添付資料 3.50

2016 年秋期研修「O&M of Tube Well and Pump Facility」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

i) O&M of Tube Well and Pump Facility

- Fall 2016 Training -

i-a) Course evaluation

Table 1 Course Evaluation: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes	0	0	13	6	19	3.3
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	1	5	13	19	3.6
3	Relevance of On-Site Training Activities	0	1	6	12	19	3.6
4	Overall Presentation Quality of Trainer	0	1	5	13	19	3.6
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	1	3	15	19	3.7
6	Time & Length of Training	2	2	10	5	19	2.9
7	Practical Activities & Exercise at Class Room	0	2	8	9	19	3.4
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.	0	1	12	6	19	3.3
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	0	6	13	19	3.7
10	Overall Quality of Training	0	2	4	13	19	3.6

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Course Evaluation: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	19	0

Table 3 Course Evaluation: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Enhanced knowledge regarding effective O&M	19	0
	Develop skill through working on EPANET	18	1
	Assess poor water quality	19	0
	Develop Action Plans for O&M Activities	19	0
	Implement Best Practices to improve Safety,	19	0

	Efficiency and Reliability of O&M Operations		

Note: Comments for Q11 - Q14 refers to Annex 1.2. and "Revision to Cycle 2 Training" below.

i-b) Trainer's evaluation

Table 1 Trainer's Evaluation

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	1	6	12	19	4.6
2	Technical Knowledge of the Content	0	0	1	8	10	19	4.5
3	Explanation of the Content	0	1	2	4	11	18	4.4
4	Demonstration & Professional Capability of Handling Equipment	0	1	0	5	13	19	4.6
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	1	5	13	19	4.6
6	Management of on-site Training	0	1	0	10	8	19	4.3
7	Time Management	0	0	1	2	16	19	4.8
8	Presentation Skills	0	1	0	1	17	19	4.8
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	1	0	9	9	19	4.4

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

i-c) Trainee's evaluation

Sr. No	Participants' Name	Organization	Designation	Attendance 20%	Assignment 1 20%	Assignment 2 20%	Assignment 3 20% (HSE)	Assignment 4 20% (WSP)	Total Marks	Pass or Fail
Group 1 (A) : WASA Lahore										
1	Mr. Tahir Hussain Ghouri	WASA Lahore	SDO	19	18	17	12	14	80	Pass
2	Mr. Mian Riaz	WASA Lahore	SDO	18.50	18	15	12	14	77.5	Pass
Group 1 (B) : WASA Lahore										
1	Mr. Hafiz Ghufran	WASA Lahore	SDO	13	17	18	16	17	81	Pass
2	Mr. Qamar-ul-Hussnain Niaz	WASA Lahore	SDO	19	17	17	16	17	86	Pass
3	Mr. Rashid Chaudhry	WASA Lahore	SDO	14.50	Absent	15	16	17	62.5	Pass
4	Mr. Muhammad Zaheer Rana	WASA Lahore	SDO	15.50	Absent	16	16	17	64.5	Pass
5	Mr. Shoukat Ali	WASA Lahore	SDO	15.50	Absent	16	16	17	64.5	Pass
Group 2: WASA Faisalabad										
1	Mr. Mukhdum Babar	WASA Faisalabad	Deputy Director	20	17	17	17	17	88	Pass
2	Mr. Usman Latif	WASA	Deputy	19.50	17	17	17	17	87.5	Pass

		Faisalabad	Director-III							
3	Mr. Hafiz Faraz Ali	TMA Sialkot	Sub Engineer	16	17	14	17	17	81	Pass
Group 3: WASA Gujranwala										
1	Mr. Tauseef Ahmed	WASA Gujranwala	Assistant Director	19	17	18	17	17	88	Pass
2	Mr. M. Amjad Ali	WASA Gujranwala	Sub-Engineer	19	17	18	17	17	88	Pass
Group 4: WASA Rawalpindi										
1	Mr. Khalique Afzal	WASA Rawalpindi	Assistant Director	20	17	16			53	Pass
2	Mr. Malik Tariq	WASA Rawalpindi	Sub Engineer	20	17	18			55	Pass
Group 5: WASA Quetta										
1	Mr. S. Mazhar Shehzad	WASA Quetta	Assistant Engineer	16	16	16			48	Fail
2	Mr. Mohammad Asif	WASA Quetta	Sub-Engineer	16	16	15			47	Fail
Group 5: WASA Multan										
1	Mr. Omer	WASA Multan	SDO	20	14	15	18	18	85	Pass

	Gormani									
2	Mr. Muhammad Arshad	WASA Multan	Sub Engineer	20	14	14	18	18	84	Pass
3	Mr. Moazam Shahreyar	WASA Lahore	Sub Engineer	8	Absent		18	18	44	Fail
									No of persons (Pass)	16
									No of persons (Fail)	3
									Passing (%)	84

i-d) Comment from Trainees and Action

Comments from Trainees and Action to Future Training of "O&M of Tube Well and Pump Facility"

Sr. No.	Participants Feed Back		Response/Solution	Time required to solve			
	Category	**Detail**		**Urgent (modified by second cycle)**	**Normal (Action to be decided after monitoring visits)**	**Later**	**Not Applicable**
1.	Technical Issues	Some materials (apparatus, gauges etc.) related to course should also be available in class room.	Already provided in the Class Room for demonstration purpose				√
		All concerned specifications of material used in Presentations should also be provided	Will be addressed as per priority and time availability			√	
		During lecture must include video clips (such as execution of work, maintenance etc. by JICA Engineers)	Will be added as per requirement	√			
		Try to incorporate animations in slides for understanding of working principle of valves, pumps etc.	Will be added as per requirement of lecture	√			
		Trainer must demonstrate in group wise	The lectures have been addressed to whole class comprising participants from different WASAs, however, assignments have already been carried out in Group Wise.				√
2.	Time and Duration	Training should be carried out from 9:00 am to 2:00pm	Will be addressed as per Company Policy	√			
		Minimum one-week training should be conducted	Will be addressed as per Company Policy	√			
		Timing of training is satisfactory. It should be continued after every six months.	The training cycle will be carried out after periodic duration in a year.	√			

3.	Other Comments	Laptops should always be present during lecture	Will be addressed for Next Training		√		
		Detail of every subject should be provided in hard and soft form in the training.	Will be provided in next training	√			
		Lecture may be delivered in English	As Participants are SDOs and Sub Engineers, therefore, combined version of language (English and Urdu) has been adopted for better understanding of Participants	√			
		Lecture notes and handouts may be printed into color copy	Will be addressed as per Company Policy	√			

添付資料 3.51

2017 年春期研修「O&M of Tube Well and Pump Facility」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

i) O&M of Tube Well and Pump Facility

- Spring 2017 Training -

i-a) Course evaluation

Table 1 Course Evaluation: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes	0	0	6	0	6	3.0
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	0	2	4	6	3.7
3	Relevance of On-Site Training Activities	0	0	2	4	6	3.7
4	Overall Presentation Quality of Trainer	-	-	-	-	-	-
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	1	0	5	6	3.7
6	Time & Length of Training	0	0	2	4	6	3.7
7	Practical Activities & Exercise at Class Room	0	0	3	3	6	3.5
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.	0	1	3	2	6	3.2
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	0	2	4	6	3.7
10	Overall Quality of Training	-	-	-	-	-	-

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Course Evaluation: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	6	0

Table 3 Course Evaluation: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Enhanced knowledge regarding effective O&M	6	0
	Develop skill through working on EPANET	6	0
	Assess poor water quality	6	0
	Develop Action Plans for O&M Activities	6	0
	Implement Best Practices to improve Safety, Efficiency and Reliability of O&M Operations	5	1

Note: Comments for Q11 - Q14 refers to Annex 1.2. and "Revision to Cycle 2 Training" below.

i-b) Trainer's evaluation

Table 1 Trainer's Evaluation

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	0	1	5	6	4.8
2	Technical Knowledge of the Content	0	0	0	1	5	6	4.8
3	Explanation of the Content	0	0	1	0	5	6	4.7
4	Demonstration & Professional Capability of Handling Equipment	0	0	0	1	5	6	4.8
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	1	0	5	6	4.7
6	Management of on-site Training	0	0	0	2	4	6	4.7
7	Time Management	0	0	0	2	4	6	4.7
8	Presentation Skills	0	0	0	1	5	6	4.8
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	0	5	1	6	4.2

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

ii-c) Trainee's evaluation

Sr. No	Participants' Name	Organization	Designation	Attendance 20%	Assignment 1 Key Issues	Assignment 2 WSP	Assignment 3 Action Plan	Total Marks	Pass or Fail
1	Mr. Asim Nazir	WASA Rawalpindi	DDM&E	20	25	13	24	82	Pass
2	Mr. Amir Hussain Shah	WASA Rawalpindi	Sub Engineer	20	21	13	20	74	Pass
3	Mr. Umair Asghar	WASA Multan	Asst. Director	14	21	15	-	50	Pass
4	Mr. Umair Ayub	WASA Multan	Assistant Director Sewerage South	10	25	15	-	50	Pass
5	Mr. Lal Tab	WSSC Mardan	Tube Well In charge	20	22	2	6	50	Pass
6	Mr. Tahir Rehman	WASA Lahore	Sub Engineer	17	24	10	23	74	Pass
7	Mr. Waqar Anjum	WSSC Kohat	Pipe Fitter	20	25	-	0	45	Fail
8	Mr. Shafi ur Rehman	WSSC Kohat	Field Supervisor	20	20	3	2	45	Fail

i-d) Comment from Trainees and Action

Comments from Trainees and Action to Future Training of "O&M of Tube Well and Pump Facility"

Sr. No	Participants Feed Back		Response/Solution	Time required to solve			
	Category	**Detail**		**Urgent (modified by third cycle)**	**Normal (Action to be decided after monitoring visits)**	**Later**	**Not Applicable**
1.	Technical Issues	Practical must be done right after the presentation	Will be addressed as per lecture requirement			√	
		Site visit to pipe manufacturing factory should be carried out.	Already addressed.				√
		Sites should be near to academy	Site visited is already near the Academy.				√
		Visit to surface water treatment plant should be carried out.	Will be addressed as per requirement			√	
2	Time and Duration	Increase training time and decrease training days	preferred to reduce time but after change of policy no change for training days		√		

添付資料 3.52

2016年秋期研修「Leak Detection」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

ii) Leakage Detection

- Fall 2016 Training -

ii-a) Course evaluation

Table 1 Course Evaluation: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes	0	1	10	6	17	3.3
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	2	5	10	17	3.5
3	Relevance of On-Site Training Activities	0	2	6	9	17	3.4
4	Overall Presentation Quality of Trainer	0	0	6	11	17	3.6
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	0	10	7	17	3.4
6	Time & Length of Training	2	1	11	3	17	2.9
7	Practical Activities & Exercise at Class Room	0	1	10	6	17	3.3
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.	0	6	9	2	17	2.8
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	2	3	8	4	17	2.8
10	Overall Quality of Training	0	0	9	8	17	3.5

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Course Evaluation: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	17	0

Table 3 Course Evaluation: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Countermeasures for Leakage	17	0
	Leakage Detection & Pipe Repairing	17	0
	Installation & Operation of the Equipment	17	0
	Leakage Detection Action Plan	15	2

ii-b)Trainer's evaluation

Table 1 Trainer's Evaluation

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	1	7	4	5	17	3.8
2	Technical Knowledge of the Content	0	2	5	5	5	17	3.8
3	Explanation of the Content	0	1	4	5	7	17	4.0
4	Demonstration & Professional Capability of Handling Equipment	0	2	3	4	8	17	4.0
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	2	9	6	17	4.2
6	Management of on-site Training	0	1	1	9	6	17	4.2
7	Time Management	0	0	5	7	5	17	4.0
8	Presentation Skills	0	0	4	4	9	17	4.3
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	2	11	4	17	4.1

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

ii-c) Trainee's evaluation

Sr.#	Name	Water Utility	Attendance (30 Marks)	Participation (50 Marks)			Assignment (20 Marks)	Total Marks	Pass or Fail*
				1st Day (20)	2nd Day (15)	3rd Day (15)			
WASA & PHED Quetta									
1.	Mr. Muhamad Ramzan	WASA Quetta	30	18	14	15	18	95	Pass
2.	Mr. Salah ud din	WASA Quetta	30	15	12	13	16	86	Pass
3.	Mr. Aimal Khan Jafar	PHED Quetta	30	16	14	15	16	91	Pass
4.	Mr. Abdul Nasir	PHED Quetta	30	17	10	13	16	86	Pass
WASA Rawalpindi									
5.	Mr. Chanzaeb Khan	WASA Rawalpindi	30	17	15	15	18	95	Pass
6.	Mr. Samran Zahid	WASA Rawalpindi	30	17	15	15	18	95	Pass
WASA Multan									
7.	Mr. Abdus	WASA	30	20	15	15	18	98	Pass

	Salam	**Multan**							
8.	**Mr. M. Mehmood**	**WASA Multan**	**30**	**14**	**12**	**14**	**16**	**86**	**Pass**
WASA Gujranwala									
9.	**Mr. Athar Nadeem**	**WASA Gujranwala**	**30**	**19**	**15**	**14**	**18**	**96**	**Pass**
10.	**Mr. M. Waseem Iqbal**	**WASA Gujranwala**	**30**	**20**	**10**	**15**	**16**	**91**	**Pass**
WASA Lahore									
11.	**Mr. Abdul ur Rehman**	**WASA Lahore**	**11.25**	**5**	**0**	**0**	**0**	**16.25**	**Fail**
12.	**Mr. Suleman Nisar**	**WASA Lahore**	**7.5**	**10**	**0**	**0**	**0**	**17.5**	**Fail**
13.	**Mr. Amjad Ali**	**WASA Lahore**	**15**	**5**	**0**	**0**	**0**	**20**	**Fail**
14.	**Mr. Shamas Ayub**	**WASA Lahore**	**3.75**	**0**	**0**	**0**	**0**	**3.75**	**Fail**
15.	**Mr. Niamat Ullah**	**WASA Lahore**	**30**	**17**	**14**	**14**	**16**	**91**	**Pass**
16.	**Ms. Warda**	**WASA Lahore**	**30**	**20**	**15**	**15**	**18**	**98**	**Pass**

17.	**Mr. Imran Qamar**	**WASA Lahore**	**30**	**20**	**15**	**15**	**18**	**98**	**Pass**
18.	**Mr. Abid Anjum**	**WASA Lahore**	**25**	**17**	**14**	**14**	**16**	**86**	**Pass**
WASA Faisalabad									
19.	**Mr. Riaz ul Haq Alvi**	**WASA Faisalabad**	**30**	**18**	**15**	**15**	**15**	**93**	**Pass**
20.	**Mr. Muhammad Athar**	**WASA Faisalabad**	**30**	**18**	**11**	**13**	**13**	**85**	**Pass**
								No of Persons (Pass)	**16**
								No of Persons (Fail)	**4**
								Passing (%)	**80**

ii-d) Comment from Trainees and Action

Table Comments from Trainees and Action to Future Training of "Leak Detection"

Categorization			Time Required to Solve				Recommendations
Main Category	**Sub Category**	**Comments & Suggestions by the Participants**	**Urgent ***	**Normal****	**Later*****	**Pending**	
Text Book Contents	Training Material Contents	Provide more extra information & suggest some more reference books	✓	-	-	-	Detail reading material is present in lecture notes. Reference books are mentioned in course outlines and at the end of each lecture notes of text book. Anyhow, detail will also be added in presentation.
		Training material Should incorporate Case studies	✓	-	-	-	Case study will be prepared to incorporate in text book material.
		Advance techniques of repairing water supply pipelines and leakage detection i.e. polyethylene and	✓	-	-	-	To incorporate repairing techniques for different pipe material & to update text book, a visit will be planned to pipe industry.

		its jointing should be added.					
	Introduction to GIS	GIS Mapping & Repairing Site Marking	✓	-	-	-	GPS device will be arranged to locate the leakage site and at repairing site along with data record sheet.
Instructional Methodology	Class Room Presentation	Leakage Detection Methods & Techniques with respect to each water utility	✓	-	-	-	Although detail is present in Lecture Notes but for the next time, some more discussion will be conducted for multiple methods through presentations.
Training Length	Training Time & Duration	- Time should be from 9 am to 2 pm - Timing should be from 8 am to 3pm - Training time is too long - Lectures time from 9:00 AM to 3:00 PM - Reduce the time	-	-	-	✓	Will be discussed in relevant forum
		- At least 10, 7 & 15	-	-	-	✓	Will be discussed in relevant

		days for training					forum
On Site Training	Site & Field Visit Activities	- Site visit was not proper - Instrument should be properly checked before going to the field - Leakage Detection was not proper - Training should be in small groups - 30 % Class & 70 % Field Work - Activities should be done in early morning - Reduce field timing - Instrument should be used by everyone - Provide the tools to each person	✓	-	-	-	More sites will be arranged in next training for on- site practice.
Equipment	Provision of	- At least one (1)	-	-	-	✓	Each water utility has to

	Equipment	instrument should be provided to each sub division of WASA					arrange leak detection equipment according to their requirement.
	Water Pressure	Low pressure in water supply lines, very difficult to identify leaks by acoustic method	✓	-	-	-	Underground Search Radar & Gas Detection methods can be used, however, it is expensive. Only available option is Boring Method in the current scenario. Area Isolation is another option to manage the low pressure problem.
	Equipment Request	Request for Leakage Detection Equipment	-	-	✓	-	Leak Detection Equipment will be provided to each WASA, after completion of 2nd training cycle to be held in February 2017.

