KAMMAVARI SANGHAM (R), 1952
K.S. School of Engineering and Management
Approved by AICTE-1-5279601, Affiliated to VTU, Belagavi
15, Near Vajarahalli, Mallasandra, off Kanakapura Road,
Bengaluru - 560 019, www.kssem.edu.in
Tel : +91 80 28425012/013/163, Fax : +91 80 28425164, Mob : 8884444408

Ref : KSSEM/CIV/057/2019-20

Date: 25/9/2018

Place: Bengaluru

To,

The Chief Engineer,

Cauvery (BWSSB)

5th floor Cauvery Bhavan

K G Road Bengaluru-560009

Sub: Requesting permission for field visit to water treatment plant, BWSSB (T K Halli)

Respected Sir/Madam,

Civil Engineering Department of K S School of Engineering and Management wishes to take 5th semester Civil Engineering students to water treatment plant, BWSSB T K Halli on 9/10/2018.In this regard I request you to permit 54 students and four faculty to visit the plant.

Thanking you,

Professor & Head
Dept. of Civil Engineering
K.S. Group of Institutions
K. S. School of Engineering
Bangalore-560 062

Yours Sincerely,

Dr Vijayalakshmi Akella

Professor and Head

Dept of Civil Engineering

KSSEM,Bengaluru

email: ceed@bwssb.gov.in
Fax : 22945103

Phone No : 22945103

ಬೆಂಗಳೂರು ನೀರು ಸರಬರಾಜು ಮತ್ತು ಒಳಚರಂಡಿ ಮಂಡಳಿ

BANGALORE WATER SUPPLY AND SEWERAGE BOARD

Office of the Chief Engineer (K), 5th Floor, Cauvery Bhavan, K.G.Road, Blore-560 009.

BWSSB CE(K)/ACE(K)-2/TA-10/D-457/1617 /2018-19. Date: 05 /10/2018

To,
EECH

Sub: Seeking permission to visit Thorekadanahalli water purification Plant.
Ref: Letter of K.S. School of Engineering and Management, dated: 29/09/2018.

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With respect to the above subject, Professor & Head Dept. K.S School of Engineering and management, #15, Near Vajarahalli, Mallasandra, Off Kanakapura Road, Bengaluru-560109, vide their letter cited under reference has requested permission to visit the Water Treatment Plant at Thorekadanahalli. As part of curriculum program, the students intend to have educational trip on 09/10/2018 there are 58 members, (54 students 04 faculties).who would like to visit Thorekadnahalli.

In this regard it may be considered to permit the students of K.S School of Engineering and management, #15, Near Vajarahalli, Mallasandra, Off Kanakapura Road, Bengaluru-560109, under the following conditions.

1. It is mandatory that, students should be above the age of 16 and the team should be accompanied by their Faculty.
2. One Assistant Engineer/Assistant Executive Engineer of the Board will be accompanying the team throughout the visit.
3. Selfie/Photography is prohibited in the Treatment Plant and BWSSB premises. Mobile phones/camera shall not be carried inside the BWSSB premises.
4. No recreation/cultural activities shall be entertained in the vicinity.
5. Consumption of food and vehicles are not allowed inside BWSSB premises.
6. Private Vehicles are not allowed inside BWSSB premises.
7. Faculty /Representatives of Institution will be held responsible for the safety of the students.

8. Visitors are prohibited to enter the restricted area in the Treatment Plant. If violated, Faculty / Representation of institute will be held responsible for any kind of loss/damages to any individual and / or BWSSB property.
9. Entry is restricted to the Water Treatment Plant only.
10. The Prescribed fee for the visitors shall be paid to BWSSB before the visit.

In addition to the above utmost care shall be taken to avoid any untoward incidents/accidents. One Assistant Executive Engineer shall accompany the team throughout the visit. Any untoward incident/accident occurs during the visit, the Faculty/Representatives of the Institution will be solely responsible. The team of visitors shall comprise those mentioned in the enclosed list and their identities shall be thoroughly verified and ensure that only these members are allowed inside. The Head of the Team shall give an undertaking for complying to the conditions.

