	100	0.000004	0.035283	0.2	0.000001	0.005096
218	L-Block	L/HE Condensor	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
219	L-Block	Reactor Bottom Line	Flange	2	0.4	100	0.000003	0.025893	0.1	0.000000	0.003124
220	L-Block	Reactor Bottom Line	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
221	L-Block	Reactor Bottom Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
222	L-Block	Reactor Bottom Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
223	L-Block	Reactor Bottom Line	Vent	7.4	0.4	100	0.000003	0.028356	0.5	0.000000	0.004031
224	L-Block	Reactor Bottom Line	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
225	L-Block Centrifuge Area	L/APD-002 Centrifuge	MV	7.5	0.4	100	0.000004	0.035831	0.5	0.000001	0.009730
226	L-Block Centrifuge Area	Ground Floor APD Area	Vent	90.3	0.4	100	0.000020	0.173474	12.2	0.000005	0.040723
227	L-Block Centrifuge Area	002-Discharge Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
228	L-Block Centrifuge Area	002-Discharge Line	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
229	L-Block Centrifuge Area	002-Discharge Line	Flange	15.6	0.4	100	0.000013	0.110410	1	0.000002	0.015873
230	L-Block Centrifuge Area	Side dummy	Flange	15.3	0.4	100	0.000012	0.108907	1	0.000002	0.015873
231	L-Block Centrifuge Area	Side dummy	Flange	15.8	0.4	100	0.000013	0.111407	1.1	0.000002	0.016978
232	L-Block Centrifuge Area	Centrifuge Bottom Line	Flange	5.2	0.4	100	0.000006	0.050835	0.3	0.000001	0.006784

233	L-Block Centrifuge Area	Centrifuge Bottom Line	Flange	4.5	0.4	100	0.000005	0.045902	0.3	0.000001	0.006784
234	L-Block Centrifuge Area	Centrifuge Bottom Line	Flange	4.7	0.4	100	0.000005	0.047333	0.3	0.000001	0.006784
235	L-Block Centrifuge Area	View glass	Flange	5.2	0.4	100	0.000006	0.050835	0.3	0.000001	0.006784
236	L-Block Centrifuge Area	Vent Line	Vent	7	0.4	100	0.000003	0.027238	0.4	0.000000	0.003429
237	L-Block Centrifuge Area	Vent Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
238	L-Block Centrifuge Area	L/CF-008 Centrifuge	MV	4	0.4	100	0.000003	0.022404	0.2	0.000001	0.005096
239	L-Block Centrifuge Area	Charging Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
240	L-Block Centrifuge Area	Vent Line	Vent	1.2	0.4	100	0.000001	0.007597	0	0.000000	0.000000
241	L-Block Centrifuge Area	Vent Line	Flange	1	0.4	100	0.000002	0.015873	0	0.000000	0.000000
242	L-Block Centrifuge Area	Discharge Line	Vent	0.9	0.4	100	0.000001	0.006169	0	0.000000	0.000000
243	L-Block Centrifuge Area	Discharge Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
244	L-Block Centrifuge Area	Discharge Line	Flange	1	0.4	100	0.000002	0.015873	0	0.000000	0.000000
245	L-Block Centrifuge Area	L/ST-21 Acetone Tank Top	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
246	L-Block Centrifuge Area	L/ST-21 Tank Bottom Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
247	L-Block Centrifuge Area	L/ST-21 Tank Bottom Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
248	L-Block Centrifuge Area	Tank MV Side dummy	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
249	L-Block Centrifuge Area	Charging Line	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
250	L-Block Centrifuge Area	L/ST-methanol Tank	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
251	L-Block Centrifuge Area	Charging Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
252	L-Block Centrifuge Area	Level Indicator Top	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
253	L-Block Centrifuge Area	Level Indicator Top	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
254	L-Block Centrifuge Area	Level Indicator Bottom	Flange	5.4	0.4	100	0.000006	0.052207	0.3	0.000001	0.006784
255	L-Block Centrifuge Area	L/ST-28 chloroform tank	MV	10.8	0.4	100	0.000005	0.047050	0.7	0.000001	0.012340
256	L-Block Centrifuge Area	Charging Line	Flange	7.9	0.4	100	0.000008	0.068295	0.5	0.000001	0.009730
257	L-Block Centrifuge Area	Charging Line	Vent	18.3	0.4	100	0.000006	0.054618	1.2	0.000001	0.007597
258	L-Block Centrifuge Area	Level Indicator Top	Vent	5.8	0.4	100	0.000003	0.023771	0.4	0.000000	0.003429
259	L-Block Centrifuge Area	Level Indicator Top	Flange	15.4	0.4	100	0.000012	0.109409	1	0.000002	0.015873
260	L-Block Centrifuge Area	Level indicator Bottom	Vent	7.4	0.4	100	0.000003	0.028356	0.5	0.000000	0.004031
261	L-Block Centrifuge Area	Level indicator Bottom	Flange	8.3	0.4	100	0.000008	0.070718	0.5	0.000001	0.009730
262	L-Block Centrifuge Area	L/ST-24 Tank	Flange	2.1	0.4	100	0.000003	0.026801	0.2	0.000001	0.005096
263	L-Block Centrifuge Area	Level indicator Top	Vent	13.4	0.4	100	0.000005	0.043585	0.9	0.000001	0.006169
264	L-Block Centrifuge Area	Level indicator Bottom	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124

265	L-Block Centrifuge Area	Tank side dummy	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
266	L-Block Centrifuge Area	L/ST -14 storage tank	MV	9	0.4	100	0.000005	0.041059	0.6	0.000001	0.011067
267	L-Block Centrifuge Area	Charging line	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
268	L-Block Centrifuge Area	Tank Top	Vent	7.8	0.4	100	0.000003	0.029457	0.5	0.000000	0.004031
269	L-Block Centrifuge Area	Tank Top	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
270	L-Block Centrifuge Area	L/ST-15 Acetone Tank	MV	12.8	0.4	100	0.000006	0.053417	0.8	0.000002	0.013560
271	L-Block Centrifuge Area	Charging Line	Flange	8.6	0.4	100	0.000008	0.072513	0.6	0.000001	0.011067
272	L-Block Centrifuge Area	Level indicator Top	Vent	9	0.4	100	0.000004	0.032673	0.6	0.000001	0.004599
273	L-Block Centrifuge Area	Level indicator Top	Flange	10.5	0.4	100	0.000010	0.083488	0.7	0.000001	0.012340
274	L-Block Centrifuge Area	L/ST-29 Ethyl Acetate Tank	MV	7.8	0.4	100	0.000004	0.036896	0.5	0.000001	0.009730
275	L-Block Centrifuge Area	Tank Vent	Flange	5.1	0.4	100	0.000006	0.050143	0.3	0.000001	0.006784
276	L-Block Centrifuge Area	Charging Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
277	L-Block Centrifuge Area	Level indicator Top	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
278	L-Block Centrifuge Area	Level indicator Bottom	Vent	4.1	0.4	100	0.000002	0.018492	0.2	0.000000	0.002076
279	L-Block Centrifuge Area	L/ST-10 Methanol tank	Vent	4	0.4	100	0.000002	0.018164	0.2	0.000000	0.002076
280	L-Block Centrifuge Area	Charging Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
281	L-Block Centrifuge Area	Level Indicator Top	Flange	3.2	0.4	100	0.000004	0.036083	0.2	0.000001	0.005096
282	L-Block Centrifuge Area	Level Indicator Bottom	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
283	L-Block Centrifuge Area	L/ST-25 Tank side	MV	1.4	0.4	100	0.000001	0.010227	0	0.000000	0.000000
284	L-Block Centrifuge Area	Tank Bottom Line	Flange	1	0.4	100	0.000002	0.015873	0	0.000000	0.000000
285	L-Block Centrifuge Area	L/ST-26 Tank (Toluene) side	MV	1.2	0.4	100	0.000001	0.009115	0	0.000000	0.000000
286	L-Block Centrifuge Area	Tank Vent Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
287	L-Block Centrifuge Area	L/ST-02 Tank Toluene side	MV	3.3	0.4	100	0.000002	0.019405	0.2	0.000001	0.005096
288	L-Block Centrifuge Area	Cahrging Line	Vent	1.2	0.4	100	0.000001	0.007597	0	0.000000	0.000000
289	L-Block Centrifuge Area	Top Vent	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
290	L-Block Centrifuge Area	L/ST-03 methanol Tank	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
291	L-Block Centrifuge Area	Charging Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
292	L-Block Centrifuge Area	L/ST-01 Toluene Tank	MV	9.6	0.4	100	0.000005	0.043087	0.6	0.000001	0.011067
293	L-Block Centrifuge Area	Level indicator Top	Flange	15.8	0.4	100	0.000013	0.111407	1.1	0.000002	0.016978
294	L-Block Centrifuge Area	Level indicator Bottom	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
295	L-Block Centrifuge Area	Tank Top vent	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
296	L-Block Centrifuge Area	L/ST-27 methanol Tank	MV	7.6	0.4	100	0.000004	0.036187	0.5	0.000001	0.009730
297	L-Block Centrifuge Area	Tank Bottom Line	Vent	5.6	0.4	100	0.000003	0.023174	0.3	0.000000	0.002785

298	L-Block Centrifuge Area	Level indicator Top	Flange	8.1	0.4	100	0.000008	0.069511	0.5	0.000001	0.009730
299	L-Block Centrifuge Area	Level indicator Bottom	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
300	L-Block Centrifuge Area	L/ST-04 Toluene tank Top	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
301	L-Block Centrifuge Area	Charging Line	Vent	4.6	0.4	100	0.000002	0.020098	0.3	0.000000	0.002785
302	L-Block Centrifuge Area	Level Indicator Top	Vent	7.6	0.4	100	0.000003	0.028909	0.5	0.000000	0.004031
303	L-Block Centrifuge Area	Level Indicator Bottom	Vent	5.6	0.4	100	0.000003	0.023174	0.3	0.000000	0.002785
304	L-Block Centrifuge Area	Tank vent Line	Vent	7.5	0.4	100	0.000003	0.028633	0.5	0.000000	0.004031
305	L-Block Centrifuge Area	L/ST-10 methanol Tank	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
306	L-Block Centrifuge Area	Charging line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
307	L-Block Centrifuge Area	level indicator top	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
308	L-Block Centrifuge Area	level indicator Bottom	Flange	8.1	0.4	100	0.000008	0.069511	0.5	0.000001	0.009730
309	L-Block Centrifuge Area	Vent Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
310	L-Block Centrifuge Area	L/ST-18 methanol tank C.L	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
311	L-Block Centrifuge Area	Tank side dummy	Flange	7	0.4	100	0.000007	0.062705	0.4	0.000001	0.008312
312	L-Block Centrifuge Area	Tank vent Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
313	L-Block Centrifuge Area	L/ST-47 storage tank charge line	Vent	3.5	0.4	100	0.000002	0.016490	0.2	0.000000	0.002076
314	L-Block Centrifuge Area	level indicator top	Vent	4.9	0.4	100	0.000002	0.021039	0.3	0.000000	0.002785
315	L-Block Centrifuge Area	level indicator Bottom	Vent	5.6	0.4	100	0.000003	0.023174	0.3	0.000000	0.002785
316	L-Block Centrifuge Area	Tank Vent Line	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
317	L-Block Centrifuge Area	L/ST-07 Ethyl NH3 Tank L.Line	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
318	L-Block Centrifuge Area	Level indicator Top	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
319	L-Block Centrifuge Area	Level indicator bottom	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
320	L-Block Centrifuge Area	L/ST-08 chloroform tank C.L	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
321	L-Block Centrifuge Area	Level indicator Top	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
322	L-Block Centrifuge Area	Level Indicator Bottom	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
323	L-Block Centrifuge Area	L/ST-09 Chloroform Tank C.L	Flange	0.7	0.4	100	0.000001	0.012340	0	0.000000	0.000000
324	L-Block Centrifuge Area	Tank Vent	Vent	1.5	0.4	100	0.000001	0.008929	0.1	0.000000	0.001257
325	L-Block Centrifuge Area	Level indicator Top	Vent	2	0.4	100	0.000001	0.010997	0.1	0.000000	0.001257
326	L-Block Centrifuge Area	Level Indicator Bottom	Vent	3	0.4	100	0.000002	0.014749	0.2	0.000000	0.002076
327	L-Block Centrifuge Area	L/ST-09 chloroform tank C.L	Flange	0.7	0.4	100	0.000001	0.012340	0	0.000000	0.000000

328	L-Block Centrifuge Area	Tank vent	Vent	1.5	0.4	100	0.000001	0.008929	0.1	0.000000	0.001257
329	L-Block Centrifuge Area	level indicator Top	Vent	2	0.4	100	0.000001	0.010997	0.1	0.000000	0.001257
330	L-Block Centrifuge Area	Level indicator Bottom	Vent	3	0.4	100	0.000002	0.014749	0.2	0.000000	0.002076
331	Production Block - K (Anxan Process)	K/SSR-003/01 Reactor	MV	1.6	0.4	100	0.000001	0.011300	0.1	0.000000	0.003124
332	Production Block - K (Anxan Process)	Addition line	Flange	0.5	0.4	100	0.000001	0.009730	0	0.000000	0.000000
333	Production Block - K (Anxan Process)	SRV Line	L	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
334	Production Block - K (Anxan Process)	RD Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
335	Production Block - K (Anxan Process)	Reactor Top Dummy	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
336	Production Block - K (Anxan Process)	Reflux Line	Vent	1.8	0.4	100	0.000001	0.010189	0.1	0.000000	0.001257
337	Production Block - K (Anxan Process)	Reflux Line	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
338	Production Block - K (Anxan Process)	Temp gauge	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
339	Production Block - K (Anxan Process)	KR/VL-03 Line	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
340	Production Block - K (Anxan Process)	Vapour Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
341	Production Block - K (Anxan Process)	Condensor Line	Flange	1.3	0.4	100	0.000002	0.019103	0	0.000000	0.000000
342	Production Block - K (Anxan Process)	Condensor Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
343	Production Block - K (Anxan Process)	Reactor Bottom Line	Vent	7.4	0.4	100	0.000003	0.028356	0.5	0.000000	0.004031
344	Production Block - K (Anxan Process)	Reactor Bottom Line	Flange	8.2	0.4	100	0.000008	0.070116	0.5	0.000001	0.009730
345	Production Block - K (Anxan Process)	Reactor Bottom Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
346	Production Block - K (Anxan Process)	K/SSR-004 Reactor	MV	5.6	0.4	100	0.000003	0.028806	0.3	0.000001	0.006784
347	Production Block - K (Anxan Process)	View glass	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
348	Production Block - K (Anxan Process)	Reactor Top dummy	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312

349	Production Block - K (Anxan Process)	SRV line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
350	Production Block - K (Anxan Process)	RD Line	Flange	11.8	0.4	100	0.000010	0.090659	0.8	0.000002	0.013560
351	Production Block - K (Anxan Process)	Vapour Line	Flange	5.8	0.4	100	0.000006	0.054909	0.4	0.000001	0.008312
352	Production Block - K (Anxan Process)	Reflux Line	Vent	7.9	0.4	100	0.000003	0.029730	0.5	0.000000	0.004031
353	Production Block - K (Anxan Process)	Reflux Line	Flange	11.8	0.4	100	0.000010	0.090659	0.8	0.000002	0.013560
354	Production Block - K (Anxan Process)	Reflux Line	Flange	15.4	0.4	100	0.000012	0.109409	1	0.000002	0.015873
355	Production Block - K (Anxan Process)	View glass	Flange	11.8	0.4	100	0.000010	0.090659	0.8	0.000002	0.013560
356	Production Block - K (Anxan Process)	Condensor	Flange	12.2	0.4	100	0.000011	0.092818	0.8	0.000002	0.013560
357	Production Block - K (Anxan Process)	Reactor Bottom	Flange	10.3	0.4	100	0.000009	0.082362	0.7	0.000001	0.012340
358	Production Block - K (Anxan Process)	Reactor Bottom	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
359	Production Block - K (Anxan Process)	K/SSR-023/01 Reactor	MV	7.4	0.4	100	0.000004	0.035474	0.5	0.000001	0.009730
360	Production Block - K (Anxan Process)	Reactor Top Dummy	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
361	Production Block - K (Anxan Process)	Reactor Top Dummy	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
362	Production Block - K (Anxan Process)	Reflux Line	Vent	7.4	0.4	100	0.000003	0.028356	0.5	0.000000	0.004031
363	Production Block - K (Anxan Process)	Reflux Line	Flange	5.4	0.4	100	0.000006	0.052207	0.3	0.000001	0.006784
364	Production Block - K (Anxan Process)	Reflux Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
365	Production Block - K (Anxan Process)	RD Line	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
366	Production Block - K (Anxan Process)	SRV Line	Flange	5.3	0.4	100	0.000006	0.051523	0.3	0.000001	0.006784
367	Production Block - K (Anxan Process)	Vapour Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
368	Production Block - K (Anxan Process)	Condensor K/HE-39	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340

369	Production Block - K (Anxan Process)	Condensor K/HE-39	Flange	5.8	0.4	100	0.000006	0.054909	0.4	0.000001	0.008312
370	Production Block - K (Anxan Process)	Distilation Line	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
371	Production Block - K (Anxan Process)	Distilation Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
372	Production Block - K (Anxan Process)	Reactor Bottom Line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
373	Production Block - K (Anxan Process)	Reactor Bottom Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
374	Production Block - K (Anxan Process)	K/CF-001 centrifuge	MV	16.8	0.4	100	0.000007	0.065448	1.1	0.000002	0.016978
375	Production Block - K (Anxan Process)	Charging Line	Flange	13.4	0.4	100	0.000011	0.099174	0.9	0.000002	0.014735
376	Production Block - K (Anxan Process)	Charging Line	Flange	17.4	0.4	100	0.000014	0.119259	1.2	0.000002	0.018054
377	Production Block - K (Anxan Process)	Charging Line	Vent	15.1	0.4	100	0.000005	0.047522	1	0.000001	0.006658
378	Production Block - K (Anxan Process)	Charging Line	Flange	16.7	0.4	100	0.000013	0.115851	1.1	0.000002	0.016978
379	Production Block -K Centrifuge Area	K/ANED-003	MV	7.8	0.4	100	0.000004	0.036896	0.5	0.000001	0.009730
380	Production Block -K Centrifuge Area	Sampling point	Flange	18.4	0.4	100	0.000014	0.124058	1.2	0.000002	0.018054
381	Production Block -K Centrifuge Area	Charging Line	Flange	15.4	0.4	100	0.000012	0.109409	1	0.000002	0.015873
382	Production Block -K Centrifuge Area	View glass	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
383	Production Block -K Centrifuge Area	K/ANED-002	MV	2.9	0.4	100	0.000002	0.017620	0.2	0.000001	0.005096
384	Production Block -K Centrifuge Area	Sampling point	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
385	Production Block -K Centrifuge Area	Sampling point	Vent	4.3	0.4	100	0.000002	0.019140	0.3	0.000000	0.002785
386	Production Block -K Centrifuge Area	Charging Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
387	Production Block -K Centrifuge Area	Charging Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
388	Production Block -K Centrifuge Area	Charging Line	Vent	2.1	0.4	100	0.000001	0.011392	0.1	0.000000	0.001257

389	Production Block -K Centrifuge Area	Charging Line	Vent	0.9	0.4	100	0.000001	0.006169	0	0.000000	0.000000
390	Production Block -K Centrifuge Area	K/OVB-04 Pump	Pump seal	7.8	0.4	100	0.000073	0.637463	0.5	0.000013	0.115433
391	Production Block -K Centrifuge Area	K/REC-44 Tank	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
392	Production Block -K Centrifuge Area	Tank Vent Line	Vent	3.5	0.4	100	0.000002	0.016490	0.2	0.000000	0.002076
393	Production Block -K Centrifuge Area	Charging line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
394	Production Block -K Centrifuge Area	Tank-SS316 Charging Line	Vent	1.8	0.4	100	0.000001	0.010189	0.1	0.000000	0.001257
395	Production Block -K Centrifuge Area	Tank-SS316 Charging Line	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
396	Production Block -K Centrifuge Area	Tank Vent	Vent	5.4	0.4	100	0.000003	0.022572	0.3	0.000000	0.002785
397	Production Block -K Centrifuge Area	Level indicator Top	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
398	Production Block -K Centrifuge Area	Level indicator Bottom	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
399	Production Block -K Centrifuge Area	K/REC-35 Storage Tank	MV	3.9	0.4	100	0.000003	0.021984	0.2	0.000001	0.005096
400	Production Block -K Centrifuge Area	level indicator Top	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
401	Production Block -K Centrifuge Area	Level indicator Bottom	Flange	15.6	0.4	100	0.000013	0.110410	1	0.000002	0.015873
402	Production Block -K Centrifuge Area	Charging line	Flange	33.9	0.4	100	0.000022	0.190978	2.3	0.000003	0.028579
403	Production Block -K Centrifuge Area	Charging line	Vent	19.6	0.4	100	0.000007	0.057400	1.3	0.000001	0.008050
404	Production Block -K Centrifuge Area	K/REC-46 Tank Bottom	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
405	Production Block -K Centrifuge Area	K/REC-46 Tank Bottom	Vent	3.8	0.4	100	0.000002	0.017502	0.2	0.000000	0.002076
406	Production Block -K Centrifuge Area	K/REC-40 Tank	MV	2.9	0.4	100	0.000002	0.017620	0.2	0.000001	0.005096
407	Production Block -K Centrifuge Area	level indicator Top	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
408	Production Block -K Centrifuge Area	level indicator Bottom	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124

409	Production Block -K Centrifuge Area	Charging Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
410	Production Block -K Centrifuge Area	K/REC-50 Tank Charging	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
411	Production Block -K Centrifuge Area	level indictor Top	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
412	Production Block -K Centrifuge Area	Level indicator Top	Flange	4.5	0.4	100	0.000005	0.045902	0.3	0.000001	0.006784
413	Production Block -K Centrifuge Area	Level indicator Bottom	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
414	Production Block -K Centrifuge Area	K/REC-51 Charging Line	Vent	9.3	0.4	100	0.000004	0.033458	0.6	0.000001	0.004599
415	Production Block -K Centrifuge Area	K/REC-51 Charging Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
416	Production Block -K Centrifuge Area	Level indicator Top	Flange	11.8	0.4	100	0.000010	0.090659	0.8	0.000002	0.013560
417	Production Block -K Centrifuge Area	Level indicator Bottom	Flange	12.4	0.4	100	0.000011	0.093890	0.8	0.000002	0.013560
418	Production Block -K Centrifuge Area	Tank Vent Line	Vent	7.4	0.4	100	0.000003	0.028356	0.5	0.000000	0.004031
419	Production Block -K Centrifuge Area	K/REC-48 Acetic Acid Tank	Vent	9.4	0.4	100	0.000004	0.033718	0.6	0.000001	0.004599
420	Production Block -K Centrifuge Area	Charging Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
421	Production Block -K Centrifuge Area	Level indicator	Vent	11.8	0.4	100	0.000005	0.039752	0.8	0.000001	0.005664
422	Production Block -K Centrifuge Area	Tank Vent	Vent	9.6	0.4	100	0.000004	0.034236	0.6	0.000001	0.004599
423	Production Block -K Centrifuge Area	K/ST-11 Toluene Tank	Vent	6.4	0.4	100	0.000003	0.025527	0.4	0.000000	0.003429
424	Production Block -K Centrifuge Area	Charging Line	Flange	8.4	0.4	100	0.000008	0.071319	0.5	0.000001	0.009730
425	Production Block -K Centrifuge Area	Level Indicator	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
426	Production Block -K Centrifuge Area	K/ST-10 Liquid NH3 Tank	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
427	Production Block -K Centrifuge Area	Charging Line	Vent	0.8	0.4	100	0.000001	0.005664	0	0.000000	0.000000
428	Production Block -K Centrifuge Area	Level Indicator	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000

429	Production Block -K Centrifuge Area	K/ST-08 Toluene tank	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
430	Production Block -K Centrifuge Area	Charging Line	Flange	15.6	0.4	100	0.000013	0.110410	1	0.000002	0.015873
431	Production Block -K Centrifuge Area	level indicator	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
432	Production Block -K Centrifuge Area	SRS/ST-49 Tank charging Line	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
433	Production Block -K Centrifuge Area	Tank side	MV	6.3	0.4	100	0.000004	0.031456	0.4	0.000001	0.008312
434	Production Block -K Centrifuge Area	Level indicator Top	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
435	Production Block -K Centrifuge Area	K/ST-06 Tank charging line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
436	Production Block -K Centrifuge Area	level indicator Top	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
437	Production Block -K Centrifuge Area	Tank Vent Line	Vent	4.6	0.4	100	0.000002	0.020098	0.3	0.000000	0.002785
438	Production Block -K Centrifuge Area	level Indicator Bottom	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
439	Production Block -K Centrifuge Area	K/ST-05 methyl di chloride tank	MV	6.4	0.4	100	0.000004	0.031828	0.4	0.000001	0.008312
440	Production Block -K Centrifuge Area	Charging Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
441	Production Block -K Centrifuge Area	Level Indicator	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
442	Production Block -K Centrifuge Area	K/ST.04 charging Line	Flange	7	0.4	100	0.000007	0.062705	0.4	0.000001	0.008312
443	Production Block -K Centrifuge Area	K/ST.04 charging Line	Vent	5.6	0.4	100	0.000003	0.023174	0.3	0.000000	0.002785
444	Production Block -K Centrifuge Area	Level Indicator	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
445	Production Block -K Centrifuge Area	Tank vent	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
446	Production Block -K Centrifuge Area	K/ST-03 methyl dichloride	MV	7.6	0.4	100	0.000004	0.036187	0.5	0.000001	0.009730
447	Production Block -K Centrifuge Area	Charging line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
448	Production Block -K Centrifuge Area	Level indicator top	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096

449	Production Block -K Centrifuge Area	Level indicator Bottom	Flange	4.5	0.4	100	0.000005	0.045902	0.3	0.000001	0.006784
450	Production Block -K Centrifuge Area	K/REC-40 Anxen Tank	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
451	Production Block -K Centrifuge Area	Charging Line	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
452	Production Block -K Centrifuge Area	level indicator	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
453	Production Block -K Centrifuge Area	K/PP-009 pumping Receiver to reactor	Flange	550.8	0.4	100	0.000156	1.367112	16.3	0.000013	0.113885
454	Production Block -K Centrifuge Area	K/REC-39 Anxen Tank C.L	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
455	Production Block -K Centrifuge Area	Charging Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
456	Production Block -K Centrifuge Area	K/ST-01 Tank charging Line	Flange	5.7	0.4	100	0.000006	0.054239	0.3	0.000001	0.006784
457	Production Block -K Centrifuge Area	Level indicator	Flange	42.6	0.4	100	0.000026	0.224401	8.4	0.000008	0.071319
458	Production Block -K Centrifuge Area	Tank Vent	Vent	16.4	0.4	100	0.000006	0.050450	1.1	0.000001	0.007133
459	Production Block J2 (MDC)	J/SSR-003/01 Reactor	MV	0.8	0.4	100	0.000001	0.006733	0	0.000000	0.000000
460	Production Block J2 (MDC)	ISSR-003/RTD-03	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
461	Production Block J2 (MDC)	View glass	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
462	Production Block J2 (MDC)	Vapour Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
463	Production Block J2 (MDC)	Reflux Line	Vent	0.8	0.4	100	0.000001	0.005664	0	0.000000	0.000000
464	Production Block J2 (MDC)	Reflux Line	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
465	Production Block J2 (MDC)	Reflux Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
466	Production Block -J2	RD Line	Flange	1.5	0.4	100	0.000002	0.021134	0.1	0.000000	0.003124
467	Production Block -J2	**SRV Line**	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
468	Production Block -J2	Condensor Line	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
469	Production Block -J2	Condensor Line	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
470	Production Block -J2	Reactor Bottom Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
471	Production Block -J2	Reactor Bottom Line	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124

472	Production Block - J2 (Methanol)	J/GLR-008/01 Reactor	MV	2.8	0.4	100	0.000002	0.017164	0.1	0.000000	0.003124
473	Production Block - J2 (Methanol)	Vapour Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
474	Production Block - J2 (Methanol)	Reactor Top dummy	Flange	1.5	0.4	100	0.000002	0.021134	0.1	0.000000	0.003124
475	Production Block - J2 (Methanol)	Reflux Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
476	Production Block - J2 (Methanol)	Reflux Line	Flange	4.1	0.4	100	0.000005	0.042982	0.2	0.000001	0.005096
477	Production Block - J2 (Methanol)	Reflux Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
478	Production Block - J2 (Methanol)	View glass	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
479	Production Block - J2 (Methanol)	Condensor Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
480	Production Block - J2 (Methanol)	Condensor Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
481	Production Block - J2 (Methanol)	Reactor Bottom Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
482	Production Block - J2 (Methanol)	Reactor Bottom Line	Flange	2.3	0.4	100	0.000003	0.028579	0.1	0.000000	0.003124
483	Production Block - J2 (Methanol)	Reactor Bottom Line	Flange	1	0.4	100	0.000002	0.015873	0	0.000000	0.000000
484	Production Block - J2 (Toluene)	**J/GLP-020/01 Reactor**	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
485	Production Block - J2 (Toluene)	Vapour Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
486	Production Block - J2 (Toluene)	RD Vent	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
487	Production Block - J2 (Toluene)	SRV Line	Flange	0.5	0.4	100	0.000001	0.009730	0	0.000000	0.000000
488	Production Block - J2 (Toluene)	Reflux Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
489	Production Block - J2 (Toluene)	Reflux Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
490	Production Block - J2 (Toluene)	Reflux Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
491	Production Block - J2 (Toluene)	Reactor Bottom Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257

492	Production Block - J2 (Toluene)	Reactor Bottom Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
493	Production Block - J2 (Toluene)	Reactor Bottom Line	Flange	1	0.4	100	0.000002	0.015873	0	0.000000	0.000000
494	Production Block - J2 (Centrifuge Area)	J/ANFD-001/01 Centrifuge	MV	14.8	0.4	100	0.000007	0.059535	1	0.000002	0.015873
495	Production Block - J2 (Centrifuge Area)	Sampling point	Flange	3.2	0.4	100	0.000004	0.036083	0.2	0.000001	0.005096
496	Production Block - J2 (Centrifuge Area)	Charging line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
497	Production Block - J2 (Centrifuge Area)	View glass	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
498	Production Block - J2 (Centrifuge Area)	Vent line	Vent	7.6	0.4	100	0.000003	0.028909	0.5	0.000000	0.004031
499	Production Block - J2 (Centrifuge Area)	MDC Tank -J2 Block	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
500	Production Block - J2 (Centrifuge Area)	Charging Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
501	Production Block - J2 (Centrifuge Area)	Level Indicator Top	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
502	Production Block - J2 (Centrifuge Area)	Level Indicator Bottom	Flange	2	0.4	100	0.000003	0.025893	0.1	0.000000	0.003124
503	Production Block - J2 (Centrifuge Area)	Tank Top vent line	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
504	Production Block - J2 (Centrifuge Area)	Toluene Tank-J2 Block	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
505	Production Block - J2 (Centrifuge Area)	Charging Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
506	Production Block - J2 (Centrifuge Area)	Level Indicator Top	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
507	Production Block - J2 (Centrifuge Area)	Level Indicator Bottom	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
508	Production Block - J2 (Centrifuge Area)	Toluene Tank -J2	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
509	Production Block - J2 (Centrifuge Area)	Bottom Of Tank	Vent	5.6	0.4	100	0.000003	0.023174	0.3	0.000000	0.002785
510	Production Block - J2 (Centrifuge Area)	Bottom Of Tank	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
511	Production Block - J2 (methanol)	Methanol Tank J2 Block	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124

512	Production Block - J2 (methanol)	Charging line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
513	Production Block - J2 (methanol)	Tank Vent Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
514	Production Block - J2 (methanol)	J/PVP pump	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
515	Production Block - J2 (methanol)	J/PVP pump	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
516	Production Block - J2 (methanol)	J/PVP-001 pump	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
517	Production Block - J2 (methanol)	J/PVP-001 pump	Vent	1.2	0.4	100	0.000001	0.007597	0	0.000000	0.000000
518	Production Block - J2 (methanol)	J/PVP-001 pump	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
519	J1 Block Service Area	J/Rec-17 MDC + methanol Tank	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
520	J1 Block Service Area	Tank bottom Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
521	J1 Block Service Area	Tank bottom Line	Flange	2	0.4	100	0.000003	0.025893	0.1	0.000000	0.003124
522	J1 Block Service Area	Tank bottom Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
523	J1 Block Service Area	Charging line	Vent	0.8	0.4	100	0.000001	0.005664	0	0.000000	0.000000
524	J1 Block Service Area	Charging line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
525	J1 Block Service Area	Tank Top Vent	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
526	J1 Block Service Area	Tank Top Vent	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
527	J1 Block Service Area	Dummy	Vent	0.6	0.4	100	0.000001	0.004599	0	0.000000	0.000000
528	E-Block	E/SSR-010 Reactor (Anxen)	MV	40.8	0.4	100	0.000014	0.126985	2.8	0.000004	0.032836
529	E-Block	Vapour Line	Flange	10.9	0.4	100	0.000010	0.085721	0.7	0.000001	0.012340
530	E-Block	SRV Line	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
531	E-Block	RD Line	Flange	12.6	0.4	100	0.000011	0.094956	0.8	0.000002	0.013560
532	E-Block	Hexanes Line to Reactor	Vent	20.8	0.4	100	0.000007	0.059923	1.4	0.000001	0.008494
533	E-Block	PNG-III Line	Vent	19.6	0.4	100	0.000007	0.057400	1.3	0.000001	0.008050
534	E-Block	PNG-II Line	Vent	22.3	0.4	100	0.000007	0.063022	1.5	0.000001	0.008929
535	E-Block	View Glass	Flange	12.6	0.4	100	0.000011	0.094956	0.8	0.000002	0.013560
536	E-Block	Reflux Line	Vent	22.6	0.4	100	0.000007	0.063634	1.5	0.000001	0.008929
537	E-Block	Reflux Line	Flange	33.4	0.4	100	0.000022	0.188985	2.3	0.000003	0.028579
538	E-Block	Condensor Line	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
539	E-Block	Condensor Line	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
540	E-Block	Reactor View glass	Flange	20.8	0.4	100	0.000015	0.135274	1.4	0.000002	0.020129

541	E-Block	Reactor Bottom Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
542	E-Block	Reactor Bottom Line	Flange	2.5	0.4	100	0.000003	0.030312	0.1	0.000000	0.003124
543	E-Block	Reactor Bottom Line	Flange	7.1	0.4	100	0.000007	0.063336	0.4	0.000001	0.008312
544	E-Block	Reactor Bottom Line	Flange	5.4	0.4	100	0.000006	0.052207	0.3	0.000001	0.006784
545	E-Block	E/SSR-012 Reactor	MV	3.7	0.4	100	0.000002	0.021137	0.2	0.000001	0.005096
546	E-Block	Vapour Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
547	E-Block	Reactor Top dummy	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
548	E-Block	Reactor Top dummy	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
549	E-Block	SRV Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
550	E-Block	RD Line	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
551	E-Block	View glass-1	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
552	E-Block	View glass-2	Flange	7.2	0.4	100	0.000007	0.063965	0.5	0.000001	0.009730
553	E-Block	Reflux Line	Vent	4.6	0.4	100	0.000002	0.020098	0.3	0.000000	0.002785
554	E-Block	Reflux Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
555	E-Block	Reflux Line	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
556	E-Block	Condensor Line	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
557	E-Block	Condensor Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
558	E-Block(Anxen)	E/SSR-017/01 Reactor	MV	3.4	0.4	100	0.000002	0.019843	0.2	0.000001	0.005096
559	E-Block(Anxen)	Vapour Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
560	E-Block(Anxen)	SRV Line	Flange	9.4	0.4	100	0.000009	0.077213	0.6	0.000001	0.011067
561	E-Block(Anxen)	RD Line	Flange	10.2	0.4	100	0.000009	0.081796	0.7	0.000001	0.012340
562	E-Block(Anxen)	Reflux Line	Vent	12.6	0.4	100	0.000005	0.041686	0.8	0.000001	0.005664
563	E-Block(Anxen)	View glass-1	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
564	E-Block(Anxen)	View glass-2	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
565	E-Block	Reflux Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
566	E-Block	Reflux Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
567	E-Block	Reflux Line	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
568	E-Block	Condensor Line	Flange	2	0.4	100	0.000003	0.025893	0.1	0.000000	0.003124
569	E-Block	Condensor Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
570	E-Block	Reactor Bottom Line	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
571	E-Block	Reactor Bottom Line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
572	E-Block	Reactor Bottom Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
573	E-Block(MDC Process)	E/SSR-04 Reactor	MV	1.2	0.4	100	0.000001	0.009115	0	0.000000	0.000000
574	E-Block(MDC Process)	Temp gauge	Flange	2	0.4	100	0.000003	0.025893	0.1	0.000000	0.003124
575	E-Block(MDC Process)	Charging Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124

576	E-Block(MDC Process)	Reflux Line	Vent	2	0.4	100	0.000001	0.010997	0.1	0.000000	0.001257
577	E-Block(MDC Process)	Reflux Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
578	E-Block(MDC Process)	Reflux Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
579	E-Block	Reactor Vapour Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
580	E-Block	Reactor Top dummy	Flange	4.3	0.4	100	0.000005	0.044452	0.3	0.000001	0.006784
581	E-Block	RD Line	Flange	8.4	0.4	100	0.000008	0.071319	0.5	0.000001	0.009730
582	E-Block	SRV Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
583	E-Block	Condensor Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
584	E-Block	Condensor Line	Flange	4.2	0.4	100	0.000005	0.043720	0.2	0.000001	0.005096
585	E-Block	Reactor Bottom Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
586	E-Block	Reactor Bottom Line	Flange	2	0.4	100	0.000003	0.025893	0.1	0.000000	0.003124
587	E-Block	Reactor Bottom Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
588	E-Block	E/SSR-048 Reactor	MV	1.5	0.4	100	0.000001	0.010768	0.1	0.000000	0.003124
589	E-Block	Charging Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
590	E-Block	View Glass	Flange	2.3	0.4	100	0.000003	0.028579	0.1	0.000000	0.003124
591	E-Block	Top dummy	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
592	E-Block	Reflux Line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
593	E-Block	Reflux Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
594	E-Block	Reflux Line	Vent	3.8	0.4	100	0.000002	0.017502	0.2	0.000000	0.002076
595	E-Block	Vapour Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
596	E-Block	Light glass	Flange	2.3	0.4	100	0.000003	0.028579	0.1	0.000000	0.003124
597	E-Block	RD Line	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
598	E-Block	SRV Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
599	E-Block	Condensor Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
600	E-Block	Condensor Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
601	E-Block	E/GLR-022/02 Reactor	MV	1.9	0.4	100	0.000001	0.012848	0.1	0.000000	0.003124
602	E-Block	Charging Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
603	E-Block	View glass-1	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
604	E-Block	View glass-2	Flange	3	0.4	100	0.000004	0.034475	0.2	0.000001	0.005096
605	E-Block	Vapour Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
606	E-Block	RD Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
607	E-Block	SRV Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
608	E-Block	Vapour Line	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
609	E-Block	Reflux Line	Vent	4.4	0.4	100	0.000002	0.019462	0.3	0.000000	0.002785
610	E-Block	Reflux Line	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784