添付資料 3.53

2017年春期研修「Leak Detection」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

ii) Leakage Detection

- Spring 2017 Training -

ii-a) Course evaluation

Table 1 Course Evaluation: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes	2	1	6	0	9	2.4
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	0	7	2	9	3.2
3	Relevance of On-Site Training Activities	0	0	8	1	9	3.1
4	Overall Presentation Quality of Trainer	-	-	-	-	-	-
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	1	6	2	9	3.1
6	Time & Length of Training	0	1	7	1	9	3.0
7	Practical Activities & Exercise at Class Room	0	1	7	1	9	3.0
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.	0	0	6	3	9	3.3
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	3	5	1	0	9	1.8
10	Overall Quality of Training	-	-	-	-	-	-

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Course Evaluation: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	8	1

Table 3 Course Evaluation: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Development of basic knowledge of leak detection	9	0
	Understand installation and operation of leak	9	0

	detection equipment		
	Understand installation and operation of pressure recorder and ultrasonic flowmeter	9	0
	Develop leak detection plan	9	0

ii-b)Trainer's evaluation

Table 1 Trainer's Evaluation

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	1	4	1	3	9	3.7
2	Technical Knowledge of the Content	0	0	5	1	3	9	3.8
3	Explanation of the Content	0	2	3	1	3	9	3.6
4	Demonstration & Professional Capability of Handling Equipment	0	0	6	0	3	9	3.7
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	1	4	1	3	9	3.7
6	Management of on-site Training	1	1	3	1	3	9	3.4
7	Time Management	1	2	1	0	5	9	3.7
8	Presentation Skills	0	0	5	1	3	9	3.8
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	6	1	2	9	3.6

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

ii-c) Trainees' evaluation

Sr.#	Name	Water Utility	Attendance 20%	Assignment 1 20%	Assignment 2 20%	Assignment 3 20%	Assignment 4 20%	Total Marks	Pass or Fail*
				Current Practices	Equipment	Equipment	Equipment		
WSSCM Mardan									
1.	Mr. Muhammad Khalil Akbar	WSSCM	20	13	14	15	17	79	Pass
WSSP Peshawar									
2.	Mr. Tariq Aziz	WSSP	20	15	11	12	17	75	Pass
3.	Mr. Amir Khattak	WSSP	20	15	14	16	17	82	Pass
WASA Rawalpindi									
4.	Mr. Noushad Aslam	WASA Rawalpindi	19.4	14	12	10	14	69.4	Pass
5.	Mr. Samran Zahid	WASA Rawalpindi	20	14	12	10	14	70	Pass
WASA Gujranwala									
6.	Mr. Khurram Nabeel	WASA Gujranwala	-	-	-	-	-	-	-
7.	Mr. Amjad Ali	WASA Gujranwala	16	15	16	12	0	59	Pass

WASA Multan									
8.	Mr. Hafiz Muhammad Waqas Mahmood	WASA Multan	20	16	0	17	15	68	Pass
9.	Mr. Amir Hussain Bukhari	WASA Multan	20	16	0	15	15	66	Pass
WSSC Kohat									
10.	Mr. Ibrar Ali	WSSC Kohat	20	7	10	13	15	65	Pass
11.	Mr. Azmat Ali	WSSC Kohat	16	7	0	0	15	38	Fail
Municipal Corporation Sargodha									
12.	Mr. Mohammad Zubair	Municipal Corporation Sargodha	2.4	0	0	0	0	2.4	Fail
Urban Unit									
13.	Mr. Ali Qumain	RA Urban Unit	0	15	17	0	18	50	Pass
								No of Persons (Pass)	10
								No of Persons (Fail)	2
								Passing (%)	83

ii-d) Comment from Trainees and Action

Table Comments from Trainees and Action to Future Training of "Leak Detection"

Categorization				Time Required to Solve			
Main Category	**Sub Category**	**Details**	**Comments**	**Urgent ***	**Normal****	**Later*****	**Pending**
Text Book Contents	**Water supply networks**	Include the design of water supply network with the help of software etc.	Participate in tube well course				✓
	Instructor	The expert or lecturer should be of PHD level	There is no any PHD degree in education for leakage detection				✓
		Lecturer should have good field experience	Lecturer needs to get 6 months or above field experience with WASA,s staff			✓	
Instructional Methodology	**In Class Room**	Class room and its environment is not good	Class rooms are temporary			✓	
		Detail manuals of equipment's required.	In next training we will distribute the manuals	✓			
		Focus on the jointing and repairing of HDPE and GI pipes instead of AC pipe.	WASA develop the joint which they need in each WASA				✓
		Materials should be provided in USB	Already provided in CD/don't need				✓

	In field	GI pipe factory visit	We will rotate on different factories to give updated information on pipes and joints	✓			
		Involve with WASA,s in the leakage detection survey	We will train WASA,s engineer again if we think to need it			✓	
		Equipment's required practical work which is not sufficient in a single day	Duration of training is fixed				✓
		Modern technique of repair should be taught instead of using old methods.	We visited the PLASCO PIPES industry in order to introduce with modern techniques	-	-	-	-
		Equipment's should be provided to every participant	Lack of equipment	-	-	-	-
		Field visit (Gujrat visit) should be arranged on final day so the participants can easily move to their home stations	Friday is half day				✓
Lecture Timing	**Class Room**	Lectures time from 9:00 AM to 2:00 PM	Recognize of JCC/PCC meeting	-	-	-	-
		Re-arrange the lectures and reduce the training to 4 days.	Recognize of JCC/PCC meeting	-	-	-	-

添付資料 3.54

2016 年秋期研修「O&M of Sewer and Storm Water Drainage」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

iii) O&M of Sewer and Storm Water Drainage

- Fall 2016 Training -

iii-a) Course evaluation

Table 1 Course Evaluation in Module 1,2: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes	0	1	13	4	18	3.1
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	0	9	9	18	3.4
3	Relevance of On-Site Training Activities	1	0	7	10	18	3.6
4	Overall Presentation Quality of Trainer	0	0	6	12	18	3.7
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	0	6	11	17	3.7
6	Time & Length of Training	2	2	7	6	17	3.3
7	Practical Activities & Exercise at Class Room	0	1	8	9	18	3.6
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.	1	1	10	6	18	2.9
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	1	0	5	12	18	3.4
10	Overall Quality of Training	0	0	5	13	18	3.8

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Course Evaluation in Module 3: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes	0	0	11	7	18	3.4
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	0	4	14	18	3.8
3	Relevance of On-Site Training Activities	0	0	7	11	18	3.6
4	Overall Presentation Quality of Trainer	0	0	1	17	18	3.9

5	Trainer's Expertise on Topics and Topic Delivery Skills	0	0	3	15	18	3.8
6	Time & Length of Training	2	4	4	7	17	2.9
7	Practical Activities & Exercise at Class Room	0	2	8	8	18	3.3
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.	0	0	10	8	18	3.4
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	1	1	10	6	18	3.2
10	Overall Quality of Training	0	0	6	12	18	3.7

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 3 Course Evaluation in Module 1, 2: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	17	1

Table 4 Course Evaluation in Module 3: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	18	0

Table 5 Course Evaluation in Module 1, 2: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Implementation of best safety practices during O&M works	18	0
	Action plan related to safety control measures at WASA Job sites	17	1
	Sludge measurement & use of drain desilting machinery	18	0
	Action plan for drain desilting operation	18	0

Table 6 Course Evaluation in Module 3: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Manhole & Sewer Line Inspection techniques	18	0
	Various methods of sewer line/Manhole Cleaning blockage removal	18	0
	Disposal Station and its O&M according to best practices	18	0

iii-b) Trainer's evaluation

Table 1 Trainer's Evaluation in Module 1,2

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	1	9	8	18	4.4
2	Technical Knowledge of the Content	0	0	1	7	10	18	4.5
3	Explanation of the Content	0	0	0	8	10	18	4.6
4	Demonstration & Professional Capability of Handling Equipment	0	0	1	5	12	18	4.6
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	1	2	4	11	18	4.4
6	Management of on-site Training	0	0	1	7	10	18	4.5
7	Time Management	1	0	3	8	6	18	4.0
8	Presentation Skills	0	0	0	7	11	18	4.6
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	1	8	9	18	4.4

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Trainer's Evaluation in Module 3

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	1	5	12	18	4.6
2	Technical Knowledge of the Content	0	0	0	7	11	18	4.6
3	Explanation of the Content	0	0	0	7	11	18	4.6
4	Demonstration & Professional Capability of Handling Equipment	0	0	1	4	13	18	4.7
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	0	8	10	18	4.6

6	Management of on-site Training	0	0	2	5	11	18	4.5
7	Time Management	0	0	4	4	10	18	4.3
8	Presentation Skills	0	0	1	5	12	18	4.6
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	3	4	11	18	4.4

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

iii-c) Trainer's evaluation

O&M of Sewerage & Drainage System including Safety Precautions

				MODULE 01					
				31 Oct. 2016 To 02 Nov. 2016					
Sr. No.	Name	Organization	Designation	Class Work	Field Work	Action Plan	Attendence	Sub-Total	Pass / Fail
				15%	20%	40%	25%	100%	
1	Mr. Zeeshan Shaukat	WASA-Lahore	SDO	12	0	38	20	70	Pass
2	Mr. Hafiz Raheel	WASA-Lahore	SDO	14	20	37	19	89	Pass
3	Mr. Faisal Sarwar	WASA-Lahore	SDO	12	0	0	17	29	*Fail*
4	Mr. M. Armughan Khan	WASA-Lahore	SDO	15	20	0	15	50	Pass
5	Mr. Rana Asif Raza	WASA-Lahore	Sub-Engineer	13	19	38	23	93	Pass
6	Mr. Moazzam Shehryar	WASA-Lahore	Sub-Engineer	0	0	0	15	15	*Fail*
7	Mr. Ali Haider Naqvi	WASA-Lahore	Sub-Engineer	13	18	0	19	50	Pass
8	Mr. Hassan Tariq	WASA-Lahore	Sub-Engineer	12	19	36	13	80	Pass
9	Mr. Muhammad Aslam	WASA-Gujranwala	Assistant Director	14	20	37	24	95	Pass
10	Mr. Jahanzeb Irshad Chatha	WASA-Gujranwala	Sub-Engineer	14	19	37	24	94	Pass
11	Mr. Muhammad Tariq Malik	WASA-Rawalpindi	Sub Engineer	14	20	37	24	96	Pass
12	Mr. Hammad Fazal	WASA-Rawalpindi	Director	14	20	37	25	96	Pass
13	Mr. Irfan Ali	WASA-Multan	Assistant Director	13	19	38	25	95	Pass
14	Mr. Muhammad Adeel	WASA-Multan	Sub Engineer	13	17	38	25	93	Pass
15	Mr. Hassan Mustafa	WASA-Faisalabad	Assistant Director	13	20	36	23	92	Pass
16	Mr. Ahmad Raza	WASA-Faisalabad	Assistant Director	13	19	36	23	91	Pass
17	Mr. Haji Salah ud Din	WASA-Quetta	Supervisor	Not Nominated for Module-01					
18	Mr. Zakir Hussain	WASA-Quetta	Assistant Engineer	0	18	36	20	74	Pass
19	Mr. Iqbal Sabir Shad	PHED-(South Zone)	SDO	14	20	38	25	97	Pass

Total Participants	18
Pass	16
Fail	2
Pass %age	89

O&M of Sewerage & Drainage System including Safety Precautions

		MODULE 02						MODULE 03						FINAL RESULTS					
		03 Nov. 2016 To 04 Nov. 2016						14 Nov. To 17 Nov. 2016						Average of Sub-Totals					
Sr. No.	Name	Class Work	Field Work	Action Plan	Attendence	Sub-Total	Pass / Fail	Class Work	Field Work	Action Plan	Attendence	Sub-Total	Pass / Fail	Class Work	Field Work	Action Plan	Attendence	Grand Total	Pass / Fail
		15%	20%	40%	25%	100%		15%	20%	40%	25%	100%		15%	20%	40%	20%	100%	
1	Mr. Zeeshan Shaukat	10	20	34	20	84	Pass	12	20	37	23	92	Pass	11	13	36	21	82	Pass
2	Mr. Hafiz Raheel	13	0	36	19	68	Pass	12	17	36	23	87	Pass	13	12	36	20	81	Pass
3	Mr. Faisal Sarwar	9	19	32	17	77	Pass	0	0	34	0	34	*Fail*	7	6	22	12	47	*Fail*
4	Mr. M. Armughan Khan	12	0	34	15	61	Pass	10	20	36	18	83	Pass	12	13	23	16	65	Pass
5	Mr. Rana Asif Raza	10	18	34	23	85	Pass	10	18	37	22	88	Pass	11	18	36	23	88	Pass
6	Mr. Moazzam Shehryar	10	18	36	15	79	Pass	10	0	37	22	70	Pass	7	6	24	17	55	Pass
7	Mr. Ali Haider Naqvi	8	18	34	19	79	Pass	15	15	37	22	90	Pass	12	17	24	20	73	Pass
8	Mr. Hassan Tariq	12	0	36	13	61	Pass	10	16	36	16	78	Pass	11	12	36	14	73	Pass
9	Mr. Muhammad Aslam	11	20	35	24	90	Pass	14	19	36	19	88	Pass	13	20	36	23	91	Pass
10	Mr. Jahanzeb Irshad Chatha	8	20	35	24	87	Pass	15	19	36	24	94	Pass	12	19	36	24	92	Pass
11	Mr. Muhammad Tariq Malik	9	20	35	24	88	Pass	14	20	36	25	95	Pass	12	20	36	25	93	Pass
12	Mr. Hammad Fazal	12	20	35	25	92	Pass	14	20	37	23	94	Pass	13	20	36	24	94	Pass
13	Mr. Irfan Ali	11	19	34	25	89	Pass	14	20	34	25	93	Pass	13	19	35	25	92	Pass
14	Mr. Muhammad Adeel	8	19	34	25	86	Pass	14	18	34	25	91	Pass	12	18	35	25	90	Pass
15	Mr. Hassan Mustafa	9	20	37	23	89	Pass	15	19	37	25	96	Pass	12	20	37	24	92	Pass
16	Mr. Ahmad Raza	8	20	37	23	88	Pass	14	20	37	25	96	Pass	12	20	37	24	92	Pass
17	Mr. Haji Salah ud Din	Not Nominated for Module-02						5	15	34	25	79	Pass	Module 03 Pass - Course Result Pending					
18	Mr. Zakir Hussain	12	17	32	20	81	Pass	15	19	34	25	93	Pass	9	18	34	22	83	Pass
19	Mr. Iqbal Sabir Shad	10	19	32	25	86	Pass	15	18	34	25	92	Pass	13	19	35	25	91	Pass

Total Participants	18
Pass	18
Fail	0
Pass %age	100

Total Participants	19
Pass	18
Fail	1
Pass %age	95

Total Participants	19
Pass	17
Fail	2
Pass %age	89

iii-d) Comment from Trainees and Action

No.	Participants' Suggestions		Faculty Response	Need for Action			
	Cate	Details	Description	1	2	3	4
1.	**Technical Issues**	1. Demonstration time on First Aid and Emergency Rescue Operation by RESCUE 1122 should be increased.	▪ Visit to RESCUE 1122 Headquarter and detailed demonstrations are arranged for 2nd cycle of training.	√			
		2. Field visits and technical demonstrations must be increased in comparison with theory part.	▪ Currently the practical portion is about 80% of the whole course, whereas theory part remains 20%.				√
		3. More lecture slides should be presented on HSE topics.	▪ O&M related HSE information will be added, where necessary.			√	
		4. Field work should be performed on sub-division level.	▪ Various WASA Lahore sub-divisions were selected to perform & observe field work.				√
		5. Bottlenecks and difficulties which the WASA field sewerage and drainage teams face in day-to-day operation, must be discussed.	▪ This suggestion will be entertained by presenting as many as practical problems along with their solution.	√			
		6. During field work more time must be provided to each participant for equipment practice.	▪ Every effort was made to provide ample time for each participant for practicing equipment. Still the time management will be improved to cater this issue.	√			

2.	**Time and Duration**	7. Training timings should not be exceeding 2:00pm.	▪ Time duration will be discussed with higher-ups.	√			
		8. All the three (03) modules should be executed consecutively and without break, so that the participants outside Lahore can be saved from discomfort of un-necessary travelling.	▪ A number of participants desired the training with breaks of few days in-between the modules. ▪ Time schedule is dependent on various factors, which force the management to execute training with few day gaps.				√
3.	**Other Concerns**	9. Lecture sides should be printed colored for better understanding of content.	▪ Colored prints of lecture slides may be arranged.			√	
		10. Simple and easy English language must be used for lecture delivery.	▪ This point is noted and will be acted upon in next training.	√			

Need Action 1:Urgent 2:Normal 3:Later 4:No valid

添付資料 3.55

2017 年春期研修「O&M of Sewer and Storm Water Drainage」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

iii) O&M of Sewer and Storm Water Drainage

- Spring 2017 Training -

iii-a) Course evaluation

Table 1 Course Evaluation in Module 1,2: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes: Module 1	2	0	8	3	13	2.9
	Difficulty Level of Training Themes: Module 2	2	0	8	3	13	2.9
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.): Module 1	0	1	5	7	13	3.5
	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.): Module 2	0	0	4	9	13	3.7
3	Relevance of On-Site Training Activities: Module 1	0	1	4	8	13	3.5
	Relevance of On-Site Training Activities: Module 2	0	0	2	11	13	3.8
4	Overall Presentation Quality of Trainer	--	--	--	--	--	--
5	Trainer's Expertise on Topics and Topic Delivery Skills: Module 1	0	0	4	9	13	3.7
	Trainer's Expertise on Topics and Topic Delivery Skills: Module 2	0	0	4	9	13	3.7
6	Time & Length of Training: Module 1	0	1	8	4	13	3.2
	Time & Length of Training: Module 2	0	2	8	3	13	3.1
7	Practical Activities & Exercise at Class Room: Module 1	0	1	7	5	13	3.3
	Practical Activities & Exercise at Class Room: Module 2	0	0	7	6	13	3.5
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.: Module 1	0	2	5	6	13	3.3
	Difficulty Level of Assessment and Evaluation	0	1	7	5	13	3.3

	(Assignment, Exercises, Project, Action Plan etc.: Module 2						
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	1	6	6	13	3.4
10	Overall Quality of Training	--	--	--	--	--	--

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Course Evaluation in Module 3: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes	0	1	5	5	11	3.4
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	0	5	6	11	3.5
3	Relevance of On-Site Training Activities	0	0	4	7	11	3.6
4	Overall Presentation Quality of Trainer	--	--	--	--	--	--
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	0	3	8	11	3.7
6	Time & Length of Training	0	1	6	4	11	3.3
7	Practical Activities & Exercise at Class Room	0	0	3	8	11	3.7
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.	0	2	8	1	11	2.9
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	0	3	8	11	3.7
10	Overall Quality of Training	--	--	--	--	--	--

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 3 Course Evaluation in Module 1, 2: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	13	0

Table 4 Course Evaluation in Module 3: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	11	0

Table 5 Course Evaluation in Module 1, 2: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Comprehension about PPE and their use	12	1
	Hazardous gas monitoring at manhole	12	1
	Traffic control management at worksite	12	1
	Drain dredging technique	12	1
	Sludge measurement at drain	13	0
	Comprehension about drain dredging machinery and their use	11	2

Table 6 Course Evaluation in Module 3: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	1- Sewer line cleaning method	11	0
	2- To observe infrastructure and O&M activities at disposal stations	11	0
	3- Creating an action plan for the improvement of sewerage system	9	2

iii-b) Trainer's evaluation

Table 1 Trainer's Evaluation in Module 1, 2

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	0	7	6	13	4.5
2	Technical Knowledge of the Content	0	0	1	5	7	13	4.5
3	Explanation of the Content	0	0	0	5	8	13	4.6
4	Demonstration & Professional Capability of Handling Equipment	0	0	0	5	8	13	4.6
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	0	2	11	13	4.8
6	Management of on-site Training	0	0	0	3	10	13	4.8
7	Time Management	0	0	1	4	8	13	4.5
8	Presentation Skills	0	0	0	3	10	13	4.8
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	0	8	5	13	4.4

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Trainer's Evaluation in Module 3

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	2	1	8	11	4.5
2	Technical Knowledge of the Content	0	0	2	2	7	11	4.5
3	Explanation of the Content	0	0	0	3	8	11	4.7
4	Demonstration & Professional Capability of Handling Equipment	0	0	0	4	7	11	4.6
5	Use of different Content Delivery Techniques (Group Discussion &	0	0	1	5	5	11	4.4

	Activities and exercises)							
6	Management of on-site Training	0	0	1	4	6	11	4.5
7	Time Management	0	0	1	2	8	11	4.6
8	Presentation Skills	0	0	0	2	9	11	4.8
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	0	4	7	11	4.6

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

iii-c) Trainer's evaluation

Sr. No.	Name	Organization	Designation	RESULT - MODULE 01 13 Feb. 2017 To 15 Feb. 2017						RESULT - MODULE 02 16 Feb. 2017 To 17 Feb. 2017					
				Class Work	Field Work	Action Plan	Attendence	Sub-Total	Pass / Fail	Class Work	Field Work	Action Plan	Attendence	Sub-Total	Pass / Fail
				15%	20%	40%	25%	100%		15%	20%	40%	25%	100%	
1	**Ms. Samina Asif**	WASA-Lahore	Assistant Director (P&D)	13	**0**	35	13	**61**	Pass	15	18	37	25	**95**	Pass
2	**Ms. Sana Fatima**	WASA-Lahore	Assistant Director (P&D)	13	10	35	13	**71**	Pass	15	19	35	25	**94**	Pass
3	**Mr. Khalid Bin Rashed**	WASA-Lahore	Sub-Engineer	13	10	35	13	**70**	Pass	15	18	31	25	**89**	Pass
4	**Mr. Waqas Ali**	WASA-Lahore	Sub-Engineer	13	10	30	13	**66**	Pass	15	18	30	25	**88**	Pass
5	**Mr. Mirza Waseem Iqbal**	WASA-Gujranwala	Sub-Engineer	7	5	25	25	**62**	Pass	12	17	34	25	**88**	Pass
6	**Mr. Muhammad Gufran**	WASA-Gujranwala	Sub-Engineer	4	10	**0**	15	**29**	**Fail**	**Absent**					**Fail**
7	**Mr. Muhammad Shakeel Ahmed**	WASA-Multan	Sub Engineer	12	18	30	25	**85**	Pass	14	18	32	25	**89**	Pass
8	**Mr. Zia ur Rehman**	WASA-Multan	Sub Engineer	13	19	32	25	**89**	Pass	15	18	33	25	**91**	Pass
9	**Mr. Salman Ahmed Hashmi**	WASA-Faisalabad	Assistant Director	12	10	38	25	**85**	Pass	14	17	32	25	**88**	Pass
10	**Mr. Muhammad Kamran Zafar**	WASA-Faisalabad	Assistant Director (P&D)	11	9	32	25	**77**	Pass	14	19	33	25	**91**	Pass
11	**Mr. Mian Mohsin Gul**	WSSC-Kohat	Manager Project	12	18	35	25	**90**	Pass	14	19	32	25	**90**	Pass
12	**Mr. Naeem Ahmed**	WSSC-Kohat	Manager (Operation)	9	**0**	36	22	**67**	Pass	14	19	34	25	**92**	Pass
13	**Mr. Kamal Afridi**	WSSP	Zonal Manager	13	18	36	25	**92**	Pass	15	18	35	25	**93**	Pass
14	**Mr. Ashraaf Qadir**	WSSP	GM PMER	9	18	**0**	17	**43**	**Fail**	**Absent**					**Fail**
15	**Mr. Muhammad Khalil Akbar**	WSSC-Mardan	Manager Municipal Service	13	10	30	25	**78**	Pass	14	19	38	25	**96**	Pass
16	**Mr. Ahmed Khalil**	WSSP	Assistant Manager	**Not Nominated**						**Not Nominated**					
17	**Mr. Zafar Ullah**	WSSP	Assistant Manager	**Not Nominated**						**Not Nominated**					