EECH may permit the students K.S School of Engineering and management, #15, Near Vajarahalli, Mallasandra, Off Kanakapura Road, Bengaluru-560109, to visit the Water Treatment Plant at Thorekadanahalli on 09/10/2018, on acceptance of all the above conditions & Faculty/Representatives of the Institution shall be entirely responsible for the visit.

Chief Engineer (K)
BWSSB
5/10/18.

Copy to: ACE (K-2) for information and necessary action.

Copy to: EE (K-3) for information and shall be equally responsible as EECH for the above visit of the faculty and students, K.S School of Engineering and management, #15, Near Vajarahalli, Mallasandra, Off Kanakapura Road, Bengaluru-560109,for information & needful.

Copy to: Professor & Head Dept. K.S School of Engineering and management, #15, Near Vajarahalli, Mallasandra, Off Kanakapura Road, Bengaluru-560109, for information & needful.

Copy to: AC(Accounts) for information & needful.

No. 64935-6-10-18. R-2904

Office of the Assistant Controller (Accts.)
Bangalore Water Supply and Sewerage Board
1st Floor, Cauvery Bhavan,
Bangalore - 560 009
6-10-18

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Date: 11/10/2018

Following are the 5th semester civil engineering students attended the field visit to Torekadanahalli Water Treatment Plant on 9th October 2018.

Sl.No	USN NO	Name of the Student
1	1KG15CV006	BINDUSHREE
2	1KG15CV011	DURAI BABU
3	1KG15CV013	GANESH M S
4	1KG15CV022	KIRAN D C
5	1KG15CV024	KIRAN S G
6	1KG15CV026	KRUTHIKA R
7	1KG15CV030	MANOJ H B
8	1KG15CV031	MOHITH N
9	1KG15CV043	RASHI.C.S
10	1KG15CV052	SUMITH
11	1KG16CV001	A RAJASEKHAR
12	1KG16CV003	ABHISHEK SN
13	1KG16CV005	ANANTH A R
14	1KG16CV007	ARAVIND N
15	1KG16CV008	ARPITHA H G
16	1KG16CV009	ARPITHA M
17	1KG16CV012	BHARATHESH B C
18	1KG16CV013	C AKHILA
19	1KG16CV015	GAGAN DEEP P M
20	1KG16CV017	GOVIND T G
21	1KG16CV018	HARISH BABU R M
22	1KG16CV020	INCHARA S
23	1KG16CV021	JAYANTH P
24	1KG16CV022	JEEVAN B
25	1KG16CV023	JEEVAN GOWDA K N
26	1KG16CV025	KARI PAVAN KUMAR
27	1KG16CV026	KHALANDAR SHARIFF S

Sl.No	USN NO	Name of the Student
28	1KG16CV029	MALOLAN NARAYAN A
29	1KG16CV030	MANOJ K C
30	1KG16CV034	MOHAMMED SHAFFI
31	1KG16CV035	NAIDU GOPI KUMAR
32	1KG16CV036	NAMRATHA R K
33	1KG16CV037	NINGARAJ G KOTAGI
34	1KG16CV038	NITHIN ANANTH
35	1KG16CV040	OM SWAROOP R K
36	1KG16CV041	PAVAN R
37	1KG16CV042	PRATHIBHA PRAKASH
38	1KG16CV046	SANAULLA SHARIFF S M
39	1KG16CV050	SHRUJANA N
40	1KG16CV051	SHUVANG AGARWALA
41	1KG16CV052	SINCHANA A S
42	1KG16CV054	SURABHI K
43	1KG16CV055	SUSHMITHA G C
44	1KG16CV056	VANISHREE M R
45	1KG16CV057	VARSHITHA S
46	1KG16CV058	YASHASWINI C
47	1KG16CV059	YUMNUM MONISH SINGH
48	1KG16CV401	CHETHAN REDDY M
49	1KG17CV400	B.SHIVARAM
50	1KG17CV403	KARTHIK R
51	1KG17CV404	KRITHIKA
52	1KG17CV406	SUPREETH V
53	1KG17CV407	THULASIPATHI G
54	1KG17CV409	ZEESHAN AJAZ

Faculty In Charge

Head of the Department

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REPORT OF

INDUSTRIAL VISIT TO

BWSSB 550 MLD WATER PURIFICATION PLANT AT T K HALLI

Malavalli taluk, Mandya

ON

9TH OCTOBER 2018

BY

DEPARTMENT OF CIVIL ENGINEERING

K.S.SCHOOL OF ENGINEERING AND MANAGEMENT

#15, Near Vajrahalli,Mallasandra, Kanakpura road,

Bengaluru-560109

Professor & Head
Dept. of Civil Engineering
K.S. Group of Institutions
K.S. School of Engineering & Management
Bangalore-560 062.