611	E-Block	Reflux Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
612	E-Block	Condensor Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
613	E-Block	Condensor Line	Flange	3	0.4	100	0.000004	0.034475	0.2	0.000001	0.005096
614	E-Block	Reactor Bottom Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
615	E-Block	Reactor Bottom Line	Flange	3.1	0.4	100	0.000004	0.035283	0.2	0.000001	0.005096
616	E-Block	E/SSR-023 Reactor	MV	2	0.4	100	0.000002	0.013349	0.1	0.000000	0.003124
617	E-Block	Top dummy	Flange	1.5	0.4	100	0.000002	0.021134	0.1	0.000000	0.003124
618	E-Block	SRV Line	Flange	2.7	0.4	100	0.000004	0.032004	0.1	0.000000	0.003124
619	E-Block	RD Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
620	E-Block	View glass-1	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
621	E-Block	View glass-2	Flange	4.5	0.4	100	0.000005	0.045902	0.3	0.000001	0.006784
622	E-Block	Vapour Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
623	E-Block	Reflux Line	Vent	7.8	0.4	100	0.000003	0.029457	0.5	0.000000	0.004031
624	E-Block	Reflux Line	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
625	E-Block	Reflux Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
626	E-Block	Condensor Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
627	E-Block	Condensor Line	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
628	E-Block	Condensor Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
629	E-Block	Reactor Bottom Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
630	E-Block	Reactor Bottom Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
631	E-Block	Reactor Bottom Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
632	E-Block(MDC Process)	E/SSR-024 Reactor	MV	2.7	0.4	100	0.000002	0.016704	0.1	0.000000	0.003124
633	E-Block(MDC Process)	Temp gauge	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
634	E-Block(MDC Process)	RD Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
635	E-Block(MDC Process)	SRV Line	Flange	2.2	0.4	100	0.000003	0.027696	0.1	0.000000	0.003124
636	E-Block(MDC Process)	Top dummy Reactor	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
637	E-Block(MDC Process)	Vapour Line	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
638	E-Block(MDC Process)	Reflux Line	Vent	6.3	0.4	100	0.000003	0.025237	0.4	0.000000	0.003429
639	E-Block(MDC Process)	Reflux Line	Flange	11.4	0.4	100	0.000010	0.088478	0.7	0.000001	0.012340
640	E-Block(MDC Process)	Reflux Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
641	E-Block(MDC Process)	Condensor Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
642	E-Block(MDC Process)	Condensor Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
643	E-Block(MDC Process)	Condensor Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
644	E-Block(MDC Process)	E/SSR-026/01 Reactor	MV	1.4	0.4	100	0.000001	0.010227	0	0.000000	0.000000
645	E-Block(MDC Process)	Vapour Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096

646	E-Block(MDC Process)	SRV Line	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
647	E-Block(MDC Process)	RD Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
648	E-Block(MDC Process)	Reflux Line	Flange	3.5	0.4	100	0.000004	0.038439	0.2	0.000001	0.005096
649	E-Block(MDC Process)	Reflux Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
650	E-Block(MDC Process)	View glass-1	Flange	12.4	0.4	100	0.000011	0.093890	0.8	0.000002	0.013560
651	E-Block(MDC Process)	View glass-2	Flange	13.6	0.4	100	0.000011	0.100217	0.9	0.000002	0.014735
652	E-Block(MDC Process)	Reactor Top dummy-1	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
653	E-Block(MDC Process)	Reactor Top dummy-2	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
654	E-Block(MDC Process)	Condensor Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
655	E-Block(MDC Process)	Condensor Line	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
656	E-Block(MDC Process)	Reactor Bottom Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
657	E-Block(MDC Process)	Reactor Bottom Line	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
658	E-Block(MDC Process)	Reactor Bottom Line	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
659	E-Block(MDC Process)	E/SSR-028 Reactor	MV	1.3	0.4	100	0.000001	0.009676	0	0.000000	0.000000
660	E-Block(MDC Process)	Charging Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
661	E-Block(MDC Process)	Charging Line	Vent	3.8	0.4	100	0.000002	0.017502	0.2	0.000000	0.002076
662	E-Block(MDC Process)	Reactor Top dummy -1	Flange	10.8	0.4	100	0.000010	0.085165	0.7	0.000001	0.012340
663	E-Block(MDC Process)	Reactor Top dummy -2	Flange	15.6	0.4	100	0.000013	0.110410	1	0.000002	0.015873
664	E-Block(MDC Process)	Vapour Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
665	E-Block(MDC Process)	RD Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
666	E-Block(MDC Process)	SRV Line	Flange	5.2	0.4	100	0.000006	0.050835	0.3	0.000001	0.006784
667	E-Block(MDC Process)	View Glass	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
668	E-Block(MDC Process)	Reflux Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
669	E-Block(MDC Process)	Reflux Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
670	E-Block(MDC Process)	Reflux Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
671	E-Block(MDC Process)	Condensor Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
672	E-Block(MDC Process)	Condensor Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
673	E-Block(MDC Process)	Reactor Bottom Line	Vent	0.8	0.4	100	0.000001	0.005664	0	0.000000	0.000000
674	E-Block(MDC Process)	Reactor Bottom Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
675	E-Block(MDC Process)	Reactor Bottom Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
676	E-Block(MDC Process)	E/SSR-001 Reactor	MV	2.1	0.4	100	0.000002	0.013845	0.1	0.000000	0.003124
677	E-Block(MDC Process)	Charging Line	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
678	E-Block(MDC Process)	Charging Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
679	E-Block(MDC Process)	Rm0010 (FIR) Line	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
680	E-Block(MDC Process)	Rm0010 (FIR) Line	Vent	9.6	0.4	100	0.000004	0.034236	0.6	0.000001	0.004599

681	E-Block(MDC Process)	Rm0010 (FIR) Line	Vent	8.4	0.4	100	0.000004	0.031081	0.5	0.000000	0.004031
682	E-Block(MDC Process)	Reflux Line	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
683	E-Block(MDC Process)	Reflux Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
684	E-Block(MDC Process)	Reflux Line	Vent	4	0.4	100	0.000002	0.018164	0.2	0.000000	0.002076
685	E-Block(MDC Process)	Reflux Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
686	E-Block(MDC Process)	Vapour Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
687	E-Block(MDC Process)	RD Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
688	E-Block(MDC Process)	SRV Line	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
689	E-Block(MDC Process)	View glass	Flange	1.8	0.4	100	0.000003	0.024037	0.1	0.000000	0.003124
690	E-Block(MDC Process)	Temp gauge	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
691	E-Block(MDC Process)	Condensor Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
692	E-Block(MDC Process)	Condensor Line	Flange	2.2	0.4	100	0.000003	0.027696	0.1	0.000000	0.003124
693	E-Block(MDC Process)	Reactor Bottom Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
694	E-Block(MDC Process)	Reactor Bottom Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
695	E-Block(MDC Process)	Reactor Bottom Line	Flange	3	0.4	100	0.000004	0.034475	0.2	0.000001	0.005096
696	E-Block(MDC Process)	E/SSR-002-02 Reactor	MV	22.9	0.4	100	0.000009	0.082487	1.6	0.000003	0.022119
697	E-Block(MDC Process)	Vapour Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
698	E-Block(MDC Process)	SRV	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
699	E-Block(MDC Process)	RD	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
700	E-Block(MDC Process)	Reflux Line	Vent	3	0.4	100	0.000002	0.014749	0.2	0.000000	0.002076
701	E-Block(MDC Process)	Reflux Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
702	E-Block(MDC Process)	Charging Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
703	E-Block(MDC Process)	Charging Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
704	E-Block(MDC Process)	Condensor Line	Vent	2	0.4	100	0.000001	0.010997	0.1	0.000000	0.001257
705	E-Block(MDC Process)	Condensor Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
706	E-Block(MDC Process)	View glass-1	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
707	E-Block(MDC Process)	View glass-2	Flange	2.7	0.4	100	0.000004	0.032004	0.1	0.000000	0.003124
708	E-Block(MDC Process)	E/GLR-003/01 Reactor	MV	1.4	0.4	100	0.000001	0.010227	0	0.000000	0.000000
709	E-Block(MDC Process)	Vapour Line	Flange	2.3	0.4	100	0.000003	0.028579	0.1	0.000000	0.003124
710	E-Block(MDC Process)	SRV	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
711	E-Block(MDC Process)	RD	Flange	2.5	0.4	100	0.000003	0.030312	0.1	0.000000	0.003124
712	E-Block(MDC Process)	View glass	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
713	E-Block(MDC Process)	Reactor top dummy-1	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
714	E-Block(MDC Process)	Reactor top dummy-2	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
715	E-Block(MDC Process)	Rmoll (Solution) Line	Vent	4.8	0.4	100	0.000002	0.020727	0.3	0.000000	0.002785

716	E-Block(MDC Process)	Rmoll (Solution) Line	Vent	5.4	0.4	100	0.000003	0.022572	0.3	0.000000	0.002785
717	E-Block(MDC Process)	Condensor Line	Vent	6.3	0.4	100	0.000003	0.025237	0.4	0.000000	0.003429
718	E-Block(MDC Process)	Condensor Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
719	E-Block(MDC Process)	Condensor Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
720	E-Block(MDC Process)	E/GLR-004/01 Reactor	MV	3.9	0.4	100	0.000003	0.021984	0.2	0.000001	0.005096
721	E-Block(MDC Process)	Vapour Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
722	E-Block(MDC Process)	RM0037 Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
723	E-Block(MDC Process)	RM0122 Line	Flange	5.4	0.4	100	0.000006	0.052207	0.3	0.000001	0.006784
724	E-Block(MDC Process)	RM010 Line	Flange	10.8	0.4	100	0.000010	0.085165	0.7	0.000001	0.012340
725	E-Block(MDC Process)	Charging Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
726	E-Block(MDC Process)	Charging Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
727	E-Block(MDC Process)	Condensor Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
728	E-Block(MDC Process)	Condensor Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
729	E-Block(MDC Process)	Condensor Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
730	E-Block(MDC Process)	E/GLR-005/01 Reactor	MV	1.4	0.4	100	0.000001	0.010227	0	0.000000	0.000000
731	E-Block(MDC Process)	Vapour Line	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
732	E-Block(MDC Process)	Reflux Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
733	E-Block(MDC Process)	Reflux Line	Flange	2.3	0.4	100	0.000003	0.028579	0.1	0.000000	0.003124
734	E-Block(MDC Process)	Reflux Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
735	E-Block(MDC Process)	Charging Line	Vent	4.8	0.4	100	0.000002	0.020727	0.3	0.000000	0.002785
736	E-Block(MDC Process)	Charging Line	Flange	3.1	0.4	100	0.000004	0.035283	0.2	0.000001	0.005096
737	E-Block(MDC Process)	SRV	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
738	E-Block(MDC Process)	RD Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
739	E-Block(MDC Process)	Top Dummy-1	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
740	E-Block(MDC Process)	Top Dummy-2	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
741	E-Block(MDC Process)	Condensor Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
742	E-Block(MDC Process)	Reactor Bottom Line	Vent	3	0.4	100	0.000002	0.014749	0.2	0.000000	0.002076
743	E-Block(MDC Process)	Reactor Bottom Line	Flange	4.4	0.4	100	0.000005	0.045179	0.3	0.000001	0.006784
744	E-Block(MDC Process)	Reactor Bottom Line	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
745	E-Block(MDC Process)	E/GLR-006/01 Raector	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
746	E-Block(MDC Process)	Vapour Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
747	E-Block(MDC Process)	Reflux Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
748	E-Block(MDC Process)	Reflux Line	Flange	7	0.4	100	0.000007	0.062705	0.4	0.000001	0.008312
749	E-Block(MDC Process)	Reflux Line	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
750	E-Block(MDC Process)	SRV Line	Flange	6.8	0.4	100	0.000007	0.061435	0.4	0.000001	0.008312

751	E-Block(MDC Process)	RD	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
752	E-Block(MDC Process)	Reactror Top Dummy-1	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
753	E-Block(MDC Process)	Reactror Top Dummy-2	Flange	4.4	0.4	100	0.000005	0.045179	0.3	0.000001	0.006784
754	E-Block(MDC Process)	Condensor Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
755	E-Block(MDC Process)	Condensor Line	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
756	E-Block(MDC Process)	Reactor Bottom Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
757	E-Block(MDC Process)	Reactor Bottom Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
758	E-Block(MDC Process)	Reactor Bottom Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
759	E-Block(MDC Process)	E/GLR-007 Reactor	MV	2	0.4	100	0.000002	0.013349	0.1	0.000000	0.003124
760	E-Block(MDC Process)	Vapour Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
761	E-Block(MDC Process)	Reactor Top dummy-1	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
762	E-Block(MDC Process)	Reactor Top dummy-2	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
763	E-Block(MDC Process)	Charging Line	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
764	E-Block(MDC Process)	Charging Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
765	E-Block(MDC Process)	View glass-1	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
766	E-Block(MDC Process)	View glass-2	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
767	E-Block(MDC Process)	Reflux Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
768	E-Block(MDC Process)	Reflux Line	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
769	E-Block(MDC Process)	Condensor Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
770	E-Block(MDC Process)	Condensor Line	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
771	E-Block(MDC Process)	Reactor Bottom Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
772	E-Block(MDC Process)	Reactor Bottom Line	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
773	E-Block(MDC Process)	Reactor Bottom Line	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
774	E-Block Centrifuge(Anxen Process)	E/ANFD-015 (Agitate Nuts filter and dryer)	MV	16.7	0.4	100	0.000007	0.065157	1.1	0.000002	0.016978
775	E-Block Centrifuge(Anxen Process)	View glass	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
776	E-Block Centrifuge(Anxen Process)	Feeding Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
777	E-Block Centrifuge(Anxen Process)	Feeding Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096

778	E-Block Centrifuge(Anxen Process)	Feeding Line	Vent	9.4	0.4	100	0.000004	0.033718	0.6	0.000001	0.004599
779	E-Block Centrifuge(Anxen Process)	Back Filter Line	Flange	1.8	0.4	100	0.000003	0.024037	0.1	0.000000	0.003124
780	E-Block Centrifuge(Anxen Process)	E/ANFD Bottom Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
781	E-Block Centrifuge(Anxen Process)	E/ANFD Bottom Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
782	E-Block Centrifuge(Anxen Process)	E/ANFD Bottom Line	Flange	10.6	0.4	100	0.000010	0.084048	2.1	0.000003	0.026801
783	E-Block Centrifuge(Anxen Process)	Vacuum Line	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
784	E-Block Centrifuge(Anxen Process)	Vacuum Line	Vent	11.8	0.4	100	0.000005	0.039752	3.1	0.000002	0.015103
785	E-Block Centrifuge(Anxen Process)	Vacuum Line	Flange	20.6	0.4	100	0.000015	0.134355	1.4	0.000002	0.020129
786	E-Block Centrifuge(Anxen Process)	F/ANFD-013	MV	4.8	0.4	100	0.000003	0.025673	0.3	0.000001	0.006784
787	E-Block Centrifuge(Anxen Process)	Vent line	Vent	4	0.4	100	0.000002	0.018164	0.2	0.000000	0.002076
788	E-Block Centrifuge(Anxen Process)	Vent line	Vent	3.3	0.4	100	0.000002	0.015802	0.2	0.000000	0.002076
789	E-Block Centrifuge(Anxen Process)	View glass	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
790	E-Block Centrifuge(Anxen Process)	Filter Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124

791	E-Block Centrifuge(Anxen Process)	Feeding Line	Flange	1.1	0.4	100	0.000002	0.016978	0	0.000000	0.000000
792	E-Block Centrifuge(Anxen Process)	Vacuum Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
793	E-Block Centrifuge(Anxen Process)	Vacuum Line	Vent	6.8	0.4	100	0.000003	0.026672	0.4	0.000000	0.003429
794	Dryer Area -E Block	ANFD-014	MV	7.8	0.4	100	0.000004	0.036896	0.5	0.000001	0.009730
795	Dryer Area -E Block	Vent Line	Vent	5.4	0.4	100	0.000003	0.022572	0.3	0.000000	0.002785
796	Dryer Area -E Block	Vent Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
797	Dryer Area -E Block	Feeding Line	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
798	Dryer Area -E Block	Feeding Line	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
799	Dryer Area -E Block	Feeding Line	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
800	Dryer Area -E Block	Vacuum Line	Vent	10.2	0.4	100	0.000004	0.035772	0.7	0.000001	0.005142
801	Dryer Area -E Block	Vacuum Line	Flange	11.6	0.4	100	0.000010	0.089571	0.8	0.000002	0.013560
802	Dryer Area -E Block	Vacuum Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
803	Production Block -E Service Area	E/ST-92 Anxen Tank	Vent	2.7	0.4	100	0.000002	0.013665	0.1	0.000000	0.001257
804	Production Block -E Service Area	Level Indicator	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
805	Production Block -E Service Area	E/ST-93 Anxen Tank	Vent	14.7	0.4	100	0.000005	0.046607	1	0.000001	0.006658
806	Production Block -E Service Area	Level Indicator	Flange	46.7	0.4	100	0.000027	0.239442	3.2	0.000004	0.036083
807	Production Block -E Service Area	Tank bottom Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
808	Production Block -E Service Area	Tank Top	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
809	Production Block -E Service Area	Tank Top	Flange	18.4	0.4	100	0.000014	0.124058	1.2	0.000002	0.018054
810	Production Block -E Service Area	Axen Tank Charging Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
811	Production Block -E Service Area	Level Indicator	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
812	Production Block -E Service Area	Tank Vent Line	Vent	5207	0.4	100	0.000373	3.266834	2.9	0.000002	0.014391

813	Production Block -E Service Area	E/ST-51 Anxen Tank Vent	Vent	1507.4	0.4	100	0.000152	1.331543	12.4	0.000005	0.041205
814	Production Block -E Service Area	Charging Line	Flange	8.4	0.4	100	0.000008	0.071319	0.5	0.000001	0.009730
815	Production Block -E Service Area	Charging Line	Vent	12.3	0.4	100	0.000005	0.040965	0	0.000000	0.000000
816	Production Block -E Service Area	E/ST-47 Anxen Tank Vent	Vent	1027	0.4	100	0.000115	1.008544	71.8	0.000017	0.146944
817	Production Block -E Service Area	Charging Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
818	Production Block -E Service Area	Charging Line	Vent	3.7	0.4	100	0.000002	0.017167	0.2	0.000000	0.002076
819	Production Block -E Service Area	E/ST-83 triethylamine Side	MV	1.3	0.4	100	0.000001	0.009676	0	0.000000	0.000000
820	Production Block -E Service Area	Level Indicator Top	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
821	Production Block -E Service Area	Level indicator bottom	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
822	Production Block -E Service Area	Charging Line	Vent	4.8	0.4	100	0.000002	0.020727	0.3	0.000000	0.002785
823	Production Block -E Service Area	Charging Line	Flange	10.2	0.4	100	0.000009	0.081796	0.7	0.000001	0.012340
824	Production Block -E Service Area	E/ST-49 Ethyl Acetate Tank	MV	13.4	0.4	100	0.000006	0.055276	0.9	0.000002	0.014735
825	Production Block -E Service Area	Charging Line	Vent	8.4	0.4	100	0.000004	0.031081	0.5	0.000000	0.004031
826	Production Block -E Service Area	Level Indicator Top	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
827	Production Block -E Service Area	Level Indicator Bottom	Vent	16.8	0.4	100	0.000006	0.051338	1.1	0.000001	0.007133
828	Production Block -E Service Area	E/ST-53 Triethylamine Tank	MV	3.7	0.4	100	0.000002	0.021137	0.2	0.000001	0.005096
829	Production Block -E Service Area	Charging Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
830	Production Block -E Service Area	Vacuum Line	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
831	Production Block -E Service Area	E/ST-27 Liquid NH3 Tank	MV	16.8	0.4	100	0.000007	0.065448	1.1	0.000002	0.016978
832	Production Block -E Service Area	Charging Line	Vent	28.4	0.4	100	0.000009	0.075079	1.9	0.000001	0.010596

833	Production Block -E Service Area	Tank Top	Flange	11.4	0.4	100	0.000010	0.088478	0.7	0.000001	0.012340
834	Production Block -E Service Area	E/ST-57 Charging Line	Vent	4.6	0.4	100	0.000002	0.020098	0.3	0.000000	0.002785
835	Production Block -E Service Area	E/ST-57 Side dummy	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
836	Production Block -E Service Area	E/ST-57 Side dummy	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
837	Production Block -E Service Area	E/ST-14 MLS Tank	MV	2.8	0.4	100	0.000002	0.017164	0.1	0.000000	0.003124
838	Production Block -E Service Area	Charging Line	Flange	3.3	0.4	100	0.000004	0.036875	0.2	0.000001	0.005096
839	Production Block -E Service Area	Level Indicator Top	Flange	8.4	0.4	100	0.000008	0.071319	0.5	0.000001	0.009730
840	Production Block -E Service Area	Level Indicator Bottom	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
841	Production Block -E Service Area	E/ST-80 MLS Tank	MV	7.6	0.4	100	0.000004	0.036187	0.5	0.000001	0.009730
842	Production Block -E Service Area	Charging Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
843	Production Block -E Service Area	Level Indicator Top	Flange	18.4	0.4	100	0.000014	0.124058	1.2	0.000002	0.018054
844	Production Block -E Service Area	Level Indicator Bottom	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
845	Production Block -E Service Area	E/ST-12 MLS Tank	MV	2.4	0.4	100	0.000002	0.015297	0.1	0.000000	0.003124
846	Production Block -E Service Area	Charging Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
847	Production Block -E Service Area	Level Indicator	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
848	Production Block -E Service Area	E/ST-34 Cyclol Hexan Tank	MV	8.4	0.4	100	0.000004	0.038997	0.5	0.000001	0.009730
849	Production Block -E Service Area	Charging Line	Vent	8.1	0.4	100	0.000003	0.030273	0.5	0.000000	0.004031
850	Production Block -E Service Area	Level Indicator	Vent	8.3	0.4	100	0.000004	0.030813	0.5	0.000000	0.004031
851	Production Block -E Service Area	E/SSR-032 Reactor	MV	40.6	0.4	100	0.000014	0.126520	2.8	0.000004	0.032836
852	Production Block -E Service Area	Vapour Line	Flange	17.6	0.4	100	0.000014	0.120225	1.2	0.000002	0.018054

853	Production Block -E Service Area	Charging Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
854	Production Block -E Service Area	Charging Line	Vent	11.5	0.4	100	0.000004	0.039018	0.8	0.000001	0.005664
855	Production Block -E Service Area	SRV Line	Flange	15.4	0.4	100	0.000012	0.109409	1	0.000002	0.015873
856	Production Block -E Service Area	RD Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
857	E-Block (Reactor Area)	Reactor Top Dummy	Flange	1340	0.4	100	0.000292	2.560933	93.8	0.000045	0.391776
858	E-Block (Reactor Area)	Reactor Bottom Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
859	E-Block (Reactor Area)	Reactor Bottom Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
860	E-Block (Reactor Area)	Reactor Bottom Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
861	E-Block (Reactor Area)	Condensor Line	Flange	4.1	0.4	100	0.000005	0.042982	0.2	0.000001	0.005096
862	E-Block (Reactor Area)	Condensor Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
863	E-Block (Reactor Area)	E/SSR-041 Reactor	MV	5.7	0.4	100	0.000003	0.029190	0.3	0.000001	0.006784
864	E-Block (Reactor Area)	Vapour Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
865	E-Block (Reactor Area)	SRV Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
866	E-Block (Reactor Area)	RD Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
867	E-Block (Reactor Area)	Charging Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
868	E-Block (Reactor Area)	Charging Line	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
869	E-Block (Reactor Area)	Charging Line	Vent	7.8	0.4	100	0.000003	0.029457	0.5	0.000000	0.004031
870	E-Block (Reactor Area)	Reflux Line	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
871	E-Block (Reactor Area)	Reflux Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
872	E-Block (Reactor Area)	Condensor Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
873	E-Block (Reactor Area)	Condensor Line	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
874	E-Block (Reactor Area)	Reactor Bottom Line	Vent	2.1	0.4	100	0.000001	0.011392	0.1	0.000000	0.001257
875	E-Block (Reactor Area)	Reactor Bottom Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
876	E-Block (Reactor Area)	Reactor Bottom Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
877	E-Block (Reactor Area)	Reactor Bottom Line	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
878	Production Block -E Service Area	E/ST-26 MDC Tank	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
879	Production Block -E Service Area	Level indicator	Vent	1.5	0.4	100	0.000001	0.008929	0.1	0.000000	0.001257
880	Production Block -E Service Area	Charging Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
881	Production Block -E Service Area	Charging Line	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257

882	Production Block -E Service Area	E 12/ST-098 Tank	MV	2.4	0.4	100	0.000002	0.015297	0.1	0.000000	0.003124
883	Production Block -E Service Area	Tank bottom Line	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
884	Production Block -E Service Area	Tank bottom Line	Vent	8.1	0.4	100	0.000003	0.030273	0.5	0.000000	0.004031
885	Production Block -E Service Area	Charging Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
886	Production Block -E Service Area	Level Indicator	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
887	Production Block -E Service Area	E/ST-74 Tank (Cyclohexane)	MV	2.4	0.4	100	0.000002	0.015297	0.1	0.000000	0.003124
888	Production Block -E Service Area	Charging Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
889	Production Block -E Service Area	Level Indicator	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
890	Production Block -E Service Area	E/ST-73 Tank Charging Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
891	Production Block -E Service Area	E/ST-73 Side	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
892	Production Block -E Service Area	Level Indicator Top	Flange	4.1	0.4	100	0.000005	0.042982	0.2	0.000001	0.005096
893	Production Block -E Service Area	Level Indicator Bottom	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
894	Production Block -E Service Area	E/ST-72 Tank (Cyclohexane)	MV	1.2	0.4	100	0.000001	0.009115	0	0.000000	0.000000
895	Production Block -E Service Area	Charging Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
896	Production Block -E Service Area	Level Indicator Top	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
897	Production Block -E Service Area	Level Indicator Bottom	Flange	7.9	0.4	100	0.000008	0.068295	0.5	0.000001	0.009730
898	Production Block -E Service Area	Tank Vent Line	Vent	20.4	0.4	100	0.000007	0.059087	1.4	0.000001	0.008494
899	Production Block -E Service Area	Tank Vent Line	Flange	30.9	0.4	100	0.000020	0.178885	2.1	0.000003	0.026801
900	Production Block -E Service Area	E/69 tank (Cyclohexane)	MV	2.3	0.4	100	0.000002	0.014818	0.1	0.000000	0.003124
901	Production Block -E Service Area	Level indicator	Flange	1.8	0.4	100	0.000003	0.024037	0.1	0.000000	0.003124

902	Production Block -E Service Area	Charging Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
903	Production Block -E Service Area	E/ST-68 (methanol)	MV	4.7	0.4	100	0.000003	0.025272	0.3	0.000001	0.006784
904	Production Block -E Service Area	Charging Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
905	Production Block -E Service Area	Level Indicator	Flange	3.5	0.4	100	0.000004	0.038439	0.2	0.000001	0.005096
906	Production Block -E Service Area	Side Dummy	Flange	4.1	0.4	100	0.000005	0.042982	0.2	0.000001	0.005096
907	Production Block -E Service Area	E/Ct-71 (Cyclohexane & Methanol)	MV	4.8	0.4	100	0.000003	0.025673	0.3	0.000001	0.006784
908	Production Block -E Service Area	Tank Top	Vent	4.8	0.4	100	0.000002	0.020727	0.3	0.000000	0.002785
909	Production Block -E Service Area	Charging Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
910	Production Block -E Service Area	Level Indicator	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
911	Production Block -E Service Area	Side dummy	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
912	Production Block -E Service Area	S/ST-70 (Cyclohexane & Methanol)	MV	1.5	0.4	100	0.000001	0.010768	0.1	0.000000	0.003124
913	Production Block -E Service Area	Charging Line	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
914	Production Block -E Service Area	Level indicator	Flange	3.1	0.4	100	0.000004	0.035283	0.2	0.000001	0.005096
915	Production Block -E Service Area	Side Dummy	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
916	Production Block -E Service Area	E/ST-67 (Cyclohexane & Methanol)	MV	3.9	0.4	100	0.000003	0.021984	0.2	0.000001	0.005096
917	Production Block -E Service Area	Level indicator Bottom	Vent	3.5	0.4	100	0.000002	0.016490	0.2	0.000000	0.002076
918	Production Block -E Service Area	Level indicator Top	Vent	1.8	0.4	100	0.000001	0.010189	0.1	0.000000	0.001257
919	Production Block -E Service Area	Charging Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
920	Production Block -E Service Area	E/St-69 (Cyclohexane & Methanol)	MV	2.9	0.4	100	0.000002	0.017620	0.2	0.000001	0.005096
921	Production Block -E Service Area	Level Indicator Bottom	Flange	1.3	0.4	100	0.000002	0.019103	0	0.000000	0.000000

922	Production Block -E Service Area	Level indicator Top	Flange	3.2	0.4	100	0.000004	0.036083	0.2	0.000001	0.005096
923	Production Block -E Service Area	Charging Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
924	Production Block -E Service Area	E/ST-60 (Anexen)	MV	5.1	0.4	100	0.000003	0.026862	0.3	0.000001	0.006784
925	Production Block -E Service Area	Charging Line	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
926	Production Block -E Service Area	Level indicator Top	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
927	Production Block -E Service Area	Level indicator Bottom	Vent	3.5	0.4	100	0.000002	0.016490	0.2	0.000000	0.002076
928	Production Block -E Service Area	E/ST-09 (anxen MLS tank	MV	7.6	0.4	100	0.000004	0.036187	0.5	0.000001	0.009730
929	Production Block -E Service Area	Charging Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
930	Production Block -E Service Area	Level Indicator Top	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
931	Production Block -E Service Area	Level Indicator Bottom	Flange	4.4	0.4	100	0.000005	0.045179	0.3	0.000001	0.006784
932	Production Block -E Service Area	E/ST-65 (Anxen Distatate)	MV	2.9	0.4	100	0.000002	0.017620	0.2	0.000001	0.005096
933	Production Block -E Service Area	Charging Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
934	Production Block -E Service Area	Level Indicator Top	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
935	Production Block -E Service Area	Level Indicator bottom	Flange	7.9	0.4	100	0.000008	0.068295	0.5	0.000001	0.009730
936	Production Block -E Service Area	E/ST-10 (Anxen Tank)	MV	7.4	0.4	100	0.000004	0.035474	0.5	0.000001	0.009730
937	Production Block -E Service Area	Charging Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
938	Production Block -E Service Area	Vacuum Line	Flange	6.1	0.4	100	0.000006	0.056899	0.4	0.000001	0.008312
939	Production Block -E Service Area	Level Indicator Top	Vent	5.4	0.4	100	0.000003	0.022572	0.3	0.000000	0.002785
940	Production Block -E Service Area	Level Indicator Bottom	Vent	3.1	0.4	100	0.000002	0.015103	0.2	0.000000	0.002076
941	Production Block -E Service Area	E/ST-11 (Anxen Tank)	MV	2.9	0.4	100	0.000002	0.017620	0.2	0.000001	0.005096

942	Production Block -E Service Area	Charging Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
943	Production Block -E Service Area	Level Indicator Top	Flange	7.3	0.4	100	0.000007	0.064590	0.5	0.000001	0.009730
944	Production Block -E Service Area	Level Indicator Bottom	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
945	Production Block -E Service Area	E/ST-18 (Anxen Tank)	MV	6.1	0.4	100	0.000004	0.030707	0.4	0.000001	0.008312
946	Production Block -E Service Area	Charging Line	Flange	5.3	0.4	100	0.000006	0.051523	0.3	0.000001	0.006784
947	Production Block -E Service Area	Level Indicator Top	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
948	Production Block -E Service Area	Level Indicator Bottom	Flange	11.8	0.4	100	0.000010	0.090659	0.8	0.000002	0.013560
949	Production Block -E Service Area	E/ST -50 (Anxen Fresh)Tank	MV	1.4	0.4	100	0.000001	0.010227	0	0.000000	0.000000
950	Production Block -E Service Area	Charging Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
951	Production Block -E Service Area	Level Indicator Top	Vent	14096.4	0.4	100	0.000767	6.718496	5.8	0.000003	0.023771
952	Production Block -E Service Area	Level Indicator Bottom	Vent	17.6	0.4	100	0.000006	0.053097	1.2	0.000001	0.007597
953	Production Block -E Service Area	Charging line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
954	Production Block -E Service Area	Charging line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
955	Production Block -E Service Area	E/ST-81 (Methanol+Anxen)	MV	2.4	0.4	100	0.000002	0.015297	0.1	0.000000	0.003124
956	Production Block -E Service Area	Charging Line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
957	Production Block -E Service Area	Level Indicator Top	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
958	Production Block -E Service Area	Level Indicator Bottom	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
959	Production Block -E Service Area	ST-82 (Methanol+ Anxen)	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
960	Production Block -E Service Area	Charging Line	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
961	Production Block -E Service Area	Vent Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312

962	Production Block -E Service Area	Level Indicator Top	Vent	7.4	0.4	100	0.000003	0.028356	0.5	0.000000	0.004031
963	Production Block -E Service Area	Level indicator Bottom	Vent	8.4	0.4	100	0.000004	0.031081	0.5	0.000000	0.004031
964	Production Block -E Service Area	E/ST-17 (Toluene Tamk)	MV	2.3	0.4	100	0.000002	0.014818	0.1	0.000000	0.003124
965	Production Block -E Service Area	Charging Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
966	Production Block -E Service Area	Level Indicator	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
967	Production Block -E Service Area	E/ST-07 (Toluene Tank)	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
968	Production Block -E Service Area	Level Indicator top	Flange	4807.4	0.4	100	0.000720	6.310895	8.3	0.000008	0.070718
969	Production Block -E Service Area	Charging Line	Vent	20.4	0.4	100	0.000007	0.059087	1.4	0.000001	0.008494
970	Production Block -E Service Area	E/ST-06 (Toluene Tank)	MV	19.6	0.4	100	0.000008	0.073435	1.3	0.000002	0.019103
971	Production Block -E Service Area	Charging Line	Vent	20.4	0.4	100	0.000007	0.059087	1.4	0.000001	0.008494
972	Production Block -E Service Area	Level indicator Top	Flange	18.4	0.4	100	0.000014	0.124058	1.2	0.000002	0.018054
973	Production Block -E Service Area	Level indicator Bottom	Flange	16.4	0.4	100	0.000013	0.114378	1.1	0.000002	0.016978
974	Production Block -E Service Area	E/ST-01 (Toluene Tank)	Mv	20.4	0.4	100	0.000009	0.075663	1.4	0.000002	0.020129
975	Production Block -E Service Area	Charging Line	Flange	18.4	0.4	100	0.000014	0.124058	1.2	0.000002	0.018054
976	Production Block -E Service Area	Level Indicator	Flange	15.4	0.4	100	0.000012	0.109409	1	0.000002	0.015873
977	Production Block -E Service Area	E/ST-021 Toluene Tank	Mv	12.8	0.4	100	0.000006	0.053417	0.8	0.000002	0.013560
978	Production Block -E Service Area	Charging Line	Vent	35.4	0.4	100	0.000010	0.088064	2.4	0.000001	0.012548
979	Production Block -E Service Area	Level Indicator	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
980	Production Block -E Service Area	E/ST-02 (Toluene) Tank	MV	20.4	0.4	100	0.000009	0.075663	1.4	0.000002	0.020129
981	Production Block -E Service Area	Charging Line	Vent	18.4	0.4	100	0.000006	0.054833	1.2	0.000001	0.007597

982	Production Block -E Service Area	Level Indicator	Flange	15.4	0.4	100	0.000012	0.109409	1	0.000002	0.015873
983	Production Block -E Service Area	E/ST-85 (methanol Tank)	MV	20.4	0.4	100	0.000009	0.075663	1.4	0.000002	0.020129
984	Production Block -E Service Area	Charging Line	Flange	6.8	0.4	100	0.000007	0.061435	0.4	0.000001	0.008312
985	Production Block -E Service Area	Side Dummy	Flange	7.2	0.4	100	0.000007	0.063965	0.5	0.000001	0.009730
986	Production Block -E Service Area	Level Indicator Top	Flange	7000.4	0.4	100	0.000939	8.228469	11.9	0.000010	0.091201
987	Production Block -E Service Area	level Indicator Bottom	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
988	Production Block -E Service Area	E/ST-89 (MDC Tank) Vent	Vent	42.5	0.4	100	0.000011	0.100524	2.9	0.000002	0.014391
989	Production Block -E Service Area	Charging Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
990	Production Block -E Service Area	Level Indicator	Vent	12.4	0.4	100	0.000005	0.041205	0.8	0.000001	0.005664
991	Production Block -E Service Area	Charging Line	Vent	20.1	0.4	100	0.000007	0.058456	1.4	0.000001	0.008494
992	Production Block -E Service Area	E/ST-19 (MDC Tank) Vent	Vent	14.6	0.4	100	0.000005	0.046378	1	0.000001	0.006658
993	Production Block -E Service Area	E/ST-104 (MDC Tank)Vent	Vent	40.2	0.4	100	0.000011	0.096556	2.8	0.000002	0.014030
994	Production Block -E Service Area	E/ST-22 (MDC Tank) Vent	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
995	Production Block -E Service Area	E/ST-52 (MDC Tank) Vent	Vent	5.4	0.4	100	0.000003	0.022572	0.3	0.000000	0.002785
996	Production Block -E Service Area	Charging Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
997	Production Block -E Service Area	Level Indicator	Flange	14.6	0.4	100	0.000012	0.105365	1	0.000002	0.015873
998	Production Block -G Block (MDC Process)	G/GLR-024/01 Reactor	MV	5083	0.4	100	0.000533	4.667257	2.3	0.000003	0.028579
999	Production Block -G Block (MDC Process)	Hopper Charging line	Vent	11.4	0.4	100	0.000004	0.038772	0.7	0.000001	0.005142
1000	Production Block -G Block (MDC Process)	Hopper Charging line	L	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
1001	Production Block -G Block (MDC Process)	Temp gauge	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340

1002	Production Block -G Block (MDC Process)	RD Line	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
1003	Production Block -G Block (MDC Process)	SRV Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
1004	Production Block -G Block (MDC Process)	ANF-001 Pump Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
1005	Production Block -G Block (MDC Process)	ANF-001 Pump Line	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
1006	Production Block -G Block (MDC Process)	Vapour Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
1007	Production Block -G Block (MDC Process)	Condensor Line G/HE-4	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
1008	Production Block -G Block (MDC Process)	Condensor Line G/HE-4	Flange	8.4	0.4	100	0.000008	0.071319	0.5	0.000001	0.009730
1009	Production Block -G Block (MDC Process)	Reactor Bottom Line	Vent	4.2	0.4	100	0.000002	0.018817	0.2	0.000000	0.002076
1010	Production Block -G Block (MDC Process)	Reactor Bottom Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1011	Production Block -G Block (MDC Process)	Reactor Bottom Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
1012	Production Block -G Block (MDC Process)	G/SSR-022 Reactor	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
1013	Production Block -G Block (MDC Process)	Temp gauge	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1014	Production Block -G Block (MDC Process)	View glass	Flange	3.5	0.4	100	0.000004	0.038439	0.2	0.000001	0.005096
1015	Production Block -G Block (MDC Process)	Reflux Line	Vent	4.4	0.4	100	0.000002	0.019462	0.3	0.000000	0.002785
1016	Production Block -G Block (MDC Process)	Reflux Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1017	Production Block -G Block (MDC Process)	RD Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
1018	Production Block -G Block (MDC Process)	SRV Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1019	Production Block -G Block (MDC Process)	Vapour Line	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
1020	Production Block -G Block (MDC Process)	Hopper Line	Vent	4.2	0.4	100	0.000002	0.018817	0.2	0.000000	0.002076
1021	Production Block -G Block (MDC Process)	Hopper Line	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784