Total Participants	**15**
Pass	**13**
Fail	**2**
Pass %age	**87**

Total Participants	**15**
Pass	**13**
Fail	**2**
Pass %age	**87**

				RESULT - MODULE 03						COURSE RESULT					
				07 Mar. 2017 To 10 Mar. 2017						Average of Sub-Totals					
Sr. No.	Name	Organization	Designation	Class Work	Field Work	Action Plan	Attendence	Sub-Total	Pass / Fail	Class Work	Field Work	Action Plan	Attendence	Grand Total	Pass / Fail
				15%	20%	40%	25%	100%		15%	20%	40%	25%	100%	
1	**Ms. Samina Asif**	WASA-Lahore	Assistant Director (P&D)	14	17	36	25	**92**	Pass	14	12	36	21	**82**	**Pass**
2	**Ms. Sana Fatima**	WASA-Lahore	Assistant Director (P&D)	14	17	37	25	**93**	Pass	14	15	36	21	**86**	**Pass**
3	**Mr. Khalid Bin Rashed**	WASA-Lahore	Sub-Engineer	13	15	34	25	**87**	Pass	14	14	33	21	**82**	**Pass**
4	**Mr. Waqas Ali**	WASA-Lahore	Sub-Engineer	12	16	36	25	**89**	Pass	13	15	32	21	**81**	**Pass**
5	**Mr. Mirza Waseem Iqbal**	WASA-Gujranwala	Sub-Engineer	**Not Nominated**						**Result Pending (Module 03)**					**Fail**
6	**Mr. Muhammad Gufran**	WASA-Gujranwala	Sub-Engineer	**Not Nominated**						**Result Pending (Module 03)**					**Fail**
7	**Mr. Muhammad Shakeel Ahmed**	WASA-Multan	Sub Engineer	8	17	36	19	**79**	Pass	11	18	33	23	**84**	**Pass**
8	**Mr. Zia ur Rehman**	WASA-Multan	Sub Engineer	13	17	36	25	**91**	Pass	14	18	34	25	**90**	**Pass**
9	**Mr. Salman Ahmed Hashmi**	WASA-Faisalabad	Assistant Director	13	18	37	25	**93**	Pass	13	15	36	25	**89**	**Pass**
10	**Mr. Muhammad Kamran Zafar**	WASA-Faisalabad	Assistant Director (P&D)	13	16	33	25	**87**	Pass	13	15	33	25	**85**	**Pass**
11	**Mr. Mian Mohsin Gul**	WSSC-Kohat	Manager Project	**Not Nominated**						**Result Pending (Module 03)**					**Fail**
12	**Mr. Naeem Ahmed**	WSSC-Kohat	Manager (Operation)	14	18	34	25	**91**	Pass	12	12	35	24	**83**	**Pass**
13	**Mr. Kamal Afridi**	WSSP	Zonal Manager	**Not Nominated**						**Result Pending (Module 03)**					**Fail**
14	**Mr. Ashraaf Qadir**	WSSP	GM PMER	**Not Nominated**						**Result Pending (Module 03)**					**Fail**
15	**Mr. Muhammad Khalil Akbar**	WSSC-Mardan	Manager Municipal Service	**Not Nominated**						**Result Pending (Module 03)**					**Fail**
16	**Mr. Ahmed Khalil**	WSSP	Assistant Manager	12	15	34	25	**86**	Pass	**Result Pending (Module 01 & 02)**					**Fail**
17	**Mr. Zafar Ullah**	WSSP	Assistant Manager	14	18	34	25	**91**	Pass	**Result Pending (Module 01 & 02)**					**Fail**

Total Participants	**11**
Pass	**11**
Fail	**0**
Pass %age	**100**

Total Participants	**17**
Pass	**9**
Fail	**8**
Pass %age	**53**

iii-d) Comment from Trainees and Action

Sr. No.	Participants' Suggestions		Faculty Response	Need for Action			
	Category	Details	Description	Urgent	Normal	Later	Not Valid
1.	Technical Issues	1. Training material i.e. ppt. slides, templates & O&M manuals must be provided in CD.	▪ At the end of session, training material was provided to all trainees in CDs for their future consultation.				√
		2. Training must include best O&M practices, which are adopted around the world.	▪ Although every effort is made that all training must obey the best practices, but still this point is noted for further improvement.	√			
		3. Design of sewerage system, manhole and disposal station must be added in training course.	▪ Under this project, these training are dedicated to the improvement in O&M skills, rather design.				√
		4. More real-time videos and pictures must be made a part of	▪ More videos, clips and pictures will be added in the course before 3rd cycle of training in Oct, 2017.	√			

Sr. No.	Participants' Suggestions		Faculty Response	Need for Action			
	Category	Details	Description	Urgent	Normal	Later	Not Valid
		training, to increase its efficacy.					
		5. Difficulty level of training lectures and materials both, should be increased further.	▪ As the nominated trainees belong to various ranks & grades, so difficulty level was made willfully medium. Further this matter be discussed with higher-ups.		√		
		6. During field work, groups must be formed so that participants can practice all equipment with more satisfaction.	▪ Although every effort was made to provide sufficient time to each participant for equipment use. Still the time management will be improved to resolve this matter.	√			

Sr. No.	Participants' Suggestions		Faculty Response	Need for Action			
	Category	Details	Description	Urgent	Normal	Later	Not Valid
		7. Proto type of manholes, drain x-sections etc. must be arranged at Academy.	▪ Such provisions will be made possible at Academy premises very soon.			√	
2.	Time and Duration	8. Training duration must be increased for module 02.	▪ As the training duration for full course is already changed to 05 days in total, so request can't be entertained.				√
		9. Training duration should be Monday through Thursday.	▪ For 3rd training cycle, duration is already compressed to five (05) days, initially which was nine (09) days, so further reduction in time is not possible.				√

Sr. No.	Participants' Suggestions		Faculty Response	Need for Action			
	Category	Details	Description	Urgent	Normal	Later	Not Valid
3.	Other Concerns	10. Software training related to sewerage & drainage design must also be provided.	▪ Design software is out of scope of this training, yet any software related to O&M will be hunted.		√		
		11. Lectures must be delivered in Urdu language along with English.	▪ Trainer used both Urdu & English media during lectures & field work, yet suggestion is acknowledged for trainings ahead.	√			

添付資料 3.56

2016 年秋期研修「O&M of Electrical Equipment」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

iv) O&M for Electrical Equipment

- Fall 2016 Training -

iv-a) Course evaluation

Table 1 Course Evaluation: Module 1 (Elect): Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes	1	1	8	1	11	2.8
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	2	4	6	12	3.3
3	Relevance of On-Site Training Activities	1	1	2	7	11	3.4
4	Overall Presentation Quality of Trainer	0	0	8	4	12	3.3
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	1	6	5	12	3.3
6	Time & Length of Training	4	0	6	1	11	2.4
7	Practical Activities & Exercise at Class Room	0	0	7	5	12	3.4
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.)	0	1	6	4	11	3.3
9	Logistic Arrangement (Class Room, Vehicles, Tea and Lunch etc.)	1	3	4	4	12	2.9
10	Overall Quality of Training	0	2	5	5	12	3.3

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Course Evaluation: Module 2 (Elect): Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes	0	1	7	1	9	3.0
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	1	1	4	3	9	3.0
3	Relevance of On-Site Training Activities	1	2	3	3	9	2.9
4	Overall Presentation Quality of Trainer	0	0	4	5	9	3.6

5	Trainer's Expertise on Topics and Topic Delivery Skills	0	0	6	3	9	3.3
6	Time & Length of Training	3	1	5	0	9	2.2
7	Practical Activities & Exercise at Class Room	0	3	2	4	9	3.1
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.)	0	1	6	2	9	3.1
9	Logistic Arrangement (Class Room, Vehicles, Tea and Lunch etc.)	2	1	4	2	9	2.7
10	Overall Quality of Training	0	3	3	3	9	3.0

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 3 Course Evaluation: Module 3 (Elect): Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes	0	0	9	1	10	3.1
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	2	4	4	10	3.2
3	Relevance of On-Site Training Activities	0	2	4	4	10	3.2
4	Overall Presentation Quality of Trainer	0	1	3	6	10	3.5
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	0	6	4	10	3.4
6	Time & Length of Training	2	4	2	2	10	2.4
7	Practical Activities & Exercise at Class Room	0	1	5	4	10	3.3
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.)	0	0	8	2	10	3.2
9	Logistic Arrangement (Class Room, Vehicles, Tea and Lunch etc.)	0	0	7	3	10	3.3
10	Overall Quality of Training	0	1	6	3	10	3.2

Note: * is the scale of the evaluation.

** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 4 Course Evaluation: Module 1 (Elect): Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	10	2

Table 5 Course Evaluation: Module 2 (Elect): Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	6	3

Table 6 Course Evaluation: Module 3 (Elect): Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	9	1

Table 7 Course Evaluation: Module 2 (Elect): Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	1-Introduction to generators	8	1
	2-Basic assembly design of generators	9	0
	3-Components of generators	9	0
	4-SOP's and best industry practices	7	2
	5-Periodic maintenance and record keeping	9	0
	6-Reliability based preventative maintenance.	8	1
	7-Trouble shooting for various failures.	6	3

Table 8 Course Evaluation: Module 3 (Elect): Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	1-Introduction	10	0
	2- Need for SCADA	9	1
	3- SCADA functions	10	0
	4-System equipment	9	1
	5- Operation of SCADA system	9	1
	6- Usage of SCADA in water utility sector	9	1
	7- Case study WASA,PMU Faisalabad	9	1
	8- Ability to design a SCADA system with basic parameters	9	1

iv-b) Trainer's evaluation

Table 1 Evaluation of Trainer, Mr Jawad Shahid: Module 1

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	2	6	3	11	4.1
2	Technical Knowledge of the Content	0	1	5	2	4	12	3.8
3	Explanation of the Content	0	1	4	2	4	11	3.8
4	Demonstration & Professional Capability of Handling Equipment	0	0	5	3	4	12	3.9
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	2	2	4	3	11	3.7
6	Management of on-site Training	0	0	5	4	3	12	3.8
7	Time Management	0	1	4	5	1	11	3.5
8	Presentation Skills	0	0	4	4	3	11	3.9
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	3	5	3	11	4.0

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Evaluation of Trainer, Mr Jawad Shahid: Module 2

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	4	4	1	9	3.7
2	Technical Knowledge of the Content	0	0	4	2	3	9	3.9
3	Explanation of the Content	0	1	2	3	3	9	3.9
4	Demonstration & Professional Capability of Handling Equipment	0	0	4	1	4	9	4
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	1	3	2	3	9	3.8

6	Management of on-site Training	0	2	2	3	2	9	3.6
7	Time Management	1	1	3	2	1	8	3.1
8	Presentation Skills	0	1	3	3	2	9	3.7
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	2	3	1	3	9	3.6

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 3 Evaluation of Trainer, Mr Jawad Shahid: Module 3

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	3	4	3	10	4.0
2	Technical Knowledge of the Content	0	0	3	3	4	10	4.1
3	Explanation of the Content	0	0	3	2	5	10	4.2
4	Demonstration & Professional Capability of Handling Equipment	0	2	1	1	6	10	4.1
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	1	1	3	5	10	4.2
6	Management of on-site Training	0	1	2	0	7	10	4.3
7	Time Management	0	0	3	0	7	10	4.4
8	Presentation Skills	0	0	3	2	5	10	4.2
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	3	4	3	10	4.0

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 4 Evaluation of Trainer, Mr Ihsan Ul Haque: Module 3

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	1	5	4	10	4.3
2	Technical Knowledge of the Content	0	0	1	3	6	10	4.5

3	Explanation of the Content	0	0	2	1	7	10	4.5
4	Demonstration & Professional Capability of Handling Equipment	0	1	1	2	6	10	4.3
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	2	4	4	10	4.2
6	Management of on-site Training	0	0	1	5	4	10	4.3
7	Time Management	0	1	1	2	6	10	4.3
8	Presentation Skills	0	0	2	1	7	10	4.5
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	2	1	7	10	4.5

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

iv-c) Trainee's evaluation

				MODULE 01 (Electrical Panels)							MODULE 02 (Generators)						
				23 Nov. 2016 To 25 Nov. 2016							30. Nov. 2016 To 02 Dec. 2016						
Sr. No.	Name	Organization	Designation	Exercise-1	Exercise-2	Exercise-3	Action Plan	Attendance	Sub-Total	Pass / Fail	Exercise-1	Exercise-2	Exercise-3	Action Plan	Attendance	Sub-Total	Pass / Fail
				15%	15%	15%	25%	30%	100%		15%	15%	15%	25%	30%	100%	
AL28+A1	Mr. Muhammad Ramzan	WASA Quetta	XEN	12	10	15	18.3	30	85	Pass	0	0	0	0	0	0	
2	Mr. Ahsan Kajeer	WASA Quetta	Sub-Engineer	12	10	15	20.0	30	87	Pass	12	12	15	20	30	89	Pass
3	Mr. Malik Shafqat Mahmood	WASA Rawalpindi	SDO	13	12	15	20.0	30	90	Pass	13	14	15	20	30	92	Pass
4	Mr. Hafiz Faraz	TMA Sailkot	Sub-Engineer	13	12	15	18.3	30	88	Pass	0	0	0	0	0	0	
5	Mr. Umair Asghar	WASA Multan	SDO	13	12	15	20.0	29	89	Pass	12	12	15	18	30	87	Pass
6	Mr. Arshad Latif	WASA Multan	Sub-Engineer	13	10	15	18.3	30	86	Pass	12	11	15	17	30	85	Pass
7	Mr. Shakeel Ahmed	WASA Gujranwala	Sub-Engineer	13	12	15	18.3	30	88	Pass	12	12	15	17	25	81	Pass
8	Mr. Shamas Ayoub	WASA Lahore	SDO	_	_	_	0.0	12	12	Fail	0	0	0	0	0	0	
9	Mr. Hafiz M. Raheel	WASA Lahore	SDO	13	12	15	20.0	29	89	Pass		15	15		20	50	Pass
10	Mr. Adeel Sharif	WASA Lahore	XEN	13	12	15	0.0	30	70	Pass		12	15		10	37	Fail
11	Ms. Anum Javed	WASA Lahore	SDO	12	10	15	21.7	30	89	Pass	14	12	15	20	27	88	Pass
12	Mr. Saeed Ahemd Khan	WASA Lahore	Sub-Engineer	13	10	15	20.0	30	88	Pass	14	12	15	18	30	89	Pass
13	Mr. M. Zaheer Rana	WASA Lahore	Sub-Engineer	13	12	15	20.0	26	86	Pass	14	12	15	18	30	89	Pass
14	Salman Ahmed Hashmi	WASA Faisalabad	SDO	0	0	0	0	0	0		13		15	22	26	76	Pass
15	Mr. Zeeshan Shaukat	WASA Lahore	SDO	0	0	0	0	0	0		0	0	0	0	10	10	Fail

Total Participants	**13**
Pass	**12**
Fail	**1**
Pass %age	**92**

Total Participants	**12**
Pass	**10**
Fail	**2**
Pass %age	**83**

				MODULE 03 (SCADA)							FINAL RESULTS				
				07 Dec. 2016 To 09 Dec. 2016							Average of Sub-Totals				
Sr. No.	Name	Organization	Designation	Exercise-1	Exercise-2	Exercise-3	Action Plan	Attendance	Sub-Total	Pass / Fail	Exercises	Action Plan	Attendance	Grand Total	Pass / Fail
				15%	15%	15%	25%	30%	100%		45%	25%	30%	100%	
AL28+A1	Mr. Muhammad Ramzan	WASA Quetta	XEN	0	0	0	0	0	0		12.3	18	10	28	Fail
2	Mr. Ahsan Kajeer	WASA Quetta	Sub-Engineer	0	0	0	0	0	0		25.3	40	20	59	Pass
3	Mr. Malik Shafqat Mahmood	WASA Rawalpindi	SDO	13	12	14	21	28	88	Pass	40.3	61	29	90	Pass
4	Mr. Hafiz Faraz	TMA Sailkot	Sub-Engineer	0	0	0	0	0	0		13.3	18	10	29	Fail
5	Mr. Umair Asghar	WASA Multan	SDO	12	13	12	20	30	87	Pass	38.7	58	30	88	Pass
6	Mr. Arshad Latif	WASA Multan	Sub-Engineer	12	10	11	20	30	83	Pass	36.3	55	30	85	Pass
7	Mr. Shakeel Ahmed	WASA Gujranwala	Sub-Engineer	12	8	13	19	30	82	Pass	37.3	54	28	84	Pass
8	Mr. Shamas Ayoub	WASA Lahore	SDO	0	0	0	0	0	0		0.0	0	4	4	Fail
9	Mr. Hafiz M. Raheel	WASA Lahore	SDO	12	13	13	20	28.5	87	Pass	41.0	40	26	75	Pass
10	Mr. Adeel Sharif	WASA Lahore	XEN	12	12	12	21	30	87	Pass	38.8	21	23	65	Pass
11	Ms. Anum Javed	WASA Lahore	SDO	12	12	13	23	30	90	Pass	38.3	65	29	89	Pass
12	Mr. Saeed Ahemd Khan	WASA Lahore	Sub-Engineer	12	10	13	20	30	85	Pass	38.0	58	30	87	Pass
13	Mr. M. Zaheer Rana	WASA Lahore	Sub-Engineer	12	9	13	20	30	84	Pass	38.3	58	29	86	Pass
14	Salman Ahmed Hashmi	WASA Faisalabad	SDO	13	13	13	21	30	90	Pass	27.0	43	19	55	Pass
15	Mr. Zeeshan Shaukat	WASA Lahore	SDO	0	0	0	0	0	0		0.0	0	3	3	Fail

Total Participants	**10**
Pass	**10**
Fail	**0**
Pass %age	**100**

Total Participants	**15**
Pass	**11**
Fail	**4**
Pass %age	**73**

iv-d) Comment from Trainees and Action

Feedback & Response (Module 1: Electrical Panel)

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	Detail		**Urgent/** Modified by second cycle	**Normal/** Action to be decided after monitoring visits	**Later/** Necessity to be monitored	**Not Applicable**
1	Technical Issues	Cover transformer, energy meter, MCU & motor	Transformer is not a main component operated or maintained by WASAs so it will be only explained as a part of power supply system. Instead, how to read energy meter and electricity bills will be considered according to availability of time arrangement. MCU is already covered in detail. Motor will be mainly explained in the mechanical course but some relevant and secessary part of it can be also added in this module.		✔		
2		What is control panel, types, components, working, Role of P.F, troubleshooting, Preventive Maintenance, Safety	To be modified in a better way to deliver knowledge more smoothly	✔			
3		Use of energy analyzer	To be added according to the priority and time availability among modules		✔		
4		Prepare faulty site and rectification	To be included as long as we can confirm safety of the site and time availability		✔		
5		Video demo of equipment and OJT site before visit	To be added where necessary		✔		
6		Handouts should be simple	Simpler handouts to be made	✔			
7		Should be practically implemented to WASAs	The contents of module will be fullly reviewed after monitoring site visits to each WASA and revised as needed in order to pick up more practical issues at the site		✔		
8		Pump design, installation etc.	There is another specific module for this topic				✔
9		Add more visual activities	The method of training regarding how to deliver practical activity will be upgraded based on lessons learnt from the first training.		✔		
10		Material is not sufficient	To be improved.		✔		
11	Time & Duration	Module duration is fine	According to the participants' feedback, three days duration seems to be good enough and maximum lecture hours will be rearranged for 1 to 2 hours per day.		✔		