About the water treatment plant:

The water supply for Bangalore is extracted mainly from Shiva Anicut Cauvery River. Here the water is brought from 95 km away from Cauvery Basin or 140 km away Kabini River from which the water is taken to Thoraikadanahalli in Mandya district and is then pumped 85km through incredibly complicated process to reach Bangalore. The water is pumped upwards 1500 feet upwards from T K Halli to Bangalore which is the Asia's biggest pumping exercise. From T K Halli the water is first pumped to Harohalli then to Tataguni and finally to Bangalore. The water treatment plant treats 550 MLD water per day and uses 200 KVH power to operate and has dedicated engineers, technicians and other staffs to operate. It has also adopted a modern technique called DAF (Dissolved air floatation).

DIFFERENT SECTIONS OF WATER TREATMENT PLANT

The treatment of water is done in different stages including aeration, chlorination, flocculation or DAF and filtration.

Aeration (Cascade Aerator)

This is the first stage of water filtration where the water is made to fall from cascades which expose water to oxygen which helps in maintaining healthy amount of oxygen in the water and also to some extent remove odor.

Chlorination

Chlorination is done in massive amount which is sent in gaseous form through pipes. The chlorine used is almost 300kg per day, which would ensure no harmful organisms are left in the water.

Flocculation

In flocculation chamber the water is subjected to alum dosing whereby aluminum phosphate is mixed to ensure right turbidity (clarity) of water. The mixing of alum coagulates the turbidity causing element which can be removed by filter beds. If the size of coagulant exceeds 10mm then DAF is used.

DAF (Dissolved Air Floatation)

This process removes suspended matters by dissolving air in the water under pressure and then releasing the air at atmospheric pressure in a floatation tank basin. The released air forms tiny bubbles which adhere to the suspended matter causing the suspended matter to float to the surface of the water where it may be removed by skimming device.

Filtration (Sand filter)

Filtration process follows wherein sand is used as filters. The water is passed in tanks containing sand filter bed from which the water flows through sand filter by gravity and the impurities are retained in sand and finally the water is fit for supply. Backwash of sand filters: This is periodically done to clean the sand filters to make it fit for further water filtration. The water is pumped back from the bottom of the sand bed which floats the impurities away.

OBJECTIVES OF THE VISIT:

1. The students should be able to gain the knowledge about the impurities that are present in water.
2. The students should be able to know the physical, chemical and bacteriological characteristics of water.
3. The students should be able to know about the different treatment units adopted in water treatment plant.
4. The students should be able to know about the technology adoption for better water treatment.

Report

The Department of Civil Engineering had organized an Industrial visit to **BWSSB 550 MLD Water Purification Plant at T K Halli, Mandya** on 9th October 2018. 51students of 5th semester Civil Engineering along with 3 faculties has visited the treatment plant.

The plant in charge briefed us on plants history and highlighted that it is Asia's biggest water purification plant with 5 stages of purification and pumping along with conventional and latest technology as its unique and exclusive mode. It is spread across 25 acres with just 52 employees to handle the entire plant. He also explained the whole process of operation at different levels and the automation.

The visit provided an opportunity to get an exposure of industry situations and practical experience which facilitated them to enhance their skills and industry understanding. Overall, the visit was very fruitful.

OUTCOMES OF THE VISIT:

1. The students are able to gain the knowledge about the impurities that are present in water.
2. The students are able to know the physical, chemical and bacteriological characteristics of water.
3. The students are able to know about the different treatment units adopted in water treatment plant.
4. The students are able to know about the technology adoption for better water treatment.

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