1022	Production Block -G Block (MDC Process)	Condensor Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
1023	Production Block -G Block (MDC Process)	Condensor Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1024	Production Block -G Block (MDC Process)	Condensor Line	Flange	2.9	0.4	100	0.000004	0.033660	0.4	0.000001	0.008312
1025	Production Block -G Block (MDC Process)	Reactor Bottom Line	Vent	4.2	0.4	100	0.000002	0.018817	0.5	0.000000	0.004031
1026	Production Block -G Block (MDC Process)	Reactor Bottom Line	Flange	3.6	0.4	100	0.000004	0.039211	0.5	0.000001	0.009730
1027	Production Block -G Block (MDC Process)	Reactor Bottom Line	Flange	2	0.4	100	0.000003	0.025893	0.2	0.000001	0.005096
1028	Production Block -G Block (MDC Process)	G/SSR-016 Reactor	MV	0.6	0.4	100	0.000001	0.005431	0.2	0.000001	0.005096
1029	Production Block -G Block (MDC Process)	G/GLR-020 Raector	MV	5.4	0.4	100	0.000003	0.028034	0.4	0.000001	0.008312
1030	Production Block -G Block (MDC Process)	Reactor Top dummy	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
1031	Production Block -G Block (MDC Process)	RD Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1032	Production Block -G Block (MDC Process)	SRV Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
1033	Production Block -G Block (MDC Process)	Vent Line	Flange	3.6	0.4	100	0.000004	0.039211	0.3	0.000001	0.006784
1034	Production Block -G Block (MDC Process)	Charging Line	Vent	4.6	0.4	100	0.000002	0.020098	0.2	0.000000	0.002076
1035	Production Block -G Block (MDC Process)	Charging Line	Flange	7.8	0.4	100	0.000008	0.067683	0.2	0.000001	0.005096
1036	Production Block -G Block (MDC Process)	View glass	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1037	Production Block -G Block (MDC Process)	Reactor Bottom Line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
1038	Production Block -G Block (MDC Process)	Reactor Bottom Line	Flange	6.4	0.4	100	0.000007	0.058861	0.2	0.000001	0.005096
1039	Production Block -G Block (MDC Process)	Vacuum Line	Flange	7.4	0.4	100	0.000007	0.065214	0.3	0.000001	0.006784
1040	Production Block -G Block (MDC Process)	Vacuum Line	Vent	6.9	0.4	100	0.000003	0.026955	0.2	0.000000	0.002076
1041	Production Block-G (Methanol)	G/ANFD-08	MV	2.9	0.4	100	0.000002	0.017620	0.3	0.000001	0.006784

1042	Production Block-G (Methanol)	View glass	Flange	0.8	0.4	100	0.000002	0.013560	0.2	0.000001	0.005096
1043	Production Block-G (Methanol)	Vacuum Line	Flange	1.4	0.4	100	0.000002	0.020129	0.3	0.000001	0.006784
1044	Production Block-G (Methanol)	Vacuum Line	Vent	6.4	0.4	100	0.000003	0.025527	0.2	0.000000	0.002076
1045	Production Block-G (Methanol)	Charging Line	Vent	1.4	0.4	100	0.000001	0.008494	0.3	0.000000	0.002785
1046	Production Block-G (Methanol)	Charging Line	Flange	0.8	0.4	100	0.000002	0.013560	0.4	0.000001	0.008312
1047	Production Block-G (Methanol)	Vent Line	Vent	0.5	0.4	100	0.000000	0.004031	0.5	0.000000	0.004031
1048	Production Block-G (Methanol)	Vent Line	Flange	0.4	0.4	100	0.000001	0.008312	0.5	0.000001	0.009730
1049	Production Block-G (Methanol)	Dust Filter Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
1050	Production Block-G (Methanol)	Dust Filter Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1051	Production Block-G (Methanol)	G/CF-002/01 Centrifuge	MV	2.4	0.4	100	0.000002	0.015297	0.4	0.000001	0.008312
1052	Production Block-G (Methanol)	Vacuum Line	Vent	6.4	0.4	100	0.000003	0.025527	0.1	0.000000	0.001257
1053	Production Block-G (Methanol)	Vacuum Line	Flange	7.4	0.4	100	0.000007	0.065214	0.2	0.000001	0.005096
1054	Production Block-G (Methanol)	Vent Line	Flange	1.4	0.4	100	0.000002	0.020129	0.2	0.000001	0.005096
1055	Production Block-G (Methanol)	Vent Line	Vent	2.4	0.4	100	0.000001	0.012548	0.3	0.000000	0.002785
1056	Production Block-G (Methanol)	View glass	Flange	2.1	0.4	100	0.000003	0.026801	0.2	0.000001	0.005096
1057	Production Block-G (Methanol)	G/CF-003/01 Centrifuge	MV	4.2	0.4	100	0.000003	0.023236	0.2	0.000001	0.005096
1058	Production Block-G (Methanol)	View glass	Flange	2.4	0.4	100	0.000003	0.029450	0.2	0.000001	0.005096
1059	Production Block-G (Methanol)	Vent Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1060	Production Block-G (Methanol)	Vacuum Line	Vent	2.1	0.4	100	0.000001	0.011392	0.2	0.000000	0.002076
1061	Production Block-G (Methanol)	Vacuum Line	Flange	3.6	0.4	100	0.000004	0.039211	0.3	0.000001	0.006784

1062	Production Block G-Service Area (Methanol)	G/ST-13 Methanol Tank	MV	4.2	0.4	100	0.000003	0.023236	0.2	0.000001	0.005096
1063	Production Block G-Service Area (Methanol)	Charging Line	Vent	4.8	0.4	100	0.000002	0.020727	0.3	0.000000	0.002785
1064	Production Block G-Service Area (Methanol)	Level Indicator	Flange	1.4	0.4	100	0.000002	0.020129	0.7	0.000001	0.012340
1065	Production Block G-Service Area (Methanol)	Tank side dummy	Flange	2.6	0.4	100	0.000004	0.031163	0.5	0.000001	0.009730
1066	Production Block G-Service Area (Methanol)	G/ST-15 MDC Tank	MV	2.4	0.4	100	0.000002	0.015297	0.2	0.000001	0.005096
1067	Production Block G-Service Area (Methanol)	Charging Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
1068	Production Block G-Service Area (Methanol)	Level Indicator Top	Flange	2.6	0.4	100	0.000004	0.031163	0.3	0.000001	0.006784
1069	Production Block G-Service Area (Methanol)	Level indicator Bottom	Flange	3.6	0.4	100	0.000004	0.039211	2.5	0.000003	0.030312
1070	Production Block G-Service Area (Methanol)	Tank Vent	Vent	14.3	0.4	100	0.000005	0.045686	1	0.000001	0.006658
1071	Production Block G-Service Area (Methanol)	G/ST-14 Methylene chloride	MV	14.2	0.4	100	0.000007	0.057723	0.9	0.000002	0.014735
1072	Production Block G-Service Area (Methanol)	Charging Line	Flange	5.2	0.4	100	0.000006	0.050835	0.3	0.000001	0.006784
1073	Production Block G-Service Area (Methanol)	Level Indicator	Vent	36.4	0.4	100	0.000010	0.089858	2.5	0.000001	0.012925
1074	Production Block G-Service Area (Methanol)	Vent Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1075	Production Block G-Service Area (Methanol)	G/REC-44 (Methanol)	MV	2.9	0.4	100	0.000002	0.017620	0.2	0.000001	0.005096
1076	Production Block G-Service Area (Methanol)	Charging Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1077	Production Block G-Service Area (Methanol)	Level Indicator	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1078	Production Block G-Service Area (Methanol)	Vent Line	Flange	5504	0.4	100	0.000793	6.943545	2.9	0.000004	0.033660
1079	Production Block G-Service Area (Methanol)	G/ST -10 Liquor NH3	MV	0.4	0.4	100	0.000000	0.004012	0	0.000000	0.000000
1080	Production Block G-Service Area (Methanol)	Level Indicator Top	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1081	Production Block G-Service Area (Methanol)	Level Indicator Bottom	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000

1082	Production Block G-Service Area (Methanol)	Toluene Tank	MV	24.2	0.4	100	0.000010	0.085961	1.6	0.000003	0.022119
1083	Production Block G-Service Area (Methanol)	Charging Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1084	Production Block G-Service Area (Methanol)	Level Indicator	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1085	Production Block G-Service Area (Methanol)	Vent Line	Vent	3	0.4	100	0.000002	0.014749	0.2	0.000000	0.002076
1086	Production Block G-Service Area (Methanol)	Vent Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1087	Production Block G-Service Area (Methanol)	G/REC-07 Toluene Tank	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
1088	Production Block G-Service Area (Methanol)	Charging Line	Flange	12.3	0.4	100	0.000011	0.093355	0.8	0.000002	0.013560
1089	Production Block G-Service Area (Methanol)	Charging Line	Vent	17.4	0.4	100	0.000006	0.052659	1.2	0.000001	0.007597
1090	Production Block G-Service Area (Methanol)	Level Indicator Top	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
1091	Production Block G-Service Area (Methanol)	Level Indicator Bottom	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1092	Production Block G-Service Area (Methanol)	G/ST-12 Toluene	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
1093	Production Block G-Service Area (Methanol)	Bottom of tank	Vent	3	0.4	100	0.000002	0.014749	0.2	0.000000	0.002076
1094	Production Block G-Service Area (Methanol)	Bottom of tank	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1095	Production Block G-Service Area (Methanol)	Charging Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
1096	Production Block G-Service Area (Methanol)	DMSO Tank	MV	2.9	0.4	100	0.000002	0.017620	0.2	0.000001	0.005096
1097	Production Block G-Service Area (Methanol)	Charging Line	Vent	0.4	0.4	100	0.000000	0.003429	0	0.000000	0.000000
1098	Production Block G-Service Area (Methanol)	Level indicator Top	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1099	Production Block G-Service Area (Methanol)	Level indicator Bottom	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1100	Production Block G-Service Area (Methanol)	G/ST-04 IPA (Charging Line)	Vent	22.6	0.4	100	0.000007	0.063634	1.5	0.000001	0.008929
1101	Production Block G-Service Area (Methanol)	Level indicator Top	Flange	15.4	0.4	100	0.000012	0.109409	1	0.000002	0.015873

1102	Production Block G-Service Area (Methanol)	Vent Line	Flange	22.4	0.4	100	0.000016	0.142540	1.5	0.000002	0.021134
1103	Production Block G-Service Area (Methanol)	Vent Line	Flange	36.4	0.4	100	0.000023	0.200817	2.5	0.000003	0.030312
1104	Production Block -G-Service Area	RM001 (Acetone Tank) Vent	Vent	12.8	0.4	100	0.000005	0.042164	0.8	0.000001	0.005664
1105	Production Block -G-Service Area	Charging line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1106	Production Block -G-Service Area	Tank bottom Line	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
1107	Production Block -G-Service Area	G/REC-31 (Anxen Tank)	Vent	35.4	0.4	100	0.000010	0.088064	2.4	0.000001	0.012548
1108	Production Block -G-Service Area	Charging Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
1109	Production Block -G-Service Area	Level Indicator	Flange	18.4	0.4	100	0.000014	0.124058	1.2	0.000002	0.018054
1110	Production Block -G-Service Area	G/ST-24 (Methanol Tank)	MV	16.4	0.4	100	0.000007	0.064280	1.1	0.000002	0.016978
1111	Production Block -G-Service Area	Charging Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
1112	Production Block -G-Service Area	Vent Line	Vent	40.5	0.4	100	0.000011	0.097077	2.8	0.000002	0.014030
1113	Production Block -G-Service Area	Level indicator	Flange	12.6	0.4	100	0.000011	0.094956	0.8	0.000002	0.013560
1114	Production Block -G-Service Area	G/ST-18 (Ethyl Acetate)	MV	20.1	0.4	100	0.000009	0.074830	1.4	0.000002	0.020129
1115	Production Block -G-Service Area	Charging Line	Flange	16.4	0.4	100	0.000013	0.114378	1.1	0.000002	0.016978
1116	Production Block -G-Service Area	Vent line	Vent	17.6	0.4	100	0.000006	0.053097	1.2	0.000001	0.007597
1117	Production Block -G-Service Area	Level indicator	Vent	20.1	0.4	100	0.000007	0.058456	1.4	0.000001	0.008494
1118	Production Block -G-Service Area	Anxen Tank	MV	2.4	0.4	100	0.000002	0.015297	0.1	0.000000	0.003124
1119	Production Block -G-Service Area	Charging Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
1120	Production Block -G-Service Area	Level Indicator Top	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
1121	Production Block -G-Service Area	Level indicator Bottom	Flange	6.1	0.4	100	0.000006	0.056899	0.4	0.000001	0.008312

1122	Production Block -G-Service Area	Vent Line	Vent	10.8	0.4	100	0.000004	0.037283	0.7	0.000001	0.005142
1123	Production Block -G-Service Area	Vent Line	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
1124	Production Block -H (MDC Process)	H/SSR-02 Reactor	MV	0.8	0.4	100	0.000001	0.006733	0	0.000000	0.000000
1125	Production Block -H (MDC Process)	RD Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1126	Production Block -H (MDC Process)	SRV Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1127	Production Block -H (MDC Process)	Reactor Top Dummy-1	Flange	2106.4	0.4	100	0.000402	3.524375	5.3	0.000006	0.051523
1128	Production Block -H (MDC Process)	Reactor Top Dummy-2	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1129	Production Block -H (MDC Process)	Reflux Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
1130	Production Block -H (MDC Process)	Reflux Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1131	Production Block -H (MDC Process)	Reflux Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1132	Production Block -H (MDC Process)	Charging Line	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
1133	Production Block -H (MDC Process)	Vapour Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1134	Production Block -H (MDC Process)	Condensor Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1135	Production Block -H (MDC Process)	Condensor Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1136	Production Block -H (MDC Process)	Reactor Bottom Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
1137	Production Block -H (MDC Process)	Reactor Bottom Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1138	Production Block -H (MDC Process)	H/GLR-003 Reactor	MV	6.2	0.4	100	0.000004	0.031082	0.4	0.000001	0.008312
1139	Production Block -H (MDC Process)	Charging Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1140	Production Block -H (MDC Process)	Vapour Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1141	Production Block -H (MDC Process)	RD Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124

1142	Production Block -H (MDC Process)	SRV Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1143	Production Block -H (MDC Process)	Reflux Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1144	Production Block -H (MDC Process)	Reflux Line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
1145	Production Block -H (MDC Process)	Reflux Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1146	Production Block -H (MDC Process)	Condensor H/HE.06	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1147	Production Block -H (MDC Process)	Condensor H/HE.06	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1148	Production Block -H (MDC Process)	Reactor Bottom Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1149	Production Block -H (MDC Process)	Reactor Bottom Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
1150	Production Block -H (MDC Process)	Reactor Bottom Line	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
1151	Production Block -H (MDC Process)	H/SSR-010 Reactor	MV	1.8	0.4	100	0.000001	0.012339	0.1	0.000000	0.003124
1152	Production Block -H (MDC Process)	Charging Line	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
1153	Production Block -H (MDC Process)	Charging Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1154	Production Block -H (MDC Process)	Vapour Line	Flange	15.8	0.4	100	0.000013	0.111407	1.1	0.000002	0.016978
1155	Production Block -H (MDC Process)	Reflux Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
1156	Production Block -H (MDC Process)	Reflux Line	Vent	15.2	0.4	100	0.000005	0.047750	1	0.000001	0.006658
1157	Production Block -H (MDC Process)	Reflux Line	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
1158	Production Block -H (MDC Process)	RD Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1159	Production Block -H (MDC Process)	SRV line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1160	Production Block -H (MDC Process)	Condensor Line	Flange	26.4	0.4	100	0.000018	0.160072	1.8	0.000003	0.024037
1161	Production Block -H (MDC Process)	Condensor Line	Flange	30.4	0.4	100	0.000020	0.176836	2.1	0.000003	0.026801

1162	Production Block -H (MDC Process)	Reactor Bottom Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
1163	Production Block -H (MDC Process)	Reactor Bottom Line	Vent	6.4	0.4	100	0.000003	0.025527	0.4	0.000000	0.003429
1164	Production Block -H (MDC Process)	Reactor Bottom Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1165	Production Block -H (MDC Process)	Reactor Bottom Line	Flange	3.1	0.4	100	0.000004	0.035283	0.2	0.000001	0.005096
1166	Production Block -H (IPA Process)	H/SSR-012 Reactor	MV	2.4	0.4	100	0.000002	0.015297	0.1	0.000000	0.003124
1167	Production Block -H (IPA Process)	Charging Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1168	Production Block -H (IPA Process)	Reflux Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
1169	Production Block -H (IPA Process)	Reflux Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
1170	Production Block -H (IPA Process)	Reflux Line	Flange	8.4	0.4	100	0.000008	0.071319	0.5	0.000001	0.009730
1171	Production Block -H (IPA Process)	Vapour Line	Flange	19.4	0.4	100	0.000015	0.128781	1.3	0.000002	0.019103
1172	Production Block -H (IPA Process)	Vapour Line	Flange	26.4	0.4	100	0.000018	0.160072	1.8	0.000003	0.024037
1173	Production Block -H (IPA Process)	View glass	Flange	14.3	0.4	100	0.000012	0.103832	1	0.000002	0.015873
1174	Production Block -H (IPA Process)	RD Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1175	Production Block -H (IPA Process)	SRV Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1176	Production Block -H (IPA Process)	Condensor Line H/HE-14	Flange	3.1	0.4	100	0.000004	0.035283	0.2	0.000001	0.005096
1177	Production Block -H (IPA Process)	Condensor Line H/HE-14	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1178	Production Block -H (IPA Process)	Reactor Bottom	Vent	10.1	0.4	100	0.000004	0.035518	0.7	0.000001	0.005142
1179	Production Block -H (IPA Process)	Reactor Bottom	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
1180	Prodcution Block H-Service Area	H/ST-06 Toluene Tank	MV	30.4	0.4	100	0.000012	0.101929	2.1	0.000003	0.026801
1181	Prodcution Block H-Service Area	Charging Line	Flange	16.4	0.4	100	0.000013	0.114378	1.1	0.000002	0.016978

1182	Prodcution Block H-Service Area	Level Indicator Top	Flange	21.4	0.4	100	0.000016	0.138018	1.4	0.000002	0.020129
1183	Prodcution Block H-Service Area	Level Indicator Bottom	Flange	17.4	0.4	100	0.000014	0.119259	1.2	0.000002	0.018054
1184	Prodcution Block H-Service Area	Anxen Tank	MV	1.2	0.4	100	0.000001	0.009115	0	0.000000	0.000000
1185	Prodcution Block H-Service Area	Charging Line	Vent	20.4	0.4	100	0.000007	0.059087	1.4	0.000001	0.008494
1186	Prodcution Block H-Service Area	Level Indicator	Flange	127.4	0.4	100	0.000056	0.486309	8.9	0.000008	0.074290
1187	Prodcution Block H-Service Area	Vent Line	Vent	30.8	0.4	100	0.000009	0.079621	2.1	0.000001	0.011392
1188	Prodcution Block H-Service Area	H/ST-18 (THF Tank)	MV	4.8	0.4	100	0.000003	0.025673	0.3	0.000001	0.006784
1189	Prodcution Block H-Service Area	Charging Line	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
1190	Prodcution Block H-Service Area	Level Indicator	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
1191	Prodcution Block H-Service Area	Vacuum Line	Vent	12.4	0.4	100	0.000005	0.041205	0.8	0.000001	0.005664
1192	Prodcution Block H-Service Area	H/ST-01 IPA Tank	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1193	Prodcution Block H-Service Area	Charging Line	Flange	14.6	0.4	100	0.000012	0.105365	1	0.000002	0.015873
1194	Prodcution Block H-Service Area	Level Indicator Top	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1195	Prodcution Block H-Service Area	Level indicator Bottom	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
1196	Prodcution Block H-Service Area	H/REC-32 (14 Dioxin)Bottom	Flange	4.4	0.4	100	0.000005	0.045179	0.3	0.000001	0.006784
1197	Prodcution Block H-Service Area	Tank Top vent	Vent	16.4	0.4	100	0.000006	0.050450	1.1	0.000001	0.007133
1198	Prodcution Block H-Service Area	Top Dummy	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
1199	Prodcution Block H-Service Area	Charging line	Flange	14.2	0.4	100	0.000012	0.103318	0.9	0.000002	0.014735
1200	Prodcution Block H-Service Area	Level Indicator	Vent	20.4	0.4	100	0.000007	0.059087	1.4	0.000001	0.008494
1201	Prodcution Block H-Service Area	H/REC-33 (14 Dioxin)	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257

1202	Prodcution Block H-Service Area	Charging line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1203	Prodcution Block H-Service Area	Level indicator Top	Flange	16.4	0.4	100	0.000013	0.114378	1.1	0.000002	0.016978
1204	Prodcution Block H-Service Area	Top Vent	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
1205	Prodcution Block H-Service Area	H/REC-034 (14 Dioxin)	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
1206	Prodcution Block H-Service Area	Charging Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
1207	Prodcution Block H-Service Area	Top Vent	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
1208	Prodcution Block H-Service Area	Level Iddicator	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
1209	Prodcution Block H-Service Area	H/ST-04 (IPA Tank)	MV	4.6	0.4	100	0.000003	0.024870	0.3	0.000001	0.006784
1210	Prodcution Block H-Service Area	Charging Line	Flange	7.9	0.4	100	0.000008	0.068295	0.5	0.000001	0.009730
1211	Prodcution Block H-Service Area	Level indicator Top	Flange	20.6	0.4	100	0.000015	0.134355	1.4	0.000002	0.020129
1212	Prodcution Block H-Service Area	Level Indicator Bottom	Vent	19.6	0.4	100	0.000007	0.057400	1.3	0.000001	0.008050
1213	Prodcution Block H-Service Area	Tank Vent Line	Vent	60.4	0.4	100	0.000015	0.129655	4.2	0.000002	0.018817
1214	Prodcution Block H-Service Area	MDC Tank	MV	10.4	0.4	100	0.000005	0.045742	0.7	0.000001	0.012340
1215	Prodcution Block H-Service Area	Charging Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
1216	Prodcution Block H-Service Area	Level Indicator Top	Vent	19.6	0.4	100	0.000007	0.057400	1.3	0.000001	0.008050
1217	Prodcution Block H-Service Area	Level Indicator Bottom	Flange	20.1	0.4	100	0.000015	0.132044	1.4	0.000002	0.020129
1218	Prodcution Block H-Service Area	Vent Line	Vent	4.6	0.4	100	0.000002	0.020098	0.3	0.000000	0.002785
1219	Prodcution Block H-Service Area	H/REC-39	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
1220	Prodcution Block H-Service Area	Charging Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1221	Prodcution Block H-Service Area	Vent Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142

1222	Prodcution Block H-Service Area	H/ST-12 (14 Dioxin Tank)	MV	11.4	0.4	100	0.000006	0.048989	0.7	0.000001	0.012340
1223	Prodcution Block H-Service Area	Charging Line	Vent	22.6	0.4	100	0.000007	0.063634	1.5	0.000001	0.008929
1224	Prodcution Block H-Service Area	Vent Line	Vent	16.6	0.4	100	0.000006	0.050895	1.1	0.000001	0.007133
1225	Prodcution Block H-Service Area	H/ST-22 (THF+Toluene)	MV	4.2	0.4	100	0.000003	0.023236	0.2	0.000001	0.005096
1226	Prodcution Block H-Service Area	Charging Line	Flange	20.2	0.4	100	0.000015	0.132507	1.4	0.000002	0.020129
1227	Prodcution Block H-Service Area	H/ST-03 (MDC+methanol)	MV	14.6	0.4	100	0.000007	0.058933	1	0.000002	0.015873
1228	Prodcution Block H-Service Area	Charging Line	Flange	23.4	0.4	100	0.000017	0.147004	1.6	0.000003	0.022119
1229	Prodcution Block H-Service Area	level indicator Top	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1230	Prodcution Block H-Service Area	Level indicator Bottom	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
1231	Production Block-C	C/SSR-009 Reactor	MV	2.4	0.4	100	0.000002	0.015297	0.1	0.000000	0.003124
1232	Production Block-C	Vapour Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1233	Production Block-C	Vacuum Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1234	Production Block-C	Reflux Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
1235	Production Block-C	Reflux Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1236	Production Block-C	Reflux Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1237	Production Block-C	SRV Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1238	Production Block-C	RD Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1239	Production Block-C	Condensor Line C/HE-14	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1240	Production Block-C	Condensor Line C/HE-14	Flange	1.1	0.4	100	0.000002	0.016978	0	0.000000	0.000000
1241	Production Block-C	Reactor Bottom	Vent	2.3	0.4	100	0.000001	0.012168	0.1	0.000000	0.001257
1242	Production Block-C	Reactor Bottom	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1243	Production Block-C	Reactor Bottom	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1244	Production Block-C	C/SSR-030 Reactor	MV	0.4	0.4	100	0.000000	0.004012	0	0.000000	0.000000
1245	Production Block-C	Charging Line	Flange	0.7	0.4	100	0.000001	0.012340	0	0.000000	0.000000
1246	Production Block-C	Vapour Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1247	Production Block-C	RD Line	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
1248	Production Block-C	SRV line	Flange	0.7	0.4	100	0.000001	0.012340	0	0.000000	0.000000

1249	Production Block-C	Reflux Line	Vent	0.6	0.4	100	0.000001	0.004599	0	0.000000	0.000000
1250	Production Block-C	Reflux Line	Flange	1.1	0.4	100	0.000002	0.016978	0	0.000000	0.000000
1251	Production Block-C	Reflux Line	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
1252	Production Block-C	View glass	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
1253	Production Block-C	C/CF-001 Centrifuge	MV	393.4	0.4	100	0.000079	0.690130	5.1	0.000006	0.050143
1254	Production Block-C	Charging Line	Flange	20.6	0.4	100	0.000015	0.134355	1.4	0.000002	0.020129
1255	Production Block-C	Charging Line	Vent	18.4	0.4	100	0.000006	0.054833	1.2	0.000001	0.007597
1256	Production Block-C	Charging Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
1257	Production Block-C	Vent Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1258	Production Block-C	Centrifuge Top dummy	Flange	30.4	0.4	100	0.000020	0.176836	2.1	0.000003	0.026801
1259	Production Block-C	Centrifuge Top dummy	Flange	14.2	0.4	100	0.000012	0.103318	0.9	0.000002	0.014735
1260	Production Block-C	C/ANFD-001	MV	1.4	0.4	100	0.000001	0.010227	0	0.000000	0.000000
1261	Production Block-C	Charging Line	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
1262	Production Block-C	Vacuum Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1263	Production Block-C	View glass	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
1264	Production Block-C	Vent Line	Vent	3.1	0.4	100	0.000002	0.015103	0.2	0.000000	0.002076
1265	Production Block-C	Sampling poor	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
1266	Production Block-C	Sampling poor	Vent	6.6	0.4	100	0.000003	0.026102	0.4	0.000000	0.003429
1267	Production Block-C	C/REC-38 MDC Tank	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1268	Production Block-C	Charging Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
1269	Production Block-C	Level indicator	Flange	4.2	0.4	100	0.000005	0.043720	0.2	0.000001	0.005096
1270	Production Block-C	C/REcC-49 (Ethyl Acetate)	MV	1.9	0.4	100	0.000001	0.012848	0.1	0.000000	0.003124
1271	Production Block-C	Charging Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
1272	Production Block-C	Level indicator	Flange	3.1	0.4	100	0.000004	0.035283	0.2	0.000001	0.005096
1273	Production Block-C	C/ST-07 (MDC Tank)	MV	2.7	0.4	100	0.000002	0.016704	0.1	0.000000	0.003124
1274	Production Block-C	Charging Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
1275	Production Block-C	Charging Line	Flange	17.4	0.4	100	0.000014	0.119259	1.2	0.000002	0.018054
1276	Production Block-C	Level indicator Top	Vent	16.4	0.4	100	0.000006	0.050450	1.1	0.000001	0.007133
1277	Production Block-C	Level indicator Bottom	Flange	1.8	0.4	100	0.000003	0.024037	0.1	0.000000	0.003124
1278	Production Block-C	C/REC-41 (methanol) Tank	MV	1.4	0.4	100	0.000001	0.010227	0	0.000000	0.000000
1279	Production Block-C	Charging Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
1280	Production Block-C	Level indicator	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
1281	Production Block-C	C/Rec-48 (IPA Tank)	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
1282	Production Block-C	C/Rec-48 (IPA Tank)	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312

1283	Production Block-C	C/Rec-48 (IPA Tank)	Flange	6.1	0.4	100	0.000006	0.056899	0.4	0.000001	0.008312
1284	Production Block-C	C/ST-02 (Ethyl Acetate)	MV	2.4	0.4	100	0.000002	0.015297	0.1	0.000000	0.003124
1285	Production Block-C	Charging Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1286	Production Block-C	Level Indicator	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
1287	Production Block-C	Vent Line	Vent	20.3	0.4	100	0.000007	0.058877	1.4	0.000001	0.008494
1288	Production Block-C	C/REC-40 (Toluene Tank)	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
1289	Production Block-C	Top Dummy	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
1290	Production Block-C	Charging Line	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
1291	Production Block-C	Level Indicator Top	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1292	Production Block-C	Level Indicator Bottom	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1293	Production Block-C	C/ST-05 (methanol Tank)	MV	1.2	0.4	100	0.000001	0.009115	0	0.000000	0.000000
1294	Production Block-C	Charging line	Vent	0.6	0.4	100	0.000001	0.004599	0	0.000000	0.000000
1295	Production Block-C	Level Indicator Top	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
1296	Production Block-C	Level Indicator Bottom	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
1297	Production Block-C	Tank Top Vent	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
1298	Production Block-C	Top Dummy	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1299	Production Block-C	C/REC-32 (N-Betrol Tank)	MV	2	0.4	100	0.000002	0.013349	0.1	0.000000	0.003124
1300	Production Block-C	Charging line	Flange	12.6	0.4	100	0.000011	0.094956	0.8	0.000002	0.013560
1301	Production Block-C	Level Indicator	Flange	14.9	0.4	100	0.000012	0.106889	1	0.000002	0.015873
1302	Production Block-C	Top Vent	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
1303	Production Block-C	Top Dummy	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1304	Production Block-C	C/Rec-45 (Toluene Tank)	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
1305	Production Block-C	Charging Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1306	Production Block-C	Level Indicator	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1307	Production Block-C	C/ST-04 (Toluene Tank)	MV	1.6	0.4	100	0.000001	0.011300	0.1	0.000000	0.003124
1308	Production Block-C	Charging Line	Flange	16.3	0.4	100	0.000013	0.113885	1.1	0.000002	0.016978
1309	Production Block-C	Vent Line	Vent	29.6	0.4	100	0.000009	0.077363	2	0.000001	0.010997
1310	Production Block-C	C/REC-42 (MDC) Tank	Vent	12.6	0.4	100	0.000005	0.041686	0.8	0.000001	0.005664
1311	Production Block-C	Charging Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
1312	Production Block-C	Level Indicator	Vent	1.5	0.4	100	0.000001	0.008929	0.1	0.000000	0.001257
1313	Production Block D (Methanol Process)	D/GLR-011/01 Raector	MV	2.3	0.4	100	0.000002	0.014818	0.1	0.000000	0.003124

1314	Production Block D (Methanol Process)	Charging Line	Vent	0.9	0.4	100	0.000001	0.006169	0	0.000000	0.000000
1315	Production Block D (Methanol Process)	Charging Line	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
1316	Production Block D (Methanol Process)	RD Line	Flange	19.4	0.4	100	0.000015	0.128781	1.3	0.000002	0.019103
1317	Production Block D (Methanol Process)	SRV Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1318	Production Block D (Methanol Process)	Reflux Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
1319	Production Block D (Methanol Process)	Reflux Line	Flange	3.7	0.4	100	0.000005	0.039977	0.2	0.000001	0.005096
1320	Production Block D (Methanol Process)	Reflux Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1321	Production Block D (Methanol Process)	Vapour Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
1322	Production Block D (Methanol Process)	Vacuum Line	Vent	6.4	0.4	100	0.000003	0.025527	0.4	0.000000	0.003429
1323	Production Block D (Methanol Process)	Condensor Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1324	Production Block D (Methanol Process)	Condensor Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1325	Production Block D (Methanol Process)	Reactor Bottom Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
1326	Production Block D (Methanol Process)	Reactor Bottm Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1327	Production Block D (Methanol Process)	D/SSR-012 Reactor	MV	2.2	0.4	100	0.000002	0.014334	0.1	0.000000	0.003124
1328	Production Block D (Methanol Process)	Charging Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
1329	Production Block D (Methanol Process)	Charging Line	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
1330	Production Block D (Methanol Process)	Reactor Top Dummy	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1331	Production Block D (Methanol Process)	View glass	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
1332	Production Block D (Methanol Process)	Vacuum Line	Vent	3.1	0.4	100	0.000002	0.015103	0	0.000000	0.000000
1333	Production Block D (Methanol Process)	Reflux Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076

1334	Production Block D (Methanol Process)	Reflux Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1335	Production Block D (Methanol Process)	Reflux Line	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
1336	Production Block D (Methanol Process)	RD Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1337	Production Block D (Methanol Process)	SRV Line	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
1338	Production Block D (Methanol Process)	Vapour Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1339	Production Block D (Methanol Process)	Condensor Line D/HE-15	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
1340	Production Block D (Methanol Process)	Condensor Line D/HE-15	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1341	Production Block D (Methanol Process)	Reactor Bottom Line	Flange	2.3	0.4	100	0.000003	0.028579	0.1	0.000000	0.003124
1342	Production Block D (Methanol Process)	Reactor Bottom Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
1343	Production Block D (Methanol Process)	Reactor Bottom Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1344	Production Block D (ANFD)	D/ANFD-003 Top	MV	0.8	0.4	100	0.000001	0.006733	0	0.000000	0.000000
1345	Production Block D (ANFD)	D/ANFD-003 Bottom	MV	0.5	0.4	100	0.000001	0.004739	0	0.000000	0.000000
1346	Production Block D (ANFD)	Vacuum Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1347	Production Block D (ANFD)	Vacuum Line	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
1348	Production Block D (ANFD)	Vent Line	Vent	1.2	0.4	100	0.000001	0.007597	0	0.000000	0.000000
1349	Production Block D (ANFD)	Vent Line	Vent	0.5	0.4	100	0.000000	0.004031	0	0.000000	0.000000
1350	Production Block D (ANFD)	View glass	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1351	Production Block D (ANFD)	Sampling point	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1352	Production Block D (ANFD)	Pump seal Line	Other	6.9	0.4	100	0.000012	0.105226	0.4	0.000002	0.016909
1353	Production Block D Service Area	D/REC-21 (Ethyl Acetate Tank)	MV	0.2	0.4	100	0.000000	0.002390	0	0.000000	0.000000

1354	Production Block D Service Area	Charging Line	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
1355	Production Block D Service Area	Charging Line	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
1356	Production Block D Service Area	Vent Line	Vent	12.5	0.4	100	0.000005	0.041446	0.8	0.000001	0.005664
1357	Production Block D Service Area	D/REC-20 (Ethyl Acetate Tank)	MV	1.6	0.4	100	0.000001	0.011300	0.1	0.000000	0.003124
1358	Production Block D Service Area	Charging Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1359	Production Block D Service Area	Vent Line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
1360	Production Block D Service Area	D/SSR-001 Line	Vent	1.8	0.4	100	0.000001	0.010189	0.1	0.000000	0.001257
1361	Production Block D Service Area	D/REC-19 (Methanol +H2O	MV	1.4	0.4	100	0.000001	0.010227	0	0.000000	0.000000
1362	Production Block D Service Area	Charging Line	Flange	0.7	0.4	100	0.000001	0.012340	0	0.000000	0.000000
1363	Production Block D Service Area	Vent Line	Vent	0.5	0.4	100	0.000000	0.004031	0	0.000000	0.000000
1364	Production Block D Service Area	D/REC-27 tank Charging Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
1365	Production Block D Service Area	Level Indicator	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1366	Production Block D Service Area	Vent Line	Vent	0.5	0.4	100	0.000000	0.004031	0	0.000000	0.000000
1367	Production Block D Service Area	D/REC-27 tank Charging Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
1368	Production Block D Service Area	Level indicator	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1369	Production Block D Service Area	Vent Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
1370	Production Block D Service Area	D/ST-01 (Acetone +methaol)	MV	1.4	0.4	100	0.000001	0.010227	0	0.000000	0.000000
1371	Production Block D Service Area	Charging Line	Vent	1008.4	0.4	100	0.000114	0.995286	13.2	0.000005	0.043113
1372	Production Block D Service Area	Level Indicatror Bottom	Vent	2507.3	0.4	100	0.000220	1.924611	16.6	0.000006	0.050895
1373	Production Block D Service Area	Vent Line	Flange	15.4	0.4	100	0.000012	0.109409	1	0.000002	0.015873

1374	Production Block D Service Area	D/REC-18 (Ethyl Acetate	MV	0.6	0.4	100	0.000001	0.005431	0	0.000000	0.000000
1375	Production Block D Service Area	Charging Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
1376	Production Block D Service Area	Level Indicator Top	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
1377	Production Block D Service Area	Vent Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1378	Production Block D Service Area	D/REF-15 (IPA) Tank Bottom	Flange	10.8	0.4	100	0.000010	0.085165	0.7	0.000001	0.012340
1379	Production Block D Service Area	Charging Line	Flange	11.9	0.4	100	0.000010	0.091201	0.8	0.000002	0.013560
1380	Production Block D Service Area	Level indicator	Flange	22.6	0.4	100	0.000016	0.143438	1.5	0.000002	0.021134
1381	Production Block D Service Area	Vent Line	Vent	14.9	0.4	100	0.000005	0.047066	1	0.000001	0.006658
1382	Production Block D Service Area	D/REC-26/Acetate-Ethyl	MV	0.5	0.4	100	0.000001	0.004739	0	0.000000	0.000000
1383	Production Block D Service Area	Charging Line	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
1384	Production Block D Service Area	Level Indicator	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
1385	Production Block D Service Area	Tank bottom	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1386	Production Block D Service Area	Vent Line	Vent	11.4	0.4	100	0.000004	0.038772	0.7	0.000001	0.005142
1387	Production Block D Service Area	D/REC-24 Anxen Tank	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
1388	Production Block D Service Area	Charging Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
1389	Production Block D Service Area	Level Indicator	Vent	0.6	0.4	100	0.000001	0.004599	0	0.000000	0.000000
1390	Production Block D Service Area	Vent Line	Vent	15.6	0.4	100	0.000006	0.048656	1	0.000001	0.006658
1391	Production Block D Service Area	D/ST-05 (MDC) Tank	MV	4.6	0.4	100	0.000003	0.024870	0.3	0.000001	0.006784
1392	Production Block D Service Area	Charging line	Vent	2.7	0.4	100	0.000002	0.013665	0.1	0.000000	0.001257
1393	Production Block D Service Area	Level Indicator	Vent	4.9	0.4	100	0.000002	0.021039	0.3	0.000000	0.002785

1394	Production Block D Service Area	D/ST-07 Tank	MV	1.4	0.4	100	0.000001	0.010227	0	0.000000	0.000000
1395	Production Block D Service Area	Level Indicator	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
1396	Production Block D Service Area	Charging line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
1397	Production Block D Service Area	Vent Line	Flange	4.3	0.4	100	0.000005	0.044452	0.3	0.000001	0.006784
1398	Production Block - I (Toluene Process)	1/GLR-047 Reactor	MV	0	0.4	100	0.000000	0.000000	0	0.000000	0.000000
1399	Production Block - I (Toluene Process)	Charging Line	Vent	2	0.4	100	0.000001	0.010997	0.1	0.000000	0.001257
1400	Production Block - I (Toluene Process)	RD Line	Flange	5	0.4	100	0.000006	0.049446	0.3	0.000001	0.006784
1401	Production Block - I (Toluene Process)	SRV Line	Flange	7	0.4	100	0.000007	0.062705	0.4	0.000001	0.008312
1402	Production Block - I (Toluene Process)	Reactor Top dummy	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
1403	Production Block - I (Toluene Process)	Reflux Line	Vent	2	0.4	100	0.000001	0.010997	0.1	0.000000	0.001257
1404	Production Block - I (Toluene Process)	Reflux Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
1405	Production Block - I (Toluene Process)	Reflux Line	Flange	2	0.4	100	0.000003	0.025893	0.1	0.000000	0.003124
1406	Production Block - I (Toluene Process)	Vapour Line	Flange	0.1	0.4	100	0.000000	0.003124	0	0.000000	0.000000
1407	Production Block - I (Toluene Process)	Vacuum Line	Vent	0.4	0.4	100	0.000000	0.003429	0	0.000000	0.000000
1408	Production Block - I (Toluene Process)	Condensor Line	Flange	1	0.4	100	0.000002	0.015873	0	0.000000	0.000000
1409	Production Block - I (Toluene Process)	Condensor Line	Flange	1	0.4	100	0.000002	0.015873	0	0.000000	0.000000
1410	Production Block - I (Toluene Process)	Reactor Bottom Line	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
1411	Production Block - I (Toluene Process)	Reactor Bottom Line	Vent	3	0.4	100	0.000002	0.014749	0.2	0.000000	0.002076
1412	Production Block - I (Toluene Process)	Reactor Bottom Line	Vent	4	0.4	100	0.000002	0.018164	0.2	0.000000	0.002076
1413	Production Block - I (Toluene Process)	I/GLR-046/01 Reactor	MV	6	0.4	100	0.000003	0.030330	0.4	0.000001	0.008312