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	Detail		**Urgent/** Modified by second cycle	**Normal/** Action to be decided after monitoring visits	**Later/** Necessity to be monitored	**Not Applicable**
12		Mon-Wed or Thu-Sat	This module will be implemented along with O&M of Diesel Generator within continuous 5 days	✔			
13	**Other Comments**	Not fully covered the topics of training material	Better time management has to be challenged. On the other hand, it is also requested to WASAs to come in time of the lecture so that the contents as planned can be covered.		✔		
14		Prepare material for O&M Staff specially Electrical Staff	This module was originally designed to deliver knowledge not only to electrical engineers but also civil/mechanical engineers. Additional/supplementary materials can be prepared for advanced participants.		✔		
15		Presentation not given properly	To be modified according to the time management and prioritized contents.		✔		
16		Use easy language	Urdu language will be applied in the next traning.	✔			
17		Provide equipment & tools	It is being planned to provide necessary tool/equipment to each WASA after completion of trainings at a satisfactory level			✔	
18		Email slides and data to all participants	The slides and data are available to the participants who give Email adress to the instructor.	✔			
19		OJT Site should be nearby	The applied site was chosen since it is one of the closest.				✔
20		Certificates for modules	Certificates are issued based on the philosophy of the academy. The request for issuing certificate by module will be transferred to and discussed in the management unit of the academy.			✔	
21		Trainer should have ability to train more people at site at a time	To be improved. Arrangement of group work for OJT will also be rearranged.		✔		
22		Instead of 2 groups at one site, please prepare two sites for each group			✔		
23		Provide PC	This module mainly delivers skills to be applied to the site work, not office work.				✔

Feedback & Response (Module 2: Generator)

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	Detail		**Urgent/** Modified by second cycle	**Normal/** Action to be decided after monitroing visits	**Later/** Necessity to be monitored	**Not Applicable**
1	**Technical Issues**	Very basic and repeated content	Some important topics related to O&M were intentionally repeated for better understanding of trainees. However, knowledge/skill delivery method should be improved as required.		✔		
2		Add generator's capacity/ load, AMF/ATS, O&M of panels, EFI, governor, actuator, speed control unit	To be considered as per requirement and according to time arrangement. For a next step, it can be planned to include sizing calculations if the time is available.		✔		
3		Running load is missing	The template will be upgraded based on result of monitoring visit.		✔		
4		Structure of alternator and AVR	To be considered as per requirement and according to time arrangement.		✔		
5		Vibration meter, sound meter, smoke detector with practice on site	It is being planned to add some more equipment in the next training and supplemental OJT with the current equipment can be implemented thorough the monitoring visits as well.		✔		
6		Add On-Load activities	Some activities can be added according to the time availability and safety.		✔		
7		Course does not fulfill WASA requirement	After the monitoring visits, contents modifications/practical troubleshooting matters will be reflected if necessary.		✔		
8		One visit was good enough instead of 3	Two sites OJT will be applied instead of three sites.	✔			
9		Difficulty level may be increased	Multiple graded activities for one topic can be prepared for advanced trainees.	✔			
10		Training on motor should also add	Motor will be mainly explained in the mechanical course but some relevant parts to electrical O&M can be covered.		✔		
11		Problems in WASAs should be checked from operators	After the monitoring visits, contents modifications/practical troubleshooting matters will be reflected if necessary.		✔		

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	Detail		Urgent/ Modified by second cycle	Normal/ Action to be decided after monitroing visits	Later/ Necessity to be monitored	Not Applicable
12		Please arrange manufacturer at site	It would be difficult to arrange from time management and training effective point of view. However, possibility can be checked as needed in future if some proper technician for generator maintenance can be assigned.			✔	
13		Complete lecture first and then go to site	Time management for lecture and OJT will be improved.	✔			
14	**Time & Duration**	3 days are too much for current content	The module duration will be reduced from three to two days.	✔			
15	**Other Comments**	Soft copy of data should be provided	We'll provide soft data to the participants who provide email address to the instructor.	✔			
16		Training required for JPO and technician	The trained participants from the academy will train JPO and Technicians.				✔

Feedback & Response (Module 3: SCADA & HSE)

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	Detail		Urgent/ Modified by second cycle	Normal/ Action to be decided after monitroing visits	Later/ Necessity to be monitored	Not Applicable
1	**Technical Issues**	Not properly covered (only intro and basics)	Better time management has to be challenged. On the other hand, it is also requested to WASAs to come in time of the lecture so that the contents as planned can be covered. Besides, it is planned to enhance training contents a bit deeper but the aim of this module is originally only to introduce basics of SCADA because SCADA system is only applied to limited sites such as WASA Lahore and WASA Faisalabad.		✔		

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	Detail		**Urgent/** Modified by second cycle	**Normal/** Action to be decided after monitroing visits	**Later/** Necessity to be monitored	**Not Applicable**
2		Discuss SCADA in detail	Same as above.		✔		
3		PCB board operate with SCADA in lecture	Some demo equipment for class can be considered according to time arrangement, necessity and budget allocation.		✔		
4		OJT at industry	Type of SCADA system at industry can be varied and even not related to the water facilities. In order to focus on water facility and actual WASAs operations, OJT at industry would not be applied in this stage.				✔
5		More focus should be on SCADA instead of 5s & HSE	This module is originally designed to balance between SCADA & HSE components. However, time management will be improved as per requirement.	✔			
6		Safety precaution & exercises on electric machines, MCU, Genset, Tr., motor etc.	To be added in HSE part if necessary.		✔		
7		Choose nearest site for OJT	Site arrangement for OJT will be improved.	✔			
8		HSE should not repeat in earlier modules	In earlier modules, only applicable PPEs were introduced. Total concept and details of HSE was mainly covered only in the third module. However, the relevant contents for each module will be reviewed to avoid unnecessary repetition.	✔			
9		Intro to SCADA was good	Contents and training method has to be improved even in a better way .	✔			
10		Increase difficulty level	It is planned to enhance training contents a bit deeper but the aim of this module is originally only to introduce basics of SCADA because SCADA system is only applied to limited sites such as WASA Lahore and WASA Faisalabad.		✔		
11		Add solar system as well	This facility is not directly relevant to training theme. Not applicable.				✔
12		Add PLC	General explanation of this equipment is already included. However, trainining contents and method can be discussed and modified to a better way.		✔		
13		Add use of received data for better O&M	To be considered according to requirement and necessity.		✔		
14		Add selection criteria for SCADA	It is planned to enhance training contents a bit deeper. However, designing matter on SCADA will be considered on later stages according to practical utility.			✔	

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	Detail		**Urgent/** Modified by second cycle	**Normal/** Action to be decided after monitroing visits	**Later/** Necessity to be monitored	**Not Applicable**
15		Exercises must be increased	It is planned to introduce new intractive exercises.		✔		
16	**Time & Duration**	One day is enough. With enhanced content module can have 3 days duration	It is planned to improve contents a bit and time management as well. However, the module duration will remain same next time.		✔		
17		All modules can be taught in week	Electrical course duration will be reduced from 9 to 8 days and breaks among modules will be removed.	✔			
18		Length of module is good	It is planned to improve contents a bit and module duration will remain same		✔		
19		Increase duration of module	It is planned to improve contents a bit and module duration will remain same		✔		
20		More time designated to participants	It is planned to introduce new intractive exercises.	✔			
21	**Other Comments**	No need to go out for 5s	Contents of 5S will be reviewed We'll have nearest and relevant site		✔		
22		After one week training certificates should be given	Certificates are issued based on the philosophy of the academy. The request for issuing certificate by module will be transferred to and discussed in the management unit of the academy.	✔			

添付資料 3.57

2017 年春期研修「O&M of Electrical Equipment」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

iv) O&M for Electrical Equipment

- Spring 2017 Training -

iv-a) Course evaluation

Table 1 Course Evaluation: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Contyents	0	0	7	4	11	3.4
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	0	6	5	11	3.5
3	Relevance of On-Site Training Activities	0	0	7	4	11	3.4
4	Overall Presentation Quality of Trainer	-	-	-	-	-	-
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	2	4	5	11	3.3
6	Time & Length of Training	0	4	4	3	11	2.9
7	Practical Activities & Exercise at Class Room	0	0	5	5	10	3.5
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.)	0	0	8	3	11	3.3
9	Logistic Arrangement (Class Room, Vehicles, Tea and Lunch etc.)	0	2	6	3	11	3.1
10	Overall Quality of Training	-	-	-	-	-	-

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = (1 x number of answer in "Not Satisfied" + 2 x number of answer in "Somewhat Satisfied" + 3 x number of answer in " Satisfied" + 4 x number of answer in "Very Satisfied") / "Total Answer"

Table 4 Course Evaluation: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	11	0

Table 7 Course Evaluation (Module 1: Electrical Panels): Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
Module 1: Electrical Panel			
15. a)	1-Introduction to different type of panels	11	0
	2-Understanding and operation of each component of Electrical Control Panel	10	1
	3-Working of motor, motor starters and power	11	0

	factor improvement panel		
	4-Testing techniques for equipment i-e relays, circuit breakers, magnetic contractors and motor winding (Continuity testing and insulation testing)	11	0
	5-Motor size calculation with respect to pump	10	1
	6-Standard operational procedures and preventive maintenance	11	0
Module 2: Generator			
15. a)	1-Introduction to Diesel Generator	11	0
	2-Basic assembly of Diesel generator and operation of each component.	11	0
	3-Troubleshooting of Diesel generator along with preventive maintenance and record keeping.	11	0
	4-Generator sizing with respect to load.	10	1
	5-Importance of operations manual and best industry practices	11	0
	HSE of Electrical Components		
	1-Introduction of hazard hunting and job safety analysis during operation and maintenance of electrical panel and generator and exercise.	11	0
	2-Introduction of selection of task specific PPE maintenance & protection.	10	1
	3-Basic firefighting, selection of fire extinguisher & exercise, record keeping exercise.	11	0
	4-Introduction of low voltage rescue kit, management of electric shock & CPR exercise.	10	1
	5-Introduction of first aid box & record keeping	11	0
	6-Introduction of accident & incident reporting procedures.	11	0

iv-b) Trainer's evaluation

Table 1 Evaluation of Trainer, Mr Jawad Shahid: Module 1

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	5	4	2	11	3.7
2	Technical Knowledge of the Content	0	0	4	2	5	11	4.1
3	Explanation of the Content	0	0	2	4	5	11	4.3
4	Demonstration & Professional Capability of Handling Equipment	0	1	1	4	5	11	4.2
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	4	4	3	11	3.9
6	Management of on-site Training	0	0	4	4	3	11	3.9
7	Time Management	0	0	1	4	6	11	4.5
8	Presentation Skills	0	0	3	3	5	11	4.2
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	1	6	4	11	4.3

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = (1 x number of answer in "Below Average" + 2 x number of answer in "Average" + 3 x number of answer in "Good" + 4 x number of answer in "Very Good" + 5 x number of answer in "Excellent") / "Total Answer"

Table 4 Evaluation of Trainer, Mr Ihsan Ul Haque: Module 3

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	2	7	2	11	4.0
2	Technical Knowledge of the Content	0	0	4	4	3	11	3.9
3	Explanation of the Content	0	0	3	3	5	11	4.2
4	Demonstration & Professional Capability of Handling Equipment	0	0	1	5	5	11	4.4
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	4	3	4	11	4.0

6	Management of on-site Training	0	0	4	2	5	11	4.1
7	Time Management	0	0	4	1	6	11	4.2
8	Presentation Skills	0	0	2	6	2	10	4.0
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	1	5	4	10	4.3

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = (1 x number of answer in "Below Average" + 2 x number of answer in "Average" + 3 x number of answer in "Good" + 4 x number of answer in "Very Good" + 5 x number of answer in "Excellent") / "Total Answer"

iv-c) Trainee's evaluation

Participants Result Sheet for Training Cycle-02

Training Cycle - 02

Sr. No.	Name	Organization	Designation	MODULE 01								MODULE 02								
				Attendance	Excercise-1	Exercise-2	Exercise-3	Total Exercise	Action Plan	Sub-Total	Pass / Fail	Attendance	Exercise-1	Exercise-2	Exercise HSE	Total Exercises	Action Plan	Sub-Total	Pass / Fail	
				30%	15%	15%	15%	45%	25%	100%		30%	15%	15%	15%	45%		100%		
1	Mr. Muhammad Sajid	WASA Multan	Asst. Dir.	28.2	7	10	8	25	20	**73.2**		28.2	6	8	15	29	20	**77.2**		
2	Mr. Muhammad Abbas	WASA Multan	Sub-Engr.	28.2	7	10	8	25	20	**73.2**		28.2	7	8	15	30	20	**78.2**		
3	M. Tauseef	WASA Gujranwala	SDO	Did not attend the course								Did not attend the course								
4	Mr. Shafqat Mehmood	WASA Rawalpindi	Asst. Dir.	Did not attend the course								Did not attend the course								
5	Mr. Muhammad Ali	WASA Rawalpindi	Sub-Engr.	28.2	7	10	9	26	18	**72.2**		28.2	7	8	14.5	29.5	18	**75.7**		
6	Mr. Muhammad Rehman	WSSP	Sub-Engr.	30	5	10	8	23	20	**73**		30	9	9	15	33	20	**83**		
7	Mr. Jamal Biland	WSSP	Sub-Engr.	30	8	10	8	26	18	**74**		30	5	8	14.5	27.5	18	**75.5**		
8	Mr. Shafi Ullah	WSSC Kohat		Did not attend the course								Did not attend the course								
9	Mr. Waqar Anjum	WSSC Kohat		Did not attend the course								Did not attend the course								
10	Mr. Armaghan Khan	WASA Lahore	SDO	26.4	7	10	8	25	18	**69.4**		26.4	9	10	7.5	26.5	18	**70.9**		
11	Mr. Hasnain Raza	WASA Lahore	SDO	30	7	10	7	24	18	**72**		30	9	8	15	32	18	**80**		
12	Mr. Faisal Sarwar	WASA Lahore	SDO	30	8	10	7	25	19	**74**		30	7	9	7.5	23.5	19	**72.5**		
13	Mr. Ali Haider Naqvi	WASA Lahore	Sub-Engr.	24	6	10	6	22	13	**59**		24	5	6	7.5	18.5	13	**55.5**		
14	Mr. Rana Mudassar	WASA Lahore	Sub-Engr.	22.2	5	10	8	23	18	**63.2**		22.2	5	9	15	29	18	**69.2**		
15	Mr. Hassan Mustafa	WASA Lahore	SDO	30	7	10	8	25	20	**75**		30	7	8	15	30	20	**80**		
16																				
17																				

Total Participants		**11**
Pass		**11**
Fail		**0**
Pass %age		**100**

Total Participants	**11**
Pass	**11**
Fail	**0**
Pass %age	**100**

			FINAL RESULTS					
			Average of Sub-Totals					
Sr. No.	Name	Exercise	Attendance	Action Plan	Grand Total	Pass / Fail	Comment	
		45%	30%	25%	100%			
1	Mr. Muhammad Sajid	27	28.2	20	75.2	Pass		
2	Mr. Muhammad Abbas	27.5	28.2	20	75.7	Pass		
3	M. Tauseef		9.3	0				
4	Mr. Shafqat Mehmood		28.2	0				
5	Mr. Muhammad Ali	27.75	28.2	18	73.95	Pass		
6	Mr. Muhammad Rehman	28	30	20	78	Pass		
7	Mr. Jamal Biland	26.75	30	18	74.75	Pass		
8	Mr. Shafi Ullah		0	0				
9	Mr. Waqar Anjum		0	0				
10	Mr. Armaghan Khan	25.75	26.4	18	70.15	Pass		
11	Mr. Hasnain Raza	28	30	18	76	Pass		
12	Mr. Faisal Sarwar	24.25	30	19	73.25	Pass		
13	Mr. Ali Haider Naqvi	20.25	24	13	57.25	Pass		
14	Mr. Rana Mudassar	26	22.2	18	66.2	Pass		
15	Mr. Hassan Mustafa	27.5	30	20	77.5	Pass		
16								
17								

Total Participants	11
Pass	11
Fail	0
Pass %age	100

iv-d) Comment from Trainees and Action

Feedback & Response

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	Detail		**Urgent/** Modified by the 3rd cycle	**Normal/** Action to be decided after OJT visits	**Later/** Necessity to be monitored	**Not Applicable**
1	**Technical Issues**	Reference material (Videos, Case studies) should be originally prepared by the academy and according to the needs of trainees	There are some materials utilizing information from other resources. For the next cycle, not only referring videos/documents but also making original materials will be tried according to the site needs.		✓		
2		Presentation slides should be made with less and simple words.	It has been improved and tried to be less wording so far. But there is still some room to be improved, especially in HSE slides. After the OJT visits, it will be modified according to the finalized contents.	✓			
3		Details of CTs and protective relays should be added	Fundamental information of CT and the relays for O&M has been already included in the lecture. However, ampere setting and inspection for CT can be added as a part of OJT/demonstration so it will be decided according to the site need after OJT visit.		✓		
4		Panels for High voltage and their components should be also added	The main target of this training is to give O&M training of broadly used equipment in WASA, which is not high voltage equipment but low voltage one. In addition, dealing with the high voltage equipment requires proper certificate and has high possibility in danger. Therefore, it cannot be suitable and applied for this training.				✓
5		Motor starter in detail such as VFD(Variable Speed Drive) and DOL(Direct-on-line) should be also added	There are some sites in WASA installing VFDs but the numbers are limited. In addition, O&M of the device is limited and depends on the manufacturer so VFD will be generally explained as same as before. On the other hand, DOL is the most basic motor starter so it can be explained in order to help trainees to understand the circuit diagram more easily.	✓			
6		Especially in Generator Session, Safety manner	The trainer is planning to work together with WASA for further study at the site. After the study of ordinal manner in WASA, the		✓		

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	Detail		**Urgent/** Modified by the 3rd cycle	**Normal/** Action to be decided after OJT visits	**Later/** Necessity to be monitored	**Not Applicable**
		of equipment especially for operator should be added	academy will try to consider a way of suitable SOP for WASA considering not only technical but also safety aspects.				
7		HSE session should be more practical than theoretical	More practical training will be considered and focused instead of theoretical parts according to the site needs after OJT visits.	✓			
8	**Time & Duration**	Training duration should be reduced such as 3days	Preference of training length is varied based on WASAs. In fact, there are some satisfied participants particularly who came from far places. Therefore, it will continue in the same length for a while and can be modified if needed later.			✓	
9		Time schedule for the class should be from 11am to 5pm.	The current time schedule has been arranged as a result of considering WASA working hours and Pakistan culture. Without any exceptional condition, it will continue with the same time span.				✓

添付資料 3.58

2016 年秋期研修「O&M of Mechanical Equipment」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

v) O&M for Mechanical Equipment

- Fall 2016 Training -

v-a) Course evaluation

Table 1 Course Evaluation: Module 1-2 (Mech): Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes: Module 1	0	0	5	1	6	3.2
	Difficulty Level of Training Themes: Module 2	0	0	4	2	6	3.3
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	0	3	3	6	3.5
3	Relevance of On-Site Training Activities module 1	0	1	1	4	6	3.5
	Relevance of On-Site Training Activities module 2	0	1	0	5	6	3.7
4	Overall Presentation Quality of Trainer	0	0	4	2	6	3.3
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	1	3	2	6	3.2
6	Time & Length of Training: Module 1	0	2	3	1	6	2.8
	Time & Length of Training: Module 2	0	2	3	1	6	2.8
7	Practical Activities & Exercise at Class Room: Module 1	1	1	1	3	6	3
	Practical Activities & Exercise at Class Room: Module 2	1	0	4	1	6	2.8
8	Difficulty level of exercises and action plans of module 1	0	0	5	1	6	3.2
	Difficulty level of exercises and action plans of module 2	0	0	5	1	6	3.2
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	1	3	0	2	6	2.5
10	Overall Quality of Training	0	1	2	3	6	3.3