1414	Production Block - I (Toluene Process)	Charging Line-Hopper	Vent	1.2	0.4	100	0.000001	0.007597	0	0.000000	0.000000
1415	Production Block - I (Toluene Process)	Temp gauge	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1416	Production Block - I (Toluene Process)	Reflux Line	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
1417	Production Block - I (Toluene Process)	Reflux Line	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
1418	Production Block - I (Toluene Process)	Reflux Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1419	Production Block - I (Toluene Process)	Reflux Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1420	Production Block - I (Toluene Process)	Vapour Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1421	Production Block - I (Toluene Process)	View glass	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
1422	Production Block - I (Toluene Process)	Condensor Line I/HE-52	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
1423	Production Block - I (Toluene Process)	Condensor Line I/HE-52	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
1424	Production Block - I (Toluene Process)	Reactor bottom Line	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
1425	Production Block - I (Toluene Process)	Reactor bottom Line	Vent	0.6	0.4	100	0.000001	0.004599	0	0.000000	0.000000
1426	Production Block - I (Toluene Process)	Reactor bottom Line	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
1427	Production Block - I (Toluene Process)	I/SSR-043 Reactor	MV	1084	0.4	100	0.000168	1.471488	21.4	0.000016	0.138018
1428	Production Block - I (Toluene Process)	Vapour Line	Flange	12.4	0.4	100	0.000011	0.093890	0.8	0.000002	0.013560
1429	Production Block - I (Toluene Process)	Reflux Line	Vent	6.8	0.4	100	0.000003	0.026672	0.4	0.000000	0.003429
1430	Production Block - I (Toluene Process)	Reflux Line	Flange	7.9	0.4	100	0.000008	0.068295	0.5	0.000001	0.009730
1431	Production Block - I (Toluene Process)	Reflux Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1432	Production Block - I (Toluene Process)	Reactor Dummy-1	Flange	9.4	0.4	100	0.000009	0.077213	0.6	0.000001	0.011067
1433	Production Block - I (Toluene Process)	Reactro Dummy-2	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096

1434	Production Block - I (Toluene Process)	Condensor Line	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
1435	Production Block - I (Toluene Process)	**Condensor Line**	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
1436	Production Block - I (Toluene Process)	Vacuum Line	Flange	7.9	0.4	100	0.000008	0.068295	0.5	0.000001	0.009730
1437	Production Block - I (Toluene Process)	RD vent	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
1438	Production Block - I (Toluene Process)	SRV Line	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
1439	Production Block - I (Toluene Process)	Reactor Botom Line	Flange	98.4	0.4	100	0.000046	0.405244	2	0.000003	0.025893
1440	Production Block - I (Toluene Process)	Reactor Bottom Line	Vent	7	0.4	100	0.000003	0.027238	0.4	0.000000	0.003429
1441	Production Block - I (Toluene Process)	Reactor Bottom Line	Flange	8.1	0.4	100	0.000008	0.069511	0.5	0.000001	0.009730
1442	Production Block - I (Toluene Process)	I/SSR-017/01 Reactor	MV	18.8	0.4	100	0.000008	0.071185	1.3	0.000002	0.019103
1443	Production Block - I (Toluene Process)	Temp gauge	Flange	13.1	0.4	100	0.000011	0.097601	0.9	0.000002	0.014735
1444	Production Block - I (Toluene Process)	View glass	Flange	11.9	0.4	100	0.000010	0.091201	0.8	0.000002	0.013560
1445	Production Block - I (Toluene Process)	Reciver Line	Flange	14.5	0.4	100	0.000012	0.104855	1	0.000002	0.015873
1446	Production Block - I (Toluene Process)	Receiver Line	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
1447	Production Block - I (Toluene Process)	Reactor To dummy	Flange	18.1	0.4	100	0.000014	0.122626	1.2	0.000002	0.018054
1448	Production Block - I (Toluene Process)	Reflux Line	Vent	4.9	0.4	100	0.000002	0.021039	0.3	0.000000	0.002785
1449	Production Block - I (Toluene Process)	Reflux Line	Flange	6.8	0.4	100	0.000007	0.061435	0.4	0.000001	0.008312
1450	Production Block - I (Toluene Process)	Reflux Line	Flange	4.1	0.4	100	0.000005	0.042982	0.2	0.000001	0.005096
1451	Production Block - I (Toluene Process)	Vapour Line	Flange	17.4	0.4	100	0.000014	0.119259	1.2	0.000002	0.018054
1452	Production Block - I (Toluene Process)	RD Line	Flange	15.9	0.4	100	0.000013	0.111905	1.1	0.000002	0.016978
1453	Production Block - I (Toluene Process)	SRV Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129

1454	Production Block - I (Toluene Process)	Condensor Line	Flange	14.3	0.4	100	0.000012	0.103832	1	0.000002	0.015873
1455	Production Block - I (Toluene Process)	Condensor Line	Flange	16	0.4	100	0.000013	0.112401	1.1	0.000002	0.016978
1456	Production Block - I (Toluene Process)	Reactor Bottom Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
1457	Production Block - I (Toluene Process)	Reactor Bottom Line	Vent	11.1	0.4	100	0.000004	0.038030	0.7	0.000001	0.005142
1458	Production Block - I (Toluene Process)	I/SSR-015 Recator	MV	9.7	0.4	100	0.000005	0.043422	0.6	0.000001	0.011067
1459	Production Block - I (Toluene Process)	Reactro Dummy(Top)	Flange	20.8	0.4	100	0.000015	0.135274	1.4	0.000002	0.020129
1460	Production Block - I (Toluene Process)	Reactor Dummy-2	Flange	25.8	0.4	100	0.000018	0.157495	1.8	0.000003	0.024037
1461	Production Block - I (Toluene Process)	Charging Line	Flange	32.3	0.4	100	0.000021	0.184569	2.2	0.000003	0.027696
1462	Production Block - I (Toluene Process)	Charging Line	Vent	40.6	0.4	100	0.000011	0.097250	2.8	0.000002	0.014030
1463	Production Block - I (Toluene Process)	Charging Line	Flange	35.2	0.4	100	0.000022	0.196120	2.4	0.000003	0.029450
1464	Production Block - I (Toluene Process)	Vapour Line	Flange	38.4	0.4	100	0.000024	0.208545	2.6	0.000004	0.031163
1465	Production Block - I (Toluene Process)	Reflux Line	Vent	144.6	0.4	100	0.000028	0.243938	2.3	0.000001	0.012168
1466	Production Block - I (Toluene Process)	Reflux Line	Flange	39.4	0.4	100	0.000024	0.212365	2.7	0.000004	0.032004
1467	Production Block - I (Toluene Process)	Jacket Vent	Flange	11.9	0.4	100	0.000010	0.091201	0.8	0.000002	0.013560
1468	Production Block - I (Toluene Process)	RD Vent	Flange	14.1	0.4	100	0.000012	0.102804	0.9	0.000002	0.014735
1469	Production Block - I (Toluene Process)	SRV Line	Flange	10.2	0.4	100	0.000009	0.081796	0.7	0.000001	0.012340
1470	Production Block - I (Toluene Process)	Condensor line I/HE-09	Flange	10.3	0.4	100	0.000009	0.082362	0.7	0.000001	0.012340
1471	Production Block - I (Toluene Process)	Condensor line I/HE-09	Flange	9.4	0.4	100	0.000009	0.077213	0.6	0.000001	0.011067
1472	Production Block - I (Toluene Process)	Reactor Bottom Line	Flange	13.9	0.4	100	0.000012	0.101773	0.9	0.000002	0.014735
1473	Production Block - I (Toluene Process)	Reactor Bottom Line	Flange	40.3	0.4	100	0.000025	0.215778	2.8	0.000004	0.032836

1474	Production Block - I (Methanol)	I/GLR-010 Reactor	MV	7.6	0.4	100	0.000004	0.036187	0.5	0.000001	0.009730
1475	Production Block - I (Methanol)	RD Line	Flange	9.3	0.4	100	0.000009	0.076632	0.6	0.000001	0.011067
1476	Production Block - I (Methanol)	SRV Line	Flange	13.9	0.4	100	0.000012	0.101773	0.9	0.000002	0.014735
1477	Production Block - I (Methanol)	Charging Line	Flange	14.6	0.4	100	0.000012	0.105365	1	0.000002	0.015873
1478	Production Block - I (Methanol)	Vapour Line	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
1479	Production Block - I (Methanol)	Temp gauge	Flange	14.5	0.4	100	0.000012	0.104855	1	0.000002	0.015873
1480	Production Block - I (Methanol)	View glass	Flange	6.7	0.4	100	0.000007	0.060795	0.4	0.000001	0.008312
1481	Production Block - I (Methanol)	Condensor Line	Flange	10.7	0.4	100	0.000010	0.084607	0.7	0.000001	0.012340
1482	Production Block - I (Methanol)	Condensor Line	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
1483	Production Block - I (Methanol)	Reactor Bottom Line	Flange	8.4	0.4	100	0.000008	0.071319	0.5	0.000001	0.009730
1484	Production Block - I (Methanol)	Reactor Bottom Line	Vent	9.6	0.4	100	0.000004	0.034236	0.6	0.000001	0.004599
1485	Production Block - I (Methanol)	Reactor Bottom Line	Flange	9.2	0.4	100	0.000009	0.076050	0.6	0.000001	0.011067
1486	Production Block - I (Methanol)	I/ANFD-005	MV	5.4	0.4	100	0.000003	0.028034	0.3	0.000001	0.006784
1487	Production Block - I (Methanol)	Vent Line	Vent	4.5	0.4	100	0.000002	0.019781	0.3	0.000000	0.002785
1488	Production Block - I (Methanol)	Vent Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
1489	Production Block - I (Methanol)	Discharging Point	Vent	3.7	0.4	100	0.000002	0.017167	0.2	0.000000	0.002076
1490	Production Block - I (Methanol)	Discharging Point	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
1491	Production Block - I (Methanol)	Sampling point	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1492	Production Block - I (Methanol)	Dust Collector	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1493	Production Block - I (Methanol)	Dust Collector	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000

1494	Production Block - I (Methanol)	View glass	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
1495	Production Block - I (Methanol)	Vacuum Line	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
1496	Production Block - I (Methanol)	Vacuum Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
1497	Production Block - I (Methanol)	I/CF-005/01 Centrifuge	MV	2.5	0.4	100	0.000002	0.015771	0.1	0.000000	0.003124
1498	Production Block - I (Methanol)	View glass	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1499	Production Block - I (Methanol)	Vacuum Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1500	Production Block - I (Methanol)	Vacuum Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
1501	Production Block - I (Methanol)	Vent Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1502	Production Block - I (Methanol)	Charging Line	Vent	1.2	0.4	100	0.000001	0.007597	0	0.000000	0.000000
1503	Production Block - I (Methanol)	Charging Line	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
1504	Production Block - I (Methanol)	Charging Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1505	Production Block - I (Methanol)	Charging Line	Vent	1.5	0.4	100	0.000001	0.008929	0.1	0.000000	0.001257
1506	Production Block -I-Service Area	I/ST-32 Methanol Tank	MV	0.6	0.4	100	0.000001	0.005431	0	0.000000	0.000000
1507	Production Block -I-Service Area	Charging Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
1508	Production Block -I-Service Area	Charging Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1509	Production Block -I-Service Area	Level Indicator	Vent	7.8	0.4	100	0.000003	0.029457	0.5	0.000000	0.004031
1510	Production Block -I-Service Area	Vent Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
1511	Production Block -I-Service Area	I/ST-31 Methanol Tank	Vent	11.2	0.4	100	0.000004	0.038278	0.7	0.000001	0.005142
1512	Production Block -I-Service Area	Charging Line	Vent	7.2	0.4	100	0.000003	0.027799	0.5	0.000000	0.004031
1513	Production Block -I-Service Area	Level Indicator	Flange	1.8	0.4	100	0.000003	0.024037	0.1	0.000000	0.003124

1514	Production Block -I-Service Area	Vent Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
1515	Production Block -I-Service Area	I/ST-38 (Chloroform Tank)	Vent	4.6	0.4	100	0.000002	0.020098	0.3	0.000000	0.002785
1516	Production Block -I-Service Area	Charging Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1517	Production Block -I-Service Area	Level Indicator Top	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
1518	Production Block -I-Service Area	Level Indicator bottom	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
1519	Production Block -I-Service Area	Vent Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
1520	Production Block -I-Service Area	I/ST-34 (Toluene Tank)	Vent	5.6	0.4	100	0.000003	0.023174	0.3	0.000000	0.002785
1521	Production Block -I-Service Area	Charging Line	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
1522	Production Block -I-Service Area	Level indicator Top	Flange	1108.4	0.4	100	0.000256	2.239845	10.6	0.000010	0.084048
1523	Production Block -I-Service Area	Level Indicator bottom	Flange	5.9	0.4	100	0.000006	0.055576	0.4	0.000001	0.008312
1524	Production Block -I-Service Area	I/ST-30 (Toluene Tank) C.L	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
1525	Production Block -I-Service Area	Charging Line	Vent	15.6	0.4	100	0.000006	0.048656	1	0.000001	0.006658
1526	Production Block -I-Service Area	Level indicator Top	Flange	16.2	0.4	100	0.000013	0.113391	1.1	0.000002	0.016978
1527	Production Block -I-Service Area	Level indicator Bottom	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
1528	Production Block -I-Service Area	I/ST-39 (Anxen Tank)	Vent	4.6	0.4	100	0.000002	0.020098	0.3	0.000000	0.002785
1529	Production Block -I-Service Area	Charging Line	Vent	7.6	0.4	100	0.000003	0.028909	0.5	0.000000	0.004031
1530	Production Block -I-Service Area	Vent Line	Vent	26.3	0.4	100	0.000008	0.071018	1.8	0.000001	0.010189
1531	Production Block -I-Service Area	Level indicator	Flange	17.4	0.4	100	0.000014	0.119259	1.2	0.000002	0.018054
1532	Production Block -I-Service Area	I/ST-29 (Acetone Tank)	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
1533	Production Block -I-Service Area	Charging Line	Vent	6.3	0.4	100	0.000003	0.025237	0.4	0.000000	0.003429

1534	Production Block -I-Service Area	Vent Line	Vent	7.4	0.4	100	0.000003	0.028356	0.5	0.000000	0.004031
1535	Production Block -I-Service Area	Level indicator	Flange	18.1	0.4	100	0.000014	0.122626	1.2	0.000002	0.018054
1536	Production Block - P	SRV Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1537	Production Block - P	PB-P Atmophos VOC - (East)	other	34.6	0.4	100	0.000034	0.296258	2.4	0.000006	0.053417
1538	Production Block - P	P/SSR-001 Reactor	MV	7.2	0.4	100	0.000004	0.034755	0.5	0.000001	0.009730
1539	Production Block - P	RV Line	Flange	6.8	0.4	100	0.000007	0.061435	0.4	0.000001	0.008312
1540	Production Block - P	RD Line	Flange	10.7	0.4	100	0.000010	0.084607	0.7	0.000001	0.012340
1541	Production Block - P	Vapour Line	Flange	11.4	0.4	100	0.000010	0.088478	0.7	0.000001	0.012340
1542	Production Block - P	Vapour Line	Flange	5.4	0.4	100	0.000006	0.052207	0.3	0.000001	0.006784
1543	Production Block - P	Charging Line	Vent	8.9	0.4	100	0.000004	0.032410	0.6	0.000001	0.004599
1544	Production Block - P	Vacuum Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
1545	Production Block - P	P/HF-01 Condensor	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
1546	Production Block - P	P/HF-01 Condensor	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
1547	Production Block - P	Reactor Bottom Line	Flange	11.6	0.4	100	0.000010	0.089571	0.8	0.000002	0.013560
1548	Production Block - P	Reactor Bottom Line	Vent	10.3	0.4	100	0.000004	0.036026	0.7	0.000001	0.005142
1549	Production Block - P	Reactor Bottom Line	Flange	11.2	0.4	100	0.000010	0.087380	0.7	0.000001	0.012340
1550	Production Block - P	P/GLR-006 Reactor	MV	10000.4	0.4	100	0.000883	7.737540	20.4	0.000015	0.133432
1551	Production Block - P	RD Line	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
1552	Production Block - P	SRV Line	Flange	11.8	0.4	100	0.000010	0.090659	0.8	0.000002	0.013560
1553	Production Block - P	Vapour Line	Flange	16.4	0.4	100	0.000013	0.114378	1.1	0.000002	0.016978
1554	Production Block - P	Vapour Line	Flange	12.3	0.4	100	0.000011	0.093355	0.8	0.000002	0.013560
1555	Production Block - P	Vcauum Line	Vent	13.6	0.4	100	0.000005	0.044055	0.9	0.000001	0.006169
1556	Production Block - P	Reflux Line	Vent	13.2	0.4	100	0.000005	0.043113	0.9	0.000001	0.006169
1557	Production Block - P	Reflux Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
1558	Production Block - P	Reflux Line	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
1559	Production Block - P	P/HE-06 Condensor Line	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
1560	Production Block - P	P/HE-06 Condensor Line	Flange	9.4	0.4	100	0.000009	0.077213	0.6	0.000001	0.011067
1561	Production Block - P	Reactor Bottom Line	Flange	10.1	0.4	100	0.000009	0.081229	0.7	0.000001	0.012340
1562	Production Block - P	Reactor Bottom Line	Vent	6.3	0.4	100	0.000003	0.025237	0.4	0.000000	0.003429
1563	Production Block - P	P/SSR-015 Reactor	MV	147.6	0.4	100	0.000038	0.331816	3.9	0.000005	0.041491
1564	Production Block - P	Vapour Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1565	Production Block - P	Charging Line	Flange	24.3	0.4	100	0.000017	0.150973	1.7	0.000003	0.023087

1566	Production Block - P	Reflux Line	Vent	4.9	0.4	100	0.000002	0.021039	0.3	0.000000	0.002785
1567	Production Block - P	Reflux Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
1568	Production Block - P	Reflux Line	Flange	4.3	0.4	100	0.000005	0.044452	0.3	0.000001	0.006784
1569	Production Block - P	RD Line	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
1570	Production Block - P	Condensor Line P/HE-24	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
1571	Production Block - P	Condensor Line P/HE-24	Flange	5.4	0.4	100	0.000006	0.052207	0.3	0.000001	0.006784
1572	Production Block - P	Reactor Bottom Line	Vent	10.2	0.4	100	0.000004	0.035772	0.7	0.000001	0.005142
1573	Production Block - P	Reactor Bottom Line	Flange	9.4	0.4	100	0.000009	0.077213	0.6	0.000001	0.011067
1574	Production Block - P	Reactor Bottom Line	Flange	8.4	0.4	100	0.000008	0.071319	0.5	0.000001	0.009730
1575	Production Block - P	P/GLR-14/01 Reactor	MV	10.8	0.4	100	0.000005	0.047050	0.7	0.000001	0.012340
1576	Production Block - P	View glass	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
1577	Production Block - P	RD Line	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
1578	Production Block - P	SRV Line	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
1579	Production Block - P	Reflux Line	Vent	4.2	0.4	100	0.000002	0.018817	0.2	0.000000	0.002076
1580	Production Block - P	Reflux Line	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
1581	Production Block - P	Reflux Line	Flange	11.4	0.4	100	0.000010	0.088478	0.7	0.000001	0.012340
1582	Production Block - P	Reflux Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
1583	Production Block - P	Vacuum Line	Flange	22.6	0.4	100	0.000016	0.143438	1.5	0.000002	0.021134
1584	Production Block - P	Vapour Line	Flange	10.3	0.4	100	0.000009	0.082362	0.7	0.000001	0.012340
1585	Production Block - P	P/HE-22 Condensor Line	Flange	6.2	0.4	100	0.000007	0.057556	0.4	0.000001	0.008312
1586	Production Block - P	P/HE-22 Condensor Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1587	Production Block - P	Reactor Bottom Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
1588	Production Block - P	Reactor Bottom Line	Flange	10.2	0.4	100	0.000009	0.081796	0.7	0.000001	0.012340
1589	Production Block - P	Reactor Bottom Line	Flange	13.1	0.4	100	0.000011	0.097601	0.9	0.000002	0.014735
1590	Production Block - P	Reactor Bottom Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
1591	Production Block -P (MDTE)	P/SSR-011 Reactor	MV	140.4	0.4	100	0.000036	0.319649	2.2	0.000003	0.027696
1592	Production Block -P (MDTE)	Charging line	Flange	15.2	0.4	100	0.000012	0.108404	1	0.000002	0.015873
1593	Production Block -P (MDTE)	Reactor Top dummy	Flange	36.4	0.4	100	0.000023	0.200817	2.5	0.000003	0.030312
1594	Production Block -P (MDTE)	RD Line	Flange	10.2	0.4	100	0.000009	0.081796	0.7	0.000001	0.012340

1595	Production Block -P (MDTE)	SRV Line	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
1596	Production Block -P (MDTE)	Vapour Line	Flange	10.8	0.4	100	0.000010	0.085165	0.7	0.000001	0.012340
1597	Production Block -P (MDTE)	Reflux Line	Vent	5.6	0.4	100	0.000003	0.023174	0.3	0.000000	0.002785
1598	Production Block -P (MDTE)	Reflux Line	Flange	4.4	0.4	100	0.000005	0.045179	0.3	0.000001	0.006784
1599	Production Block -P (MDTE)	Reflux Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
1600	Production Block -P (MDTE)	View glass	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
1601	Production Block -P (MDTE)	P/HE-16 Condensor Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1602	Production Block -P (MDTE)	P/HE-16 Condensor Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
1603	Production Block -P (MDTE)	Condensor Line From Reactor	Vent	4.4	0.4	100	0.000002	0.019462	0.3	0.000000	0.002785
1604	Production Block -P (MDTE)	Reactor Bottom Line	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
1605	Production Block -P (MDTE)	Reactor Bottom Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
1606	Production Block -P (MDTE)	Reactor Bottom Line	Flange	7.2	0.4	100	0.000007	0.063965	0.5	0.000001	0.009730
1607	Production Block -P (MDTE)	PB-P East Walk Area	Vent	55.4	0.4	100	0.000014	0.121792	3.8	0.000002	0.017502
1608	Production Block -P (MDTE)	PB-P West side Area	Vent	49.2	0.4	100	0.000013	0.111764	3.4	0.000002	0.016148
1609	Production Block -P (MDTE)	Near Storage Tank Entrance	Flange	51.4	0.4	100	0.000029	0.256214	3.5	0.000004	0.038439
1610	Production Block -P (MDTE)	P/ST-02 (MTBE Tank)	MV	12.6	0.4	100	0.000006	0.052792	0.8	0.000002	0.013560
1611	Production Block -P (MDTE)	Charging Line	Vent	7.6	0.4	100	0.000003	0.028909	0.5	0.000000	0.004031
1612	Production Block -P (MDTE)	Charging Line	Flange	9.3	0.4	100	0.000009	0.076632	0.6	0.000001	0.011067
1613	Production Block -P (MDTE)	Level Indicator	Flange	12.6	0.4	100	0.000011	0.094956	0.8	0.000002	0.013560
1614	Production Block -P (MDTE)	P/ST-03 (Toluene + THF)	Vent	13.6	0.4	100	0.000005	0.044055	0.9	0.000001	0.006169

1615	Production Block -P (MDTE)	Level Indicator	Flange	12.6	0.4	100	0.000011	0.094956	0.8	0.000002	0.013560
1616	Production Block -P (MDTE)	Charging Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1617	Production Block -P (MDTE)	Vent Line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
1618	Production Block -P (MDTE)	P/ST-04 Acetone	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
1619	Production Block -P (MDTE)	Charging line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1620	Production Block -P (MDTE)	Level Indicator	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1621	Production Block -P (MDTE)	MDC Storage Tank	MV	5.1	0.4	100	0.000003	0.026862	0.3	0.000001	0.006784
1622	Production Block -P (MDTE)	Charging Line	Flange	217.6	0.4	100	0.000081	0.709659	5.3	0.000006	0.051523
1623	Production Block -P (MDTE)	Level Indicator	Vent	9.3	0.4	100	0.000004	0.033458	0.6	0.000001	0.004599
1624	Production Block -P (MDTE)	Vent Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
1625	Production Block -P (MDTE)	Spent IPA Tank Level Indicator	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
1626	Production Block -P (MDTE)	Level Indicator Top	Flange	4.3	0.4	100	0.000005	0.044452	0.3	0.000001	0.006784
1627	Production Block -P (MDTE)	Charging Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
1628	Production Block -P (MDTE)	MDC Storage Tank	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
1629	Production Block -P (MDTE)	Charging Line	Flange	5.2	0.4	100	0.000006	0.050835	0.3	0.000001	0.006784
1630	Production Block -P (MDTE)	Vent Line	Vent	10.2	0.4	100	0.000004	0.035772	0.7	0.000001	0.005142
1631	Production Block -P (MDTE)	Level Indicator	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
1632	Production Block -N (Toluene)	N/GLR-026/01 Raector	MV	0.5	0.4	100	0.000001	0.004739	0	0.000000	0.000000
1633	Production Block -N (Toluene)	RD Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1634	Production Block -N (Toluene)	SRV Line	Flange	9.2	0.4	100	0.000009	0.076050	0.6	0.000001	0.011067

1635	Production Block -N (Toluene)	Vacuum Line	Vent	12.3	0.4	100	0.000005	0.040965	0.8	0.000001	0.005664
1636	Production Block -N (Toluene)	Vacuum Line	Flange	11.2	0.4	100	0.000010	0.087380	0.7	0.000001	0.012340
1637	Production Block -N (Toluene)	Reflux Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
1638	Production Block -N (Toluene)	Reflux Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1639	Production Block -N (Toluene)	Reflux Line	Flange	44.6	0.4	100	0.000026	0.231789	3.1	0.000004	0.035283
1640	Production Block -N (Toluene)	Reactor Top dummy	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1641	Production Block -N (Toluene)	View glass	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
1642	Production Block -N (Toluene)	Vapour Line	Flange	9.4	0.4	100	0.000009	0.077213	0.6	0.000001	0.011067
1643	Production Block -N (Toluene)	Condensor Line N/HE-30	Flange	12.4	0.4	100	0.000011	0.093890	0.8	0.000002	0.013560
1644	Production Block -N (Toluene)	Condensor Line N/HE-30	Flange	9.3	0.4	100	0.000009	0.076632	0.6	0.000001	0.011067
1645	Production Block -N (Toluene)	Reactor Bottom Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
1646	Production Block -N (Toluene)	Reactor Bottom Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1647	Production Block -N (Toluene)	Reactor Pumping to GLR-26	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1648	Production Block -N (Toluene)	N/GLR-027/01 Raector	MV	1.3	0.4	100	0.000001	0.009676	0	0.000000	0.000000
1649	Production Block -N (Toluene)	View glass	Flange	2.2	0.4	100	0.000003	0.027696	0.1	0.000000	0.003124
1650	Production Block -N (Toluene)	Reactor Top dummy	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1651	Production Block -N (Toluene)	Temp gauge	Flange	11.2	0.4	100	0.000010	0.087380	0.7	0.000001	0.012340
1652	Production Block -N (Toluene)	dummy-2	Flange	22.6	0.4	100	0.000016	0.143438	1.5	0.000002	0.021134
1653	Production Block -N (Toluene)	Reflux Line	Vent	9.6	0.4	100	0.000004	0.034236	0.6	0.000001	0.004599
1654	Production Block -N (Toluene)	Reflux Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124

1655	Production Block -N (Toluene)	Reflux Line	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
1656	Production Block -N (Toluene)	Vapour Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
1657	Production Block -N (Toluene)	Vapour Line	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
1658	Production Block -N (Toluene)	Condensor Line	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
1659	Production Block -N (Toluene)	Condensor Line	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
1660	Production Block -N (Toluene)	RD Line	Flange	3.1	0.4	100	0.000004	0.035283	0.2	0.000001	0.005096
1661	Production Block -N (Toluene)	SRV Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1662	Production Block -N (Toluene)	Reactor Bottom Line	Vent	3.3	0.4	100	0.000002	0.015802	0.2	0.000000	0.002076
1663	Production Block -N (Toluene)	Reactor Bottom Line	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
1664	Production Block -N (Toluene)	N/SSR-010 /01 raector	MV	52.4	0.4	100	0.000017	0.153084	3.4	0.000004	0.037661
1665	Production Block -N (Toluene)	RD Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
1666	Production Block -N (Toluene)	SRV Line	Flange	22.4	0.4	100	0.000016	0.142540	1.5	0.000002	0.021134
1667	Production Block -N (Toluene)	Reactor Top dummy-1	Flange	23.9	0.4	100	0.000017	0.149215	1.6	0.000003	0.022119
1668	Production Block -N (Toluene)	Reactor top dummy-2	Flange	23.9	0.4	100	0.000017	0.149215	1.6	0.000003	0.022119
1669	Production Block -N (Toluene)	Vapour Line	Flange	10.8	0.4	100	0.000010	0.085165	0.7	0.000001	0.012340
1670	Production Block -N (Toluene)	Reflux Line	Vent	20.3	0.4	100	0.000007	0.058877	1.4	0.000001	0.008494
1671	Production Block -N (Toluene)	Reflux Line	Flange	27.4	0.4	100	0.000019	0.164329	1.9	0.000003	0.024973
1672	Production Block -N (Toluene)	Condensor Line	Flange	21.4	0.4	100	0.000016	0.138018	1.4	0.000002	0.020129
1673	Production Block -N (Toluene)	Condensor line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
1674	Production Block -N (Toluene)	Reactor Bottom	Vent	2.8	0.4	100	0.000002	0.014030	0.1	0.000000	0.001257

1675	Production Block -N (Ethyl Acetate)	N/SSR-020/01 reactor	MV	1.8	0.4	100	0.000001	0.012339	0.1	0.000000	0.003124
1676	Production Block -N (Ethyl Acetate)	Temp gauge	Flange	2.3	0.4	100	0.000003	0.028579	0.1	0.000000	0.003124
1677	Production Block -N (Ethyl Acetate)	RD Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
1678	Production Block -N (Ethyl Acetate)	SRV Line	Flange	1.5	0.4	100	0.000002	0.021134	0.1	0.000000	0.003124
1679	Production Block -N (Ethyl Acetate)	Reactor Top dummy	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1680	Production Block -N (Ethyl Acetate)	Reactor Top dummy	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
1681	Production Block -N (Ethyl Acetate)	Reflux Line	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
1682	Production Block -N (Ethyl Acetate)	Reflux Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1683	Production Block -N (Ethyl Acetate)	Reflux Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1684	Production Block -N (Ethyl Acetate)	View glass	Flange	3.3	0.4	100	0.000004	0.036875	0.2	0.000001	0.005096
1685	Production Block -N (Ethyl Acetate)	Reactor Bottom Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
1686	Production Block -N (Ethyl Acetate)	Reactor Bottom Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1687	Production Block -N (Ethyl Acetate)	Reactor Bottom Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
1688	Production Block -N (Ethyl Acetate)	N/ANFD-008	MV	1.4	0.4	100	0.000001	0.010227	0	0.000000	0.000000
1689	Production Block -N (Ethyl Acetate)	Discharging Point	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1690	Production Block -N (Ethyl Acetate)	Sampling point	Flange	3.1	0.4	100	0.000004	0.035283	0.2	0.000001	0.005096
1691	Production Block -N (Ethyl Acetate)	Vent Line	Vent	4.6	0.4	100	0.000002	0.020098	0.3	0.000000	0.002785
1692	Production Block -N (Ethyl Acetate)	Vent Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
1693	Production Block -N (Ethyl Acetate)	Dust Collector	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
1694	Production Block -N (Ethyl Acetate)	Dust Collector	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312

1695	Production Block -N-Service Area	N/ST-06 (Ethyl Acetate)	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
1696	Production Block -N-Service Area	Charging Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1697	Production Block -N-Service Area	Level Indicator	Flange	4.2	0.4	100	0.000005	0.043720	0.2	0.000001	0.005096
1698	Production Block -N-Service Area	Vent Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
1699	Production Block -N-Service Area	N/ST-07 (Ethyl Acetate)	MV	2.9	0.4	100	0.000002	0.017620	0.2	0.000001	0.005096
1700	Production Block -N-Service Area	Charging Line	Flange	3.2	0.4	100	0.000004	0.036083	0.2	0.000001	0.005096
1701	Production Block -N-Service Area	Level Indicator bottom	Flange	3.1	0.4	100	0.000004	0.035283	0.2	0.000001	0.005096
1702	Production Block -N-Service Area	Level Indicatro Top	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
1703	Production Block -N-Service Area	N/ST-08 (mmpo) Tank	MV	2.8	0.4	100	0.000002	0.017164	0.1	0.000000	0.003124
1704	Production Block -N-Service Area	Charging line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1705	Production Block -N-Service Area	Level Indicator Top	Flange	13.4	0.4	100	0.000011	0.099174	0.9	0.000002	0.014735
1706	Production Block -N-Service Area	Level Indicator bottom	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1707	Production Block -N-Service Area	Vent Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
1708	Production Block -N-Service Area	N/ST-09 (Hexane) Tank	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
1709	Production Block -N-Service Area	Charging Line	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
1710	Production Block -N-Service Area	Level Indicator	Flange	1.8	0.4	100	0.000003	0.024037	0.1	0.000000	0.003124
1711	Production Block -N-Service Area	Vent Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1712	Production Block -N-Service Area	N/ST-11 methanol Tank CL	Vent	0.8	0.4	100	0.000001	0.005664	0	0.000000	0.000000
1713	Production Block -N-Service Area	Charging Line	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
1714	Production Block -N-Service Area	Vent Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096

1715	Production Block -N-Service Area	Level indicator Top	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1716	Production Block -N-Service Area	Level indicator Bottom	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
1717	Production Block -N-Service Area	N/ST-12 (Toluene Tank)	MV	6.9	0.4	100	0.000004	0.033667	0.4	0.000001	0.008312
1718	Production Block -N-Service Area	N/ST-12 Level Indicator Top	Flange	5.2	0.4	100	0.000006	0.050835	0.3	0.000001	0.006784
1719	Production Block -N-Service Area	N/ST-12 level indicator Bottom	Flange	5.7	0.4	100	0.000006	0.054239	0.3	0.000001	0.006784
1720	Production Block -N-Service Area	N/ST-12 level indicator Bottom	Flange	63.4	0.4	100	0.000034	0.297124	1.4	0.000002	0.020129
1721	Production Block -N-Service Area	N/ST-07 Tank level indicator	Flange	22.9	0.4	100	0.000017	0.144779	1.6	0.000003	0.022119
1722	Production Block -N-Service Area	Charging Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1723	Production Block -N-Service Area	Vent Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
1724	Production Block-N(MDC Process)	PB-4/SSR-017 Reactor	MV	17.8	0.4	100	0.000008	0.068337	1.2	0.000002	0.018054
1725	Production Block-N(MDC Process)	Top dummy	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1726	Production Block-N(MDC Process)	RD Line	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
1727	Production Block-N(MDC Process)	SRV Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1728	Production Block-N(MDC Process)	Vacuum Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1729	Production Block-N(MDC Process)	Temp gauge	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
1730	Production Block-N(MDC Process)	View glass	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1731	Production Block-N(MDC Process)	Top Reactor dummy-1	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1732	Production Block-N(MDC Process)	Top Reactor dummy-2	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1733	Production Block-N(MDC Process)	Reactor Bottom	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
1734	Production Block-N(MDC Process)	Reactor Bottom	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124

1735	Production Block-N(MDC Process)	Reactor Bottom	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1736	Production Block-N(MDC Process)	Reactor Bottom	Vent	4.6	0.4	100	0.000002	0.020098	0.3	0.000000	0.002785
1737	Production Block-4 (Acetic Acid)	PB.4/SSR-002 Reactor	MV	2.1	0.4	100	0.000002	0.013845	0.1	0.000000	0.003124
1738	Production Block-4 (Acetic Acid)	View glass	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1739	Production Block-4 (Acetic Acid)	PB4/R/RTD-02	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
1740	Production Block-4 (Acetic Acid)	Vent Line	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
1741	Production Block-4 (Acetic Acid)	Charging Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1742	Production Block-4 (Acetic Acid)	Reflux Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1743	Production Block-4 (Acetic Acid)	Reflux Line	Vent	2.1	0.4	100	0.000001	0.011392	0.1	0.000000	0.001257
1744	Production Block-4 (Acetic Acid)	Reflux Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1745	Production Block-4 (Acetic Acid)	Reflux Line	Flange	1.7	0.4	100	0.000003	0.023087	0.1	0.000000	0.003124
1746	Production Block-4 (Acetic Acid)	Distillation Line	Vent	0.9	0.4	100	0.000001	0.006169	0	0.000000	0.000000
1747	Production Block-4 (Acetic Acid)	Distillation Line	Flange	2.3	0.4	100	0.000003	0.028579	0.1	0.000000	0.003124
1748	Production Block-4 (Acetic Acid)	Vapour Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1749	Production Block-4 (Acetic Acid)	Vapour Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1750	Production Block-4 (Acetic Acid)	RD Line	Flange	1.7	0.4	100	0.000003	0.023087	0.1	0.000000	0.003124
1751	Production Block-4 (Acetic Acid)	SRV Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1752	Production Block-4 (Acetic Acid)	PB-4/HE-03 Condensor	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1753	Production Block-4 (Acetic Acid)	PB-4/HE-03 Condensor	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
1754	Production Block-4 (Acetic Acid)	Reactor Bottom Line	Vent	4.2	0.4	100	0.000002	0.018817	0.2	0.000000	0.002076

1755	Production Block-4 (Acetic Acid)	Reactor Bottom Line	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
1756	Production Block-4 (Acetic Acid)	Reactor Bottom Line	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
1757	Production Block-4 (Mono-methyl amine)	PB-4/SSR-009 Reactor	MV	0.9	0.4	100	0.000001	0.007352	0	0.000000	0.000000
1758	Production Block-4 (Mono-methyl amine)	PB-4/R/RT-09	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1759	Production Block-4 (Mono-methyl amine)	Light glass	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1760	Production Block-4 (Mono-methyl amine)	View glass	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
1761	Production Block-4 (Mono-methyl amine)	RD Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1762	Production Block-4 (Mono-methyl amine)	SRV Line	Flange	1.7	0.4	100	0.000003	0.023087	0.1	0.000000	0.003124
1763	Production Block-4 (Mono-methyl amine)	Reflux Line	Vent	0.6	0.4	100	0.000001	0.004599	0	0.000000	0.000000
1764	Production Block-4 (Mono-methyl amine)	Reflux Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1765	Production Block-4 (Mono-methyl amine)	Reflux Line	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
1766	Production Block-4 (Mono-methyl amine)	Reflux Line	Vent	1.7	0.4	100	0.000001	0.009776	0.1	0.000000	0.001257
1767	Production Block-4 (Mono-methyl amine)	Distillation Line	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
1768	Production Block-4 (Mono-methyl amine)	Distillation Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1769	Production Block-4 (Mono-methyl amine)	Vapour Line	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
1770	Production Block-4 (Mono-methyl amine)	PB-4/HE-11 Condensor Line	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
1771	Production Block-4 (Mono-methyl amine)	PB-4/HE-11 Condensor Line	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
1772	Production Block-4 (Mono-methyl amine)	Reactor Bottom Line	Vent	0.4	0.4	100	0.000000	0.003429	0	0.000000	0.000000
1773	Production Block-4 (Mono-methyl amine)	Reactor Bottom Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1774	Production Block-4 (Mono-methyl amine)	Reactor Bottom Line	Flange	0.7	0.4	100	0.000001	0.012340	0	0.000000	0.000000

1775	Production Block-4 (Mono-methyl amine)	Reactor Bottom Line	Vent	1.5	0.4	100	0.000001	0.008929	0.1	0.000000	0.001257
1776	Production Block-4 (Mono-methyl amine)	Reactor Bottom Line	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
1777	Production Block-4 (Mono-methyl amine)	PB-4/CF-008 Centrifuge	MV	0.4	0.4	100	0.000000	0.004012	0	0.000000	0.000000
1778	Production Block-4 (Mono-methyl amine)	View glass	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
1779	Production Block-4 (Mono-methyl amine)	Vent Line	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
1780	Production Block-4 (Mono-methyl amine)	Vacuum Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1781	Production Block-4 (Ethyl Acetate)	PB-4/SSR-032 Reactor	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
1782	Production Block-4 (Ethyl Acetate)	Top dummy	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1783	Production Block-4 (Ethyl Acetate)	SRV Line	Flange	1.7	0.4	100	0.000003	0.023087	0.1	0.000000	0.003124
1784	Production Block-4 (Ethyl Acetate)	SRV Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
1785	Production Block-4 (Ethyl Acetate)	Reflux Line	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
1786	Production Block-4 (Ethyl Acetate)	Reflux Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1787	Production Block-4 (Ethyl Acetate)	Reflux Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1788	Production Block-4 (Ethyl Acetate)	Distillation Line	Vent	0.6	0.4	100	0.000001	0.004599	0	0.000000	0.000000
1789	Production Block-4 (Ethyl Acetate)	Distillation Line	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
1790	Production Block-4 (Ethyl Acetate)	Distillation Line	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
1791	Production Block-4 (Ethyl Acetate)	Vapour Line	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
1792	Production Block-4 (Ethyl Acetate)	PB-4/HE-32 Condensor Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1793	Production Block-4 (Ethyl Acetate)	PB-4/HE-33 Condensor Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1794	Production Block-4 (Ethyl Acetate)	Vent Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124

1795	Production Block-4 (Ethyl Acetate)	Reactor bottom Line	Vent	1.7	0.4	100	0.000001	0.009776	0.1	0.000000	0.001257
1796	Production Block-4 (Ethyl Acetate)	Reactor bottom Line	Flange	1.5	0.4	100	0.000002	0.021134	0.1	0.000000	0.003124
1797	Production Block-4 (Ethyl Acetate)	Reactor bottom Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1798	Production Block-4 (Ethyl Acetate)	Reactor bottom Line	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
1799	Production Block-4 (Ethyl Acetate)	PB-4/CF-004 Centrifuge	MV	1806.4	0.4	100	0.000246	2.154914	7.1	0.000007	0.063336
1800	Production Block-4 (Ethyl Acetate)	Inbetween joint Line	Flange	16.4	0.4	100	0.000013	0.114378	1.1	0.000002	0.016978
1801	Production Block-4 (Ethyl Acetate)	Vent Line	Flange	22.4	0.4	100	0.000016	0.142540	1.5	0.000002	0.021134
1802	Production Block-4 (Ethyl Acetate)	Vent Line	Flange	19.4	0.4	100	0.000015	0.128781	1.3	0.000002	0.019103
1803	Production Block-4 (Ethyl Acetate)	MS/Discharge Line	Flange	18.4	0.4	100	0.000014	0.124058	1.2	0.000002	0.018054
1804	Production Block-4 (Ethyl Acetate)	MS/Discharge Line	Flange	30.4	0.4	100	0.000020	0.176836	2.1	0.000003	0.026801
1805	Production Block-4 (Ethyl Acetate)	MS/Discharge Line	Flange	27.4	0.4	100	0.000019	0.164329	1.9	0.000003	0.024973
1806	Production Block-4 (Ethyl Acetate)	Charging Line	Flange	18.4	0.4	100	0.000014	0.124058	1.2	0.000002	0.018054
1807	Production Block-4 (Ethyl Acetate)	Charging Line	Flange	15.3	0.4	100	0.000012	0.108907	1	0.000002	0.015873
1808	Production Block-4 (IPA)	PB-4/GLR-033 Raector	MV	1110.4	0.4	100	0.000171	1.498177	14.2	0.000012	0.103318
1809	Production Block-4 (IPA)	SRV Line	Flange	15.3	0.4	100	0.000012	0.108907	1	0.000002	0.015873
1810	Production Block-4 (IPA)	RD Line	Flange	16.2	0.4	100	0.000013	0.113391	1.1	0.000002	0.016978
1811	Production Block-4 (IPA)	Top dummy	Flange	20.3	0.4	100	0.000015	0.132970	1.4	0.000002	0.020129
1812	Production Block-4 (IPA)	Reflux Line	Vent	13.2	0.4	100	0.000005	0.043113	0.9	0.000001	0.006169
1813	Production Block-4 (IPA)	Reflux Line	Flange	19.4	0.4	100	0.000015	0.128781	1.3	0.000002	0.019103
1814	Production Block-4 (IPA)	Reflux Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
1815	Production Block-4 (IPA)	Vapour Line	Flange	12.6	0.4	100	0.000011	0.094956	0.8	0.000002	0.013560
1816	Production Block-4 (IPA)	Condensor line PB-4/HE-46	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1817	Production Block-4 (IPA)	Condensor line PB-4/HE-46	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
1818	Production Block-4 (IPA)	Reactor Bottom Line	Vent	17.6	0.4	100	0.000006	0.053097	1.2	0.000001	0.007597

1819	Production Block-4 (IPA)	Reactor Bottom Line	Flange	20.2	0.4	100	0.000015	0.132507	1.4	0.000002	0.020129
1820	Production Block-4 (IPA)	Reactor Bottom Line	Flange	11.5	0.4	100	0.000010	0.089026	0.8	0.000002	0.013560
1821	Production Block-4 (IPA)	Reactor Top dummy	Flange	4000.7	0.4	100	0.000633	5.543325	10.6	0.000010	0.084048
1822	Production Block-4 (IPA)	View glass	Flange	4.4	0.4	100	0.000005	0.045179	0.3	0.000001	0.006784
1823	Production Block-4 (IPA)	Temp gauge	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
1824	Production Block-4 (IPA)	Vent Line	Flange	4.2	0.4	100	0.000005	0.043720	0.2	0.000001	0.005096
1825	Production Block-4 (Methanol)	PB-4/SSR-035 Reactor	MV	1.6	0.4	100	0.000001	0.011300	0.1	0.000000	0.003124
1826	Production Block-4 (Methanol)	View glass	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
1827	Production Block-4 (Methanol)	Temp gauge	Flange	2.7	0.4	100	0.000004	0.032004	0.1	0.000000	0.003124
1828	Production Block-4 (Methanol)	Light glass	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
1829	Production Block-4 (Methanol)	PB 4/F-26 Line	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
1830	Production Block-4 (Methanol)	PB 4/F-26 Line	Vent	0.8	0.4	100	0.000001	0.005664	0	0.000000	0.000000
1831	Production Block-4 (Methanol)	PB-4/F-27 Line	Flange	1.3	0.4	100	0.000002	0.019103	0	0.000000	0.000000
1832	Production Block-4 (Methanol)	PB-4/F-27 Line	Vent	0.8	0.4	100	0.000001	0.005664	0	0.000000	0.000000
1833	Production Block-4 (Methanol)	Vapour Line	Flange	1.3	0.4	100	0.000002	0.019103	0	0.000000	0.000000
1834	Production Block-4 (Methanol)	Vacuum Line	Vent	0.6	0.4	100	0.000001	0.004599	0	0.000000	0.000000
1835	Production Block-4 (Methanol)	Vacuum Line	Flange	1.7	0.4	100	0.000003	0.023087	0.1	0.000000	0.003124
1836	Production Block-4 (Methanol)	Vent Line	Vent	7.2	0.4	100	0.000003	0.027799	0.5	0.000000	0.004031
1837	Production Block-4 (Methanol)	Vent Line	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
1838	Production Block-4 (Methanol)	Raector Bottom Line	Vent	4.6	0.4	100	0.000002	0.020098	0.3	0.000000	0.002785
1839	Production Block-4 (Methanol)	Raector Bottom Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1840	Production Block-4 (Methanol)	Raector Bottom Line	Flange	4.1	0.4	100	0.000005	0.042982	0.2	0.000001	0.005096
1841	Production Block-4 (Acetone)	PB-4/SSR-014 Reactor	MV	9.6	0.4	100	0.000005	0.043087	0.6	0.000001	0.011067

1842	Production Block-4 (Acetone)	RD Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
1843	Production Block-4 (Acetone)	SRV Line	Flange	118.4	0.4	100	0.000053	0.461794	8.2	0.000008	0.070116
1844	Production Block-4 (Acetone)	PB-4/F-21 Line	Vent	17.3	0.4	100	0.000006	0.052440	1.2	0.000001	0.007597
1845	Production Block-4 (Acetone)	PB-4/F-21 Line	Flange	15.4	0.4	100	0.000012	0.109409	1	0.000002	0.015873
1846	Production Block-4 (Acetone)	PB-4/F-21 Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
1847	Production Block-4 (Acetone)	Vacuum Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
1848	Production Block-4 (Acetone)	Vacuum Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1849	Production Block-4 (Acetone)	View glass	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1850	Production Block-4 (Acetone)	Temp gauge	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
1851	Production Block-4 (Acetone)	Vapour Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1852	Production Block-4 (Acetone)	Vapour Line	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
1853	Production Block-4 (Acetone)	Condensor Line/HE-20	Flange	7.3	0.4	100	0.000007	0.064590	0.5	0.000001	0.009730
1854	Production Block-4 (Acetone)	Condensor Line/HE-20	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
1855	Production Block-4 (Acetone)	Condensor Line/HE-21	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1856	Production Block-4 (Acetone)	Condensor Line/HE-21	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
1857	Production Block-4 (Acetone)	Raector Bottom Line	Vent	4.3	0.4	100	0.000002	0.019140	0.3	0.000000	0.002785
1858	Production Block-4 (Acetone)	Raector Bottom Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1859	Production Block-4 (Acetone)	Raector Bottom Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1860	Production Block-4 (Acetone)	Raector Bottom Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
1861	Production Block -4 Service Area	PB-4/ST-09 methanol Tank	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076

1862	Production Block -4 Service Area	Bottom Line	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
1863	Production Block -4 Service Area	Charging Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
1864	Production Block -4 Service Area	Level indicator	Flange	5.4	0.4	100	0.000006	0.052207	0.3	0.000001	0.006784
1865	Production Block -4 Service Area	PB-4/ST-04 (Ethyl Acetate)	MV	1.6	0.4	100	0.000001	0.011300	0.1	0.000000	0.003124
1866	Production Block -4 Service Area	Charging Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1867	Production Block -4 Service Area	Level indicator	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
1868	Production Block -4 Service Area	Vent Line	Flange	0.7	0.4	100	0.000001	0.012340	0	0.000000	0.000000
1869	Production Block -4 Service Area	PB-4/REC-34 (MDC Tank)	MV	2.9	0.4	100	0.000002	0.017620	0.2	0.000001	0.005096
1870	Production Block -4 Service Area	Charging Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
1871	Production Block -4 Service Area	Top Dummy	MV	26.2	0.4	100	0.000010	0.091214	1.8	0.000003	0.024037
1872	Production Block -4 Service Area	Vent Line	Flange	30.5	0.4	100	0.000020	0.177247	2.1	0.000003	0.026801
1873	Production Block -4 Service Area	Level indicator	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
1874	Production Block -4 Service Area	PB-4/ST-03 Tank Top (MDC)	MV	2508.4	0.4	100	0.000314	2.753844	17.3	0.000014	0.118774
1875	Production Block -4 Service Area	Charging line	Flange	16.4	0.4	100	0.000013	0.114378	1.1	0.000002	0.016978
1876	Production Block -4 Service Area	Level indicator	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
1877	Production Block -4 Service Area	Vent Line	Flange	15.3	0.4	100	0.000012	0.108907	1	0.000002	0.015873
1878	Production Block -4 Service Area	PB-4/REC-42 Ethyl Acetae	Flange	3	0.4	100	0.000004	0.034475	0.2	0.000001	0.005096
1879	Production Block -4 Service Area	Charging Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
1880	Production Block -4 Service Area	Level indicator	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
1881	Production Block -4 Service Area	Vent Line	Flange	1126.4	0.4	100	0.000259	2.265465	13.1	0.000011	0.097601

1882	Production Block -4 Service Area	PB-4/REC-36(MDC Tank)	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
1883	Production Block -4 Service Area	Charging Line	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
1884	Production Block -4 Service Area	Level indicator	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
1885	Production Block -4 Service Area	Vent Line	Flange	16.3	0.4	100	0.000013	0.113885	1.1	0.000002	0.016978
1886	Production Block -4 Service Area	PB-4/REC-29 (MDC Tank)	MV	6.9	0.4	100	0.000004	0.033667	0.4	0.000001	0.008312
1887	Production Block -4 Service Area	Charging Line	Flange	11.6	0.4	100	0.000010	0.089571	0.8	0.000002	0.013560
1888	Production Block -4 Service Area	Vent Line	Flange	20.3	0.4	100	0.000015	0.132970	1.4	0.000002	0.020129
1889	Production Block -4 Service Area	Vacuum Line	Vent	16.4	0.4	100	0.000006	0.050450	1.1	0.000001	0.007133
1890	Production Block -4 Service Area	Level indicator	Flange	15.1	0.4	100	0.000012	0.107900	1	0.000002	0.015873
1891	Production Block -4 Service Area	(MDC Tank) PB-4	MV	2.9	0.4	100	0.000002	0.017620	0.2	0.000001	0.005096
1892	Production Block -4 Service Area	Charging Line	Flange	12.6	0.4	100	0.000011	0.094956	0.8	0.000002	0.013560
1893	Production Block -4 Service Area	Level indicator Top	Vent	4040.6	0.4	100	0.000310	2.718845	12.7	0.000005	0.041925
1894	Production Block -4 Service Area	PB-4/SF14 (MDC) Tank	MV	10.6	0.4	100	0.000005	0.046397	0.7	0.000001	0.012340
1895	Production Block -4 Service Area	Level indicator	Flange	14.6	0.4	100	0.000012	0.105365	1	0.000002	0.015873
1896	Production Block -4 Service Area	Charging Line	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
1897	Production Block -4 Service Area	Top dummy	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
1898	Production Block -4 Service Area	PB-4 /REC-30 (MDC Tank)	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1899	Production Block -4 Service Area	level indicator	Flange	6.6	0.4	100	0.000007	0.060153	0.4	0.000001	0.008312
1900	Production Block -4 Service Area	Charging Line	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
1901	Production Block -4 Service Area	Vent Line	Flange	12.3	0.4	100	0.000011	0.093355	0.8	0.000002	0.013560
1902	Production Block-3	PB-3/ANFD-004	MV	11.3	0.4	100	0.000006	0.048668	0.7	0.000001	0.012340

1903	Production Block-3	discharge manhole	Flange	10.5	0.4	100	0.000010	0.083488	0.7	0.000001	0.012340
1904	Production Block-3	Sampling point	Flange	9.4	0.4	100	0.000009	0.077213	0.6	0.000001	0.011067
1905	Production Block-3	View glass	Flange	5.4	0.4	100	0.000006	0.052207	0.3	0.000001	0.006784
1906	Production Block-3	Dust Collector	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
1907	Production Block-3	Vent Line	Vent	9.3	0.4	100	0.000004	0.033458	0.6	0.000001	0.004599
1908	Production Block-3	Vent Line	Vent	9.7	0.4	100	0.000004	0.034494	0.6	0.000001	0.004599
1909	Production Block-3	Charging Line	Vent	8.9	0.4	100	0.000004	0.032410	0.6	0.000001	0.004599
1910	Production Block-3	Charging Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
1911	Production Block-3	Vacuum Line	Flange	10.8	0.4	100	0.000010	0.085165	0.7	0.000001	0.012340
1912	Production Block-3	Vacuum Line	Flange	9.2	0.4	100	0.000009	0.076050	0.6	0.000001	0.011067
1913	Production Block-3	PB-3/SSR-016 Reactor	MV	5.4	0.4	100	0.000003	0.028034	0.3	0.000001	0.006784
1914	Production Block-3	View glass	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1915	Production Block-3	RD Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
1916	Production Block-3	SRV Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1917	Production Block-3	Vapour Line	Flange	5.4	0.4	100	0.000006	0.052207	0.3	0.000001	0.006784
1918	Production Block-3	Reactor Top dummy	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
1919	Production Block-3	Charging Line	Vent	7.8	0.4	100	0.000003	0.029457	0.5	0.000000	0.004031
1920	Production Block-3	PB-3/HE-24 Condensor	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
1921	Production Block-3	PB-3 /HE-23 Condensor	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
1922	Production Block-3	Reactor Bottom Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
1923	Production Block-3	Reactor Bottom Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
1924	Production Block-3 (methanol)	PB-3 Crystalliser Room - IV	other	53	0.4	100	0.000044	0.389555	3.7	0.000008	0.070529
1925	Production Block-3 (methanol)	PB/SSR-014 Reactor	MV	3.8	0.4	100	0.000002	0.021562	0.2	0.000001	0.005096
1926	Production Block-3 (methanol)	RD Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1927	Production Block-3 (methanol)	SRV Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
1928	Production Block-3 (methanol)	Vapour Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1929	Production Block-3 (methanol)	View glass	Flange	6.1	0.4	100	0.000006	0.056899	0.4	0.000001	0.008312
1930	Production Block-3 (methanol)	Vent Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
1931	Production Block-3 (methanol)	Vent Line	Flange	3.1	0.4	100	0.000004	0.035283	0.2	0.000001	0.005096

1932	Production Block-3 (methanol)	PB-3/HE-19 Condensor	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
1933	Production Block-3 (methanol)	PB-3/HE-20 Condensor	Flange	5.3	0.4	100	0.000006	0.051523	0.3	0.000001	0.006784
1934	Production Block-3 (methanol)	Suction Line	Vent	7.1	0.4	100	0.000003	0.027519	0.4	0.000000	0.003429
1935	Production Block-3 (methanol)	Suction Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
1936	Production Block-3 (methanol)	Reactor Bottom Line	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
1937	Production Block-3 (methanol)	Reactor Bottom Line	Flange	5.3	0.4	100	0.000006	0.051523	0.3	0.000001	0.006784
1938	Production Block-3 (n-butanol)	PB-3/SSR-030 Reactor	MV	8.4	0.4	100	0.000004	0.038997	0.5	0.000001	0.009730
1939	Production Block-3 (n-butanol)	SRV Line	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
1940	Production Block-3 (n-butanol)	RD Line	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
1941	Production Block-3 (n-butanol)	View glass	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
1942	Production Block-3 (n-butanol)	Temp gauge	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
1943	Production Block-3 (n-butanol)	Reactor Light glass	Flange	5.3	0.4	100	0.000006	0.051523	0.3	0.000001	0.006784
1944	Production Block-3 (n-butanol)	Reflux Line	Vent	7.9	0.4	100	0.000003	0.029730	0.5	0.000000	0.004031
1945	Production Block-3 (n-butanol)	Reflux Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1946	Production Block-3 (n-butanol)	Reflux Line	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
1947	Production Block-3 (n-butanol)	Distillation Line	Vent	0.8	0.4	100	0.000001	0.005664	0	0.000000	0.000000
1948	Production Block-3 (n-butanol)	Vapour Line	Flange	3.1	0.4	100	0.000004	0.035283	0.2	0.000001	0.005096
1949	Production Block-3 (n-butanol)	PB-3/HE-49 Condensor	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
1950	Production Block-3 (n-butanol)	PB-3-48 condensor	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1951	Production Block-3 (n-butanol)	Reactor Bottom Line	Vent	4.2	0.4	100	0.000002	0.018817	0.2	0.000000	0.002076

1952	Production Block-3 (n-butanol)	Reactor Bottom Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
1953	Production Block-3 (n-butanol)	Reactor Bottom Line	Flange	4.2	0.4	100	0.000005	0.043720	0.2	0.000001	0.005096
1954	Production Block-3 (n-butanol)	PB-3/SSR-027 Raector	MV	2.9	0.4	100	0.000002	0.017620	0.2	0.000001	0.005096
1955	Production Block-3 (n-butanol)	RD Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
1956	Production Block-3 (n-butanol)	SRV Line	Vent	5.2	0.4	100	0.000003	0.021964	0.3	0.000000	0.002785
1957	Production Block-3 (n-butanol)	Reflux Line	Vent	40.2	0.4	100	0.000011	0.096556	2.8	0.000002	0.014030
1958	Production Block-3 (n-butanol)	Reflux Line	Flange	20.3	0.4	100	0.000015	0.132970	1.4	0.000002	0.020129
1959	Production Block-3 (n-butanol)	Reflux Line	Flange	11.4	0.4	100	0.000010	0.088478	0.7	0.000001	0.012340
1960	Production Block-3 (n-butanol)	Vapour Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
1961	Production Block-3 (n-butanol)	Condensor Line PB-HE-43	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
1962	Production Block-3 (n-butanol)	Condensor Line PB-HE-42	Flange	4.5	0.4	100	0.000005	0.045902	0.3	0.000001	0.006784
1963	Production Block-3 (n-butanol)	Reactor Bottom Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1964	Production Block-3 (n-butanol)	Reactor Bottom Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1965	Production Block-3 (n-butanol)	Reactor Bottom Line	Vent	4	0.4	100	0.000002	0.018164	0.2	0.000000	0.002076
1966	Production Block-3 (Toluene)	PB-3/SSR-025 Reactor	MV	4.6	0.4	100	0.000003	0.024870	0.3	0.000001	0.006784
1967	Production Block-3 (Toluene)	Vapour Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1968	Production Block-3 (Toluene)	RD Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1969	Production Block-3 (Toluene)	SRV Line	Flange	7	0.4	100	0.000007	0.062705	0.4	0.000001	0.008312
1970	Production Block-3 (Toluene)	Reflux Line	Vent	8.4	0.4	100	0.000004	0.031081	0.5	0.000000	0.004031
1971	Production Block-3 (Toluene)	Reflux Line	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067

1972	Production Block-3 (Toluene)	Reflux Line	Flange	7.2	0.4	100	0.000007	0.063965	0.5	0.000001	0.009730
1973	Production Block-3 (Toluene)	Charging line	Vent	4.2	0.4	100	0.000002	0.018817	0.2	0.000000	0.002076
1974	Production Block-3 (Toluene)	Charging line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
1975	Production Block-3 (Toluene)	Vent Line	Flange	62.9	0.4	100	0.000034	0.295467	3.6	0.000004	0.039211
1976	Production Block-3 (Toluene)	Condensor -PB-3/HE-39	Flange	4.2	0.4	100	0.000005	0.043720	0.2	0.000001	0.005096
1977	Production Block-3 (Toluene)	Condensor -PB-3/HE-40	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
1978	Production Block-3 (Toluene)	Reactor Bottom Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
1979	Production Block-3 (Toluene)	Reactor Bottom Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
1980	Production Block-3 (Toluene)	Reactor Bottom Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
1981	Production Block-3 (Acetone)	PB-3/SSR-023 Reactor	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
1982	Production Block-3 (Acetone)	Vapour Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
1983	Production Block-3 (Acetone)	RD Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
1984	Production Block-3 (Acetone)	SRV Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1985	Production Block-3 (Acetone)	Condensor Line /HE-36	Flange	4.1	0.4	100	0.000005	0.042982	0.2	0.000001	0.005096
1986	Production Block-3 (Acetone)	Reactor Bottom	Flange	2	0.4	100	0.000003	0.025893	0.1	0.000000	0.003124
1987	Production Block-3 (Acetone)	Reactor Bottom	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1988	Production Block-3 (HCL+H2O)	PB.3/GLR.022 Raector	MV	1126.9	0.4	100	0.000173	1.514776	2.3	0.000003	0.028579
1989	Production Block-3 (HCL+H2O)	Temp gauge	Flange	3.3	0.4	100	0.000004	0.036875	0.2	0.000001	0.005096
1990	Production Block-3 (HCL+H2O)	RD Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
1991	Production Block-3 (HCL+H2O)	SRV Line	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096

1992	Production Block-3 (HCL+H2O)	Vapour Line	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
1993	Production Block-3 (HCL+H2O)	Charging Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
1994	Production Block-3 (HCL+H2O)	Charging Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
1995	Production Block-3 (HCL+H2O)	Condensor HE-34	Flange	14.3	0.4	100	0.000012	0.103832	1	0.000002	0.015873
1996	Production Block-3 (HCL+H2O)	Condensor HE-34	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
1997	Production Block-3 (HCL+H2O)	Reactor Bottom Line	Vent	0.8	0.4	100	0.000001	0.005664	0	0.000000	0.000000
1998	Production Block-3 (HCL+H2O)	Reactor Bottom Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
1999	Production Block-3 (Toluene)	PB-3/SSR-021 Reactor	MV	2001.5	0.4	100	0.000266	2.326497	5.3	0.000006	0.051523
2000	Production Block-3 (Toluene)	Vapour Line	Flange	15.6	0.4	100	0.000013	0.110410	1	0.000002	0.015873
2001	Production Block-3 (Toluene)	Reactor Top dummy	Flange	26.3	0.4	100	0.000018	0.159643	1.8	0.000003	0.024037
2002	Production Block-3 (Toluene)	Reflux Line	Flange	5.4	0.4	100	0.000006	0.052207	0.3	0.000001	0.006784
2003	Production Block-3 (Toluene)	Reflux Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
2004	Production Block-3 (Toluene)	Reflux Line	Vent	9.6	0.4	100	0.000004	0.034236	0.6	0.000001	0.004599
2005	Production Block-3 (Toluene)	Charging Line	Flange	8.4	0.4	100	0.000008	0.071319	0.5	0.000001	0.009730
2006	Production Block-3 (Toluene)	Condensor Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
2007	Production Block-3 (Toluene)	Reactor Bottom Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
2008	Production Block-3 (Toluene)	Reactor Bottom Line	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
2009	Production Block-3 (Toluene)	Reactor Bottom Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
2010	Production Block-3 (Acetone)	PB-3/SRR-19 Reactor	MV	2149	0.4	100	0.000280	2.453412	10.3	0.000009	0.082362
2011	Production Block-3 (Acetone)	RD Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129

2012	Production Block-3 (Acetone)	SRV Line	Flange	13.1	0.4	100	0.000011	0.097601	0.9	0.000002	0.014735
2013	Production Block-3 (Acetone)	Reflux Line	Vent	20.9	0.4	100	0.000007	0.060132	1.4	0.000001	0.008494
2014	Production Block-3 (Acetone)	Reflux Line	Flange	19.3	0.4	100	0.000015	0.128312	1.3	0.000002	0.019103
2015	Production Block-3 (Acetone)	Reflux Line	Flange	15.6	0.4	100	0.000013	0.110410	1	0.000002	0.015873
2016	Production Block-3 (Acetone)	Vapour Line	Flange	20.1	0.4	100	0.000015	0.132044	1.4	0.000002	0.020129
2017	Production Block-3 (Acetone)	Vapour Line	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
2018	Production Block-3 (Acetone)	Condensor Line/HE-29	Flange	7.3	0.4	100	0.000007	0.064590	0.5	0.000001	0.009730
2019	Production Block-3 (Acetone)	Reactor Bottom	Vent	9.2	0.4	100	0.000004	0.033197	0.6	0.000001	0.004599
2020	Production Block-3 (Acetone)	Reactor Bottom	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
2021	Production Block-3 (Acetone)	Reactor Bottom	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
2022	Production Block-3 (Acetone)	PB-3/GLR-009 Reactor	MV	4063	0.4	100	0.000451	3.948194	13.6	0.000011	0.100217
2023	Production Block-3 (Acetone)	Vapour Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2024	Production Block-3 (Acetone)	Reflux Line	Vent	6.3	0.4	100	0.000003	0.025237	0.4	0.000000	0.003429
2025	Production Block-3 (Acetone)	Reflux Line	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
2026	Production Block-3 (Acetone)	Reflux Line	Flange	3.8	0.4	100	0.000005	0.040737	0.2	0.000001	0.005096
2027	Production Block-3 (Acetone)	Condensor Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
2028	Production Block-3 (Acetone)	RD Line	Flange	7.6	0.4	100	0.000008	0.066453	0.5	0.000001	0.009730
2029	Production Block-3 (Acetone)	Charging line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
2030	Production Block-3 (Acetone)	Reactor Bottom	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
2031	Production Block-3 (Acetone)	Reactor Bottom	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124

2032	Production Block-3 Service Area	PB.3/ST.30 (Acetone)	MV	22.9	0.4	100	0.000009	0.082487	1.6	0.000003	0.022119
2033	Production Block-3 Service Area	Charging line	Flange	15.2	0.4	100	0.000012	0.108404	1	0.000002	0.015873
2034	Production Block-3 Service Area	Level indicator	Flange	20.1	0.4	100	0.000015	0.132044	1.4	0.000002	0.020129
2035	Production Block-3 Service Area	Vent Line	Vent	19.2	0.4	100	0.000006	0.056549	1.3	0.000001	0.008050
2036	Production Block-3 Service Area	PB.3/REC-38 (IPA Tank)	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2037	Production Block-3 Service Area	Charging line	Vent	6.3	0.4	100	0.000003	0.025237	0.4	0.000000	0.003429
2038	Production Block-3 Service Area	Vent Line	Vent	45.3	0.4	100	0.000012	0.105277	3.1	0.000002	0.015103
2039	Production Block-3 Service Area	Level indicator	Flange	40.3	0.4	100	0.000025	0.215778	2.8	0.000004	0.032836
2040	Production Block-3 Service Area	PB-3/REC-32 (Acetone)	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
2041	Production Block-3 Service Area	Charging line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
2042	Production Block-3 Service Area	Level indicator	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
2043	Production Block-3 Service Area	Tank Bottom	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
2044	Production Block-3 Service Area	Vent Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
2045	Production Block-3 Service Area	PB-3/ST-13(Toluene + Ethyl amin)Tank	MV	12.6	0.4	100	0.000006	0.052792	0.8	0.000002	0.013560
2046	Production Block-3 Service Area	Charging line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
2047	Production Block-3 Service Area	Level indicator Top	Flange	8.4	0.4	100	0.000008	0.071319	0.5	0.000001	0.009730
2048	Production Block-3 Service Area	Level indicator Bottom	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
2049	Production Block-3 Service Area	Vent Line	Vent	6.4	0.4	100	0.000003	0.025527	0.4	0.000000	0.003429
2050	Production Block-3 Service Area	PB-3/ST-22 (Dis.methanol)	MV	20.4	0.4	100	0.000009	0.075663	1.4	0.000002	0.020129
2051	Production Block-3 Service Area	Charging line	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730

2052	Production Block-3 Service Area	level indicator	Flange	8.4	0.4	100	0.000008	0.071319	0.5	0.000001	0.009730
2053	Production Block-3 Service Area	Vent Line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
2054	Production Block-3 service Area	PB-3/REC-034 (Acetone Tank)	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
2055	Production Block-3 service Area	Level indicator	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
2056	Production Block-3 service Area	Charging line	Vent	15.4	0.4	100	0.000006	0.048204	1	0.000001	0.006658
2057	Production Block-3 service Area	Vent Line	Flange	16.4	0.4	100	0.000013	0.114378	1.1	0.000002	0.016978
2058	Production Block-3 service Area	PB-3/ST-20(Dis.methanol)	Vent	6.9	0.4	100	0.000003	0.026955	0.4	0.000000	0.003429
2059	Production Block-3 service Area	level indicator	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
2060	Production Block-3 service Area	Charging line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
2061	Production Block-3 service Area	PB-3/ST-19 Tank	MV	6.9	0.4	100	0.000004	0.033667	0.4	0.000001	0.008312
2062	Production Block-3 service Area	Charging line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
2063	Production Block-3 service Area	Vent Line	Flange	15.4	0.4	100	0.000012	0.109409	1	0.000002	0.015873
2064	Production Block-3 service Area	PB-3/ST-26 (mixid Solvent)	MV	5.6	0.4	100	0.000003	0.028806	0.3	0.000001	0.006784
2065	Production Block-3 service Area	level indicator	Flange	29.6	0.4	100	0.000020	0.173538	2	0.000003	0.025893
2066	Production Block-3 service Area	Charging line	Flange	35.4	0.4	100	0.000022	0.196906	2.4	0.000003	0.029450
2067	Production Block-3 service Area	Tank Top Vent	Vent	21.3	0.4	100	0.000007	0.060963	1.4	0.000001	0.008494
2068	Production Block-3 service Area	PB-3/ST-28(Acetane)	MV	14.9	0.4	100	0.000007	0.059836	1	0.000002	0.015873
2069	Production Block-3 service Area	Charging line	Flange	16.9	0.4	100	0.000013	0.116829	1.1	0.000002	0.016978
2070	Production Block-3 service Area	Level indicator	Flange	20.6	0.4	100	0.000015	0.134355	1.4	0.000002	0.020129
2071	Production Block-3 service Area	Vent Line	Vent	16.3	0.4	100	0.000006	0.050227	1.1	0.000001	0.007133

2072	Production Block-3 service Area	PB.3/ST-11 Charging line	Flange	16.4	0.4	100	0.000013	0.114378	1.1	0.000002	0.016978
2073	Production Block-3 service Area	Vent Line	Vent	20.7	0.4	100	0.000007	0.059715	1.4	0.000001	0.008494
2074	Production Block-3 service Area	level indicator	Flange	31.6	0.4	100	0.000021	0.181736	2.2	0.000003	0.027696
2075	Production Block-3 service Area	Top dummy	Flange	20.1	0.4	100	0.000015	0.132044	1.4	0.000002	0.020129
2076	Production Block-2 (H2O+ Flu process)	PB-2/GLR-014 Reactor	MV	5.2	0.4	100	0.000003	0.027255	0.3	0.000001	0.006784
2077	Production Block-2 (H2O+ Flu process)	Vapour Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2078	Production Block-2 (H2O+ Flu process)	RD Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
2079	Production Block-2 (H2O+ Flu process)	SRV Line	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
2080	Production Block-2 (H2O+ Flu process)	View glass	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
2081	Production Block-2 (H2O+ Flu process)	Temp gauge	Flange	4	0.4	100	0.000005	0.042239	0.2	0.000001	0.005096
2082	Production Block-2 (H2O+ Flu process)	Condensor /HE-20	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
2083	Production Block-2 (H2O+ Flu process)	Condensor /HE-20	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
2084	Production Block-2 (H2O+ Flu process)	Vacuum Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
2085	Production Block-2 (H2O+ Flu process)	Vacuum Line	Flange	2	0.4	100	0.000003	0.025893	0.1	0.000000	0.003124
2086	Production Block-2 (H2O+ Flu process)	Reactor Bottom Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
2087	Production Block-2 (H2O+ Flu process)	Reactor Bottom Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
2088	Production Block-2 (H2O+ Flu process)	Reactor Bottom Line	Flange	3	0.4	100	0.000004	0.034475	0.2	0.000001	0.005096
2089	Production Block-2 (H2O+ Flu process)	PB-2/GLR-004 Reactor	MV	42.3	0.4	100	0.000015	0.130457	2.9	0.000004	0.033660
2090	Production Block-2 (H2O+ Flu process)	RD Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
2091	Production Block-2 (H2O+ Flu process)	SRV Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096

2092	Production Block-2 (H2O+ Flu process)	Temp gauge	Flange	4.5	0.4	100	0.000005	0.045902	0.3	0.000001	0.006784
2093	Production Block-2 (H2O+ Flu process)	Charging Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2094	Production Block-2 (H2O+ Flu process)	Charging Line	Vent	3	0.4	100	0.000002	0.014749	0.2	0.000000	0.002076
2095	Production Block-2 (methanol)	PB-2/SSR-028 Reactor	MV	1208.6	0.4	100	0.000182	1.596081	11.7	0.000010	0.090116
2096	Production Block-2 (methanol)	Vapour Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
2097	Production Block-2 (methanol)	RD Line	Flange	15.3	0.4	100	0.000012	0.108907	1	0.000002	0.015873
2098	Production Block-2 (methanol)	SRV Line	Flange	14.8	0.4	100	0.000012	0.106382	1	0.000002	0.015873
2099	Production Block-2 (methanol)	Reflux Line	Vent	10.5	0.4	100	0.000004	0.036531	0.7	0.000001	0.005142
2100	Production Block-2 (methanol)	Reflux Line	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
2101	Production Block-2 (methanol)	Reflux Line	Flange	5.3	0.4	100	0.000006	0.051523	0.3	0.000001	0.006784
2102	Production Block-2 (methanol)	Charging Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
2103	Production Block-2 (methanol)	Charging Line	Vent	7.4	0.4	100	0.000003	0.028356	0.5	0.000000	0.004031
2104	Production Block-2 (methanol)	Light glass	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
2105	Production Block-2 (methanol)	Temp gauge	Flange	10.7	0.4	100	0.000010	0.084607	0.7	0.000001	0.012340
2106	Production Block-2 (methanol)	Condensor Line /HE-41	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
2107	Production Block-2 (methanol)	Condensor Line/HE-41	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2108	Production Block-2 (methanol)	Reactor Bottom Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
2109	Production Block-2 (methanol)	Reactor Bottom Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2110	Production Block-2 (methanol)	PB-2/GLR-023 Reactor	MV	16.1	0.4	100	0.000007	0.063400	1.1	0.000002	0.016978
2111	Production Block-2 (methanol)	Vapour Line	Flange	11.2	0.4	100	0.000010	0.087380	0.7	0.000001	0.012340

2112	Production Block-2 (methanol)	RD Line	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
2113	Production Block-2 (methanol)	SRV Line	Flange	9.4	0.4	100	0.000009	0.077213	0.6	0.000001	0.011067
2114	Production Block-2 (methanol)	Reactor Light glass	Flange	8.2	0.4	100	0.000008	0.070116	0.5	0.000001	0.009730
2115	Production Block-2 (MDC Process)	Charging line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
2116	Production Block-2 (MDC Process)	Charging line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
2117	Production Block-2 (MDC Process)	Condensor line/HE-36	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
2118	Production Block-2 (MDC Process)	Condensor line/HE-36	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
2119	Production Block-2 (MDC Process)	Reactor Bottom Line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
2120	Production Block-2 (MDC Process)	Reactor Bottom Line	Flange	4.2	0.4	100	0.000005	0.043720	0.2	0.000001	0.005096
2121	Production Block-2 (MDC Process)	Reactor Bottom Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
2122	Production Block-2 (MDC Process)	PB-2/SSR-021 Reactor	MV	19.2	0.4	100	0.000008	0.072313	1.3	0.000002	0.019103
2123	Production Block-2 (MDC Process)	Temp gauge	Flange	10.3	0.4	100	0.000009	0.082362	0.7	0.000001	0.012340
2124	Production Block-2 (MDC Process)	Vapour Line	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
2125	Production Block-2 (MDC Process)	RD line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
2126	Production Block-2 (MDC Process)	SRV Line	Flange	5.4	0.4	100	0.000006	0.052207	0.3	0.000001	0.006784
2127	Production Block-2 (MDC Process)	Reflux Line	Vent	9.2	0.4	100	0.000004	0.033197	0.6	0.000001	0.004599
2128	Production Block-2 (MDC Process)	Reflux Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
2129	Production Block-2 (MDC Process)	Reflux Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
2130	Production Block-2 (MDC Process)	View glass	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
2131	Production Block-2 (MDC Process)	Condensor HE-32	Flange	15.3	0.4	100	0.000012	0.108907	1	0.000002	0.015873