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Course Evaluation: Module 3-4 (Mech): Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes: Module 3	2	0	3	3	8	2.9
	Difficulty Level of Training Themes: Module 4	0	3	4	2	9	2.9
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	1	6	2	9	3.1
3	Relevance of On-Site Training Activities module 3	0	1	4	3	8	3.2
	Relevance of On-Site Training Activities module 4	0	2	5	2	9	3
4	Overall Presentation Quality of Trainer	0	1	5	3	9	3.2
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	1	5	3	9	3.2
6	Time & Length of Training: Module 3	1	3	3	1	8	2.5
	Time & Length of Training: Module 4	0	2	6	1	9	2.9
7	Practical Activities & Exercise at Class Room: Module 3	1	0	4	4	9	3.2
	Practical Activities & Exercise at Class Room: Module 4	0	1	6	2	9	3.1
8	Difficulty level of exercises and action plans of module 3	1	1	6	0	8	2.6
	Difficulty level of exercises and action plans of module 4	0	2	5	2	9	3
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	1	3	5	9	3.4
10	Overall Quality of Training	0	1	4	4	9	3.3

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 3 Course Evaluation: Module 1-2 (Mech): Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	6	0

Table 4 Course Evaluation: Module 3-4 (Mech): Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	8	1

Table 5 Course Evaluation: Module 1-2 (Mech): Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	1) Importance of mechanical equipment in WASA operation	6	0
	2) Ability to recognize assembly components	6	0
	3) Ability to operate according to SOP's	6	0
	4) Develop and implement preventive maintenance plan	5	1
	5) Able to do root cause analysis and troubleshoot	5	1

Table 6 Course Evaluation: Module 3-4 (Mech): Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished	No Response
15. a)	1-Importance of water meter and heavy machines in WASA operations	6	1	2
	2-Ability to recognize water meter types and perform accuracy check	5	2	2
	3-Importance of HSE in mechanical equipment operations	8	0	1
	4- Ability to recognize assembly components	8	0	1
	5-Ability to operate according to SOP's	8	0	1
	6-Develop and implement preventive maintenance plan	7	1	1
	7-Able to do root cause analysis	5	3	1

v-b) Trainer's evaluation

Table 1 Evaluation of Trainer, Mr Mubasher Cheema: Module 1-2

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	1	2	3	6	4.3
2	Technical Knowledge of the Content	0	0	3	0	3	6	4
3	Explanation of the Content	0	0	3	2	1	6	3.7
4	Demonstration & Professional Capability of Handling Equipment	0	0	2	2	1	5	3.8
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	1	4	1	6	4
6	Management of on-site Training	-	-	-	-	-	-	-
7	Time Management	0	0	4	1	1	6	3.5
8	Presentation Skills	0	0	1	3	2	6	4.2
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	2	4	0	6	3.7

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Evaluation of Trainer, Mr Mubasher Cheema: Module 3-4

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	2	4	3	9	4.1
2	Technical Knowledge of the Content	0	1	1	4	3	9	4
3	Explanation of the Content	0	0	2	5	2	9	4
4	Demonstration & Professional Capability of Handling Equipment	0	0	2	5	2	9	4
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	1	5	3	9	4.2

6	Management of on-site Training	-	-	-	-	-	-	-
7	Time Management	0	2	1	4	2	9	3.7
8	Presentation Skills	0	0	0	5	4	9	4.4
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	2	4	3	9	4.1

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 3 Evaluation of Trainer, Mr Ihsan Ul Haque: Module 1-2

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	4	2	0	6	3.3
2	Technical Knowledge of the Content	0	0	4	2	0	6	3.3
3	Explanation of the Content	0	1	3	2	0	6	3.2
4	Demonstration & Professional Capability of Handling Equipment	0	0	4	2	0	6	3.3
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	2	2	1	1	6	3.2
6	Management of on-site Training	0	2	2	1	1	6	3.2
7	Time Management	0	2	2	1	1	6	3.2
8	Presentation Skills	0	2	2	1	1	6	3.2
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	1	2	3	0	6	3.3

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 4 Evaluation of Trainer, Mr Ihsan Ul Haque: Module 3-4

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	1	2	5	1	9	3.7
2	Technical Knowledge of the Content	0	1	3	4	1	9	3.5

3	Explanation of the Content	0	2	3	3	1	9	3.3
4	Demonstration & Professional Capability of Handling Equipment	0	2	1	5	1	9	3.5
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	2	1	4	2	9	3.7
6	Management of on-site Training	0	1	3	3	2	9	3.7
7	Time Management	0	1	3	4	1	9	3.5
8	Presentation Skills	0	1	1	4	1	7	3.7
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	2	2	4	1	9	3.4

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

v-c) Trainee's evaluation

				MODULE 01								MODULE 02						
				26 Dec. 2016 To 28 Dec. 2016								29 Dec. 2016 To 30 Dec. 2016						
Sr. No.	Name	Organization	Designation	Attendance	Excercise-1A	Excercise-1B	Exercise-2	Exercise-3	Action Plan	Sub-Total	Pass / Fail	Attendance	Exercise-1	Exercise-2	Exercise-3	Action Plan	Sub-Total	Pass / Fail
				30%	7.5%	7.5%	15%	15%	25%	100%		30%	15%	15%	15%	25%	100%	
1	Mr. Muhammad Ramzan	WASA Quetta	XEN	10	13	10	11	_	_	33	Fail	Not Attended						
2	Mr. Salahuddin	WASA Quetta	Supervisor	10	13	5	9	_	_	28	Fail	Not Attended						
3	Mr. Waqas Liaqat	WASA Lahore	SDO	28.6	15	14	15	13	19	91	pass	30	13	15	13	19	90	Pass
4	Mr. Ch. Fayaz	WASA Lahore	Sub-Engineer	30	15	14	15	15	19	94	pass	30	14	15	13	19	91	Pass
5	Mr. Amir Tufail	WASA Lahore	Sub-Engineer	23.4	_	_	_	11	15	50	pass	30	12	13	14	15	84	Pass
6	Mr. Qosain Naz	WASA Lahore	SDO	18.6	_	_	_	14	_	33	Fail	15	15	13	13	_	56	Pass
7	Mr. Waqas Naseer	WASA Lahore	SDO	26.4	15	15	14	14	_	70	pass	_	14	15	_	_	29	Fail
8	Mr. Souman Khalid	WASA Lahore	SDO	28.6	15	15	15	11	20	90	pass	27.9	14	13	14	20	89	Pass
9	Mr. Abaid Ur Rehman	WASA Lahore	SDO	Not Attended								Not Attended						
10	Mr. Sohaib	WASA Gujranwala	Sub-Engineer	28.6	15	13	15	15	_	73	pass	15	12	12	14	_	53	Pass
11	Mr. Umair Ayub	WASA Multan	SDO	25.6	15	15	15	11	22	89	pass	30	15	12	15	22	94	Pass
12	Mr. Muhammad Shakeel Ahmed	WASA Multan	Sub-Engineer	28.6	15	15	15	7	13	79	pass	30	13	12	14	13	82	Pass
13	Mr. Zain Ul Abidin	WASA Faisalabad	SDO	Not Attended								Not Attended						
14	Mr. Noushad Aslam	WASA Rawalpindi	Sub-Engineer	Not Attended								Not Attended						
15	Mr. Aamir Hussain Shah	WASA Rawalpindi	Sub-Engineer	Not Attended								Not Attended						
16																		
17																		

Total Participants	11
Pass	8
Fail	3
Pass %age	73

Total Participants	9
Pass	8
Fail	1
Pass %age	89

Sr. No.	Name	Organization	Designation	MODULE 04 11 Jan. 2017 To 13 Jan. 2017							MODULE 03 09 Jan. 2017 To 10 Jan. 2017					
				Attendance	Exercise-1	Exercise-2	Exercise-3	Action Plan	Sub-Total	Pass / Fail	Attendance	Exercise-1	Exercise-2	Action Plan	Sub-Total	Pass / Fail
				30%	15%	15%	15%	25%	100%		30%	25%	20%	25%	100%	
1	Mr. Muhammad Ramzan	WASA Quetta	XEN	Not Attended							Not Attended					
2	Mr. Salahuddin	WASA Quetta	Supervisor	Not Attended							Not Attended					
3	Mr. Waqas Liaqat	WASA Lahore	SDO	20	_	_	14	20	54	Pass	30	25	20	25	100	Pass
4	Mr. Ch. Fayaz	WASA Lahore	Sub-Engineer	30	15	15	13	25	98	Pass	30	25	20	25	100	Pass
5	Mr. Amir Tufail	WASA Lahore	Sub-Engineer	30	13.8	15	13	20	92	Pass	27.9	25	18	22	93	Pass
6	Mr. Qosain Naz	WASA Lahore	SDO	Not Attended							Not Attended					
7	Mr. Waqas Naseer	WASA Lahore	SDO	18.6	14	15	_	_	50	Pass	27.9	23	20	_	71	Pass
8	Mr. Souman Khalid	WASA Lahore	SDO	30	15	15	15	20	95	Pass	30	25	20	25	100	Pass
9	Mr. Abaid Ur Rehman	WASA Lahore	SDO	17.2	10.8	15	_	_	43	Fail	27.9	25	20	20	93	Pass
10	Mr. Sohaib	WASA Gujranwala	Sub-Engineer	Not Attended							Not Attended					
11	Mr. Umair Ayub	WASA Multan	SDO	28.6	11.5	14	10	20	85	Pass	30	23	_	20	73	Pass
12	Mr. Muhammad Shakeel Ahmed	WASA Multan	Sub-Engineer	30	12	14	13	19	88	Pass	30	23	18	20	91	Pass
13	Mr. Zain Ul Abidin	WASA Faisalabad	SDO	30	11.4	14	13	25	94	Pass	15	_	_	25	40	Fail
14	Mr. Noushad Aslam	WASA Rawalpindi	Sub-Engineer	30	9	11	14	20	84.0	Pass	30	19	18	20	87	Pass
15	Mr. Aamir Hussain Shah	WASA Rawalpindi	Sub-Engineer	30	6	11	15	20	82.0	Pass	15	_	_	20	35	Fail
16																
17																

Total Participants	11
Pass	10
Fail	1
Pass %age	91

Total Participants	11
Pass	9
Fail	2
Pass %age	82

Sr. No.	Name	Organization	Designation	FINAL RESULTS				
				Average of Sub-Totals				
				Exercise	Attendance	Action Plan	Grand Total	Pass / Fail
				45%	30%	25%	100%	
1	Mr. Muhammad Ramzan	WASA Quetta	XEN	6	3	0	9.0	Fail
2	Mr. Salahuddin	WASA Quetta	Supervisor	5	3	0	7.0	Fail
3	Mr. Waqas Liaqat	WASA Lahore	SDO	36	27	21	84.0	Pass
4	Mr. Ch. Fayaz	WASA Lahore	Sub-Engineer	44	30	22	96.0	Pass
5	Mr. Amir Tufail	WASA Lahore	Sub-Engineer	34	28	18	80.0	Pass
6	Mr. Qosain Naz	WASA Lahore	SDO	14	8	0	23.0	Fail
7	Mr. Waqas Naseer	WASA Lahore	SDO	36	18	0	55.0	Pass
8	Mr. Souman Khalid	WASA Lahore	SDO	43	29	21	94.0	Pass
9	Mr. Abaid Ur Rehman	WASA Lahore	SDO	18	11	5	34.0	Fail
10	Mr. Sohaib	WASA Gujranwala	Sub-Engineer	21	11	0	32.0	Fail
11	Mr. Umair Ayub	WASA Multan	SDO	35	29	21	86.0	Pass
12	Mr. Muhammad Shakeel Ahmed	WASA Multan	Sub-Engineer	39	30	16	85.0	Pass
13	Mr. Zain Ul Abidin	WASA Faisalabad	SDO	10	11	13	34.0	Fail
14	Mr. Noushad Aslam	WASA Rawalpindi	Sub-Engineer	18	15	10	43.0	Fail
15	Mr. Aamir Hussain Shah	WASA Rawalpindi	Sub-Engineer	8	11	10	30.0	Fail
16								
17								

Total Participants	**15**
Pass	**7**
Fail	**8**
Pass %age	**47**

v-d) Comment from Trainees and Action

Module 1-2 Pumps, Valves and Induction Motor-Chlorination and Filtration system

Sr. No.	Feedback from Participants	Response by Academy	Response Time		
			Immediate/ Urgent	Normal/ After field visit	Pending/ After Second Cycle
Technical					
1	Diagrams, charts and demonstration on mechanical parts be more efficient on site	On site most of them we do visual inspection so no need to give you hardcopy of every equipment diagrams and charts but where it necessary we should add more diagrams and charts, We do our best but if any deficiency then cover in next cycle. Improvement need on every stage.		✓	

2	Training should be more practical	We have to scheduled for practical and theoretical portion where we want to cover mechanical course as we can but unfortunately most of them WASA peoples not come on time so we compromise on time of both of portion.		✓	
3	Inter-city visits could be arranged	We have time issue we show you all facilities of WASA and its academy rules to give demonstration of site in WAS Lahore.		✓	
Time Duration					
4	Working hours should be reduced	Its already reduced we try for more better in next cycle		✓	
5	Extend Training days	Peoples instead of Lahore WASA have problem to deal with long terms but we try best to cover all things in scheduled time		✓	
Others					
6	Labs should be established in academy	Lab take too much budget but better to see real and practical experience of WASA facilities.			✓
7	Handouts containing colored pictures and properly labeled	We must be do better ways in next cycle	✓		
8	Handouts should be in detail not only PPT slides	We give more explained material next cycle		✓	

9	Trainer should conduct introductory session and information exchange with trainees before starting the training session	Most of them WASA peoples not come on time so introductory session be eliminated because we wish to cover our main course		✓	
10	Japanese experts should be share their experience	Whenever we need Japanese expert skills they represent but its work of Academy members to give demonstration			✓

Module 3-4 Water Meter and Heavy Machine Equipment

Sr. No.	Feedback from Participants	Response by Academy	Response Time		
			Immediate/ Urgent	Normal/ After field visit	Pending/ After Second Cycle
Technical					
1	Advance technique should be add such as EFI,computer card of excavator and digitalization.	In first cycle we need to cover only basic knowledge about jetting,sucker,backhoe maintenance and operation unit and next time we can add more technical knowledge and add more knowledge about digital technology.		✓	
2	In Heavy machine portion excavator maintenance and parts should be add	We add this time basic knowledge of heavy machines maintenance and their operations. Next time we can be add some more machine operation and maintenance.		✓	
3	Implementation of schedule, preventive maintenance and breakdown must be needed	This time we tried to focus more on maintenance plan and make a schedule of maintenance its cover this time but next time we add more exercises about that.	✓		
4	More detail of preventive maintenance slides be add	Next time we add more detailed of preventive maintenance slides.	✓		
5	Water meter module was not up to recommendation	This time we deal only with basic information of water meter because only some of WASA people can understand but next time we improve it.	✓		

6	Water meter training should be on outfall	If its within the time range we must go there for water meter in next cycle		✓	
7	On site training of heavy machines should be in workshop or automobile production unit	Good to see production and repairing. Next time we try to arrange OJT in Kissan engineering if they gives permission. Where you can see many facilities of jetting, sucker and combine unit production and repairing.	✓		
Time Duration					
8	Working hours should be reduced	Its already reduced we try for more better in next cycle		✓	
9	Too long for other cities WASA	Although this time we minimize the training time and we add two module and cover in 5 days. So its already done.			✓
Others					
10	There must be sign board of academy at Main road so we can easily find out the way	Sign board should be there at Main road but Al-Jazari academy Lahore this name you can be search on google maps so then its easily to you to find the better way.	✓		
11	Heaters and TV should be available in hostels	We make improvement			✓
12	Some printout need to be in color form	We improve		✓	
13	Videos may also be provided along with ppts in USB or CD	Yes anyone can take these videos in USB	✓		

添付資料 3.59

2017 年春期研修「O&M of Mechanical Equipment」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

v) O&M for Mechanical Equipment

- Spring 2017 Training -

v-a) Course evaluation

Table 1 Course Evaluation: (Mech): Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes	0	0	11	1	12	3.1
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	0	7	3	10	3.3
3	Relevance of On-Site Training Activities	0	0	8	4	12	3.3
4	Overall Presentation Quality of Trainer	-	-	-	-	-	-
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	0	3	9	12	3.8
6	Time & Length of Training	1	0	10	1	12	2.9
7	Practical Activities & Exercise at Class Room	0	2	7	3	12	3.1
8	Difficulty level of exercises and action plans etc	0	0	9	2	11	3.2
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	3	2	6	1	12	2.4
10	Overall Quality of Training	-	-	-	-	-	-

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Course Evaluation: (Mech): Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	12	0

Table 3 Course Evaluation: Module 1-2 (Mech): Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	1) Importance of mechanical equipment in WASA operation	11	1
	2) Ability to recognize assembly components	9	3
	3) Ability to operate according to SOP's	11	1
	4) Develop and implement preventive maintenance plan	11	1
	5) Able to do root cause analysis and troubleshoot	9	2
	6) Importance of HSE in mechanical equipment operations	12	0
	7) Importance of 5S (workplace organization and process standardization) in WASA operation	11	1

v-b) Trainer's evaluation

Table 1 Evaluation of Trainer, Mr Mubasher Cheema

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	1	3	8	12	4.6
2	Technical Knowledge of the Content	0	0	2	2	8	12	4.5
3	Explanation of the Content	0	1	2	1	8	12	4.3
4	Demonstration & Professional Capability of Handling Equipment	0	0	1	4	7	12	4.5
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	1	2	9	12	4.7
6	Management of on-site Training	0	0	1	5	5	11	4.4
7	Time Management	0	1	0	7	4	12	4.2
8	Presentation Skills	0	0	2	1	9	12	4.6
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	0	5	7	12	4.6

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Evaluation of Trainer, Mr Ihsan Ul Haque

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	1	7	4	12	4.3
2	Technical Knowledge of the Content	0	0	2	6	4	12	4.2
3	Explanation of the Content	0	0	3	5	4	12	4.1
4	Demonstration & Professional Capability of Handling Equipment	0	0	4	1	6	11	4.2
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	2	3	6	11	4.4

6	Management of on-site Training	0	1	3	2	5	11	4.0
7	Time Management	0	3	2	5	2	12	3.5
8	Presentation Skills	0	1	1	5	4	11	4.1
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	2	5	5	12	4.3

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

v-c) Trainee's evaluation

Sr. No.	Name	Organization	Designation	MODULE 01								MODULE 02					
				24 Apr. 2017 To 25 Apr. 2017								25 Apr. 2017 To 26 Apr. 2017					
				Attendance	Excercise-1A	Excercise-1B	Exercise-2	Exercise-3	Action Plan	Sub-Total	Pass / Fail	Attendance	Exercise-1	Exercise-2	Action Plan	Sub-Total	Pass / Fail
				30%	7.5%	7.5%	15%	15%	25%	100%		30%	30%	15%	25%	100%	
1	Mr. Shakeel Ahmed	WASA Multan	Sub-Engineer	30	7.5	5.5	11	9	25	88	Pass	30	28	13	25	96	Pass
2	Mr. Sohail Ahtar	WASA Multan	Sub-Engineer	30	7.5	6.5	13	9	25	91	Pass	30	28	13	25	96	Pass
3	Ms Zoya Farooq	WASA Faisalabad	SDO	10				15	25	50	Pass	30	28	15	25	98	Pass
4	Mr. Sanwal Malik	WASA Faisalabad	SDO	30	7.5	6	11	15	25	94.5	Pass	30	26	15	25	96	Pass
5	Engr. Farrukh	WSSP	SDO	30	7.5	7.5	15	15	25	100	Pass	30	30	13	25	98	Pass
6	Engr. M. Umair	WSSP	Sub-Engineer	30	7	6.5	14	15	25	97.5	Pass	30	28	14	25	97	Pass
7	Mr. Shafqat Mehmood	WASA Rawalpindi	SDO	30	7.5	7.5	15	15	23	98	Pass	30	28	14	23	95	Pass
8	Mr. Ali	WASA Rawalpindi	Sub-Engineer	30	7.5	7.5	15	15	23	98	Pass	30	28	13	23	94	Pass
9	Mr. Sohail Cheema	WASA Lahore	XEN	**Not Attended**								**Not Attended**					
10	Mr. M. Zaheer Rana	WASA Lahore	Sub-Engineer	**Not Attended**								**Not Attended**					
11	Ms Quba Khalid	WASA Lahore	SDO	10				15	25	50	Pass	30	30	15	25	100	Pass
12	Mr. Umair Raza	WASA Lahore	SDO	**Not Attended**								**Not Attended**					
13	Mr. Hafiz Muhammad Noman	WASA Lahore	Sub-Engineer	30	4.5	7.5	15	15	25	97	Pass	30	30	15	25	100	Pass
14	Mr. Muhammad Hamza	WSSC Kohat	Sub-Engineer	30	7.5	7.5	15	15	25	100	Pass	30	28	12	25	95	Pass
15	Mr. Waqar Anjum	WSSC Kohat	Sub-Engineer	30	7.5	7.5	15	15	25	100	Pass	30	28	11	25	94	Pass

		MODULE 03								MODULE 04						FINAL RESULTS				
		26 Apr. 2017 To 27 Apr. 2017								28 Apr. 2017						Average of Sub-Totals				
Sr. No.	Name	Attendance	Exercise-1	Exercise-2	Exercise-3	Action Plan	Sub-Total	Pass / Fail		Attendance	Exercise	Action Plan	Sub-Total	Pass / Fail		Exercise	Attendance	Action Plan	Grand Total	Pass / Fail
		30%	15%	15%	15%	25%	100%			30%	45%	25%	100%			45%	30%	25%	100%	
1	Mr. Shakeel Ahmed	30	15	15	14	25	99	Pass		30	42	25	97	Pass		40	30	25	95	Pass
2	Mr. Sohail Ahtar	30	15	15	14	25	99	Pass		30	41	25	96	Pass		41	30	25	96	Pass
3	Ms Zoya Farooq	30	15	15	13	25	98	Pass		30	45	25	100	Pass		37	25	25	87	Pass
4	Mr. Sanwal Malik	30	15	15	13	25	98	Pass		30	43	25	98	Pass		42	30	25	97	Pass
5	Engr. Farrukh	30	15	15	15	25	100	Pass		30	43	25	98	Pass		44	30	25	99	Pass
6	Engr. M. Umair	30	14	15	15	25	99	Pass		30	41	25	96	Pass		42	30	25	97	Pass
7	Mr. Shafqat Mehmood	30	15	15	13	23	96	Pass		30	43	23	96	Pass		43	30	23	96	Pass
8	Mr. Ali	30	14	15	15	23	97	Pass		30	43	23	96	Pass		43	30	23	96	Pass
9	Mr. Sohail Cheema	Not Attended								Not Attended						Not Attended				
10	Mr. M. Zaheer Rana	Not Attended								Not Attended						Not Attended				
11	Ms Quba Khalid	30	15	15	15	25	100	Pass		30	45	25	100	Pass		38	25	25	88	Pass
12	Mr. Umair Raza	Not Attended								Not Attended						Not Attended				
13	Mr. Hafiz Muhammad Noman	30	15	15	15	25	100	Pass		30	45	25	100	Pass		44	30	25	99	Pass
14	Mr. Muhammad Hamza	30	15	15	15	25	100	Pass		30	42	25	97	Pass		43	30	25	98	Pass
15	Mr. Waqar Anjum	30	12	15	15	25	97	Pass		30	42	25	97	Pass		42	30	25	97	Pass

v-d) Comment from Trainees and Action

Feedback & Response

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	**Detail**		**Urgent/** Modified by the 3rd cycle	**Normal/** Action to be decided after OJT visits	**Later/** Necessity to be monitored	**Not Applicable**
1	**Training Material**	Slides are like summary, its good but a little more detail may be added. Detail pictures if added.	We try our best to add detailed pictures and next time we will add some more. Moreover details are covered by the instructor.		✓		
2		Make all training materials in overall book form WASA for relevant operations Add the content of proper estimating project & quantities including HSE as part of implementation.	We have provided hard copies of all lecture materials as well as soft copy on a CD. Cost estimation and quantities are covered in other courses (business planning, assets management)		✓		
3		Lectures should be in Urdu.	Our instructors already use Urdu language but next time we will use more of Urdu language.	✓			
4		Maximum training materials related to common problems and issues often occur at our sites. All are good.	For WASA improvement we will try to highlights diverse WASA issues.		✓		
5		Include dismantling/ re fixing and troubleshooting of turbine & pump also include generator in their course. Include short test practically like doze check etc.	Our current courses are focused on operations and maintenance, over-hauling and repair can be taught in a separate course. During WASA visits we do perform various maintenance and repair exercises on tube-wells. Generator is covered in Electrical equipment training module. Many equipment performance tests were performed on WASA sites.				✓

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	Detail		**Urgent/** Modified by the 3rd cycle	**Normal/** Action to be decided after OJT visits	**Later/** Necessity to be monitored	**Not Applicable**
6		Everything is good about training.	Thank you we will keep it up.				✓
7		In notes, headings should be in Urdu & English.	We tried to use simple language, which is not so difficult. Suggestion for Urdu addition is good.	✓			
8		Training material was informative & well provided, difficulty level or kind of exercises can be	Thanks we will keep on improving and add more.				✓
9	**Training length and timing**	Please duration time short	It's already too short, in 5 days 4 modules are covered.				✓
10		Training class duration is very much lengthy, therefore I suggest there may be relaxation moment during periods, to prevent the participants from getting bored, and make sure the mental presence in the class.	Class timings can be reviewed but participant presence on time will help in creating more relaxed breaks during the training period.				✓
11		Training length and timing is good but in lecture exceeding 80 minutes is difficult to concentrate.	Actually WASA peoples did not come on time and we wanted to cover the module in 1 and half day so lecture time increased but we will try to optimize it in next cycle. Participant can help by showing on time.				✓
12		Training length is sufficient as well as timing. Practical by trainee should be involved practically to get better know how.	Thank you for your appreciation. Regarding practical exercises, we visited all WASA's and performed various exercises.				✓

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	Detail		**Urgent/** Modified by the 3rd cycle	**Normal/** Action to be decided after OJT visits	**Later/** Necessity to be monitored	**Not Applicable**
13		If WSSC and WASAs other participants want to change timing then it should be change.	Actually we have planned yearly training schedule, please suggest an alternate if you have any.			✓	
14		Both are sufficient.	Thank you				✓
15		3 days are enough for existing training material. Categories this training in different SDO, XEN level and include pump selection & designing in detail.	Some time participants came late in class and we have module durations already shortened, so it's difficult to cover 4 modules in 3 days. We added some things regarding selection and designing but courses are mainly about operations and maintenance.				✓
16		Training duration is too lengthy so please reduce the duration of training and please change class timings like 11:00am to 6pm in summer.	We have to adopt a timing, which is suitable for all.			✓	
17		Overall training is much better, I feel that there may be multiple trainer from different domains.	It is a good suggestion, we will see how we can collaborate with the industry to involve other experts.			✓	
18		Very good	Thank you				✓
19		All the things are good.	Thank you and we will keep on improving.				✓
20	**Site visit & activity**	In machines one needs to look at it with details. If such machinery (heavy) is packed and in running condition, one cannot see the different and small parts	A) Equipment running conditions are reviewed in detail during the follow-up visits at WASA facilities.				✓

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	Detail		**Urgent/** Modified by the 3rd cycle	**Normal/** Action to be decided after OJT visits	**Later/** Necessity to be monitored	**Not Applicable**
		inside one machinery. So if you have two types of machinery. A) one should be in running condition B) Second should be wdith all parts open.	B) We have section cut models available for pumps in class. Other such equipment is observed during the follow-up visits.				
21		On site, practical demonstration by trainee could be improved & trainee should get on to hand on experience & execution.	All WASAs were visited after each training cycle and participants were engaged for practical demonstrations at WASA sites.		✓		
22		Overall it's a good session.	Thank you, we will try to keep on improving.				✓
23		All is well, nothing to do something else.	Thank you for your appreciation.				✓
24		Site visits are perfect, and I also suggest that, the visits to the sites like store etc. may be conduct surprise.	Surprise visits might be less productive. We want to ensure participant and other resource person availability on site for maximum output from the visit.			✓	
25		Please keep your board on main road and provide vehicle in 2nd time for enjoyment.	For the name plate or location indication, we will convey to academy administration. Entertainment vehicle should be a personal arrangement.			✓	
26		Please place Academy sign board on main road.	For the name plate or location indication, we will convey to academy administration.			✓	
27	**Others**	For a new learner the mechanical equipment should be in detail.	Actually we keep in mind time duration and difficulty level for all and try to cater the needs of all participants and WASAs.			✓	

Sr. No.	Participants' Feedback		Response/Solution	Time Required to Solve			
	Category	Detail		Urgent/ Modified by the 3rd cycle	Normal/ Action to be decided after OJT visits	Later/ Necessity to be monitored	Not Applicable
28		Division of overall subjects related to mechanical, electrical & civil topics so to get overall understanding from start to end.	We tried to focus on operations and maintenance of facilities involving mechanical equipment in this particular course.				✓
29		Al Jazari Academy is a good converter to convert the power of knowledge of O & M of mechanical equipment and other activities, I am very thankful for increasing my knowledge power from Al Jazari academy. Specially thanks to Mr. Mubasher Cheema sb and Ihsan sb.	Thank you for your appreciation, we will keep on improving.				✓
30		Aljazari Academy is so good for all WASAs for maintenance & HSE for our sewer staff. It should continue further planning for us.	Yes, we will work continue to work for WASAs capacity enhancement.				✓

添付資料 3.60

2016 年秋期研修「Asset Management」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

vi) Asset Management

- Fall 2016 Training -

vi-a) Course evaluation

Table 1 Course Evaluation: Module 1-2: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes	0	1	13	0	14	2.9
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	2	9	3	14	3.1
3	Relevance of On-Site Training Activities	-	-	-	-	-	-
4	Overall Presentation Quality of Trainer: Module 1	0	3	5	4	12	3.1
	Overall Presentation Quality of Trainer: Module 2	0	2	6	6	14	3.3
5	Trainer's Expertise on Topics and Topic Delivery Skills	1	2	6	5	14	3.1
6	Time & Length of Training	4	3	6	0	13	2.2
7	Practical Activities & Exercise at Class Room: Module 1	0	3	7	4	14	3.1
	Practical Activities & Exercise at Class Room: Module 2	0	2	7	5	14	3.2
8	Difficulty level of assessment and evaluation	0	1	11	1	13	3.0
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	0	7	7	14	3.5
10	Overall Quality of Training	0	0	10	4	14	3.3

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Course Evaluation: Module 3-4: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes	1	1	9	1	12	2.8
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	2	7	3	12	3.1

3	Relevance of On-Site Training Activities	-	-	-	-	-	-
4	Overall Presentation Quality of Trainer: Module 3	0	3	5	4	12	3.1
	Overall Presentation Quality of Trainer: Module 4	0	1	8	3	12	3.2
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	2	8	2	12	3.0
6	Time & Length of Training: Module 3	3	0	6	2	11	2.6
	Time & Length of Training: Module 4	3	2	6	1	12	2.4
7	Practical Activities & Exercise at Class Room: Module 3	0	2	8	2	12	3.0
	Practical Activities & Exercise at Class Room: Module 4	0	3	5	3	11	3.0
8	Difficulty level of assessment and evaluation	0	4	5	2	11	2.8
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	3	5	3	11	3.0
10	Overall Quality of Training	0	5	4	2	11	2.7

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 3 Course Evaluation: Module 5-6: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes: Module 5	0	4	8	0	12	2.7
	Difficulty Level of Training Themes: Module 6	0	3	8	1	12	2.8
2	Quality of Training Material: Module 5	0	2	8	1	11	2.9
	Quality of Training Material; Module 6	0	1	9	2	12	3.1
3	Relevance of On-Site Training Activities: Module 5	0	2	10	0	12	2.8
	Relevance of On-Site Training Activities: Module 6	0	2	10	0	12	2.8
4	Overall Presentation Quality of Trainer: Module 5	0	3	7	2	12	2.9
	Overall Presentation	0	0	10	2	12	3.2

	Quality of Trainer: Module 6						
5	Trainer's Expertise on Topics and Topic Delivery Skills: Module 5	0	4	6	2	12	2.8
	Trainer's Expertise on Topics and Topic Delivery Skills: Module 6	0	1	8	3	12	3.2
6	Time & Length of Training: Module 5	0	3	8	1	12	2.8
	Time & Length of Training: Module 6	0	2	9	1	12	2.9
7	Practical Activities & Exercise at Class Room: Module 5	0	1	9	1	11	3.0
	Practical Activities & Exercise at Class Room: Module 6	0	1	9	2	12	3.1
8	Difficulty level of assessment and evaluation: Module 5	0	2	9	0	11	2.8
	Difficulty level of assessment and evaluation: Module 6	0	2	9	0	11	2.8
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	2	3	6	1	12	2.5
10	Overall Quality of Training	0	2	9	1	12	2.9

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 4 Course Evaluation: Module 1-2: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	13	0

Table 5 Course Evaluation: Module 3-4: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	11	0

Table 6 Course Evaluation: Module 5-6: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	10	0

Table 7 Course Evaluation: Module 1-2: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	1) Asset, Asset coding, Asset Condition assessment and asset risk assessment	13	0
	2) Ways to apply condition and risk in asset management decisions and how to make Asset management plans.	13	0
	3) Financial appraisals techniques (NPV,IRR,BCR), Asset Recording & Reporting and fixed asset register	11	2
	4) Different features of asset management information system (AMIS)	13	0

Table 8 Course Evaluation: Module 3-4: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	1) Excel based tools for analyzing and categorizing the asset data in terms of its condition diameter, age and other attributes.	11	1
	2) Understanding of asset specific analyzing using Microsoft Excel and preparation of graphs through pivot table.	11	1
	3) Current practices and future requirements of asset management at each WASA	11	1
	4) Financial appraisal exercises to master techniques of NPV and IRR.	11	1
	5) Preparation of asset replacement plan	11	1

Table 9 Course Evaluation: Module 5-6: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	1) Asset attributes for preparing fixed asset register.	12	0
	2) Understanding of asset inspection and asset lifecycle management.	10	2
	3) Understanding of basic GIS concept, and applications of GIS in asset management.	10	2
	4) Learning of basic GIS mapping skills, query functions, and preparation of cost estimates.	12	0
	5) Making Block, updating maps from as per build drawings.	10	2
	6) Understanding of GPS, data collections from GPS device, and mapping of surveyed data.	10	2

vi-b) Trainer's evaluation

Table 1 Evaluation of Trainer, Mr Abid Husdsainy: Module 1-2

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	0	7	7	14	4.5
2	Technical Knowledge of the Content	0	0	0	8	6	14	4.4
3	Explanation of the Content	0	0	1	4	9	14	4.5
4	Demonstration & Professional Capability of Handling Equipment	0	0	1	5	6	12	4.4
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	1	3	2	7	13	4.1
6	Management of on-site Training	-	-	-	-	-	-	-
7	Time Management	1	1	2	3	6	13	3.9
8	Presentation Skills	0	0	2	7	5	14	4.2
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	1	8	5	14	4.3

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Evaluation of Trainer, Mr Asif Iqbal: Module 1-2

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	4	9	1	14	3.7
2	Technical Knowledge of the Content	0	1	3	8	2	14	3.7
3	Explanation of the Content	0	1	4	6	3	14	3.7
4	Demonstration & Professional Capability of Handling Equipment	0	0	4	6	2	12	3.8
5	Use of different Content Delivery Techniques (Group Discussion & Activities and	0	1	5	5	2	13	3.6

	exercises)							
6	Management of on-site Training	-	-	-	-	-	-	-
7	Time Management	1	1	5	4	3	14	3.5
8	Presentation Skills	0	0	6	4	4	14	3.8
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	3	7	4	14	4.1

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 3 Evaluation of Trainer, Ms Anneqa Azeem: Module 3-4

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	1	0	3	7	1	12	3.6
2	Technical Knowledge of the Content	0	1	3	6	2	12	3.7
3	Explanation of the Content	0	0	4	5	3	12	3.9
4	Demonstration & Professional Capability of Handling Equipment	0	0	4	6	2	12	3.8
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	1	6	3	2	12	3.5
6	Management of on-site Training	-	-	-	-	-	-	-
7	Time Management	0	0	7	2	3	12	3.6
8	Presentation Skills	0	2	4	3	3	12	3.6
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	2	0	2	4	8	4

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 4 Evaluation of Trainer, Mr Nizam-Ud-Din: Module 5-6

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	4	5	3	12	3.9
2	Technical Knowledge of the	0	0	6	4	2	12	3.7

	Content							
3	Explanation of the Content	0	0	6	3	3	12	3.7
4	Demonstration & Professional Capability of Handling Equipment	0	0	4	6	2	12	3.8
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	1	4	5	2	12	3.7
6	Management of on-site Training	0	0	4	5	3	12	3.9
7	Time Management	0	1	3	6	2	12	3.7
8	Presentation Skills	0	2	2	5	3	12	3.7
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	1	2	6	3	12	3.9

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 5 Evaluation of Trainer, Ms Anneqa Azeem: Module 5-6

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	2	8	2	12	4.0
2	Technical Knowledge of the Content	0	1	3	5	3	12	3.8
3	Explanation of the Content	0	1	3	4	4	12	3.9
4	Demonstration & Professional Capability of Handling Equipment	0	1	4	3	4	12	3.8
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	3	6	3	12	4.0
6	Management of on-site Training	-	-	-	-	-	-	-
7	Time Management	0	0	3	6	3	12	4.0
8	Presentation Skills	0	1	3	4	4	12	3.9
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	3	6	3	12	4.0

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number

of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 6 Evaluation of Trainer, Mr Rao Ali Raza: Module 5

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	2	3	3	1	9	3.3
2	Technical Knowledge of the Content	0	2	3	4	1	10	3.4
3	Explanation of the Content	1	1	5	0	2	9	3.1
4	Demonstration & Professional Capability of Handling Equipment	1	3	2	3	1	10	3
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	1	1	6	0	2	10	3.1
6	Management of on-site Training	1	2	4	2	1	10	3
7	Time Management	0	1	6	2	1	10	3.3
8	Presentation Skills	1	2	4	2	1	10	3
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	2	4	3	0	9	3.1