2132	Production Block-2 (MDC Process)	Condensor HE-32	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
2133	Production Block-2 (MDC Process)	Reactor Bottom Line	Vent	2.3	0.4	100	0.000001	0.012168	0.1	0.000000	0.001257
2134	Production Block-2 (MDC Process)	Reactor Bottom Line	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
2135	Production Block-2 (MDC Process)	Reactor Bottom Line	Flange	6.2	0.4	100	0.000007	0.057556	0.4	0.000001	0.008312
2136	Production Block-2 (MDC Process)	Reactor Bottom Line	Flange	4.4	0.4	100	0.000005	0.045179	0.3	0.000001	0.006784
2137	Production Block-2 Service Area	PB-2/Crystallisar-II GF	Other	31057	0.4	100	0.002661	23.310429	18.1	0.000022	0.195440
2138	Production Block-2 Service Area	PB-2/Crystallisar-IV GF	Other	2056	0.4	100	0.000466	4.078916	12.3	0.000017	0.152512
2139	Production Block-2 Service Area	PB-2/57-15 Tank (Ethyl Acetate)	Vent	12.6	0.4	100	0.000005	0.041686	0.8	0.000001	0.005664
2140	Production Block-2 Service Area	Charging line	Flange	20.6	0.4	100	0.000015	0.134355	1.4	0.000002	0.020129
2141	Production Block-2 Service Area	Level indicator	Vent	16.3	0.4	100	0.000006	0.050227	1.1	0.000001	0.007133
2142	Production Block-2 Service Area	Tank Bottom Line	Flange	2.7	0.4	100	0.000004	0.032004	0.1	0.000000	0.003124
2143	Production Block-2 Service Area	Vent Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
2144	Production Block-2 Service Area	Acetone Tank (PB-2)	MV	20.4	0.4	100	0.000009	0.075663	1.4	0.000002	0.020129
2145	Production Block-2 Service Area	Vent Line	Vent	2204	0.4	100	0.000200	1.753085	5.4	0.000003	0.022572
2146	Production Block-2 Service Area	Charging line	Flange	10.3	0.4	100	0.000009	0.082362	0.7	0.000001	0.012340
2147	Production Block-2 Service Area	Level Indicator	Vent	5.4	0.4	100	0.000003	0.022572	0.3	0.000000	0.002785
2148	Production Block-2 Service Area	PB-2/REC-38 Charging Line	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
2149	Production Block-2 Service Area	Level Indicator	Vent	10.3	0.4	100	0.000004	0.036026	0.7	0.000001	0.005142
2150	Production Block-2 Service Area	Vent Line	Flange	7.2	0.4	100	0.000007	0.063965	0.5	0.000001	0.009730
2151	Production Block-2 Service Area	Methanol Tank charging Line	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340

2152	Production Block-2 Service Area	Level Indicator	Flange	5.4	0.4	100	0.000006	0.052207	0.3	0.000001	0.006784
2153	Production Block-2 Service Area	Vent	Vent	4.6	0.4	100	0.000002	0.020098	0.3	0.000000	0.002785
2154	Production Block-2 Service Area	PB-2/ST-13 (MDC Tank) Charging	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
2155	Production Block-2 Service Area	Level indicator	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
2156	Production Block-2 Service Area	Vent Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
2157	Production Block-2 Service Area	PB-2/ST-12 Acatone Tank	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
2158	Production Block-2 Service Area	Charging line	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
2159	Production Block-2 Service Area	Level indicator Top	Flange	11.2	0.4	100	0.000010	0.087380	0.7	0.000001	0.012340
2160	Production Block-2 Service Area	Level indicator Bottom	Flange	15.3	0.4	100	0.000012	0.108907	1	0.000002	0.015873
2161	Production Block-2 Service Area	PB-2/REC-34 (Acetone_MLS)	MV	3.6	0.4	100	0.000002	0.020708	0.2	0.000001	0.005096
2162	Production Block-2 Service Area	Charging line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
2163	Production Block-2 Service Area	Level Indicator	Flange	5.2	0.4	100	0.000006	0.050835	0.3	0.000001	0.006784
2164	Production Block-2 Service Area	Vent Line	Vent	19.4	0.4	100	0.000007	0.056975	1.3	0.000001	0.008050
2165	Production Block-2 Service Area	PB-2/REC-33 (Acetone + MLS)	MV	2.9	0.4	100	0.000002	0.017620	0.2	0.000001	0.005096
2166	Production Block-2 Service Area	Charging line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2167	Production Block-2 Service Area	Level Indicator Top	Vent	6.3	0.4	100	0.000003	0.025237	0.4	0.000000	0.003429
2168	Production Block-2 Service Area	Level Indicator BOttom	Vent	7.8	0.4	100	0.000003	0.029457	0.5	0.000000	0.004031
2169	Production Block-2 Service Area	Vent Line	Vent	10.2	0.4	100	0.000004	0.035772	0.7	0.000001	0.005142
2170	Production Block-2 Service Area	PB-2/ST-04 (CycloHexan) Tank	Vent	13.2	0.4	100	0.000005	0.043113	0.9	0.000001	0.006169
2171	Production Block-2 Service Area	Tank Bottom Line	Flange	7.5	0.4	100	0.000008	0.065835	0.5	0.000001	0.009730

2172	Production Block-2 Service Area	Level Indicator	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
2173	Production Block-2 Service Area	PB-2/ST-08 (Ethyl Acetate)	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
2174	Production Block-2 Service Area	Vent Line	Vent	7.6	0.4	100	0.000003	0.028909	0.5	0.000000	0.004031
2175	Production Block-2 Service Area	Level indicator	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
2176	Production Block-2 Service Area	Charging Line	Flange	1.5	0.4	100	0.000002	0.021134	0.1	0.000000	0.003124
2177	Production Block-1 (Acetone)	PB-1/SSR-30/Reactor	MV	40.2	0.4	100	0.000014	0.125588	2.8	0.000004	0.032836
2178	Production Block-1 (Acetone)	Top dummy-1	Flange	16.3	0.4	100	0.000013	0.113885	1.1	0.000002	0.016978
2179	Production Block-1 (Acetone)	Top Dummy-2	Flange	20.3	0.4	100	0.000015	0.132970	1.4	0.000002	0.020129
2180	Production Block-1 (Acetone)	Vapour Line	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
2181	Production Block-1 (Acetone)	RD Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
2182	Production Block-1 (Acetone)	SRV Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
2183	Production Block-1 (Acetone)	Condensor Line/HE-47	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2184	Production Block-1 (Acetone)	Condensor Line/HE-47	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
2185	Production Block-1 (Acetone)	Reflux Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
2186	Production Block-1 (Acetone)	Reflux Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
2187	Production Block-1 (Acetone)	Reactor Bottom Line	Vent	2.1	0.4	100	0.000001	0.011392	0.1	0.000000	0.001257
2188	Production Block-1 (Acetone)	Reactor Bottom Line	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
2189	Production Block-1 (Acetone)	Reactor Bottom Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
2190	Production Block-1 (Toluene)	PB1/SSR-025-Reactor	MV	9.4	0.4	100	0.000005	0.042415	0.6	0.000001	0.011067
2191	Production Block-1 (Toluene)	RD Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124

2192	Production Block-1 (Toluene)	SRV Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
2193	Production Block-1 (Toluene)	Top dummy	Flange	2	0.4	100	0.000003	0.025893	0.1	0.000000	0.003124
2194	Production Block-1 (Toluene)	Reflux Line	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
2195	Production Block-1 (Toluene)	Reflux Line	Flange	2.3	0.4	100	0.000003	0.028579	0.1	0.000000	0.003124
2196	Production Block-1 (Toluene)	Reflux Line	Flange	4.4	0.4	100	0.000005	0.045179	0.3	0.000001	0.006784
2197	Production Block-1 (Toluene)	Vapour Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
2198	Production Block-1 (Toluene)	Temp gauge	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
2199	Production Block-1 (Toluene)	View glass	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
2200	Production Block-1 (Toluene)	Condensor Line PB1/HE-21	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2201	Production Block-1 (Toluene)	Condensor Line PB1/HE-22	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
2202	Production Block-1 (Toluene)	Reactor Bottom Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
2203	Production Block-1 (Toluene)	Reactor Bottom Line	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
2204	Production Block-1 (Toluene)	Reactor Bottom Line	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
2205	Production Block -1 Service	PB-1 GLR-022/Reactor	MV	20000	0.4	100	0.001482	12.985520	2.9	0.000004	0.033660
2206	Production Block -1 Service	View Line	Flange	15.3	0.4	100	0.000012	0.108907	1	0.000002	0.015873
2207	Production Block -1 Service	RD Line	Flange	40.3	0.4	100	0.000025	0.215778	2.8	0.000004	0.032836
2208	Production Block -1 Service	SRV Line	Flange	19.6	0.4	100	0.000015	0.129716	1.3	0.000002	0.019103
2209	Production Block-1 (IPA)	PB-1/SSR-021 Reactor	MV	5000.6	0.4	100	0.000526	4.610622	11.3	0.000010	0.087930
2210	Production Block-1 (IPA)	Vapour Line	Flange	20.1	0.4	100	0.000015	0.132044	1.4	0.000002	0.020129
2211	Production Block-1 (IPA)	Reflux Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
2212	Production Block-1 (IPA)	Reflux Line	Flange	21.4	0.4	100	0.000016	0.138018	1.4	0.000002	0.020129
2213	Production Block-1 (IPA)	Reflux Line	Flange	20.1	0.4	100	0.000015	0.132044	1.4	0.000002	0.020129
2214	Production Block-1 (IPA)	Condensor line/HE-40	Flange	39.2	0.4	100	0.000024	0.211603	2.7	0.000004	0.032004

2215	Production Block-1 (IPA)	Condensor line/HE-41	Flange	28.3	0.4	100	0.000019	0.168122	1.9	0.000003	0.024973
2216	Production Block-1 (IPA)	Reactor Bottom Line	Flange	15.3	0.4	100	0.000012	0.108907	1	0.000002	0.015873
2217	Production Block-1 (IPA)	Reactor Bottom Line	Vent	16.2	0.4	100	0.000006	0.050004	1.1	0.000001	0.007133
2218	Production Block-1 (IPA)	Reactor Bottom Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
2219	Production Block-1 (Toluene)	PB-1/SSR-019 Reactor	MV	6.1	0.4	100	0.000004	0.030707	0.4	0.000001	0.008312
2220	Production Block-1 (Toluene)	View glass	Flange	5.2	0.4	100	0.000006	0.050835	0.3	0.000001	0.006784
2221	Production Block-1 (Toluene)	Vapour Line	Flange	4.2	0.4	100	0.000005	0.043720	0.2	0.000001	0.005096
2222	Production Block-1 (Toluene)	Vapour Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
2223	Production Block-1 (Toluene)	Temp gauge	Flange	5.9	0.4	100	0.000006	0.055576	0.4	0.000001	0.008312
2224	Production Block-1 (Toluene)	RD Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2225	Production Block-1 (Toluene)	SRV Line	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
2226	Production Block-1 (Toluene)	Reflux Line	Vent	7.6	0.4	100	0.000003	0.028909	0.5	0.000000	0.004031
2227	Production Block-1 (Toluene)	Reflux Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
2228	Production Block-1 (Toluene)	Reflux Line	Flange	11.4	0.4	100	0.000010	0.088478	0.7	0.000001	0.012340
2229	Production Block-1 (Toluene)	Condensor Line HE-19	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
2230	Production Block-1 (Toluene)	Condensor Line HE-18	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
2231	Production Block-1 (Toluene)	Reactor Bottom Line	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
2232	Production Block-1 (Toluene)	Reactor Bottom Line	Flange	2.2	0.4	100	0.000003	0.027696	0.1	0.000000	0.003124
2233	Production Block-1 (Toluene)	Reactor Bottom Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
2234	Production Block-1 (methanol)	PB-1/SSR-001 Reactor	MV	2.9	0.4	100	0.000002	0.017620	0.2	0.000001	0.005096
2235	Production Block-1 (methanol)	Vapour Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
2236	Production Block-1 (methanol)	Charging line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096

2237	Production Block-1 (methanol)	Charging line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
2238	Production Block-1 (methanol)	View glass	Flange	2.3	0.4	100	0.000003	0.028579	0.1	0.000000	0.003124
2239	Production Block-1 (methanol)	Reflux Line	Vent	2.3	0.4	100	0.000001	0.012168	0.1	0.000000	0.001257
2240	Production Block-1 (methanol)	Reflux Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
2241	Production Block-1 (methanol)	Reflux Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2242	Production Block-1 (methanol)	Condensor Line HE-01	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
2243	Production Block-1 (methanol)	Condensor Line HE-02	Flange	2.3	0.4	100	0.000003	0.028579	0.1	0.000000	0.003124
2244	Production Block-1 (methanol)	Bottom Line Of Reactor	Vent	6.6	0.4	100	0.000003	0.026102	0.4	0.000000	0.003429
2245	Production Block-1 (methanol)	Bottom Line Of Reactor	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
2246	Production Block-1 (methanol)	Bottom Line Of Reactor	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
2247	Production Block-1 (methanol)	PB-1/GLR-016 Reactor	Vent	2.2	0.4	100	0.000001	0.011782	0.1	0.000000	0.001257
2248	Production Block-1 (methanol)	Top Dummy	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
2249	Production Block-1 (methanol)	Charging line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
2250	Production Block-1 (methanol)	Charging line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
2251	Production Block-1 (methanol)	Reflux Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
2252	Production Block-1 (methanol)	Reflux Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
2253	Production Block-1 (methanol)	Reflux Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2254	Production Block-1 (methanol)	Vapour Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
2255	Production Block-1 (methanol)	Condensor Line HE-34	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
2256	Production Block-1 (methanol)	Condensor Line HE-34	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096

2257	Production Block-1 (methanol)	RD Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
2258	Production Block-1 (methanol)	SRV Line	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
2259	Production Block-1 (methanol)	Reactor Bottom	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
2260	Production Block-1 (methanol)	Reactor Bottom	Flange	6.2	0.4	100	0.000007	0.057556	0.4	0.000001	0.008312
2261	PB-1 Service Area	PB-1 (IPA Tank)	MV	3.4	0.4	100	0.000002	0.019843	0.2	0.000001	0.005096
2262	PB-1 Service Area	Level Indicator Top	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2263	PB-1 Service Area	Level Indicator Bottom	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
2264	PB-1 Service Area	Charging line	Flange	10.6	0.4	100	0.000010	0.084048	0.7	0.000001	0.012340
2265	PB-1 Service Area	Vent	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
2266	PB-1 Service Area	PB-1 (Di-methyl chloride)	MV	6.3	0.4	100	0.000004	0.031456	0.4	0.000001	0.008312
2267	PB-1 Service Area	Charging Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2268	PB-1 Service Area	Level Indicator Top	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
2269	PB-1 Service Area	Level Indicator Bottom	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
2270	PB-1 Service Area	Vent Line	Vent	17.4	0.4	100	0.000006	0.052659	0.5	0.000000	0.004031
2271	PB-1 Reactor Area	PB-1/SSR-034 reactor	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
2272	PB-1 Reactor Area	Charging Line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
2273	PB-1 Reactor Area	RD Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
2274	PB-1 Reactor Area	SRV Line	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
2275	PB-1 Reactor Area	Reflux Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
2276	PB-1 Reactor Area	Reflux Line	Flange	9.4	0.4	100	0.000009	0.077213	0.6	0.000001	0.011067
2277	PB-1 Reactor Area	Reflux Line	Flange	5.8	0.4	100	0.000006	0.054909	0.4	0.000001	0.008312
2278	PB-1 Reactor Area	Vapour Line	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
2279	PB-1 Reactor Area	Vapour Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
2280	PB-1 Reactor Area	Condensor PR-1/HE-29	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
2281	PB-1 Reactor Area	Condensor PR-1/HE-29	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
2282	PB-1 Reactor Area	Reactor Bottom	Vent	6.4	0.4	100	0.000003	0.025527	0.4	0.000000	0.003429
2283	PB-1 Reactor Area	Raector Bottom	Flange	7.1	0.4	100	0.000007	0.063336	0.4	0.000001	0.008312
2284	PB-1 Reactor Area	Reactor Bottom	Flange	4.5	0.4	100	0.000005	0.045902	0.3	0.000001	0.006784
2285	Production Block-1 (Acetone)	PB-1/SSR-038 Reactor	MV	4.6	0.4	100	0.000003	0.024870	0.3	0.000001	0.006784
2286	PB-1 Reactor Area	Charging line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
2287	PB-1 Reactor Area	Vapour Line	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124

2288	PB-1 Reactor Area	Reflux Line	Vent	6.4	0.4	100	0.000003	0.025527	0.4	0.000000	0.003429
2289	PB-1 Reactor Area	Reflux Line	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
2290	PB-1 Reactor Area	Reflux Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
2291	PB-1 Reactor Area	RD Line	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
2292	PB-1 Reactor Area	SRV Line	Flange	6	0.4	100	0.000006	0.056239	0.4	0.000001	0.008312
2293	PB-1 Reactor Area	Reactor Bottom Line	Vent	2	0.4	100	0.000001	0.010997	0.1	0.000000	0.001257
2294	PB-1 Reactor Area	Reactor Bottom Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
2295	PB-1 Reactor Area	Reactor Bottom Line	Vent	2.2	0.4	100	0.000001	0.011782	0.1	0.000000	0.001257
2296	PB-1 Reactor Area	Reactor Bottom Line	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
								245.37			**18.82**

The Sum of Total VOC Emissions Before Repair 245.3721 kgs/year
The Sum of Total VOC Emissions After Repair 18.82266 kgs/year
The Percentage Reduction of TVOC by LDAR Study is 92.3%

92.32893335

GLENS INNOVATION LABS PVT LTD, CHENNAI

REPORT ON LDAR STUDY OF HETERO LABS LTD., Unit - III LIMITED- VISHAKHAPATNAM, ANDHRA PRADESH

Solvent Recovery System

S.No	Location/Samples	Sample Name	Type	Screening Value Before Repair (ppm)	RF	% of VOC	Before Repair Kg/hr	Before Repair Kg/year	Screening Value After Repair (ppm)	After Repair Kg/hr	After Repair Kg/year
1	Solvent Recovery System	SRS/SS-005 Raector	MV	18006.4	0.4	100	0.001371	12.005876	3.3	0.000004	0.036875
2	Solvent Recovery System	Charging line	Vent	26.8	0.4	100	0.000008	0.071993	1.8	0.000001	0.010189
3	Solvent Recovery System	Charging line	Flange	39.4	0.4	100	0.000024	0.212365	2.7	0.000004	0.032004
4	Solvent Recovery System	RD Line	Flange	45.8	0.4	100	0.000027	0.236175	3.2	0.000004	0.036083
5	Solvent Recovery System	SRV Line	Flange	19.4	0.4	100	0.000015	0.128781	1.3	0.000002	0.019103
6	Solvent Recovery System	View Glass	Flange	38.4	0.4	100	0.000024	0.208545	2.6	0.000004	0.031163
7	Solvent Recovery System	Temp gauge	Vent	20.4	0.4	100	0.000007	0.059087	1.4	0.000001	0.008494
8	Solvent Recovery System	Reactor Bottom Line	Vent	49.4	0.4	100	0.000013	0.112092	3.4	0.000002	0.016148
9	Solvent Recovery System	Reactor Bottom Line	Flange	58.4	0.4	100	0.000032	0.280382	4	0.000005	0.042239
10	Solvent Recovery System	Reactor Bottom Line	Vent	40.6	0.4	100	0.000011	0.097250	2.8	0.000002	0.014030
11	Solvent Recovery System	SRS/SSR-003 Toluene	MV	10.5	0.4	100	0.000005	0.046070	0.7	0.000001	0.012340
12	Solvent Recovery System	Charging line	Vent	39.4	0.4	100	0.000011	0.095161	2.7	0.000002	0.013665
13	Solvent Recovery System	Charging line	Flange	28.4	0.4	100	0.000019	0.168541	1.9	0.000003	0.024973
14	Solvent Recovery System	Vapour Line	Flange	15.2	0.4	100	0.000012	0.108404	1	0.000002	0.015873
15	Solvent Recovery System	RD Line	Flange	11.9	0.4	100	0.000010	0.091201	0.8	0.000002	0.013560
16	Solvent Recovery System	SRV Line	Flange	22.6	0.4	100	0.000016	0.143438	1.5	0.000002	0.021134
17	Solvent Recovery System	SRS/condensor HE-38	Flange	11.4	0.4	100	0.000010	0.088478	0.7	0.000001	0.012340
18	Solvent Recovery System	SRS/condensor HE-38	Flange	14.8	0.4	100	0.000012	0.106382	1	0.000002	0.015873
19	Solvent Recovery System	Reactor Bootom Line	Vent	30.4	0.4	100	0.000009	0.078871	2.1	0.000001	0.011392
20	Solvent Recovery System	Reactor Bottom Line	Flange	19.3	0.4	100	0.000015	0.128312	1.3	0.000002	0.019103
21	Solvent Recovery System	Reactor Bottom Line	Vent	15.2	0.4	100	0.000005	0.047750	1	0.000001	0.006658
22	Solvent Recovery System	Reactor Bottom Line	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
23	Solvent Recovery System	SRS/ST-06 (Acetone Tank) methanol	MV	20.3	0.4	100	0.000009	0.075386	1.4	0.000002	0.020129
24	Solvent Recovery System	Charging line	Flange	19.4	0.4	100	0.000015	0.128781	1.3	0.000002	0.019103

25	Solvent Recovery System	Level indicator	Vent	5.3	0.4	100	0.000003	0.022269	0.3	0.000000	0.002785
26	Solvent Recovery System	Level indicator	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
27	Solvent Recovery System	Vent Line	Vent	1500.6	0.4	100	0.000152	1.327191	8.2	0.000003	0.030544
28	Solvent Recovery System	SRS/ST-07 (TEA+H2O)	MV	30.4	0.4	100	0.000012	0.101929	2.1	0.000003	0.026801
29	Solvent Recovery System	Charging line	Vent	49.5	0.4	100	0.000013	0.112257	3.4	0.000002	0.016148
30	Solvent Recovery System	Level indicator	Flange	36.4	0.4	100	0.000023	0.200817	2.5	0.000003	0.030312
31	Solvent Recovery System	Vent line	Vent	5098.4	0.4	100	0.000367	3.217361	3.9	0.000002	0.017834
32	Solvent Recovery System	SRS/ST-08 (Ethyl Acetate)	MV	28.4	0.4	100	0.000011	0.096877	1.9	0.000003	0.024973
33	Solvent Recovery System	Charging line	Vent	30.4	0.4	100	0.000009	0.078871	2.1	0.000001	0.011392
34	Solvent Recovery System	Vacuum Line	Vent	18.5	0.4	100	0.000006	0.055049	1.2	0.000001	0.007597
35	Solvent Recovery System	Side Dummy	Flange	19.2	0.4	100	0.000015	0.127842	1.3	0.000002	0.019103
36	Solvent Recovery System	SRS/ST-09 (methanol+Toluene)	MV	19.5	0.4	100	0.000008	0.073155	1.3	0.000002	0.019103
37	Solvent Recovery System	Charging line	Vent	29.2	0.4	100	0.000009	0.076605	2	0.000001	0.010997
38	Solvent Recovery System	Level indicator	Vent	40.3	0.4	100	0.000011	0.096729	2.8	0.000002	0.014030
39	Solvent Recovery System	Tank Vent	Vent	2098.8	0.4	100	0.000193	1.692095	7.5	0.000003	0.028633
40	Solvent Recovery System	SRS/ST-	MV	39.4	0.4	100	0.000014	0.123716	2.7	0.000004	0.032004
41	Solvent Recovery System	Charging line	Flange	16.9	0.4	100	0.000013	0.116829	1.1	0.000002	0.016978
42	Solvent Recovery System	level indicator	Vent	20.4	0.4	100	0.000007	0.059087	1.4	0.000001	0.008494
43	Solvent Recovery System	Vent Line	Vent	15.3	0.4	100	0.000005	0.047977	1	0.000001	0.006658
44	Solvent Recovery System	Vacuum Line	Vent	10.8	0.4	100	0.000004	0.037283	0.7	0.000001	0.005142
45	SRS Phase-1	SRS/ST-11	MV	10.4	0.4	100	0.000005	0.045742	0.7	0.000001	0.012340
46	SRS Phase-1	Charging line	Flange	16.8	0.4	100	0.000013	0.116340	1.1	0.000002	0.016978
47	SRS Phase-1	Charging line	Vent	40.3	0.4	100	0.000011	0.096729	2.8	0.000002	0.014030
48	SRS Phase-1	Vent Line	Vent	69.4	0.4	100	0.000016	0.143371	4.8	0.000002	0.020727
49	SRS Phase-1	SRS/ST-10 (Ethyl Acetate Tank)	MV	36.4	0.4	100	0.000013	0.116609	2.5	0.000003	0.030312
50	SRS Phase-1	Charging	Flange	40.8	0.4	100	0.000025	0.217665	2.8	0.000004	0.032836
51	SRS Phase-1	Vent Line	Vent	50.1	0.4	100	0.000013	0.113240	3.5	0.000002	0.016490
52	SRS Phase-1	SRS/ST-13 (iye Sol)	MV	41.8	0.4	100	0.000015	0.129303	2.9	0.000004	0.033660
53	SRS Phase-1	Charging Line	Vent	16.2	0.4	100	0.000006	0.050004	1.1	0.000001	0.007133
54	SRS Phase-1	Vent Line	Vent	10.3	0.4	100	0.000004	0.036026	0.7	0.000001	0.005142
55	SRS Phase-1	SRS/phase-I (SRS/CLM-19)	MV	20.1	0.4	100	0.000009	0.074830	1.4	0.000002	0.020129
56	SRS Phase-1	(SRS/CLM-10)	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
57	SRS Phase-1	SRS/CLM-09	Flange	7.2	0.4	100	0.000007	0.063965	0.5	0.000001	0.009730

58	SRS Phase-1	SRS/CLM-08	Flange	5.3	0.4	100	0.000006	0.051523	0.3	0.000001	0.006784
59	SRS Phase-1	SRS/CLM-07	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
60	SRS Phase-1	SRS Reflux Line	Vent	10.9	0.4	100	0.000004	0.037533	0.7	0.000001	0.005142
61	SRS Phase-1	SRS/CLM-04	Flange	1110.4	0.4	100	0.000256	2.242698	3.7	0.000005	0.039977
62	SRS Phase-1	Reflux Line	Vent	200.4	0.4	100	0.000035	0.308952	2.7	0.000002	0.013665
63	SRS Phase-1	SRS/CLM-03	Flange	158.9	0.4	100	0.000065	0.568402	4.2	0.000005	0.043720
64	SRS Phase-1	Reflux Line	Vent	90.4	0.4	100	0.000020	0.173614	6.3	0.000003	0.025237
65	SRS Phase-1	SRS/CLM-02	Flange	30.2	0.4	100	0.000020	0.176014	2.1	0.000003	0.026801
66	SRS Phase-1	Reflux Line	Vent	10.9	0.4	100	0.000004	0.037533	0.7	0.000001	0.005142
67	SRS Phase-1	SRS/REC-35 (TEA)	Vent	1308.4	0.4	100	0.000137	1.201816	3.1	0.000002	0.015103
68	SRS Phase-1	Tank Charging Line	Vent	78.5	0.4	100	0.000018	0.156748	2.9	0.000002	0.014391
69	SRS Phase-1	Level indicator	Vent	10.5	0.4	100	0.000004	0.036531	0.7	0.000001	0.005142
70	SRS Phase-1	Level indicator	Flange	9.4	0.4	100	0.000009	0.077213	0.6	0.000001	0.011067
71	SRS Phase-1	SRS/REC-34 (TEA Tank)	Vent	10.3	0.4	100	0.000004	0.036026	0.7	0.000001	0.005142
72	SRS Phase-1	Unloading Line	Flange	110.4	0.4	100	0.000050	0.439540	2.2	0.000003	0.027696
73	SRS Phase-1	SRS/REC-05 (MTBE)	Vent	216.4	0.4	100	0.000037	0.326621	3.5	0.000002	0.016490
74	SRS Phase-1	Charging Line	Flange	20.6	0.4	100	0.000015	0.134355	1.4	0.000002	0.020129
75	SRS Phase-1	Level indicator	Vent	19.5	0.4	100	0.000007	0.057188	1.3	0.000001	0.008050
76	SRS Phase-1	SRS/REC-06 (MTBE)	Vent	109.4	0.4	100	0.000023	0.199327	2.3	0.000001	0.012168
77	SRS Phase-1	Charging Line	Flange	10.3	0.4	100	0.000009	0.082362	0.7	0.000001	0.012340
78	SRS Phase-1	Level indicator	Vent	40.4	0.4	100	0.000011	0.096903	2.8	0.000002	0.014030
79	SRS Phase-1	SRS/REC-09 (MTBE)	Vent	95.8	0.4	100	0.000021	0.181062	4.5	0.000002	0.019781
80	SRS Phase-1	Unloading Line	Flange	81.4	0.4	100	0.000040	0.354457	5.6	0.000006	0.053565
81	SRS Phase-1	Vent Line	Vent	90.4	0.4	100	0.000020	0.173614	4.1	0.000002	0.018492
82	SRS Phase-1	SRS/REC-10 (MTBE)	Vent	1000.5	0.4	100	0.000113	0.989635	9.1	0.000004	0.032935
83	SRS Phase-1	Unloading Point	Vent	120.4	0.4	100	0.000024	0.213644	3.1	0.000002	0.015103
84	SRS Phase-1	SRS/REC-11 (MTBE)	Vent	90.3	0.4	100	0.000020	0.173474	6.3	0.000003	0.025237
85	SRS Phase-1	Charging Line	Flange	30.6	0.4	100	0.000020	0.177657	2.1	0.000003	0.026801
86	SRS Phase-1	SRS/REC-14 Charging Line	Vent	10.5	0.4	100	0.000004	0.036531	0.7	0.000001	0.005142
87	SRS Phase-1	Level Indicator	Flange	90.4	0.4	100	0.000044	0.381696	6.3	0.000007	0.058210
88	SRS Phase-1	Vent Line	Vent	10.3	0.4	100	0.000004	0.036026	0.7	0.000001	0.005142
89	SRS Phase-1	SRS-2nd Floor/CLM-10	Flange	40.2	0.4	100	0.000025	0.215400	2.8	0.000004	0.032836
90	SRS Phase-1	View Glass	Flange	10.3	0.4	100	0.000009	0.082362	0.7	0.000001	0.012340

91	SRS Phase-1	SRS-2nd Floor/CLM-09	Flange	14.3	0.4	100	0.000012	0.103832	1	0.000002	0.015873
92	SRS Phase-1	SRS-2nd Floor/CLM-08	Flange	9.4	0.4	100	0.000009	0.077213	0.6	0.000001	0.011067
93	SRS Phase-1	SRS-2nd Floor/CLM-08	Vent	10.5	0.4	100	0.000004	0.036531	0.7	0.000001	0.005142
94	SRS Phase-1	SRS-2nd Floor/CLM-07	Flange	15.3	0.4	100	0.000012	0.108907	1	0.000002	0.015873
95	SRS Phase-1	SRS-2nd Floor/CLM-07	Vent	20.5	0.4	100	0.000007	0.059296	1.4	0.000001	0.008494
96	SRS Phase-1	SRS-2nd Floor/CLM-04	Flange	10.3	0.4	100	0.000009	0.082362	0.7	0.000001	0.012340
97	SRS Phase-1	SRS-2nd Floor/CLM-03	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
98	SRS Phase-1	SRS-2nd Floor/CLM-02	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
99	SRS Phase-1	SRS-2nd Floor/CLM-01	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
100	SRS Phase-1	SRS/REC-07 (Ethyl Acetate)	Vent	7.8	0.4	100	0.000003	0.029457	0.5	0.000000	0.004031
101	SRS Phase-1	level indicator	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
102	SRS Phase-1	Vent	Vent	1000.4	0.4	100	0.000113	0.989563	3.1	0.000002	0.015103
103	SRS Phase-1	SRS(SRS-03 (methanol+Acetone)	Vent	500.4	0.4	100	0.000068	0.599271	2.3	0.000001	0.012168
104	SRS Phase-1	Charging Line	Flange	40.3	0.4	100	0.000025	0.215778	2.8	0.000004	0.032836
105	SRS Phase-1	SRS(REC-04) (methanol)	Vent	10.9	0.4	100	0.000004	0.037533	0.7	0.000001	0.005142
106	SRS Phase-1	SRS(REC-04) (methanol)	Flange	190.4	0.4	100	0.000074	0.645814	4.1	0.000005	0.042982
107	SRS Phase-1	SRS (REC-01) MDC Tank	Vent	4.7	0.4	100	0.000002	0.020413	0.3	0.000000	0.002785
108	SRS Phase-1	SRS (REC-01) MDC Tank	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
109	SRS Phase-1	Level Indicator	Vent	7.2	0.4	100	0.000003	0.027799	0.5	0.000000	0.004031
110	SRS Phase-1	Vent	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
111	SRS Phase-1	SRS-3rd Floor/CLM-10	Flange	10.8	0.4	100	0.000010	0.085165	0.7	0.000001	0.012340
112	SRS Phase-1	SRS-3rd Floor/CLM-9	Flange	11.5	0.4	100	0.000010	0.089026	0.8	0.000002	0.013560
113	SRS Phase-1	SRS-3rd Floor/CLM-8	Flange	11.2	0.4	100	0.000010	0.087380	0.7	0.000001	0.012340
114	SRS Phase-1	SRS-3rd Floor/CLM-7	Flange	15.3	0.4	100	0.000012	0.108907	1	0.000002	0.015873
115	SRS Phase-1	SRS-3rd Floor/CLM-6	Flange	7.4	0.4	100	0.000007	0.065214	0.5	0.000001	0.009730
116	SRS Phase-1	SRS-3rd Floor/CLM-5	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
117	SRS Phase-1	SRS-3rd Floor/CLM-4	Flange	4.2	0.4	100	0.000005	0.043720	0.2	0.000001	0.005096
118	SRS Phase-1	SRS-3rd Floor/CLM-3	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
119	SRS Phase-1	SRS-3rd Floor/CLM-2	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
120	SRS Phase-1	SRS-3rd Floor/CLM-1	Flange	10.5	0.4	100	0.000010	0.083488	0.7	0.000001	0.012340
121	SRS Phase-1	SRS/CLM-1 Condensor /HE-01	Flange	5.1	0.4	100	0.000006	0.050143	0.3	0.000001	0.006784
122	SRS Phase-1	SRS/CLM-1 Condensor /HE-02	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
123	SRS Phase-1	SRS/CLM-10 Condensor /HE-15	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000

124	SRS Phase-1	SRS/CLM-10 Condensor /HE-16	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
125	SRS Phase-1	SRS/CLM-2 Condensor/HE Box	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
126	SRS Phase-1	SRS/CLM-9 Condensor/HE-13	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
127	SRS Phase-1	SRS/CLM-9 Condensor/HE-14	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
128	SRS Phase-1	SRS/CLM-8 Condensor/HE-12	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
129	SRS Phase-1	SRS/CLM-8 Condensor/HE-11	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
130	SRS Phase-1	SRS/CLM-20 Condensor/HE-10	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
131	SRS Phase-1	SRS/CLM-20 Condensor/HE-09	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
132	SRS Phase-1 Condensor Area	SRS/CLM-19/Condensor/Primary	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
133	SRS Phase-1 Condensor Area	SRS/CLM-19/Condensor/Secondary	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
134	SRS Phase-1 Condensor Area	SRS/CLM-03/Condensor/Primary	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
135	SRS Phase-1 Condensor Area	SRS/CLM-03/Condensor/Secondary	Flange	0.1	0.4	100	0.000000	0.003124	0	0.000000	0.000000
136	SRS Phase-1 Condensor Area	SRS/CLM-04/Condensor/Primary	Flange	1.1	0.4	100	0.000002	0.016978	0	0.000000	0.000000
137	SRS Phase-1 Condensor Area	SRS/CLM-04/Condensor/Secondary	Flange	0.7	0.4	100	0.000001	0.012340	0	0.000000	0.000000
138	SRS Phase-1 Condensor Area	SRS/CLM-07 /condensor/Primary	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
139	SRS Phase-1 Condensor Area	SRS/CLM-07/Condensor/Secondary	Flange	0.1	0.4	100	0.000000	0.003124	0	0.000000	0.000000
140	SRS Phase-1 Condensor Area	SRS/KET-04 Reactor	MV	7.6	0.4	100	0.000004	0.036187	0.5	0.000001	0.009730
141	SRS Phase-1 Condensor Area	Charging Line	Vent	6.9	0.4	100	0.000003	0.026955	0.4	0.000000	0.003429
142	SRS Phase-1 Condensor Area	Charging Line	Flange	19.2	0.4	100	0.000015	0.127842	1.3	0.000002	0.019103
143	SRS Phase-1 Condensor Area	RD Line	Flange	10.3	0.4	100	0.000009	0.082362	0.7	0.000001	0.012340
144	SRS Phase-1 Condensor Area	SRV Line	Flange	7.8	0.4	100	0.000008	0.067683	0.5	0.000001	0.009730
145	SRS Phase-1 Condensor Area	Vent Line	Flange	90.4	0.4	100	0.000044	0.381696	3.3	0.000004	0.036875
146	SRS Phase-1 Condensor Area	View Glass	Flange	110.5	0.4	100	0.000050	0.439821	7.7	0.000008	0.067069
147	SRS Phase-1 Condensor Area	Temp gauge	Flange	10.4	0.4	100	0.000009	0.082925	0.7	0.000001	0.012340
148	SRS Phase-1 Condensor Area	Vacuum Line	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
149	SRS Phase-1 Condensor Area	Reactor Bottom Line	Flange	10.3	0.4	100	0.000009	0.082362	0.7	0.000001	0.012340
150	SRS Phase-1 Condensor Area	Reactor Bottom Line	Vent	11.2	0.4	100	0.000004	0.038278	0.7	0.000001	0.005142
151	SRS Phase-1 Condensor Area	Reactor Bottom Line	Vent	18.4	0.4	100	0.000006	0.054833	1.2	0.000001	0.007597
152	SRS Phase-1 Condensor Area	Reactor Bottom Line	Flange	7.3	0.4	100	0.000007	0.064590	0.5	0.000001	0.009730
153	SRS Phase-2	SRS-1st Floor/CLM-15	Flange	2.4	0.4	100	0.000003	0.029450	0.1	0.000000	0.003124
154	SRS Phase-2	SRS-1st Floor/CLM-15 Collection	Vent	110.4	0.4	100	0.000023	0.200645	2.4	0.000001	0.012548

155	SRS Phase-2	SRS/1st Floor/CLM-16	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
156	SRS Phase-2	SRS/1st Floor Reflux Line	Flange	16.3	0.4	100	0.000013	0.113885	1.1	0.000002	0.016978
157	SRS Phase-2	SRS-1st Floor/CLM-21	Flange	10.2	0.4	100	0.000009	0.081796	0.7	0.000001	0.012340
158	SRS Phase-2	SRS-1st Floor Reflux Line	Vent	169.4	0.4	100	0.000031	0.273559	3.5	0.000002	0.016490
159	SRS Phase-2	SRS-1st Floor /CLM-17	Vent	10	0.4	100	0.000004	0.035263	0.6	0.000001	0.004599
160	SRS Phase-2	SRS-1st Floor /CLM Collection	Vent	210.8	0.4	100	0.000037	0.320479	4.2	0.000002	0.018817
161	SRS Phase-2	SRS-1st Floor /CLM-14	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
162	SRS Phase-2	SRS-1st Floor /CLM Reflux	Vent	20.4	0.4	100	0.000007	0.059087	1.4	0.000001	0.008494
163	SRS Phase-2	SRS-1st Floor /CLM-13	Flange	3.4	0.4	100	0.000004	0.037661	0.2	0.000001	0.005096
164	SRS Phase-2	SRS-1st Floor /CLM Reflux	Vent	209.6	0.4	100	0.000036	0.319157	2.1	0.000001	0.011392
165	SRS Phase-2	SRS-1st Floor /CLM-12	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
166	SRS Phase-2	SRS-1st Floor /CLM Reflux Line	Vent	119.6	0.4	100	0.000024	0.212616	2.4	0.000001	0.012548
167	SRS Phase-2	SRS/Rec-70 Tank Charging line	Flange	110.5	0.4	100	0.000050	0.439821	7.7	0.000008	0.067069
168	SRS Phase-2	Level indicator	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
169	SRS Phase-2	Tank Top Dummy	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
170	SRS Phase-2	SRS/REC-71 Tank Unloading	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
171	SRS Phase-2	Level Indicator	Vent	2.2	0.4	100	0.000001	0.011782	0.1	0.000000	0.001257
172	SRS Phase-2	Tank Top Dummy	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
173	SRS Phase-2	Vent Line	Vent	1206	0.4	100	0.000129	1.132956	3.7	0.000002	0.017167
174	SRS Phase-2	SRS-2nd Floor/CLM-014	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
175	SRS Phase-2	SRS-2nd Floor/CLM-013	Flange	1.4	0.4	100	0.000002	0.020129	0	0.000000	0.000000
176	SRS Phase-2	SRS-2nd Floor/CLM-012	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
177	SRS Phase-2	SRS-2nd Floor/CLM-017	Flange	1.1	0.4	100	0.000002	0.016978	0	0.000000	0.000000
178	SRS Phase-2	SRS-2nd Floor/CLM-021	Flange	0.7	0.4	100	0.000001	0.012340	0	0.000000	0.000000
179	SRS Phase-2	SRS-2nd Floor/CLM-016	Flange	0.6	0.4	100	0.000001	0.011067	0	0.000000	0.000000
180	SRS Phase-2	SRS-2nd Floor/CLM-015	Flange	1.2	0.4	100	0.000002	0.018054	0	0.000000	0.000000
181	SRS Phase-2	SRS/REC-29 Tank Charging	Vent	110.3	0.4	100	0.000023	0.200513	7.7	0.000003	0.029183
182	SRS Phase-2	Level Indicator	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
183	SRS Phase-2	Level Indicator	Vent	16.3	0.4	100	0.000006	0.050227	1.1	0.000001	0.007133
184	SRS Phase-2	SRS/REC-30 Unloading Line	Vent	1220.6	0.4	100	0.000130	1.142870	7.8	0.000003	0.029457
185	SRS Phase-2	Level indicator	Vent	55.3	0.4	100	0.000014	0.121633	3.8	0.000002	0.017502
186	SRS Phase-2	Vent Line	Flange	90.6	0.4	100	0.000044	0.382292	6.3	0.000007	0.058210
187	SRS Phase-2	SRS/REC-25 Tank Charging	Vent	9.6	0.4	100	0.000004	0.034236	0.6	0.000001	0.004599