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

vi-c) Trainee's evaluation

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Asset Manageme

Assessment of Par

Sr No.	Name	Department	Session - I (Module 1&2) (31 October - 4 November, 2016)									Session - II (Mod (21-24 Novembe				
			AMP (25%)	Task-1 (10%)	Task-2 (10%)	Task-3 (10%)	Task-4 (10%)	Task-5 (10%)	Total Marks 75%	Attendance Marks (25%)	Final Marks (100%)	Task-1 (5%)	Task-2 (15%)	Task-3 (20%)	Task-4 (30%)	Task-5 (10%)
1	Mr. Sohail Sandhu	WASA Lahore	22.0	9.5	9.0	6.0	10.0	10.0	66.5	25.0	91.5	2.0	10.0	13.0	25.0	9.8
2	Mr. Muhammad Danish	WASA Lahore	20.0	7.5	7.0	8.0	7.0	10.0	59.5	22.5	82.0	Not Attended Session II				
3	Mr. Adeel Sharif	WASA Lahore	Not Attended Session I						0.0	0.0	0.0	Not Attended Session II				
4	Mr. Sohail Cheema	WASA Lahore	20.0	5.0	9.0	9.0	10.0	10.0	63.0	22.7	85.7	3.0	11.0	14.0	25.0	10.0
5	Mr. Waqas Liaqat	WASA Lahore	Not Attended Session I						0.0	0.0	0.0	5.0	12.0	0.0	25.0	10.0
6	Mr. Shamas Ayub	WASA Lahore	Not Attended Session I						0.0	0.0	0.0	Not Attended Session II				
7	Mr. Abdul Rehman	WASA Lahore	22.0	8.5	9.0	6.0	8.0	10.0	63.5	20.3	83.8	5.0	12.0	20.0	25.0	10.0
8	Mr. Ghufran Sadiq	WASA Lahore	0.0	9.5	9.0	7.0	7.0	10.0	42.5	21.0	63.5	Not Attended Session II				
9	Mr. Asghar Ali	WASA Lahore	Not Attended Session I						0.0	0.0	0.0	Not Attended Session II				
10	Muhammad Tauseef	WASA Gujranwala	20.0	7.5	8.0	6.0	5.0	9.0	55.5	24.3	79.8	5.0	14.0	18.0	30.0	9.0
11	Tufail Ghuman	WASA Gujranwala	0.0	5.0	6.0	6.0	6.0	9.0	32.0	20.0	52.0	4.0	10.0	12.0	0.0	0.0
12	Mr. Asim Nazir	WASA Rawalpindi	17.0	7.5	8.0	7.0	8.0	10.0	57.5	25.0	82.5	4.0	11.0	16.0	30.0	9.0
13	Mr. Zafar Iqbal	WASA Rawalpindi	17.0	7.5	8.0	7.0	6.0	10.0	55.5	25.0	80.5	Not Attended Session II				
14	Mr. Javed Iqbal	WASA Rawalpindi	Not Attended Session I						0.0	0.0	0.0	2.0	10.0	13.0	30.0	9.0
15	Hafiz Waqas Mehmood	WASA Multan	17.0	6.5	9.0	7.0	10.0	10.0	59.5	25.0	84.5	5.0	14.0	20.0	30.0	10.0
16	Mr. Muhammad Sajjid	WASA Multan	18.0	6.5	9.0	8.0	10.0	10.0	61.5	25.0	86.5	5.0	13.0	19.0	30.0	10.0
17	Miss. Burira Anam	WASA Faisalabad	17.0	10.0	8.0	6.0	10.0	10.0	61.0	23.8	84.8	5.0	13.0	20.0	30.0	10.0
18	Miss. Zoya Farooq	WASA Faisalabad	16.0	9.3	8.0	7.0	0.0	10.0	50.3	17.8	68.1	5.0	14.0	20.0	30.0	10.0
19	Engr. Muhammad Ali	NSUSC (North Sindh Urban Services Corporation Limited)	14.0	4.0	9.0	9.0	4.0	10.0	50.0	22.8	72.8	5.0	12.0	18.0	30.0	9.0

Eng.Abid Hussainy
Course Leader
The Urban Unit

Yasuyuki Kuroda
Course Co-Leader
JICA

ALJAZARI
ACADEMY

Asset Management Course

Assessment of Participants

Session - I (Module 1&2)							Session - II (Module 3&4)							Session - III (Module 5&6)						
1 October - 4 November, 2016)							(21-24 November, 2016)							(05 - 09 December, 2016)						
Task-3 (10%)	Task-4 (10%)	Task-5 (10%)	Total Marks 75%	Attendance Marks (25%)	Final Marks (100%)	Task-1 (5%)	Task-2 (15%)	Task-3 (20%)	Task-4 (30%)	Task-5 (10%)	Total Marks 80%	Attendance Marks (20%)	Final Marks (100%)	Task-1 (35%)	Task-2 (15%)	Task-3 (15%)	Task-4 (10%)	Total Marks 75%	Attendance Marks (25%)	Final Marks (100%)
6.0	10.0	10.0	66.5	25.0	91.5	2.0	10.0	13.0	25.0	9.8	59.8	20.0	79.8	33.0	12.0	14.0	10.0	69.0	25.0	94.0
8.0	7.0	10.0	59.5	22.5	82.0	Not Attended Session II					0.0	0.0	0.0	Not Attended Session III				0.0	0.0	0.0
ded Session I			0.0	0.0	0.0	Not Attended Session II					0.0	0.0	0.0	Not Attended Session III				0.0	0.0	0.0
9.0	10.0	10.0	63.0	22.7	85.7	3.0	11.0	14.0	25.0	10.0	63.0	18.5	81.5	34.0	15.0	15.0	8.0	72.0	25.0	97.0
ded Session I			0.0	0.0	0.0	5.0	12.0	0.0	25.0	10.0	52.0	16.5	68.5	34.0	12.0	14.0	10.0	70.0	23.5	93.5
ded Session I			0.0	0.0	0.0	Not Attended Session II					0.0	0.0	0.0	Not Attended Session III				0.0	0.0	0.0
6.0	8.0	10.0	63.5	20.3	83.8	5.0	12.0	20.0	25.0	10.0	72.0	18.4	90.4	0.0	14.0	13.0	0.0	27.0	17.8	44.8
7.0	7.0	10.0	42.5	21.0	63.5	Not Attended Session II					0.0	0.0	0.0	Not Attended Session III				0.0	0.0	0.0
ded Session I			0.0	0.0	0.0	Not Attended Session II					0.0	0.0	0.0	Not Attended Session III				0.0	0.0	0.0
6.0	5.0	9.0	55.5	24.3	79.8	5.0	14.0	18.0	30.0	9.0	76.0	20.0	96.0	33.0	15.0	15.0	10.0	73.0	25.0	98.0
6.0	6.0	9.0	32.0	20.0	52.0	4.0	10.0	12.0	0.0	0.0	26.0	10.0	36.0	Not Attended Session III				0.0	0.0	0.0
7.0	8.0	10.0	57.5	25.0	82.5	4.0	11.0	16.0	30.0	9.0	70.0	20.0	90.0	35.0	11.0	14.0	8.0	68.0	25.0	93.0
7.0	6.0	10.0	55.5	25.0	80.5	Not Attended Session II					0.0	0.0	0.0	Not Attended Session III				0.0	0.0	0.0
ded Session I			0.0	0.0	0.0	2.0	10.0	13.0	30.0	9.0	64.0	20.0	84.0	34.0	10.0	14.0	9.0	67.0	25.0	92.0
7.0	10.0	10.0	59.5	25.0	84.5	5.0	14.0	20.0	30.0	10.0	79.0	20.0	99.0	31.0	15.0	14.0	9.0	69.0	25.0	94.0
8.0	10.0	10.0	61.5	25.0	86.5	5.0	13.0	19.0	30.0	10.0	77.0	20.0	97.0	31.0	13.0	14.0	9.0	67.0	25.0	92.0
6.0	10.0	10.0	61.0	23.8	84.8	5.0	13.0	20.0	30.0	10.0	78.0	20.0	98.0	32.0	0.0	15.0	8.0	55.0	22.8	77.8
7.0	0.0	10.0	50.3	17.8	68.1	5.0	14.0	20.0	30.0	10.0	79.0	20.0	99.0	30.0	15.0	15.0	8.0	68.0	20.0	88.0
9.0	4.0	10.0	50.0	22.8	72.8	5.0	12.0	18.0	30.0	9.0	74.0	20.0	94.0	30.0	13.0	0.0	9.0	52.0	25.0	77.0

Yasuyuki Kuroda
Course Co-Leader
JICA

Dr.Kiran Farh
Principal
Al-Jazari Water & Sanita

RI

nt Course

icipants

e 3&4)			Session - III (Module 5&6)							Assignment Marks		Attendance Marks		Final Course Marks (100%)	Result		
2016)			(05 - 09 December, 2016)														
Total Marks 80%	Attendance Marks (20%)	Final Marks (100%)	Task-1 (35%)	Task-2 (15%)	Task-3 (15%)	Task-4 (10%)	Total Marks 75%	Attendance Marks (25%)	Final Marks (100%)	Grand Total Marks (230)	Grand Total (75%)	Grand Total Marks (70)	Grand Total (25%)		Pass/Fail	Grade	Position
59.8	20.0	79.8	33.0	12.0	14.0	10.0	69.0	25.0	94.0	195.3	63.7	70.0	25.0	88.7	Pass	A	
0.0	0.0	0.0	Not Attended Session III				0.0	0.0	0.0	59.5	19.4	22.5	8.0	27.4	Fail	F	
0.0	0.0	0.0	Not Attended Session III				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fail	F	
63.0	18.5	81.5	34.0	15.0	15.0	8.0	72.0	25.0	97.0	198.0	64.6	66.2	23.6	88.2	Pass	A	
52.0	16.5	68.5	34.0	12.0	14.0	10.0	70.0	23.5	93.5	122.0	39.8	40.0	14.3	54.1	Pass	B	
0.0	0.0	0.0	Not Attended Session III				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fail	F	
72.0	18.4	90.4	0.0	14.0	13.0	0.0	27.0	17.8	44.8	162.5	53.0	56.4	20.1	73.1	Pass	A	
0.0	0.0	0.0	Not Attended Session III				0.0	0.0	0.0	42.5	13.9	21.0	7.5	21.4	Fail	F	
0.0	0.0	0.0	Not Attended Session III				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fail	F	
76.0	20.0	96.0	33.0	15.0	15.0	10.0	73.0	25.0	98.0	204.5	66.7	69.3	24.7	91.4	Pass	A	3rd
26.0	10.0	36.0	Not Attended Session III				0.0	0.0	0.0	58.0	18.9	30.0	10.7	29.6	Fail	F	
70.0	20.0	90.0	35.0	11.0	14.0	8.0	68.0	25.0	93.0	195.5	63.8	70.0	25.0	88.8	Pass	A	
0.0	0.0	0.0	Not Attended Session III				0.0	0.0	0.0	55.5	18.1	25.0	8.9	27.0	Fail	F	
64.0	20.0	84.0	34.0	10.0	14.0	9.0	67.0	25.0	92.0	131.0	42.7	45.0	16.1	58.8	Pass	B	
79.0	20.0	99.0	31.0	15.0	14.0	9.0	69.0	25.0	94.0	207.5	67.7	70.0	25.0	92.7	Pass	A	1st
77.0	20.0	97.0	31.0	13.0	14.0	9.0	67.0	25.0	92.0	205.5	67.0	70.0	25.0	92.0	Pass	A	2nd
78.0	20.0	98.0	32.0	0.0	15.0	8.0	55.0	22.8	77.8	194.0	63.3	66.5	23.8	87.0	Pass	A	
79.0	20.0	99.0	30.0	15.0	15.0	8.0	68.0	20.0	88.0	197.3	64.3	57.8	20.6	85.0	Pass	A	
74.0	20.0	94.0	30.0	13.0	0.0	9.0	52.0	25.0	77.0	176.0	57.4	67.8	24.2	81.6	Pass	A	

Dr.Kiran Farhan
Principal
Al-Jazari Water & Sanitation Academy

ALJAZARI
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vi-d) Comment from Trainees and Action

Sr. No.	Participants Feed Back		Response/Solution	Time required to solve			
	Category	Detail		Urgent (modified by second cycle)	Normal (Action to be decided after monitoring visits)	Later	Not Applicable
1.	Technical Issues Session I (Module 1&2)	• Need to collect more data as per physically at site.	Will be added as per requirement.	√			
		• Practical must be performed. More assignments. • More exercises should be incorporated. To get more precise grip, course/module time should be increased	Will be added more assignment as per requirement and time availability.	√			
		• All the lectures should be provided.	Lectures and training materials were already provided to the participants.				√
		• All the material and assignments may be emailed to all the participants.	Will be addressed in next phase as per requirement.			√	
	Technical Issues Session II (Module 3&4)	• Practical work should be more than theoretical work.	Will be added as per requirement and time availability.	√			
		• Some exercises & data was redundant as in previous modules, rest was up to satisfactory level.	Will be considered as per requirement.	√			

		• Training material should be concise and to the point. • Module 4 had most of the things that were already taught, its course material should be improved.	Will be considered as per requirement.	√			
	Technical Issues Session III (Module 5&6)	• Arc GIS should be a separate course before Asset Management.	Will be incorporated as per academy policy.			√	
	Technical Issues Session III (Module 5&6)	• Site should be visited by trainer himself before class visit.	Will be considered for next training session.	√			
		• Only relevant material may be displayed.	Will be considered as per requirement.	√			
		• Regarding GIS portion, it would be far better if powers of GIS (as a tool for WASA) were elaborated than to go through some exercises for which tutorials can be used.	GIS portion already contains the WASA data exercises, and it will be further improved as per requirement.	√			
		• PPT Slides can be improved for GIS Section	Will be incorporated as per requirement.	√			
		• Practical work should be increased. Good material	Will be added as per requirement.	√			
2.	Time and Duration Session II (Module 3&4)	• Duration up to 1:00 pm. • Current is too much, It can be reduced. • Length should be reduced.	Will be considered as per academy policy.			√	
	Time and Duration Session III (Module 5&6)	• Timing should be short. • Length of training may be reduced. • Length / Time period may be increased. • Class timing should be 9am to 2pm.	Will be considered as per academy policy.			√	

		• Timing is fine, training should be of 5 days at most. • Overall length should be reduced not more than 10 days.					
3.	Other Comments	• Very useful and fruitful must be implemented in organization. • Very useful and must be implemented in WASAs.	Will be considered as per academy policy.		√		
		• Need more improvement i-e. academic, hosteling etc	Will be considered in next training.	√			

添付資料 3.61

2017 年春期研修「Business Planning」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

vii) Business Planning

- Spring 2017 Training -

vi-a) Course evaluation

Table 1 Course Evaluation: Module 1-2: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training Themes: Module 1	0	0	11	2	13	3.2
	Difficulty Level of Training Themes: Module 2	0	0	10	1	11	3.1
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	0	3	10	13	3.8
3	Relevance of On-Site Training Activities	--	--	--	--	--	--
4	Overall Presentation Quality of Trainer: Module 1	0	0	7	6	13	3.5
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	1	6	6	13	3.4
6	Time & Length of Training: Module 1	0	2	9	1	12	2.9
	Time & Length of Training: Module 2	1	3	8	1	13	2.7
7	Practical Activities & Exercise at Class Room: Module 1	0	1	6	6	13	3.4
	Practical Activities & Exercise at Class Room: Module 2	0	3	4	6	13	3.2
8	Difficulty level of assessment and evaluation: Module 1	1	2	8	1	12	2.8
	Difficulty level of assessment and evaluation: Module 2	0	2	9	1	12	2.9
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	1	3	9	13	3.6
10	Overall Quality of Training	1	0	7	5	13	3.2

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Course Evaluation: Module 3-4-5: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**

1	Difficulty Level of Training Themes: Module 3	0	0	8	2	10	3.2
	Difficulty Level of Training Themes: Module 4	0	1	5	3	9	3.2
	Difficulty Level of Training Themes: Module 5	0	1	5	3	9	3.2
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	0	8	2	10	3.2
3	Relevance of On-Site Training Activities	--	--	--	--	--	--
4	Overall Presentation Quality of Trainer	--	--	--	--	--	--
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	0	5	5	10	3.5
6	Time & Length of Training	0	2	7	1	10	2.9
7	Practical Activities & Exercise at Class Room: Module 3	0	0	5	5	10	3.5
	Practical Activities & Exercise at Class Room: Module 4	0	1	6	3	10	3.2
	Practical Activities & Exercise at Class Room: Module 5	0	0	7	3	10	3.3
8	Difficulty level of assessment and evaluation	0	0	8	2	10	3.2
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	1	5	4	10	3.3
10	Overall Quality of Training	--	--	--	--	--	--

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 3 Course Evaluation: Module 1-2: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	12	1

Table 4 Course Evaluation: Module 3-4-5: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	10	0

Table 5 Course Evaluation: Module 1-2: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Identify components of business plan	13	0
	Carry out the SWOT analysis	13	0
	Understand the benchmarking in WSS utilities	13	0
	Carry out GAP analysis through qualitative and quantities data	12	1
	Able to target setting on the basis of GAP analysis	12	1
	Team Work	13	0

Table 6 Course Evaluation: Module 3: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Ability to conduct training needs analysis	10	0
	Ability to prepare training schedule and training calendar	9	1
	Learn about training monitoring & evaluation	10	0
	Forecast training budget	7	3
	Formulate training plan for their own WASAs	10	0

Table 6 Course Evaluation: Module 4: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Identify causes of revenue management issues	10	0
	Formulate strategies for improvement (i) Outdated database (ii) Bill distribution and collection (iii) Arrears (iv) Additional source of Revenue	10	0
	Use of MS excel for aging for arrears	10	0
	Identify causes of revenue management issues	10	0
	Formulate strategies for improvement Outdated database Bill distribution and collection Arrears Additional source of Revenue	10	0

Table 7 Course Evaluation: Module 5: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Consolidation of all modules into business plan format	10	0
	Presentation of business plans	10	0

vi-b) Trainer's evaluation

Table 1 Evaluation of Trainer, Mr. Abid Hussainy: Module 1-2

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	1	1	11	13	4.8
2	Technical Knowledge of the Content	0	0	1	2	10	13	4.7
3	Explanation of the Content	0	0	1	6	6	13	4.4
4	Demonstration & Professional Capability of Handling Equipment	0	0	0	8	5	13	4.4
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	0	7	6	13	4.5
6	Management of on-site Training	--	--	--	--	--	--	--
7	Time Management	0	0	1	6	6	13	4.4
8	Presentation Skills	0	0	0	3	10	13	4.8
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	0	9	4	13	4.3

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Evaluation of Trainer, MR. MUHAMMAD KASHIF: Module 1-2

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	1	1	5	6	13	4.2
2	Technical Knowledge of the Content	0	1	1	6	5	13	4.2
3	Explanation of the Content	0	0	3	7	3	13	4.0
4	Demonstration & Professional Capability of Handling Equipment	0	0	3	4	6	13	4.2
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	2	5	6	13	4.3

6	Management of on-site Training	--	--	--	--	--	--	--
7	Time Management	0	0	1	7	5	13	4.3
8	Presentation Skills	0	0	1	9	2	12	4.1
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	1	2	5	5	13	4.1

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 3 Evaluation of Trainer, MS. SADAF SHAH HUSSAINY: Module 3-4-5

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	1	8	4	13	4.2
2	Technical Knowledge of the Content	0	0	2	8	3	13	4.1
3	Explanation of the Content	0	0	1	9	3	13	4.2
4	Demonstration & Professional Capability of Handling Equipment	--	--	--	--	--	--	--
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	2	7	4	13	4.2
6	Management of on-site Training	--	--	--	--	--	--	--
7	Time Management	0	0	1	12	0	13	3.9
8	Presentation Skills	0	0	1	6	6	13	4.4
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	1	8	4	13	4.2

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 4 Evaluation of Trainer, MR. MUHAMMAD KASHIF: Module 3-4-5

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	1	9	1	11	4
2	Technical Knowledge of the Content	0	0	0	6	5	11	4.5

3	Explanation of the Content	0	0	1	5	5	11	4.4
4	Demonstration & Professional Capability of Handling Equipment	--	--	--	--	--	--	--
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	1	5	5	11	4.4
6	Management of on-site Training	--	--	--	--	--	--	--
7	Time Management	0	0	0	6	5	11	4.5
8	Presentation Skills	0	0	0	7	4	11	4.4
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	1	4	6	11	4.5

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 5 Evaluation of Trainer, MR. MUHAMMAD SAMIE: Module 3-4-5

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	1	6	3	10	4.2
2	Technical Knowledge of the Content	0	0	1	3	6	10	4.5
3	Explanation of the Content	0	0	0	6	4	10	4.4
4	Demonstration & Professional Capability of Handling Equipment	--	--	--	--	--	--	--
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	0	8	2	10	4.2
6	Management of on-site Training	--	--	--	--	--	--	--
7	Time Management	0	0	0	6	4	10	4.4
8	Presentation Skills	0	0	0	6	4	10	4.4
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	0	5	5	10	4.5

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in

"Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 6 Evaluation of Trainer, MR. ASIF IQBAL: Module 3-4-5

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	1	8	1	10	4.0
2	Technical Knowledge of the Content	0	0	1	6	3	10	4.2
3	Explanation of the Content	0	0	1	7	2	10	4.1
4	Demonstration & Professional Capability of Handling Equipment	--	--	--	--	--	--	--
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	0	6	4	10	4.4
6	Management of on-site Training	--	--	--	--	--	--	--
7	Time Management	0	0	1	7	2	10	4.1
8	Presentation Skills	0	0	0	7	3	10	4.3
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	0	7	3	10	4.3