188	SRS Phase-2	Level Indicator	Flange	11.6	0.4	100	0.000010	0.089571	0.8	0.000002	0.013560
189	SRS Phase-2	Tank Bottom Line	Vent	20.1	0.4	100	0.000007	0.058456	1.4	0.000001	0.008494
190	SRS Phase-2	SRS/REC-26 Tank Unloading	Vent	90.8	0.4	100	0.000020	0.174169	1.5	0.000001	0.008929
191	SRS Phase-2	Bottom Line	Vent	16.3	0.4	100	0.000006	0.050227	1.1	0.000001	0.007133
192	SRS Phase-2	SRS/REC-21 Charging Line	Flange	20.4	0.4	100	0.000015	0.133432	1.4	0.000002	0.020129
193	SRS Phase-2	Level indicator	Vent	30.4	0.4	100	0.000009	0.078871	2.1	0.000001	0.011392
194	SRS Phase-2	SRS/REC-22 unloading Line	Vent	10.9	0.4	100	0.000004	0.037533	0.7	0.000001	0.005142
195	SRS Phase-2	Tank Bottom Line	Vent	20.6	0.4	100	0.000007	0.059506	1.4	0.000001	0.008494
196	SRS-Phase-II 3rd Floor-Condensor Area	SRS-CLM-15 BOX Condensor	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
197	SRS-Phase-II 3rd Floor-Condensor Area	SRS-CLM-15 BOX Condensor	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
198	SRS-Phase-II 3rd Floor-Condensor Area	SRS/CLM-16 Condensor/Primary	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
199	SRS-Phase-II 3rd Floor-Condensor Area	SRS/CLM-16 Condensor/Secondary	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
200	SRS-Phase-II 3rd Floor-Condensor Area	SRS/CLM-21 Condensor/Primary	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
201	SRS-Phase-II 3rd Floor-Condensor Area	SRS/CLM-21 Condensor/Secondary	Flange	0.1	0.4	100	0.000000	0.003124	0	0.000000	0.000000
202	SRS-Phase-II 3rd Floor-Condensor Area	SRS/CLM-17 Condensor/Primary	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
203	SRS-Phase-II 3rd Floor-Condensor Area	SRS/CLM-17 Condensor/Secondary	Flange	1.1	0.4	100	0.000002	0.016978	0	0.000000	0.000000
204	SRS-Phase-II 3rd Floor-Condensor Area	SRS/CLM-12 Condensor/Primary	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
205	SRS-Phase-II 3rd Floor-Condensor Area	SRS/CLM-12 Condensor/Secondary	Flange	0.1	0.4	100	0.000000	0.003124	0	0.000000	0.000000
206	SRS-Phase-II 3rd Floor-Condensor Area	SRS/CLM-13 Condensor/Primary	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
207	SRS-Phase-II 3rd Floor-Condensor Area	SRS/CLM-13 Condensor/Secondary	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
208	SRS-Phase-II 3rd Floor-Condensor Area	SRS/CLM-14 Condensor/Primary	Flange	0.4	0.4	100	0.000001	0.008312	0	0.000000	0.000000
209	SRS-Phase-II 3rd Floor-Condensor Area	SRS/CLM-14 Condensor/Secondary	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
210	SRS-Phase-II 3rd Floor-Condensor Area	SRS/SSR-008Reactor (Methanol+H2O)	MV	1.6	0.4	100	0.000001	0.011300	0.1	0.000000	0.003124

211	SRS-Phase-II 3rd Floor-Condensor Area	Charging Line	Vent	6.4	0.4	100	0.000003	0.025527	0.4	0.000000	0.003429
212	SRS-Phase-II 3rd Floor-Condensor Area	Charging Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
213	SRS-Phase-II 3rd Floor-Condensor Area	Vent Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
214	SRS-Phase-II 3rd Floor-Condensor Area	RD Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
215	SRS-Phase-II 3rd Floor-Condensor Area	Vapour Line	Flange	7.9	0.4	100	0.000008	0.068295	0.5	0.000001	0.009730
216	SRS-Phase-II 3rd Floor-Condensor Area	Condensor HE-45	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
217	SRS-Phase-II 3rd Floor-Condensor Area	Reactor Bottom	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
218	SRS Phase - II (Methanol+Toluene)	SRS/SSR-015 Reactor	MV	6.4	0.4	100	0.000004	0.031828	0.4	0.000001	0.008312
219	SRS Phase - II (Methanol+Toluene)	bye Line	Vent	16.2	0.4	100	0.000006	0.050004	1.1	0.000001	0.007133
220	SRS Phase - II (Methanol+Toluene)	Charging line	Flange	9.4	0.4	100	0.000009	0.077213	0.6	0.000001	0.011067
221	SRS Phase - II (Methanol+Toluene)	PNS-II Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
222	SRS Phase - II (Methanol+Toluene)	RD Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
223	SRS Phase - II (Methanol+Toluene)	SRV Line	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
224	SRS Phase - II (Methanol+Toluene)	Temp gauge	Flange	6.1	0.4	100	0.000006	0.056899	0.4	0.000001	0.008312
225	SRS Phase - II (Methanol+Toluene)	Vapour Line	Flange	4.2	0.4	100	0.000005	0.043720	0.2	0.000001	0.005096
226	SRS Phase - II (Methanol+Toluene)	Condesor Line	Flange	3.3	0.4	100	0.000004	0.036875	0.2	0.000001	0.005096
227	SRS Phase - II (Methanol+Toluene)	Reactor Bottom line	Vent	4.2	0.4	100	0.000002	0.018817	0.2	0.000000	0.002076
228	SRS Phase - II (Methanol+Toluene)	Reactor Bottom Line	Flange	6	0.4	100	0.000006	0.056239	0.4	0.000001	0.008312
229	SRS Phase - II (Methanol+Toluene)	SRS/SSR-017 Reactor	MV		0.4	100	0.000000	0.000000	0	0.000000	0.000000
230	SRS Phase - II (Methanol+Toluene)	PNG Line	Flange	0.2	0.4	100	0.000001	0.005096	0	0.000000	0.000000
231	SRS Phase - II (Methanol+Toluene)	Charging Line	Vent	5.6	0.4	100	0.000003	0.023174	0.3	0.000000	0.002785
232	SRS Phase - II (Methanol+Toluene)	Charging Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
233	SRS Phase - II (Methanol+Toluene)	View Glass	Flange	5.3	0.4	100	0.000006	0.051523	0.3	0.000001	0.006784
234	SRS Phase - II (Methanol+Toluene)	REC-79 Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
235	SRS Phase - II (Methanol+Toluene)	REC-79 Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
236	SRS Phase - II (Methanol+Toluene)	Vapour Line	Flange	0.9	0.4	100	0.000002	0.014735	0	0.000000	0.000000
237	SRS Phase - II (Methanol+Toluene)	Condensor Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
238	SRS Phase - II (Methanol+Toluene)	Reactor Bottom	Vent	6.9	0.4	100	0.000003	0.026955	0.4	0.000000	0.003429
239	SRS Phase - II (Methanol+Toluene)	Reactor Bottom	Flange	7.2	0.4	100	0.000007	0.063965	0.5	0.000001	0.009730

240	SRS-Tank Form Area	SRS/ST-37 (Acetone Tank)	MV	12.6	0.4	100	0.000006	0.052792	0.8	0.000002	0.013560
241	SRS-Tank Form Area	Charging Line	Vent	23.5	0.4	100	0.000007	0.065459	1.6	0.000001	0.009356
242	SRS-Tank Form Area	Level indicator	Flange	6.3	0.4	100	0.000007	0.058210	0.4	0.000001	0.008312
243	SRS-Tank Form Area	SRS/ST-36 (Acetone Tank)	MV	30.2	0.4	100	0.000012	0.101427	2.1	0.000003	0.026801
244	SRS-Tank Form Area	Charging Line	Vent	19.6	0.4	100	0.000007	0.057400	1.3	0.000001	0.008050
245	SRS-Tank Form Area	Level indicator	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
246	SRS-Tank Form Area	SRS/ST-31 (Triethyl Amine)	MV	8.3	0.4	100	0.000004	0.038649	0.5	0.000001	0.009730
247	SRS-Tank Form Area	Level indicator	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
248	SRS-Tank Form Area	Charging Line	Flange	9.1	0.4	100	0.000009	0.075465	0.6	0.000001	0.011067
249	SRS-Tank Form Area	vent Line	Vent	5.3	0.4	100	0.000003	0.022269	0.3	0.000000	0.002785
250	SRS-Tank Form Area	SRS/ST-34 (MDC Tank)	MV	30.1	0.4	100	0.000012	0.101176	2.1	0.000003	0.026801
251	SRS-Tank Form Area	Level Indicator	Flange	22.3	0.4	100	0.000016	0.142091	1.5	0.000002	0.021134
252	SRS-Tank Form Area	Charging Line	Vent	10.9	0.4	100	0.000004	0.037533	0.7	0.000001	0.005142
253	SRS-Tank Form Area	Tank Top vent	Vent	163.4	0.4	100	0.000030	0.266509	3.1	0.000002	0.015103
254	SRS-Tank Form Area	SRS/REC-41 (Triethyl amine)	Vent	6.9	0.4	100	0.000003	0.026955	0.4	0.000000	0.003429
255	SRS-Tank Form Area	Tank Top	MV	6.2	0.4	100	0.000004	0.031082	0.4	0.000001	0.008312
256	SRS-Tank Form Area	Charging Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
257	SRS-Tank Form Area	SRS/REC-38 (Tert Butyl Methyl Ether)	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
258	SRS-Tank Form Area	tank Bottom	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
259	SRS-Tank Form Area	Level indicator	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
260	SRS-Tank Form Area	Charging Line	Flange	6.8	0.4	100	0.000007	0.061435	0.4	0.000001	0.008312
261	SRS Phase-II (Methanol+Toluene)	SRS/SSR-013 (Reactor)	MV	43.6	0.4	100	0.000015	0.133440	3	0.000004	0.034475
262	SRS Phase-II (Methanol+Toluene)	Charging Line	Vent	20.5	0.4	100	0.000007	0.059296	1.4	0.000001	0.008494
263	SRS Phase-II (Methanol+Toluene)	Charging Line	Flange	19.6	0.4	100	0.000015	0.129716	1.3	0.000002	0.019103
264	SRS Phase-II (Methanol+Toluene)	View glass	Flange	20.1	0.4	100	0.000015	0.132044	1.4	0.000002	0.020129
265	SRS Phase-II (Methanol+Toluene)	RD Line	Flange	19.6	0.4	100	0.000015	0.129716	1.3	0.000002	0.019103
266	SRS Phase-II (Methanol+Toluene)	SRV Line	Flange	22.4	0.4	100	0.000016	0.142540	1.5	0.000002	0.021134
267	SRS Phase-II (Methanol+Toluene)	Vapour Line	Flange	16.4	0.4	100	0.000013	0.114378	1.1	0.000002	0.016978
268	SRS Phase-II (Methanol+Toluene)	Reflux Line	Vent	20.1	0.4	100	0.000007	0.058456	1.4	0.000001	0.008494
269	SRS Phase-II (Methanol+Toluene)	Reflux Line	Flange	19.2	0.4	100	0.000015	0.127842	1.3	0.000002	0.019103
270	SRS Phase-II (Methanol+Toluene)	Reflux Line	Flange	16.3	0.4	100	0.000013	0.113885	1.1	0.000002	0.016978
271	SRS Phase-II (Methanol+Toluene)	Condensor Line	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
272	SRS Phase-II (Methanol+Toluene)	Recactor bottom	Vent	19.2	0.4	100	0.000006	0.056549	1.3	0.000001	0.008050

273	SRS Phase-II (Methanol+Toluene)	Reactor Bottom	Flange	10.3	0.4	100	0.000009	0.082362	0.7	0.000001	0.012340
274	SRS Phase-II (Methanol+Toluene)	SRS/SSR-18 Reactor	MV	1.6	0.4	100	0.000001	0.011300	0.1	0.000000	0.003124
275	SRS Phase-II (Methanol+Toluene)	Charging Line	Flange	4.8	0.4	100	0.000005	0.048042	0.3	0.000001	0.006784
276	SRS Phase-II (Methanol+Toluene)	lye Line	Vent	6.2	0.4	100	0.000003	0.024946	0.4	0.000000	0.003429
277	SRS Phase-II (Methanol+Toluene)	BMX Line	Vent	9.4	0.4	100	0.000004	0.033718	0.6	0.000001	0.004599
278	SRS Phase-II (Methanol+Toluene)	Reflux Line	Vent	10.8	0.4	100	0.000004	0.037283	0.7	0.000001	0.005142
279	SRS Phase-II (Methanol+Toluene)	Reflux Line	Flange	16.3	0.4	100	0.000013	0.113885	1.1	0.000002	0.016978
280	SRS Phase-II (Methanol+Toluene)	Reflux Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
281	SRS Phase-II (Methanol+Toluene)	Vapour Line	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
282	SRS Phase-II (Methanol+Toluene)	Condensor Line	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
283	SRS Phase-II (Methanol)	SRS/SSR-011 reactor	MV	29.6	0.4	100	0.000011	0.099918	2	0.000003	0.025893
284	SRS Phase-II (Methanol)	Charging Line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
285	SRS Phase-II (Methanol)	Charging Line	Flange	6.9	0.4	100	0.000007	0.062071	0.4	0.000001	0.008312
286	SRS Phase-II (Methanol)	View Glass	Flange	6.2	0.4	100	0.000007	0.057556	0.4	0.000001	0.008312
287	SRS Phase-II (Methanol)	REC-72 Line	Vent	10.2	0.4	100	0.000004	0.035772	1.8	0.000001	0.010189
288	SRS Phase-II (Methanol)	Reflux Line	Flange	15.3	0.4	100	0.000012	0.108907	2.4	0.000003	0.029450
289	SRS Phase-II (Methanol)	Reflux Line	Vent	18.2	0.4	100	0.000006	0.054401	2.2	0.000001	0.011782
290	SRS Phase-II (Methanol)	Reflux Line	Flange	10.3	0.4	100	0.000009	0.082362	2.9	0.000004	0.033660
291	SRS Phase-II (Methanol)	Lye Line	Flange	3.9	0.4	100	0.000005	0.041491	0.2	0.000001	0.005096
292	SRS Phase-II (Methanol)	Vapour Line	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
293	SRS Phase-II (Methanol)	Condensor Line	Flange	0.5	0.4	100	0.000001	0.009730	0	0.000000	0.000000
294	SRS Phase-II (Methanol)	Reactor Bottom	Flange	0.8	0.4	100	0.000002	0.013560	0	0.000000	0.000000
295	SRS Phase-II (Methanol)	Reactor Bottom	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
296	SRS Phase-II (Methanol)	SRS/MSR-20 Reactor	MV	20.5	0.4	100	0.000009	0.075940	1.4	0.000002	0.020129
297	SRS Phase-II (Methanol)	Lye Line	Vent	15.3	0.4	100	0.000005	0.047977	4.1	0.000002	0.018492
298	SRS Phase-II (Methanol)	Reflux Line	Flange	5.6	0.4	100	0.000006	0.053565	0.3	0.000001	0.006784
299	SRS Phase-II (Methanol)	Reflux Line	Vent	9.6	0.4	100	0.000004	0.034236	0.6	0.000001	0.004599
300	SRS Phase-II (Methanol)	Reflux Line	Flange	5.2	0.4	100	0.000006	0.050835	0.3	0.000001	0.006784
301	SRS Phase-II (Methanol)	Vapour Line	Flange	19.2	0.4	100	0.000015	0.127842	1.3	0.000002	0.019103
302	SRS Phase-II (Methanol)	Condensor Line	Flange	0.3	0.4	100	0.000001	0.006784	0	0.000000	0.000000
303	SRS Phase-II (Methanol)	Reactor Bottom Line	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
304	SRS Tank Form Area	SRS/ST-104 (Ethyl Acetate)	MV	20.2	0.4	100	0.000009	0.075108	4.5	0.000005	0.045902
305	SRS Tank Form Area	Charging Line	Vent	30.4	0.4	100	0.000009	0.078871	1.5	0.000001	0.008929

306	SRS Tank Form Area	Level indicator	Flange	12.6	0.4	100	0.000011	0.094956	1.5	0.000002	0.021134
307	SRS Tank Form Area	SRS/ST.103 Charging Line	Vent	2.6	0.4	100	0.000002	0.013297	1.3	0.000001	0.008050
308	SRS Tank Form Area	Level Indicator	Flange	16.3	0.4	100	0.000013	0.113885	2.4	0.000003	0.029450
309	SRS Tank Form Area	SRS/ST.47	MV	12.7	0.4	100	0.000006	0.053105	0.8	0.000002	0.013560
310	SRS Tank Form Area	Charging Line	Flange	20.6	0.4	100	0.000015	0.134355	1.4	0.000002	0.020129
311	SRS Tank Form Area	Tank Top dummy	Flange	29.3	0.4	100	0.000020	0.172294	2	0.000003	0.025893
312	SRS Tank Form Area	SRS/ST-45	MV	10.2	0.4	100	0.000005	0.045083	0.7	0.000001	0.012340
313	SRS Tank Form Area	Charging Line	Flange	9.6	0.4	100	0.000009	0.078369	0.6	0.000001	0.011067
314	SRS Tank Form Area	Level Indicator	Flange	8.3	0.4	100	0.000008	0.070718	0.5	0.000001	0.009730
315	SRS Tank Form Area	SRS/ST-67 Top dumyy	MV	15.6	0.4	100	0.000007	0.061923	1	0.000002	0.015873
316	SRS Tank Form Area	Level indicator	Vent	3.7	0.4	100	0.000002	0.017167	0.2	0.000000	0.002076
317	SRS Tank Form Area	Charging Line	Flange	4.9	0.4	100	0.000006	0.048746	0.3	0.000001	0.006784
318	SRS Tank Form Area	SRS/ST-66 Top dummy	MV	12.7	0.4	100	0.000006	0.053105	1.5	0.000002	0.021134
319	SRS Tank Form Area	Charging Line	Flange	4.5	0.4	100	0.000005	0.045902	0.3	0.000001	0.006784
320	SRS Tank Form Area	SRS/ST-65 Top dummy	MV	4.9	0.4	100	0.000003	0.026072	0.3	0.000001	0.006784
321	SRS Tank Form Area	Level Indicator	Flange	3.2	0.4	100	0.000004	0.036083	0.2	0.000001	0.005096
322	SRS Tank Form Area	Charging Line	Vent	2.7	0.4	100	0.000002	0.013665	0.1	0.000000	0.001257
323	SRS Tank Form Area	SRS/St-21 Tank	MV	39.6	0.4	100	0.000014	0.124185	4.8	0.000005	0.048042
324	SRS Tank Form Area	Charging Line	Flange	16.8	0.4	100	0.000013	0.116340	1.1	0.000002	0.016978
325	SRS Tank Form Area	Tank Vent	Vent	200.6	0.4	100	0.000035	0.309176	35.6	0.000010	0.088423
326	SRS Tank Form Area	SRS/ST-27 Charging Line	Vent	200.6	0.4	100	0.000035	0.309176	27.8	0.000008	0.073928
327	SRS Tank Form Area	SRS/ST-27 tank	MV	19.6	0.4	100	0.000008	0.073435	1.3	0.000002	0.019103
328	SRS Tank Form Area	Side Dummy	Flange	596.8	0.4	100	0.000165	1.446763	14.7	0.000012	0.105874
329	SRS Tank Form Area	SRS/ST-106	MV	63.9	0.4	100	0.000020	0.177541	4.4	0.000005	0.045179
330	SRS Tank Form Area	Level Indicator Bottom	Vent	3816.6	0.4	100	0.000298	2.608865	45.8	0.000012	0.106117
331	SRS Tank Form Area	Charging Line	Flange	96.2	0.4	100	0.000046	0.398826	6.7	0.000007	0.060795
332	SRS Tank Form Area	SRS/ST-85 (Toluene Tank)	MV	20.6	0.4	100	0.000009	0.076216	1.4	0.000002	0.020129
333	SRS Tank Form Area	Charging Line	Vent	19.8	0.4	100	0.000007	0.057823	1.3	0.000001	0.008050
334	SRS Tank Form Area	SRS/ST-84 Charging Line	Flange	30.8	0.4	100	0.000020	0.178476	2.1	0.000003	0.026801
335	SRS Tank Form Area	Level indicator	Flange	200.6	0.4	100	0.000076	0.670051	13.4	0.000011	0.099174
336	SRS Tank Form Area	SRS/ST-83 Charging Line	Vent	28.6	0.4	100	0.000009	0.075462	1.2	0.000001	0.007597
337	SRS Tank Form Area	Level Indicator	Flange	20.6	0.4	100	0.000015	0.134355	1.3	0.000002	0.019103
338	SRS Tank Form Area	SRS/ST-80 Tank Top	MV	90.6	0.4	100	0.000026	0.230444	11.3	0.000010	0.087930

339	SRS Tank Form Area	Charging Line	Vent	17.8	0.4	100	0.000006	0.053533	6.4	0.000003	0.025527
340	SRS Tank Form Area	SRS/ST-79 Charging Line	MV	20.6	0.4	100	0.000009	0.076216	2.4	0.000003	0.029450
341	SRS Tank Form Area	Level Indicator	Flange	10.2	0.4	100	0.000009	0.081796	1.5	0.000002	0.021134
342	SRS Tank Form Area	SRS/ST-82 Tank Bottom	Vent	10.6	0.4	100	0.000004	0.036782	1.7	0.000001	0.009776
343	SRS Tank Form Area	Top dummy	Flange	13.9	0.4	100	0.000012	0.101773	1.4	0.000002	0.020129
344	SRS Tank Form Area	Charging Line	Flange	20.6	0.4	100	0.000015	0.134355	10.6	0.000010	0.084048
								59.663439			4.878364

The Sum of Total VOC Emissions Before Repair 59.6634 kgs/year

The Sum of Total VOC Emissions After Repair 4.878 kgs/year

The Percentage Reduction of TVOC by LDAR Study is 91.823%

91.82352843

GLENS INNOVATION LABS PVT LTD, CHENNAI

REPORT ON LDAR STUDY OF HETERO LABS LTD., Unit - III LIMITED- VISHAKHAPATNAM, ANDHRA PRADESH

Solvent Storage Area

S.No	Location/Samples	Sample Name	Type	Screening Value Before Repair (ppm)	RF	% of VOC	Before Repair Kg/hr	Before Repair Kg/year	Screening Value After Repair (ppm)	After Repair Kg/hr	After Repair Kg/year
1	Solvent Storage Yard-API	SMT-12 (Cyclohexane)unloading	Vent	1.2	0.4	100	0.000001	0.007597	0	0.000000	0.000000
2	Solvent Storage Yard-API	Measuring line	Vent	2.2	0.4	100	0.000001	0.011782	0.1	0.000000	0.001257
3	Solvent Storage Yard-API	Production Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
4	Solvent Storage Yard-API	Pumping Line	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
5	Solvent Storage Yard-API	Tank Bottom Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
6	Solvent Storage Yard-API	SMT-11 (Toluene tank)unloading	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
7	Solvent Storage Yard-API	Measuring line	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
8	Solvent Storage Yard-API	Production Line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
9	Solvent Storage Yard-API	Pumping To Raector	Flange	1.9	0.4	100	0.000003	0.024973	0.1	0.000000	0.003124
10	Solvent Storage Yard-API	Tank Bottom Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
11	Solvent Storage Yard-API	SMT-10 (Methanol) unloading	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
12	Solvent Storage Yard-API	Measuring line	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
13	Solvent Storage Yard-API	Production Line	Vent	3.4	0.4	100	0.000002	0.016148	0.2	0.000000	0.002076
14	Solvent Storage Yard-API	Tank Bottom Line	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
15	Solvent Storage Yard-API	Pumping To Raector	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124

16	Solvent Storage Yard-API	SMT-09 (Ethyl Acetate)unloading	Flange	2.9	0.4	100	0.000004	0.033660	0.2	0.000001	0.005096
17	Solvent Storage Yard-API	Level Indicator	Vent	2759.6	0.4	100	0.000235	2.062958	10.8	0.000004	0.037283
18	Solvent Storage Yard-API	Production Line	Flange	20.1	0.4	100	0.000015	0.132044	1.4	0.000002	0.020129
19	Solvent Storage Yard-API	SMT-08 (Triethyl Amine) Unloading	Vent	1.2	0.4	100	0.000001	0.007597	0	0.000000	0.000000
20	Solvent Storage Yard-API	Measuring line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
21	Solvent Storage Yard-API	Production Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
22	Solvent Storage Yard-API	Pumping Line	Flange	3.6	0.4	100	0.000004	0.039211	0.2	0.000001	0.005096
23	Solvent Storage Yard-API	SMT-07 (Acetone) level indicator	Vent	159.6	0.4	100	0.000030	0.262007	3.4	0.000002	0.016148
24	Solvent Storage Yard-API	SMT-07 unloading Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
25	Solvent Storage Yard-API	SMT-07 Measuring Line	Vent	30.4	0.4	100	0.000009	0.078871	2.1	0.000001	0.011392
26	Solvent Storage Yard-API	Production Line	Vent	20.4	0.4	100	0.000007	0.059087	1.4	0.000001	0.008494
27	Solvent Storage Yard-API	Tank Bottom Line	Flange	19.6	0.4	100	0.000015	0.129716	1.3	0.000002	0.019103
28	Solvent Storage Yard-API	SMT-06 (IPA) Level Indicator	Vent	206.4	0.4	100	0.000036	0.315622	2.9	0.000002	0.014391
29	Solvent Storage Yard-API	Unloading Line	Vent	15.3	0.4	100	0.000005	0.047977	1	0.000001	0.006658
30	Solvent Storage Yard-API	Production Line	Vent	10.4	0.4	100	0.000004	0.036279	0.7	0.000001	0.005142
31	Solvent Storage Yard-API	Measuring line	Vent	22.8	0.4	100	0.000007	0.064042	1.5	0.000001	0.008929
32	Solvent Storage Yard-API	Bottom Line Tank	Flange	15.8	0.4	100	0.000013	0.111407	1.1	0.000002	0.016978
33	Solvent Storage Yard-API	SMT-05 (Dimethyl Formamide)	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
34	Solvent Storage Yard-API	Measuring line	Vent	5.6	0.4	100	0.000003	0.023174	0.3	0.000000	0.002785
35	Solvent Storage Yard-API	Production	Vent	4.5	0.4	100	0.000002	0.019781	0.3	0.000000	0.002785

36	Solvent Storage Yard-API	SMT-04 (DMC) unloading	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
37	Solvent Storage Yard-API	Measuring line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
38	Solvent Storage Yard-API	Production line	Vent	4.4	0.4	100	0.000002	0.019462	0.3	0.000000	0.002785
39	Solvent Storage Yard-API	Tank Bottom	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
40	Solvent Storage Yard-API	SMT-03 (N-Hexane)level Indicator	Vent	39.6	0.4	100	0.000011	0.095510	2.7	0.000002	0.013665
41	Solvent Storage Yard-API	Unloading Line	Vent	56.2	0.4	100	0.000014	0.123063	3.9	0.000002	0.017834
42	Solvent Storage Yard-API	Measuring line	Vent	102.3	0.4	100	0.000022	0.189875	4.1	0.000002	0.018492
43	Solvent Storage Yard-API	Production Line	Vent	503.4	0.4	100	0.000069	0.601870	5.3	0.000003	0.022269
44	Solvent Storage Yard-API	SMT 02 (Absolute Alcohol) Level Indicator	Vent	6.9	0.4	100	0.000003	0.026955	0.4	0.000000	0.003429
45	Solvent Storage Yard-API	Unloading Line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
46	Solvent Storage Yard-API	Production Line -1	Vent	1.6	0.4	100	0.000001	0.009356	0.1	0.000000	0.001257
47	Solvent Storage Yard-API	Production Line-2	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
48	Solvent Storage Yard-API	Measuring line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
49	Solvent Storage Yard-API	ST-02 (Abo methanol)	MV	0.6	0.4	100	0.000001	0.005431	0	0.000000	0.000000
50	Solvent Storage Yard-API	Suction to Pump	Flange	1.6	0.4	100	0.000003	0.022119	0.1	0.000000	0.003124
51	Solvent Storage Yard-API	Side Dummy	Flange	2.2	0.4	100	0.000003	0.027696	0.1	0.000000	0.003124
52	Solvent Storage Yard-API	ST-04 (Di methyl Acetmine)	MV	2.5	0.4	100	0.000002	0.015771	0.1	0.000000	0.003124
53	Solvent Storage Yard-API	Suction to Pump Line	Flange	3	0.4	100	0.000004	0.034475	0.2	0.000001	0.005096
54	Solvent Storage Yard-API	Suction to pump line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
55	Solvent Storage Yard-API	ST-06 (IPA Tank)	MV	2.5	0.4	100	0.000002	0.015771	0.1	0.000000	0.003124

56	Solvent Storage Yard-API	Suction to pump line	Flange	1.7	0.4	100	0.000003	0.023087	0.1	0.000000	0.003124
57	Solvent Storage Yard-API	Side Dummy	Flange	2.6	0.4	100	0.000004	0.031163	0.1	0.000000	0.003124
58	Solvent Storage Yard-API	ST-08 (Tri-Ethyl amin) Tank	MV	2.3	0.4	100	0.000002	0.014818	0.1	0.000000	0.003124
59	Solvent Storage Yard-API	Suction Line to Pump	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
60	Solvent Storage Yard-API	Suction Line to Pump	Flange	9.4	0.4	100	0.000009	0.077213	0.6	0.000001	0.011067
61	Solvent Storage Yard-API	ST-10 (Methanol tank)	MV	2.6	0.4	100	0.000002	0.016240	0.1	0.000000	0.003124
62	Solvent Storage Yard-API	Sucction Line to Pump	Vent	0.9	0.4	100	0.000001	0.006169	0	0.000000	0.000000
63	Solvent Storage Yard-API	ST-12 (Cyclo Hexane) Tank	MV	28.4	0.4	100	0.000011	0.096877	1.9	0.000003	0.024973
64	Solvent Storage Yard-API	Suction Line	Vent	20.4	0.4	100	0.000007	0.059087	1.4	0.000001	0.008494
65	Solvent Storage Yard-API	Suction Line	Flange	15.1	0.4	100	0.000012	0.107900	1	0.000002	0.015873
66	Solvent Storage Yard-API	ST-11 (Toluene) Suction Line	Vent	13.4	0.4	100	0.000005	0.043585	0.9	0.000001	0.006169
67	Solvent Storage Yard-API	ST-11 (Toluene) Suction Line	MV	10.4	0.4	100	0.000005	0.045742	0.7	0.000001	0.012340
68	Solvent Storage Yard-API	St-09 (Ethyl Acetate) Tank	MV	0.8	0.4	100	0.000001	0.006733	0	0.000000	0.000000
69	Solvent Storage Yard-API	Suction Line	Vent	1.9	0.4	100	0.000001	0.010596	0.1	0.000000	0.001257
70	Solvent Storage Yard-API	Suction Line	Flange	2.1	0.4	100	0.000003	0.026801	0.1	0.000000	0.003124
71	Solvent Storage Yard-API	ST-07 (Acetone)	MV	68.4	0.4	100	0.000021	0.186800	4.7	0.000005	0.047333
72	Solvent Storage Yard-API	Suction Line to Pump	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
73	Solvent Storage Yard-API	Suction Line to Pump	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
74	Solvent Storage Yard-API	ST-05 (Di-methyl Formade)Tank	MV	4.5	0.4	100	0.000003	0.024465	0.3	0.000001	0.006784
75	Solvent Storage Yard-API	Suction Line To Pump	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076

76	Solvent Storage Yard-API	Suction line To pump	Flange	6.4	0.4	100	0.000007	0.058861	0.4	0.000001	0.008312
77	Solvent Storage Yard-API	Tank Top Vent	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
78	Solvent Storage Yard-API	ST-03 (Anxen Tank) (N-Hxen)	MV	3.6	0.4	100	0.000002	0.020708	0.2	0.000001	0.005096
79	Solvent Storage Yard-API	Suction Line to Pump	Vent	1.5	0.4	100	0.000001	0.008929	0.1	0.000000	0.001257
80	Solvent Storage Yard-API	Suction Line to Pump	Flange	2.8	0.4	100	0.000004	0.032836	0.1	0.000000	0.003124
81	Solvent Storage Yard-API	SST-14 (methylene chloride)vent	Vent	1508.4	0.4	100	0.000152	1.332182	3.2	0.000002	0.015454
82	Solvent Storage Yard-API	Suction Line	Vent	15.3	0.4	100	0.000005	0.047977	1	0.000001	0.006658
83	Solvent Storage Yard-API	Suction Line	Flange	10.2	0.4	100	0.000009	0.081796	0.7	0.000001	0.012340
84	Solvent Storage Yard-API	SST-13 (Chloroform) unloading	Vent	1.4	0.4	100	0.000001	0.008494	0	0.000000	0.000000
85	Solvent Storage Yard-API	Suction Line	Vent	0.4	0.4	100	0.000000	0.003429	0	0.000000	0.000000
86	Solvent Storage Yard-API	Suction Line	Flange	1.5	0.4	100	0.000002	0.021134	0.1	0.000000	0.003124
87	Solvent Storage Yard-API	Measuring line	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257
88	Solvent Storage Yard	SMT-01 (IPA Tank) Unloading	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
89	Solvent Storage Yard	Measuring line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
90	Solvent Storage Yard	Production Line	Vent	4.6	0.4	100	0.000002	0.020098	0.3	0.000000	0.002785
91	Solvent Storage Yard	SyIP-001 Line	Vent	3.6	0.4	100	0.000002	0.016830	0.2	0.000000	0.002076
92	Solvent Storage Yard	SMT-02 (ABS Alcohol) unloading	Vent	2.7	0.4	100	0.000002	0.013665	0.1	0.000000	0.001257
93	Solvent Storage Yard	Measuring line	Vent	2.9	0.4	100	0.000002	0.014391	0.2	0.000000	0.002076
94	Solvent Storage Yard	Production Line	Vent	3.8	0.4	100	0.000002	0.017502	0.2	0.000000	0.002076
95	Solvent Storage Yard	SY/PP-002	Vent	4.1	0.4	100	0.000002	0.018492	0.2	0.000000	0.002076
96	Solvent Storage Yard	SMT-03 (Methanol) Unloading	Vent	5.8	0.4	100	0.000003	0.023771	0.4	0.000000	0.003429
97	Solvent Storage Yard	Measuring line	Vent	6.2	0.4	100	0.000003	0.024946	0.4	0.000000	0.003429
98	Solvent Storage Yard	Production Line	Vent	150	0.4	100	0.000029	0.250500	10.5	0.000004	0.036531
99	Solvent Storage Yard	SY/PP-003	Vent	6.9	0.4	100	0.000003	0.026955	0.4	0.000000	0.003429
100	Solvent Storage Yard	SMT-04(ABS Alcohol) Unloading	Vent	5.4	0.4	100	0.000003	0.022572	0.3	0.000000	0.002785
101	Solvent Storage Yard	Measuring line	Vent	6.1	0.4	100	0.000003	0.024655	0.4	0.000000	0.003429

102	Solvent Storage Yard	Production Line	Vent	8.9	0.4	100	0.000004	0.032410	0.6	0.000001	0.004599
103	Solvent Storage Yard	SY/PP-004	Vent	7.4	0.4	100	0.000003	0.028356	0.5	0.000000	0.004031
104	Solvent Storage Yard	SMT-05(Ethyl Alcohol) Unloading	Vent	8.3	0.4	100	0.000004	0.030813	0.5	0.000000	0.004031
105	Solvent Storage Yard	Production Line-1	Vent	4.7	0.4	100	0.000002	0.020413	0.3	0.000000	0.002785
106	Solvent Storage Yard	Production Line-2	Vent	5.9	0.4	100	0.000003	0.024067	0.4	0.000000	0.003429
107	Solvent Storage Yard	SS/PP-005	Vent	6.7	0.4	100	0.000003	0.026387	0.4	0.000000	0.003429
108	Solvent Storage Yard	SMT-06 (Hexane) Unloading	Vent	25.5	0.4	100	0.000008	0.069447	1.7	0.000001	0.009776
109	Solvent Storage Yard	Measuring line	Vent	30.8	0.4	100	0.000009	0.079621	2.1	0.000001	0.011392
110	Solvent Storage Yard	Production Line	Vent	33.9	0.4	100	0.000010	0.085346	2.3	0.000001	0.012168
111	Solvent Storage Yard	SY/PP-006	Vent	26.8	0.4	100	0.000008	0.071993	1.8	0.000001	0.010189
112	Solvent Storage Yard	SMT-07 (Acetone) unloading	Vent	2.8	0.4	100	0.000002	0.014030	0.1	0.000000	0.001257
113	Solvent Storage Yard	Measuring line	Vent	3.3	0.4	100	0.000002	0.015802	0.2	0.000000	0.002076
114	Solvent Storage Yard	Production Line	Vent	3.7	0.4	100	0.000002	0.017167	0.2	0.000000	0.002076
115	Solvent Storage Yard	SY/PP-007	Vent	1.8	0.4	100	0.000001	0.010189	0.1	0.000000	0.001257
116	Solvent Storage Yard	SMT-08 (Triethyl Amine) Unloading	Vent	7.8	0.4	100	0.000003	0.029457	0.5	0.000000	0.004031
117	Solvent Storage Yard	Measuring line	Vent	7.7	0.4	100	0.000003	0.029183	0.5	0.000000	0.004031
118	Solvent Storage Yard	Production Line	Vent	6.2	0.4	100	0.000003	0.024946	0.4	0.000000	0.003429
119	Solvent Storage Yard	SY/PP-008	Vent	8.1	0.4	100	0.000003	0.030273	0.5	0.000000	0.004031
120	Solvent Storage Yard	SMT-09 (1,4-Dioxane)unloading	Vent	15.3	0.4	100	0.000005	0.047977	1	0.000001	0.006658
121	Solvent Storage Yard	Measuring line	Vent	17.6	0.4	100	0.000006	0.053097	1.2	0.000001	0.007597
122	Solvent Storage Yard	Production Line	Vent	16.5	0.4	100	0.000006	0.050673	1.1	0.000001	0.007133
123	Solvent Storage Yard	SY/npl-009	Vent	19.4	0.4	100	0.000007	0.056975	1.3	0.000001	0.008050
124	Solvent Storage Yard	SMT-10 (Chloroform) unloading	Vent	20.4	0.4	100	0.000007	0.059087	1.4	0.000001	0.008494
125	Solvent Storage Yard	Measuring line	Vent	22.7	0.4	100	0.000007	0.063838	1.5	0.000001	0.008929
126	Solvent Storage Yard	Production Line	Vent	23.5	0.4	100	0.000007	0.065459	1.6	0.000001	0.009356
127	Solvent Storage Yard	SY/PP-10	Vent	22.2	0.4	100	0.000007	0.062817	1.5	0.000001	0.008929
128	Solvent Storage Yard	SMt-12 (Toluene) unloading	Vent	4.5	0.4	100	0.000002	0.019781	0.3	0.000000	0.002785
129	Solvent Storage Yard	Measuring line	Vent	8.3	0.4	100	0.000004	0.030813	0.5	0.000000	0.004031
130	Solvent Storage Yard	Production Line	Vent	4.7	0.4	100	0.000002	0.020413	0.3	0.000000	0.002785
131	Solvent Storage Yard	SST/PP-12	Vent	8.5	0.4	100	0.000004	0.031349	0.5	0.000000	0.004031
132	Solvent Storage Yard	SMT-13 Pump seal Line	Pump seal	20.4	0.4	100	0.000132	1.159210	1.4	0.000025	0.219010
133	Solvent Storage Yard	Measuring line	Vent	4.5	0.4	100	0.000002	0.019781	0.3	0.000000	0.002785
134	Solvent Storage Yard	ST-11 (Di methyl Formide)	MV	6.4	0.4	100	0.000004	0.031828	0.4	0.000001	0.008312
135	Solvent Storage Yard	Suction Line to Pump	Vent	2.6	0.4	100	0.000002	0.013297	0.1	0.000000	0.001257

136	Solvent Storage Yard	Vent Line	Vent	3.9	0.4	100	0.000002	0.017834	0.2	0.000000	0.002076
137	Solvent Storage Yard	ST-09 (1,4 Dioxane)	MV	4.8	0.4	100	0.000003	0.025673	0.3	0.000001	0.006784
138	Solvent Storage Yard	Suction Line	Vent	4.6	0.4	100	0.000002	0.020098	0.3	0.000000	0.002785
139	Solvent Storage Yard	Vent Line	Vent	7.8	0.4	100	0.000003	0.029457	0.5	0.000000	0.004031
140	Solvent Storage Yard	ST-07 (Acetone Tank)	MV	4.6	0.4	100	0.000003	0.024870	0.3	0.000001	0.006784
141	Solvent Storage Yard	Suction Line to Pump	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
142	Solvent Storage Yard	Suction Line to Pump	Vent	17.4	0.4	100	0.000006	0.052659	1.2	0.000001	0.007597
143	Solvent Storage Yard	ST-05 (Ethyl Acetate)	MV	15.3	0.4	100	0.000007	0.061032	1	0.000002	0.015873
144	Solvent Storage Yard	Suction Line to Pump	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
145	Solvent Storage Yard	Vent Line	Vent	11.5	0.4	100	0.000004	0.039018	0.8	0.000001	0.005664
146	Solvent Storage Yard	ST-03 (methanol Tank)	MV	20.5	0.4	100	0.000009	0.075940	1.4	0.000002	0.020129
147	Solvent Storage Yard	Suction Line	Vent	11.5	0.4	100	0.000004	0.039018	0.8	0.000001	0.005664
148	Solvent Storage Yard	Vent Line	Vent	6.3	0.4	100	0.000003	0.025237	0.4	0.000000	0.003429
149	Solvent Storage Yard	ST-01 (IPA Tank)	MV	7.6	0.4	100	0.000004	0.036187	0.5	0.000001	0.009730
150	Solvent Storage Yard	Suction line to pump	Vent	10.3	0.4	100	0.000004	0.036026	0.7	0.000001	0.005142
151	Solvent Storage Yard	Suction line to pump	Vent	9.2	0.4	100	0.000004	0.033197	0.6	0.000001	0.004599
152	Solvent Storage Yard	ST-02 (Absolute Alcohol)	MV	8.6	0.4	100	0.000005	0.039688	0.6	0.000001	0.011067
153	Solvent Storage Yard	Suction Line to Pump	Vent	2.3	0.4	100	0.000001	0.012168	0.1	0.000000	0.001257
154	Solvent Storage Yard	Side Dummy	Flange	4.6	0.4	100	0.000005	0.046620	0.3	0.000001	0.006784
155	Solvent Storage Yard	ST-04 (Ethyene Chloride)	MV	5.6	0.4	100	0.000003	0.028806	0.3	0.000001	0.006784
156	Solvent Storage Yard	Suction to pump	Vent	2.4	0.4	100	0.000001	0.012548	0.1	0.000000	0.001257
157	Solvent Storage Yard	Side Dummy	Flange	10.8	0.4	100	0.000010	0.085165	0.7	0.000001	0.012340
158	Solvent Storage Yard	ST-06 (Hexanes Tank)	MV	11.4	0.4	100	0.000006	0.048989	0.7	0.000001	0.012340
159	Solvent Storage Yard	Suction Line to Pump	Vent	7.2	0.4	100	0.000003	0.027799	0.5	0.000000	0.004031
160	Solvent Storage Yard	Side Dummy	Flange	5.3	0.4	100	0.000006	0.051523	0.3	0.000001	0.006784
161	Solvent Storage Yard	ST-08 (Tri-Ethyl amin) Tank	MV	4.8	0.4	100	0.000003	0.025673	0.3	0.000001	0.006784
162	Solvent Storage Yard	Suction Line to Pump	Vent	11.5	0.4	100	0.000004	0.039018	0.8	0.000001	0.005664
163	Solvent Storage Yard	Vent line (Top)	Vent	16.2	0.4	100	0.000006	0.050004	1.1	0.000001	0.007133
164	Solvent Storage Yard	ST-10 (Chloroform Tank)	MV	11.2	0.4	100	0.000006	0.048345	0.7	0.000001	0.012340
165	Solvent Storage Yard	Suction Line to Pump	Vent	2.3	0.4	100	0.000001	0.012168	0.1	0.000000	0.001257
166	Solvent Storage Yard	Vent line (Top)	Vent	4.1	0.4	100	0.000002	0.018492	0.2	0.000000	0.002076
167	Solvent Storage Yard	ST-12 (Toluene tank)	MV	4.6	0.4	100	0.000003	0.024870	0.3	0.000001	0.006784
168	Solvent Storage Yard	Suction Line	Vent	10.6	0.4	100	0.000004	0.036782	0.7	0.000001	0.005142
169	Solvent Storage Yard	Side Dummy	Flange	9.8	0.4	100	0.000009	0.079518	0.6	0.000001	0.011067
170	Solvent Storage Yard	Tank Top Vent Line	Vent	4.5	0.4	100	0.000002	0.019781	0.3	0.000000	0.002785

11.811520 1.255318

89.37208379

The Sum of Total VOC Emissions Before Repair 11.81 kgs/year
The Sum of Total VOC Emissions After Repair 1.255318 kgs/year
The Percentage Reduction of TVOC by LDAR Study is 89.3%

Government of Andhra Pradesh

A.P. State Disaster Response and Fire Services Department

Annual Periodical Renewal Fire Certificate

From:
Regional Fire Officer
Andhra Pradesh, Vijayawada

To:
SENIOR GENERAL MANAGER,
SY NO. 126,150,151/2 N. NARASAPURAM (V), NAKKAPALLI (MD), VISAKHA DISTRICT - 531081

File No: 12288/VSP/RFO/2020, Date:09/06/2020

Occupancy NoC RC Number: 478-A/RFO/ER/2014,Dt: 05.05.2014

Sub: Andhra Pradesh State Disaster Response and Fire Services Department - Annual Periodical Fire Certificate to the constructed Non Multi Storeyed Building of **HETERO LABS LIMITED UNIT-III, represented by MOHANA REDDY CHILUKURI, SY NO. 126,150,151/2 N. NARASAPURAM (V), NAKKAPALLI (MD), VISAKHA DISTRICT - 531081** - Regarding.

Ref:
1. G.O.Ms.NO.71 Home (Prisons-A) Department, Dated.01-04-2010 & G.O.Ms.NO.140 Home(Prison & Fire Services) Department, Dt.04-09-2015.
2. This Office Delegation of Powers Rc.No.3350/Audit/NOC/2012, Dated.09-03-2017.
3. This Office NOC for Occupancy Rc No. 478-A/RFO/ER/2014,Dt: 05.05.2014, Dt.05/05/2014
4. Renewal NOC For Occupancy 478-A/RFO/ER/2014,Dt: 05.05.2014, Dt.05/05/2019
5. Online Application for Renewal NOC of MOHANA REDDY CHILUKURI, SY NO. 126,150,151/2 N. NARASAPURAM (V), NAKKAPALLI (MD), VISAKHA DISTRICT - 531081 - Inspection report called for Regarding.
6. Online Inspection Report submitted by Officers of this Department on 08-06-2020.

<< 0 >>

The Management of HETERO LABS LIMITED UNIT-III, represented by MOHANA REDDY CHILUKURI, SY NO. 126,150,151/2 N. NARASAPURAM (V), NAKKAPALLI (MD), VISAKHA DISTRICT - 531081 has requested to issue Annual Periodical Fire Certificate for period 2017-2018 duly remitting the Fire Precautionary fee for Rs.476076/- vide challan No. 41001363262020, Dated 14/04/2020 at through CFMS online challan, through CFMS online challan.

PRODUCTION BLOCK - B

,PRODUCTION BLOCK - D

,PRODUCTION BLOCK - G

,PRODUCTION BLOCK - H

,WARE HOUSE 1 & 2 (RM & ENG)

,WARE HOUSE - 3

,WARE HOUSE - 4

,WARE HOUSE - 5

,PRODUCTION BLOCK - A

,SOLVENT STORAGE YARD

,CYLINDER SHED

,QC & PHARMA

,UTILITY BLOCK & PCC ROOM

,ADMINISTRATION BLOCK

,DRUM YARD

,PRODUCTION BLOCK - C

1. This certificate is being issued as per G.O.Ms.No 140 Home (prisons & Fire Services) Department, Dt: 04.09.2015.
2. The No Objection Certificate for Occupancy was issued vide reference cited (3) and the Management has also obtained Annual Periodical Renewal Fire Certificate for vide reference 4th cited to the constructed Non Multi Storeyed Building.
3. The Officers of the department have recommended to issue The Annual Periodical Renewal Fire Certificate **MOHANA REDDY CHILUKURI SY NO. 126,150,151/2 N. NARASAPURAM (V), NAKKAPALLI (MD), VISAKHA DISTRICT - 531081**, subject to the following conditions.

Sl	As Builder	As Occupant	As Security Personnel
1	All the fire protection arrangements shall be maintained in good condition as seen during inspection.	All the escape/exit routes shall not be kept locked/blocked or encroached	All the occupants must know the correct method of operation of the fire fighting system installed.
2	Any loss of life or property due to non-functioning of fire safety measures and other installations shall be the responsibilities of the management.	All occupants shall be trained to operate the fire safety equipments during emergency.	Mock drills should be conducted once in 3 months for initial two years. Thereafter, once in every 6 months.
3	Addition / alteration, if any in the building may be verified by building authority.	Mock drills should be conducted once in 3 months for initial two years. Thereafter, once in every 6 months.	All security personnel shall be trained to operate the fire safety equipments during emergency.
4	This is Only for Fire Safety Point of View.	Raise the alarm if the fire cannot be controlled; Evacuate the area completely at once with nearest safe exit.	Attack the fire using available fire equipment only if you feel capable of controlling. If not, take all steps to isolate the area by closing doors and windows.

4. This Annual Periodical Renewal Fire Certificate is valid from 05/05/2020 to 04/05/2023.

5. The Responsibility/liability of the owner/occupier or both to maintain Fire safety measures in good condition in all times, in accordance with AP Fire safety Act 1999 and Rules, 2006.

The following deficiencies are identified by the officers of the department and needs to be attended to by the management.

1. The management has provided 14 Nos. Modular for 14 Nos. reactors and 03 Nos. Aerosols of 05 Kgs. capacity in PB-D instead of Sprinkler system. 2. The management has not provided ADAS in PB-G, PB-H, Ware House -V , as the blocks are open on all sides . 3. The management has yet to provide ADAS systems to Ware House -4 & Admin Block. The management has provided additional fire equipment as mentioned in para - 13 of the NOC for Occupancy issued vide Rc.No.478-A/RFO/ER/2014, Dated : 05.05.2014. 4. The management has provided 03 pump houses which covers the entire 05 units of Hetero Industry. There are 03 Nos. Jockey Pumps of 416 LPM Capacity each, 03 Nos. Main Pumps of 6833 LPM capacity each and 03 Nos. Diesel pumps of 6833 LPM Capacity each, all are inter connected . 5. The management has provided 01 No. Foam Tender and 01 No. Multi Purpose Tender covering the entire 05 units of the industry. Hence basing on the recommendations of the committee the renewal is issued subject to provide deficit automatic detection system in Ware House -4 & Admin Block.

- The Renewal NOC is issued for a period of 3 years subject to submit DECLARATION FORM in the prescribed format every year.

This Renewal NOC is issued form Fire Safety Point of view only basing on recommendation of the inspection Committee and this Renewal NOC is not for claiming proprietary or ownership rights. Further, in case of any deviation noticed with respect to this Renewal NOC after issuance of this Renewal NOC, the same Renewal NOC shall be liable for cancellation at any time.

- The Management has to maintain Fire Safety Measures and other installations in good working condition at all times and the Responsibility of Fire Fighting equipment maintenance lies with the management as seen & tested by the committee at the time of inspection
- This Renewal NOC is valid for three years only and It is the responsibility of the Builder/Owner to apply for renewal of No Objection certificate, duly remitting the user charges as per G.O.Ms.No.169, Home (Prisons & Fire Service) Department.Dt.19-12-2019. two months before expire of this Renewal of No Objection Certificate

12288/VSP/RFO/2020

Your Sincerely,

Regional Fire Officer
Andhra Pradesh, Vijayawada

Copy to MOHANA REDDY CHILUKURI, SY NO. 126,150,151/2 N. NARASAPURAM (V), NAKKAPALLI (MD), VISAKHA DISTRICT 531081

Copy to Chief Office for Record Purpose

Copy to District Fire Officer Concerned

Copy to Assistant District Fire Officer Concerned

Copy to Station Fire Officer Concerned

Hetero Complex Safety Equipment's				
S. No	**Name of the Equipment**	**Capacity / UoM**	**Total Quantity**	**Photograph**
1	Fire Extinguishers	Nos	2238	
2	ARFFF (Foam)	Lts	47960	
3	Fire hydrant points	Nos	462	
4	Fire hose cabinet	Nos	436	
5	First aid hose reel	Nos	176	
6	Fire hydrant monitors	Nos	74	
7	Fire hydrant gate valves	Nos	314	
8	Fire blanket	Nos	148	
9	Eye & Body wash unit	Nos	105	

10	Personal protective Equipment in Blocks	Nos	74	
11	Eye wash bottle	Nos	327	
12	SCBA	Nos	38	
TYPE OF FIRE EXTINGUISHER				
1	CO2	2 kg	96	
2		4.5 kg	567	
3		5 kg	10	
4		22.5 kg	275	
5		45 kg	91	
6	Foam	9Lts	112	
7		50Lts	373	
8	DCP	9Kg	78	
9		10Kg	120	
10		25Kg	282	
11		50Kg	81	

12	D-Type	9Kg	4	
13		10 Kg	27	
14		25 Kg	15	
15		50 Kg	11	
16	ABC	2Kg	80	
17	DCP / Clean Agent Modular	10 Kg	672	

HETERO INFRASTRUCTURE SEZ LTD, NAKKAPALLI.

HETERO COMPLEX FIRE HYDRANT PUMP HOUSE DETAILS

PUMP HOUSE NO →	PUMP HOUSE –I			PUMP HOUSE-II			PUMP HOUSE-III		
PUMP DESCRIPTION	JOCKEY PUMP	MAIN PUMP	DIESEL PUMP	JOCKEY PUMP	MAIN PUMP	DIESEL PUMP	JOCKEY PUMP	MAIN PUMP	DIESEL PUMP
PUMP HEAD (Mt)	88	88	88	88	88	88	95.1	88	88
PUMP FLOW (m3/hr)	25	410	410	25	410	410	61	273	273
PUMP HP	25	215	231	25	215	231	20	150	133
PUMP RPM	2900	2900	1800	2900	1480	1800	2920	1480	1800
PUMP LPM	416	6833	6833	416	6833	6833	1000	4550	4550
AUTO START (Kg/cm2)	5	5	5	5	4	2	5	4	Manual shut off
AUTO SHUT OFF (Kg/cm2))	7	Manual shut off	Manual shut off	7	Manual shut off	Manual shut off	7	Manual shut off	Manual shut off
Water Storage Capacity	600 KL			1200 KL			1000 KL		

HIGH PRESSURE WATER MIST FIRE TENDER		
UNIT	Fire Engine -1	Fire Engine-2
Engine model	EICHER 10.95	EICHER 10.95
Water tank capacity	3500ltrs	2000ltrs
Foam Tank capacity	350L	400L
Foam Water monitor capacity	2000Lpm@100bar	1000Gpm@7kG/cm2
DCP Tank capacity	….	250 Kgs
High pressure pump	150Lpm @ 100bar	150Lpm @ 100bar
High pressure hose pipe (60mtrs length)	02 no's	02 no's
Type	Advances water mist and Foam type	Advanced water Mist, Foam and Dry Chemical Powder

Annexure- V

GREEN BELT PHOTOS

Annexure-7
(T/1/c/ANX-7)

PERSONNEL PROTECTIVE EQUIPMENT MATRIX

Area/Activity	PPEs REQUIRED BEFORE STARTING ACTIVITY				Area/Activity	PPEs REQUIRED BEFORE STARTING ACTIVITY			
PPE mandatory before entering in to any work Areas.	Safety Shoes		Nose Mask		Flammable Gas handling like Hydrogen etc.	Safety Shoes		FR Suit with Hood	
	Safety Goggles					Safety Goggles		Nitrile Hand glove	
	Safety Helmet					Safety Helmet		SCBA	
Handling of Flammable Solvents with Proper Earthing and bonding	Safety Shoes		FR Suit with Hood		Boiler house	Safety Shoes		FR Suit with Hood	
	Safety Goggles		Nitrile Gloves			Safety Goggles		Heat Resistant glove	
	Safety Helmet		PAPR			Safety Helmet		Ear Plug/Muff	
	Full Face Mask					Dust Masks			
Toxic Material Handling (Like NH3, bromine etc)	Safety Shoes		PVC Air Line Suit		Opening of Pipe lines	Safety Shoes		FR Suit with Hood	
	Safety Helmet		PVC Hand Gloves			Safety Goggles		Hand Gloves	
	Full Face Mask		PAPR			Safety Helmet		Nose Mask	
Charging/ Handling of corrosive chemical (NaOH, H_2SO_4)	Safety Shoes		PVC Apron		Utility and DG Set areas	Safety Shoes		Hand gloves	
	Safety Goggles		PVC Hand Gloves			Safety Goggles		Ear Plug/Mug	
	Safety Helmet		PAPR			Safety Helmet		FR Suit	
	Full Face Mask		Other			Nose Mask			
Charging/Handling powder (powder Milling, sifting, dispensing and charging in to reactor Etc)	Safety Shoes		FR Suit with Hood		Working at effluent sumps, water, sumps, cooling towers, aeration tanks, etc.	Safety Shoes		FR Suit with Hood	
	Safety Goggles		Nitrile Gloves			Safety Goggles		Safety Belts	
	Safety Helmet		PAPR			Safety Helmet		Hand gloves	
	Dust Mask					Nose Mask		Life Buoys	
Hot material handling, Abrasive material handling	Safety Shoes		FR Suit /Apron		Working at heights, painting, and Civil constructions.	Safety Shoes		Life Lines	
	Safety Goggles		Heat Resistant glove			Safety Goggles		Safety Belts	
	Safety Helmet					Safety Helmet		Hand gloves	
	Nose Mask					Nose Mask			
Rescue operation in Fire	Safety Shoes		Fire Proximity Suit		Hot Works like welding, cutting , grinding , heating , chipping etc.	Safety Shoes		FR Suit with Hood	
	Safety Goggles		Fire Proximity Glove			Safety Goggles		Safety Belts	
	Safety Helmet					Safety Helmet		Hand gloves	
	Full Face Mask		SCBA			Nose Mask			
Rescue operation in toxic, corrosive atmosphere.	SCBA		PVC hand Gloves		Confined Space Entry	Safety Shoes		Safety Belt/Ladder	
	PVC Suit/Apron		Safety Helmet			Safety Goggles			
	Safety Gum Shoe					Safety Helmet			
Laboratory works	Safety Shoes		FR Suit with Hood		Working on MCC, SFU, Isolator, capacitors underground cable	Insulative Shoe		Arc Suit	
	Safety Goggles		Lab Apron			Safety Goggles		Electrical Resistance Gloves	
	Nose Mask					Safety Helmet			
Detoxification Works	Safety Shoes		PVC Suit		Excavation work	Safety Shoes		FR Suit with Hood	
	Safety Goggles		Hand Gloves			Safety Goggles		Hand Gloves	
	Safety Helmet		PAPR			Safety Helmet			
Monitoring activities in plant and warehouse	Safety Shoes		FR Suit with Hood		Gas cylinder Handling	Safety Shoes		FR Suit with Hood	
	Safety Goggles		Nose Mask			Safety Goggles		Hand Gloves	
	Safety Helmet					Safety Helmet		Face Shield	
Road Tanker Sampling and Unloading	Safety Shoes		FR Suit with Hood		Powder Handling	Safety Shoes		FR Suit with Hood	
	Safety Goggles		Safety Belts			Safety Goggles		Nitrile Hand gloves	
	Safety Helmet		Nitrile Hand glove			Safety Helmet		PAPR	
	Full Face Mask					Nose Mask			

A Brief Report of CSR activities in Nakkapalli plant areas

December 2022

About Hetero

Hetero is one of India's leading generic pharmaceutical companies and is one of the world's largest producers of anti-retroviral drugs for the treatment of HIV/AIDS. With more than 20 years of expertise in the pharmaceutical industry, Hetero's strategic business areas include APIs, generics and biosimilars. Hetero also offers custom pharmaceutical services to its partners around the world. The company is recognized for its strengths in Research and Development, manufacturing, and commercialization of a wide range of products.

Hetero is the first company in India to launch the generic version of Remdesivir injection, COVIFOR, in India, which is used to treat hospitalization cases of COVID-19.

Corporate Social Responsibility

At Hetero, we value health and prosperity for all. Our passion for improving quality of life extends beyond our business and transcends everything we do. While we work towards making medicines affordable and accessible to society at large, we also continuously seek opportunities to help the society through our corporate social responsibility initiatives. Since its inception, Hetero has been directly supporting with healthcare programmes, drinking water & sanitation, educational and welfare activities in communities surrounding the company's factories. The company also extends its support beyond its operational vicinities depending on the community needs and emergencies.

As a Hetero group we will focus on the following thematic areas to implement CSR activities in Nakkapally Region. Following activities have been implemented in 26 number of villages with an outreach of 16,800 households, 32 schools 31 Anganwadi centers etc.

1. Quality Education
2. Health Care Services
3. Village Infrastructure.
4. Drinking Water & Sanitation

1. Quality Education

Quality Education is one of the flagship programs for Hetero Company. We are working in 32 Schools & 31 Anganwadi Centers. Goal is to address the root causes of education quality challenges. We identified several challenges among the marginalised students studying especially in govt schools.

To provide quality education:

- Supported **32 vidya volunteers** in schools to balance the student teacher ratio. Purpose of vidya volunteers is to address the root causes of lack of required teaching staff in select schools. Vidya volunteers are well trained on various participatory didactic learning/teaching methods. Vidya volunteers help the school students through language and numeracy improvement. Also helps in various behavioural change trainings to students.

- Provided **uniforms, bags, stationery, notebooks & furniture** to schools to bring the uniformity among the students (till the year 2019). The intent of providing the above is to enable children studying in the schools to have a better access to learning materials.
- Provided **outdoor playing equipment** to Anganwadi schools to encourage the children to attend regularly. In several Anganwadi centers, it was observed that the children do not have access to required outdoor playing equipment.
- Constructed **RO Water Plant** in Schools to address the clean and safe drinking water.
- Provided **Cooking Wessels** to Schools.
- **Merit Awards** to students to encourage higher education.
- Provided **Reading Material** to 10th class students
- Constructed **25 toilets in Schools for Boys & Girls** to prevent the transmission of communicable diseases.

2. Health Care Services:

Health is the other flag ship program for Hetero Company, under health, we are working in following segments:

2.1 Vision Health Care Centre:

To Address the eyesight issues of marginalised communities, Hetero opened a Vision centre at Nakapally Village in collaboration with Sankurathri Foundation. The Vision centre equips latest technologies, well trained staff. Communities from neighbouring villages visits the Vision center, get the eye tests done, and for needed patients, undertake surgeries by specialist Surgeons.

Objective of the Centre:

To Support the needy villagers, who are having vision problem and not able to bare the expenses for eye surgeries.

So far, served **42,958 members**, distributed **17,983 spectacles** & conducted **1,806 eye surgeries.**

2.2 Mobile Medical Van:

The main purpose of this activity is to serve the underprivileged society and especially focus on seasonal diseases like fever, cold, allergies etc, blood pressure & sugar/diabetes.

Through this project, so far, we conducted **1,973 camps** and reached **1,04,612 members** & distributed medicines. A qualified medical doctor provides required medical support to the patients in the village itself. Once the testing is one, required medicines are provided to the patients free of cost. Interactions with few patients inferred that, on an average each patient save around Rs. 1000 per visit if they go and get the same medical support from nearby town.

2.3 Covid 19 response:

During Covid, every **15 days** we have done sanitation in the whole village to stop the spread of virus in the villages.

During lock down we have distributed groceries to the people in and around Nakkapally Region. We have organized special vaccination drive to the villagers.

Under this project we covered 27 villages and distributed **16,000 Grocery kit** (Dal, Rice, Sugar, oil packet etc) to the Villagers.

3. Village Infrastructure:

Under this project 27 villages are adopted by Hetero Group and constructed the following infrastructure in the villages.

- Constructed 6 Community Halls.
- Laying of CC Roads & Gravel roads
- Construction of Toilets
- Laying of Electrical Lines.
- Provided Solar lamps to the fisherman community
- Provided streetlights
- Construction of compound walls to Graveyards.
- Planted trees in the community.

4. Drinking Water & Sanitation:

Under this project following activities are completed.

- 14 RO Plants are installed in various villages to provide clean and neat drinking water.
- Provided running water to the whole community.
- Constructed Overhead tanks.
- Drilled 12 bore wells
- Constructed drainages in the community
- Created awareness on Swachh Bharath

CIN : U45200TG2006PLC049668

HETERO INFRASTRUCTURE SEZ LTD.

Ch. Lakshmipuram (Vill.), N. Narasapuram (Vill.), Rajayyapeta (Vill.), Nakkapally (Mandal)
VISAKHAPATNAM (Dist.) - 531 081. A.P., India. Tel : 08931- 227307, Fax : 08931- 227200
E-mail : contact@heterodrugs.com. URL : http//www.heterodrugs.com.

27/10/2022

Letter No: HIS/EHS/APPCB/2022-23/16

The Environmental Engineer
Regional Office
A.P. Pollution Control Board
Visakhapatnam

Dear Sir,

Sub : Submission of Environmental Statement in Form-V of M/s Hetero Infrastructure SEZ Ltd for the Financial year 2021-22 - Regarding

Ref : APPCB/VSP/VSP/219/CFO/HO/2017 Dated 11/12/2017 and amendment dated 25/06/2019

With reference to above, we are herewith submitting the environmental statement in Form-V for the financial year 2021-22 for your information and perusal.

You are requested to kindly acknowledge the receipt.

Thanking you Sir,

Yours faithfully,
For Hetero Infrastructure SEZ Ltd

S. Kullayi Reddy
Associate Vice President -EHS

Enclosures : As Above

PROFILE

M/s. HETERO INFRASTRUCTURE SEZ Ltd, obtained EC & consent for establishment for setting up of 17 manufacturing facilities for producing Bulk Drug intermediates & APIs and also got Consent for operation for the same SEZ. Out of 17 permitted units, Hetero constructed following 03 units in Hetero Infrastructure SEZ Ltd,

- Hetero Drugs Ltd, Unit-IX (Plot No:1)
- Hetero Labs Ltd, Unit-IX (Plot No: 2 & 3)
- Honour Lab Ltd, Unit-III (Plot No:4)

All above mentioned units are producing Bulk Drugs & API and all these products are being manufactured on Regular basis. Manufacturing of the products is being undertaken as per the consent conditions.
Hetero Infrastructure is providing services like Water, Steam, Effluent Treatment Plant, Sewage Treatment plant, Vermi Compost plant, Scrap Yard, Hazardous waste managment etc to all the above mentioned units.

Apart from above mentioned units, the other unit Hetero Labs Ltd, Unit-III is making use of these facilities of Hetero Infrastructure SEZ Ltd as per the CFE & CFO.

Salient features of
M/s. Hetero Infrastructure SEZ Limited

Total Site Area	340 Acres
Built up Area	180 Acres
Area of Green Belt Developed	100 Acres
Area available for Green Belt Development	50 Acres
Year of Establishment	2010
Year of Commissioning	2011
Capital Cost	120 Crores
Type of plant	Facilitator for Bulk Drug Manufacturing units
Water Consumption as on date	242 KLD
Investment on Pollution Control	
• Capital Investment	100 Crore
• Recurring O & M	300 Lakhs/annum
Employment	300

MINISTRY OF ENVIRONMENT AND FORESTS NOTIFICATION
New Delhi, the 22nd April 1993
(PART II, SECTION 3, SUB-SECTION (1)

"FORM - V"
ENVIRONMENTAL STATEMENT FOR
THE FINANCIAL YEAR ENDING THE 31ST MARCH 2022

PART – A

Name and address of the owner/ Occupier of the industry, operation Or process	:	**Dr. C. Mohan Reddy, Director** 7-2-A2, Hetero Corporate, Industrial Estate Sanathnagar Hyderabad -500018
Registered Office Address	:	**M/s. Hetero Infrastructure SEZ Ltd,** 7-2-A2, Hetero Corporate Industrial Estate Sanathnagar Hyderabad -5000018 Tel: 040- 23704923/24/25
Works address	:	**M/s. Hetero Infrastructure SEZ Ltd,** N.Narsapuram (V), Nakkapally (Md), Visakhapatnam Dist - 531081.
Industry Category	:	Red.
Production Capacity	:	NA (Only Services)
Month and Year of Establishment	:	2010.
Date of Last Environmental Statement Submitted	:	September 2021

PART-B
Water and Raw Material Consumption

Water Consumption (m^3/day)

S.No	Water Consumption	Quantity (KL/day) Including power plant	Quantity (KL/day) Including power plant
1.	Process & Washing	837	-
2.	Cooling tower Make up	250	-
3.	Boiler Feed	330	242
4.	Domestic	120	-
5.	Raw water RO make up	107	
Total		**1644**	**242**

PART-C

Pollution discharged to environment/unit of output
(Parameter as specified in the consent issued)

	Quality ofPollutants discharged (mass/day)	Concentrations of Pollutants discharges (Mass/volume)	Percentage of variation from prescribed standards with reasons.
1.Ambient Air Quality	**Analysis Report Enclosed**		Within the limits
2.Stack Emissions			
3.Noise levels			
4.Effluent			

PART-D

HAZARDOUS WASTES

(As specified under 1[Hazardous Wastes (Management, Handling and Transboundry Movement) Rules, 2008)]

Hazardous Wastes	Total Quantity (Kg.)	
	During the previous financial Year (2020-21)	During the current financial Year (2021-22)
Forced Evaporation Salts	2205.4 Tons	1676.84
ETP Sludge	53.21 Tons	47.46
Incinerator Ash	6.12	0

PART-E

Solid Wastes

Solid waste	Total Quantity	
	During the previous financial year (2020-21)	During the current financial year (2021-22)
Boiler ash	7650 Tons	9418 Tons

PART-F

Characteristics in terms of Composition and quantum of hazardous as well as solid wastes and the disposal practices adopted by them

Fly Ash from Boiler : To Brick Manufacturers
Spent Carbon from Process : To TSDF , Parawada / Cement Industries
Forced Evaporation Salts : To TSDF , Parawada
Organic Residue : To TSDF , Parawada and Cement Industries

PART-G

Impact of the pollution abatement measures taken on Conservation of natural resources and on the cost of production.

The industry has adopted following measures for the conservation of natural resources:

- Sea water Desalination Plant for meeting the water requirement of the industry.
- Sewage Treatment Plant for reuse of Domestic wastewater for gardening purposes.
- Usage of vermicomposting for green belt and grounding purpose as a replacement for chemical fertilizers.
- Green belt Development for abatement of pollution

The industry adopted all possible pollution control measures (Common Facility located at M/s Hetero Infrastructure SEZ Ltd) which includes Equipment's for Conservation of energy, Effluent Treatment Plants (Stripper, MEE, ATFD Bio-tower & Dual stage aerobic Treatment plant based on ASP), Sewage Treatment plants, Equipments for controlling fugitive emissions (Scrubbers, Condensers) for the abatement of pollution. To avoid any chances of ground water/ Soil contamination, the industry has constructed all above Ground tanks for ETP, STP etc.

Further the industry has installed 03 nos of Continuous Ambient Air Quality Monitoring (CAAQM) stations for monitoring the quality of the air, Online effluent monitoring system (OEMS) for various parameters to check the quality of treated effluents being disposed into Sea, Portable & online VOC meters for measuring organic vapours concentration in and around factory area.

PART-H

Additional measures/investment proposal for environmental protection including abatement of pollution, prevention of pollution.

The industry has already invested around Rs. 100.00 Crores towards installation of pollution control devices in Hetero Infrastructure SEZ Ltd and developed green belt in and around the factory Premises in an area of more than 40% of the total area of the Industry. Green belt consists of various plants like Ganuga, Neem, Almond, Silver oak, Plintoform, casurina, Eucalyptus and Conacorpous etc.

All installed Pollution control equipments are periodically evaluated and necessary modifications/replacements are being made for improvement in their performances from time to time as and when required irrespective of Budget allocations.

The industry proposed to invest additional amount of Rs 100 crore towards installation of new 1.2 MLD Effluent Treatment plant and associated facilities.

PART-I

Any other particulars for improving the quality of the environment

- Increasing the greenbelt area by planting more plants, lawns, bushes etc.
- Industry is maintaining good housekeeping, mitigating fugitive emissions, reducing spills of raw material by taking all possible measures.
- Recovering of solvents from the effluents in stripper thereby reducing the organic vapours entry into the atmosphere and effective biological treatment.
- Rainwater harvesting by collecting complete run off in an open pond for recharging of ground water as well as for reuse.
- Captive power generation of 6.1 MW in connection to the existing 45 TPH Boiler.
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CONCLUSION

Hetero Infrastructure SEZ limited is taking all possible measures for the abatement of pollution and certain steps are in consideration for workplace improvement and cost reduction. The following are the pollution abatement measures taken by the industry:

Taking all steps required to assure low emission levels, without any prejudice to the quantum of production.

1. Utilization of domestic wastewater discharges for development of greenery after treating in Sewage Treatment Plants.
2. Giving due importance to the greenery and ultimately taken care in abating the pollution.
3. Rainwater harvesting by way of collecting rainwater in a pond created by the industry
4. Online instruments for monitoring the pollution levels in and around factory premises.
5. Operating Effluent Treatment Plant (Common) for bringing the pollution levels well within the norms of the Board.
6. Regular monitoring of air, water, effluent and Ground water by third party once in a month to keep watch on the pollution levels.

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Annexure IV

SV ENVIRO LABS & CONSULTANTS Environmental
Engineers & Consultants in Pollution Control
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Autonagar, Visakhapatnam
Phone: 9440338628
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(Recognized by GOI, Ministry of Environment & Forests)
(An ISO 9001 Certified and NABET Accredited for EIA)

Ref Code	: SVELC/HISEZL/22-09/001	**Date : 08-10-2022**
Name and Address	: **M/s. HETERO INFRASTRUCTURE SEZ LIMITED,** N.Narasapuram Village, Nakkapally Mandal, Visakhapatnam (Dt).	
Sample Particulars	: Effluent Analysis	
Source of Collection	: ETP OUTLET	
Sample Code	: SVELC/22/EFF/1191	
Date of Collection	: 29-09-2022	
Date of Receipt	: 29-09-2022	

TEST REPORT

S No	Parameter	Unit	Result	Method	Standard
1	pH	-	7.63	APHA 4500-H+B, 23rd Ed,2017	5.5-9.0
2	Suspended Solids, SS	mg/l	21.0	APHA 2540-D, 23rd Ed,2017	100
3	Total Dissolved Solids, TDS	mg/l	1649	APHA,2540-C,23rd Ed, 2017	-
4	Chemical Oxygen Demand(COD)	mg/l	183	APHA 5220-B, 23rd Ed,2017	250
5	BOD 3d 27°C	mg/l	64.0	IS 3025 Part 44	100
6	Chlorides as Cl^-	mg/l	401	APHA,4500-Cl B,23rd Ed, 2017	1000
7	Oil & Grease	mg/l	2.3	APHA,5520-D,5-38,23rd Ed, 2017	10
8	Sulphide as S	mg/l	0.25	APHA,4500S^2 D, 23rd Ed,2017	2.0
9	Phenolic compounds (C_6H_5OH)	mg/l	0.04	APHA,5530-C, 23rd Ed,2017	1.0
10	Cyanide as CN	mg/l	BDL	APHA,4500-CN^- E , 23rd Ed,2017	0.2
11	Hexavalent chromium as Cr^{+6}	mg/l	BDL	APHA,3500-Cr B , 23rd Ed,2017	0.1
12	Lead as Pb	mg/l	BDL	APHA,3120-B , 23rd Ed,2017	0.1

Note: BDL denotes Below Detectable Level

ANALYZED BY

SV ENVIRO LABS & CONSULTANTS VISAKHAPATNAM

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Ref Code	: SVELC/HISEZL3/22-09/002	**Date : 08-10-2022**
Name and Address	: **M/s. HETERO INFRASTRUCTURE SEZ LIMITED,** N. Narasapuram Village, Nakkapally Mandal, Visakhapatnam (Dt).	
Sample Particulars	: Stack Monitoring	
Source of Collection	: 45 TPH Boiler Chimney	
Sample Code	: SVELC/22/SE/1192	
Date and Time of Start	: 28-09-2022 11:15 hr	
Duration of Sampling	: 60 MINS	

TEST REPORT

STACK DETAILS

S.No	Description	Unit	Result
1	Pitot Coefficient	-	0.87
2	Specific Gravity of Fluid	-	1.0
3	Temperature @ DGM	°C	32
4	Stack Temperature	°C	134
5	Nozzle Diameter	mm	10
6	Exit Velocity	m/sec	6.82
7	Duration of Sampling	minutes	60
8	Fuel Used	-	Coal

EMISSION DATA

S.No	Parameter	Unit	Result	Method	Standard
1	Particulate Matter – PM	mg/nm^3	51.2	IS:11255 – P-1	115
2	Sulphur Dioxide – SO_2	mg/nm^3	55.6	IS:11255 – P-2	-
3	Oxides of Nitrogen – NO_x	mg/nm^3	43.1	IS:11255 – P-7	-

ANALYZED BY

SV ENVIRO LABS & CONSULTANTS