Note: * is the scale of the evaluation.
** is calculated as follows:
Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

ii-c) Trainees' evaluation

Sr. No.	Name	Designation	Department	Session 1 (Module 1 & 2) (Feb 6, 2017 - Feb 10, 2017) Task 1	Task 2	Task 3	Total
				TM-10	TM-20	TM-10	TM-40
							A
1	Mr. Muhammad Ishfaq	Account Officer	WASA Gujranwala	9.00	18.00	7.00	34.00
2	Engr. Waqar Ali Kalwar	Assistant Manager	NSUSC	8.13	20.00	2.50	30.63
3	Mr. M. Ahmad	AD Pension	WASA Lahore	9.75	13.70	3.50	26.95
4	Ms. Sidra	AD Book Keeping	WASA Lahore	9.75	13.70	6.00	29.45
5	Mr. Murtaza	AD Revenue	WASA Lahore	9.75	13.70	7.50	30.95
6	Ms. Varda	AD LDC	WASA Lahore	9.75	13.70	-	23.45
7	Mr. Ahmad Waheed	TO to DMD (E)	WASA Lahore	9.75	13.70	3.00	26.45
8	Ms. Quba Khalid	AD (WWT)	WASA Lahore	9.75	13.70	6.00	29.45
9	Mr. Shehzad Ali	AD Admin	WASA Lahore	9.75	13.70	5.00	28.45
10	Mr. Umair Asghar	Assistant Director	WASA Multan	7.00	16.00	2.50	25.50
11	Mr. Umair Ayub	Assistant Director	WASA Multan	7.00	16.00	2.50	25.50
12	Mr. Muhammad Arshad	AD - Accounts	WASA Multan	-	-	-	-
13	Mr. Muhammad Khaleeq Afzal	Assistant Director	WASA Rawalpindi	10.00	10.00	6.00	26.00
14	Mr. Faisal Shahzad	Senior Accountant	WASA Rawalpindi	10.00	10.00	6.50	26.50
15	Mr. Shahid Pasha	AD Admin	WASA Faisalabad	7.85	6.00	2.50	16.35
16	Muhammad Imran	Assistant Director	WASA Faisalabad	-	-	-	-
17	Mr. Zubair Wattoo	Chief Officer	MC Sargodha	6.75	-	-	6.75
18	Muhammad Riaz	Sanitory Inspector	MC Sahiwal	-	-	-	-

		Session 2 (Module 3, 4 & 5) Feb 27, 2017 - March 3, 2017									Result	
Sr. No.	Name	Task 4	Task 5	Task 6	Total	Grand Total	Percentile (80%)	Participation Marks	Attendance	Final Course Marks	Pass/Fail	Remarks
		TM-10	TM-10	TM-40	TM-60	TM-100	TM-80	TM-10	TM-10	TM-100		
					B	*C = A + B*	*D = C x 0.8*	*E*		*F*		
1	Mr. Muhammad Ishfaq	10.00	8.50	33.20	52	85.70	68.56	8	10	87	PASS	1st Position
2	Engr. Waqar Ali Kalwar	9.00	8.50	31.60	49	79.73	63.78	8	10	82	PASS	3rd Position
3	Mr. M. Ahmad	10.00	10.00	34.80	55	81.75	65.40	6	9	80	PASS	
4	Ms. Sidra	10.00	10.00	34.80	55	84.25	67.40	6	10	83	PASS	2nd Position
5	Mr. Murtaza	9.00	10.00	34.80	54	84.75	67.80	6	9	83	PASS	2nd Position
6	Ms. Varda	10.00	10.00	34.80	55	78.25	62.60	8	9	80	PASS	
7	Mr. Ahmad Waheed	-	10.00	34.80	45	71.25	57.00	9	8	74	PASS	
8	Ms. Quba Khalid	-	10.00	34.80	45	74.25	59.40	6	7	72	FAIL	Less Attendance
9	Mr. Shehzad Ali	-	10.00	34.80	45	73.25	58.60	6	10	75	PASS	
10	Mr. Umair Asghar	9.00	7.25	30.24	46	71.99	57.59	7	9	74	PASS	
11	Mr. Umair Ayub	9.00	7.25	30.24	46	71.99	57.59	6	7	71	FAIL	Less Attendance
12	Mr. Muhammad Arshad	9.00	7.25	30.24	46	46.49	37.19	5	5	47	FAIL	Less Attendance
13	Mr. Muhammad Khaleeq Afzal	9.00	7.50	32.40	49	74.90	59.92	8	10	78	PASS	
14	Mr. Faisal Shahzad	10.00	7.50	32.40	50	76.40	61.12	8	10	79	PASS	
15	Mr. Shahid Pasha	10.00	7.00	29.60	47	62.95	50.36	8	10	68	FAIL	Low Performance in Module 1&2
16	Muhammad Imran	-	7.00	29.60	37	36.60	29.28	5	4	38	FAIL	Less Attendance
17	Mr. Zubair Wattoo	-	-		-	6.75	5.40	7	2	14	FAIL	Less Attendance
18	Muhammad Riaz	-	-		-	-	-	-	1	1	FAIL	Less Attendance

NOTE Participants with active participation, maintaining 80% attendance and passing their activities with at least 70% score will be awarded certificates.

iii-d) Comment from Trainees and Action

Sr. No.	Participants Feedback		Response/Solution	Time required to solve			
	Category	Details		Urgent/ Modified by Second Cycle	Normal (Action to be decided after monitoring visits)	Later	Not Applicable
1	Technical Issues (Module 1 & 2)	Course outline may be communicated one month before starting the session along with some reading material	Will be addressed in the next cycle	✓			
		Time should be increased to cover up all areas of training. Saturday & Sunday may also be used for training.	Will be addressed as per requirement assessment		✓		
		Practical visits to sites are suggested.	Will be addressed as per requirement assessment		✓		
		Trainees who are called should have some education/professional background integrated with the content of training that would be more effective in capacity building.	Already addressed in the Nomination Letters				✓

Sr. No.	Participants Feedback		Response/Solution	Time required to solve			
	Category	Details		Urgent/ Modified by Second Cycle	Normal (Action to be decided after monitoring visits)	Later	Not Applicable
		Operating slides & playing videos should be in synchronization with the person presenting.	Will be addressed in the next cycle	✓			
		All material should be provided in soft copies to all participants.	Already provided				✓
		Some written case studies may be included with questions and solved answer to understand the relevant problems easily.	Will be addressed in the next cycle	✓			
		Technical trainees should be mentioned in the nomination letter along with non-technical trainees.	Already addressed in the Nomination Letters				✓
		Video portion should be increased.	Will be addressed in the next cycle	✓			
		Participation of more personnel from dept. and their use of experience and approach for promotion of business plan.	Will be addressed as per requirement assessment		✓		

Sr. No.	Participants Feedback		Response/Solution	Time required to solve			
	Category	Details		Urgent/ Modified by Second Cycle	Normal (Action to be decided after monitoring visits)	Later	Not Applicable
		Trainees must be related to the subject course as irrelevant persons have nothing to do with the course	Will be addressed in the next cycle	✓			
	Technical Issues (Module 3, 4 & 5)	Class room should be in round/U shape.	Will be addressed in the next cycle	✓			
		Finance portion should be more understandable for technical & non-technical participants.	Will be addressed in the next cycle	✓			
		Please include these two modules for one day or half day. i) Settlement of Audit ii) Taxation laws	These may be addressed in more focused course on Finance				✓
		More training sessions should be there regarding sewerage & water supply and advance technique for laying of sewer line.	Will be addressed as per requirement assessment		✓		
		Training should be conducted on actual data of NSUSC	Will be addressed in the next cycle	✓			

Sr. No.	Participants Feedback		Response/Solution	Time required to solve			
	Category	Details		Urgent/ Modified by Second Cycle	Normal (Action to be decided after monitoring visits)	Later	Not Applicable
		For effective business planning, business planning course may be divided into 3 separate trainings. 1- For engineering technical staff – 3 days 2- For admin finance & revenue – 3 days 3- Joint session of Engg. & AF&R staff – 4 days	It is important to provide a holistic view of the water and sewerage business to all participants.				✓

添付資料 3.62

2016 年秋期研修「O&M of Tube Well and Pump Facility」で作成された

アクションプラン

Engr. Ghafran Sadiq

(SDO Iqbal Town WASA LDA Lahore)

Operational Issues:

- Deeper & inadequate water pipe lines
- Water shortage in hot seasons
- Increased frequency of complaints of different nature in different seasons
- Buried or dislocated valve chamber
- Large number of complaints w/s & sewer
- Shortage of staff

Possible Causes:

- Infrastructure could not update regularly
- Untrained staff
- Lack of planning
- Mapping system was not updated regularly

Control Measures:

- Sufficient field staff should be deployed
- Staff should be trained on regular intervals
- Proper tools of R& M
- GIS system should be evolved at least on town level
- Upgradation of infrastructure
- SCADA system Should be introduced

M. Zaheer Rana

(Sub Divisional Officers Drainage Central Johar Town WASA LDA Lahore)

Operational Issues:

- Deeper & inadequate water pipe lines
- Water shortage
- Load Shedding
- Buried or dislocated valve chamber
- Large number of complaints w/s & sewer
- Shortage of staff
- Low pressure

Possible Causes:

- Infrastructure could not update regularly
- Lack of planning
- Mapping system was not updated regularly
- Privates society

Control Measures:

- Sufficient field staff should be deployed
- Staff should be trained on regular intervals
- Proper tools of R& M
- Upgradation of infrastructure

Muhammad Qamar Ul Hasnain

SDO Industrial Areas

Sr. No.	Operational Issues	Possible Changes	Control Measures
1.	Water table	Water table is down day by day	Increase water table due to natural process and mechanical process
2.	Out lived machinery	Machinery meet its design life	Need to replace the machinery & equipment
3.	Low pressure water supply	Old pipe	Repair / replacement of pipe, valve, hydrants and OHR
4.	Wastage of water supply	Damages of pipe	Control leakage
5.	Surveillance of monitoring	Shortage of skilled staff	Staff required
6.	Low quality material		Quality material
7	Routine inspection of the system	Checking staff	Man power to regulate installation
8.	Awareness of consumers	Lack of awareness	Media campaign
9.	Lack of skilled staff	Skilled staff not available	Man power

Muhammad Raiz

SDO Baghbanpura Lahore

Sr. No.	Operational Issues	Possible Causes	Control Measure
1.	Water shortage	• Due to load shedding • Less pressure at grid system • Improper distribution system	• To increase pressure tube well timing should be increase, in case of load shedding generators can be used. • Check distribution valve & installed pressure gauge at different points
2.	Water leakage	• Out lived water supply lines • Out lived jointing material	• Replace the out lived w/s lines with S.V • Leakage prevention maintenance should be done regularly
3.	Delay in repair of w/s lines	• No spare material in stock • Lack of skilled staff	• Repair material in stock • Need to train junior staff as well.

Rashid Chaudhary

SDO Garden Town WASA Lahore

Sr. No.	Major Issues	Possible Causes	Control Measures
1.	Water leakage pipe	damaged water pipe lines	Check the water supply lines with pressure gauge
2.	Low pressure	Tube well air blowing	The water supply line low pressure control with to add the column in the tube well and flow of water discharge increase
3.	Ground water level	Ground water decrease	The underground water decrease day by day. Control our head reservoir in the area.
4.	Old water pipe lines	Old pipe damaged	Need to replace the pipe line
5.	Out lined machinery	Machinery meet it design	Need to replace machinery
6.	Water supply complaint	Damaged of lines hours connect	Change the hours water connection
7.	Water shortage	Load	Need generator in T.W
8.	Shortage of staff water supply	Staff shortage	Need water supply staff
9.	Need to installed new T.W	Old T.W lift out	Replacement of old tube well

Shoukat Ali

SDO WASA LDA Lahore

Sr. No.	Major Issues	Possible Changes	Solution
1.	Pipe leakage A block Gulshan e Ravi 4" & 6 "	Due to old pipes & joints	Replacements of old pipes
2.	Bursting of water supply pipes	Due to positive pressure at night hours	Replacements of old pipes
3.	House connection of the different areas	Due to positive pressure of the T.W	Replacements of house connection

Tahir Hussain Ghouri

SDO Jubilee Town WASA Lahore

Operational Issues:

1 Water supply system

- Water shortage
- Water leakage
- Old pipe lines
- Shortage of staff

2 T.W

- Check the draw down
- Check the power factor
- Check the air valve
- Discharge meter

Possible changes:

- due to WAPDA load shedding
- due to old pipe lines
- Replacement of old pipe lines
- Replacement the pumps
- Repair the air valve
- Installed the discharge meter

Control Measures:

- Control water leakage
- Control S.V
- T.W in operation

East Division (WASA FSD)

Sr. No.	Major Issues	Possible Causes	Control Measures
1.	Low pressure & short w/s training	90% WSR ate installed on western side	• Operation of OHR • Deployment of resources
2	Poor efficiency slow sand filtration plant	• Poor screening of silt • Out lifted filter media	• Replacement of Filter media • Measures of remove silt
3	Lack of knowledge about existing network system	Non maintenance of record	• GIS mapping • Data sharing
4	Improper dose of Cl_2	Unskilled staff	• Training staff • Deployment of cl_2 supervisor
5	Poor material of valve	Lack of knowledge about design & selection	• Training • Guidelines
6	Illegal household connection	Theft	• Zoning • survey

Makhdum Babar

Dy. Div (O& M West Division)

Sr. No.	Operational Issues	Possible Causes	Control Measures
1.	Less resources & less feeding system	Low pressure Multi pumping from 38 Km source.	Surface water using through water treatment plant
2.	• Turbidity • Impurities	Not timely flushing of lines	Flushing must be done timely
3.	Lack of maps	Incomplete maps	Complete maps with GIS dimensions
4.	Insufficient machinery	Old machinery does not give output according to design	• Properly repaired in time • Replaced with upgraded machinery
5.	Quality of water	Improper chlorination & filtration system	Proper dosage of Cl_2
6.	Repairing	• Non operation valve • Inter linking of areas • Non function OHR	• Proper zoning must be done • All valve operational • Functional OHR area wise

Muhammad Tauseef

Assistant Director Engg. (WASA Gujranwala)

Sr. No.	Major Issues	Causes	Control Measures
1	Decrease in discharge of tube wells	No proper inspection	Over hauling by KSB or some other
2.	Motor burnt often	Fluctuation in electric power	Use good quality copper in winding
3.	Increase in leakage Complaint	More water pressure in pipe than admissible	Monitor the number of tube well
4.	Jammed sluice valve	No regular inspection	Inspection should be done at least on time in a week
5.	Low pressure at user end	Low capacity tube well installed in areas	Tube well should be upgraded
6.	Contaminated at end	No washout	Washouts at the end of branches
7.	No light	Nonfunctional OHR's	All OHR's should be cleaned & operational
8.	Smelly water bitter taste		Whole area should be inspected seriously
9.	NRW	No maps available	GIS based maps should be completed

Amjad Ali

Sub Engineer (WASA Zone II)

Sr. No.	Operational Issues	Possible Changes	Mitigation Measures
1.	Pipe lines leakage	Variation in pressure	OHR's should be functional to control
2.	Out lived machinery	Not replaced before expiry	Should be immediately replaced into new machinery.
3.	Decrease in discharge of the tube well	No proper inspection	Overhauling the pumps from approved manufactures
4.	Motor burnt often	Due to function of electric city	Should use good quality of copper wire in winding
5.	Contamination due to house connection	Sub-standard material re used in house connection	Consumers should bound to use standard material in house connection.
6.	Jammed/ out of order sluice valve	No regular inspection	Inspection should be at least one time in a week.
7.	Low pressure at user end	Low capacity tube well installed	New tube well should be installed as per requirement
8.	Shortage of technical staff	Cause of burning of E/motors and damage to pump and improper daily maintenance.	Technical staff should be deployed at all tube well

Muhammad Arshad

Sub Engineer WASA Multan

Sr. No.	Issues	Solution
1.	Load shedding	Government issues
2.	Leakage water supply lines	Replacement of new water pipe lines
3.	Safety issues	
4.	Skilled labor	Post hiring skill labor
5.	Loss of valuable items in purification plant	Proper security system

Omer Zafar Gurmani

Assistant Director Engg. WASA (MDA)

Assignment: What are the prevailing operational issues in the system

Sr. No.	Possible Causes	Control Measures
1.	• Safety is the first step in all • Ability to timely detect water • Quality issues that may lead to health problems	• Employing system wide water quality monitoring
2.	• Poor services management by officials	• Detect post hiring • Skilled labors
3.	• Inability to optimize the operation of a group of water • To provide equal water supply & avoid equipment damages under these conditions	• Use of advance asset maintaining system • Fault detection & preventive Maintenance
4.	• Could not address & identify water leakage and to identify, address energy over consumption in heavy assets	• Enhance efficiency of water supply operations by employing advance analytical on water supply asset operational data to reduce asset energy

Mohammad Tariq

Sub Engineer (WASA RWP)

Sr. No.	Major Issues	Reasons	Solution
1.	Leakage in pipelines	• Old pipe • Improper joints	Replaced old pipe and proper jointing
2.	Jointing material	Sub standards material at market	Used best quality jointing material
3.	Labors	Shortage of staff	Skills requirement training
4.	Line broken		Coordination with other departments
5.	Time wastage	Unavailability of proper maps	Poor system
6.	Loss of drinking water	Required new underground storage	New construction plan
7.	Complaints increased day by day	Due to load shedding	Generators

Muhammad Khalique Afzal

Assistant Director (WASA RWP)

Sr. No.	Major Issues	Causes	Solution
1	No proper task & equipment	• Proper task for O & M are not in store. If exit than out of order	Task may be provided for O & M
2.	Lack of skilled staff	• No training is conducted for lower field staff. So that they have no sense for proper execution of WASA.	Training may be conducted at Junior staff
3.	Lot of leakage in supply lines	• Pipes are old & rusty • Material are under specification	• Network may be replaced • Proper selection of pipe material
4.	Motor burnt ratio	Electric motor burnt due to overloading of the pumps	Pumps may be overhauled from recognized workshop
5.	Contaminated water	Due to improper jointing of house connection	H.C may be joined to supply lines properly

Hafiz Faraz Ali

Sub Engineer (TMA Sialkot)

Sr. No.	Issues	Possible Changes	Mitigation Measures
1.	Not merit system	Basic appointment on MNA & MPA Quota	Proper merit system via NTS & PPSC
2.	Unskilled employed appointed	Not perform the job efficiency	To provide proper training
3.	Mostly used old machinery in water supply system	Not better efficiency	Replace the old machinery with latest machinery
4.	Lack of information between related departments		

S. Mazhar Shehzad

Mali Bagh Sub Division (A.E WASA Quetta)

Sr. No.	Operational Issues	Possible Causes	Control Measures
1.	Total length of GI Pipelines =370 Km. Out of which 200 Km pipe lines has been found rusted. Due to system pipe line 15 % of clean water losses is observed	Due to completion of service life of pipe	Replacement of GI pipe 250 Km has already been made by laying of HDPE pipe lines
2.	Sluice valve spindles rods and base are damaged		75 % of sluice valve are replaced
3.	2 N.O.C of Tube well located at kisani road is dried	Heavy depletion of ground water level	Provisional of power generators.

Sariab

Sub Division (WASA Quetta)

Sr. No.	Operational Issues	Possible Causes	Control Measures
1.	Total length of GI Pipelines =230 Km. Out of which 150 Km pipe lines has been found rusted. Due to system pipe line 10 % of clean water losses is observed	Due to completion of service of pipe.	Replacement of GI pipe 100 Km has already been made by laying of HDPE pipe lines
2.	Sluice valve spindles rods and base are damaged		60 % of sluice valve are replaced
3.	Tube well located at kisani road is dried	Heavy depletion of ground water level	Replacement of TW required.

添付資料 3.63

2016 年秋期研修「Leak Detection」で作成されたアクションプラン

WASA's	Preparation	Basic Survey	Plan	Action/Implementation	Evaluation
Faisalabad	1. Leakage Detection Team Established. Two Teams having work with 1 Fitter & 2 Helper. 2. Water Distribution network, Maps & Drawing are already prepared. 3. Equipment's i.e. Ultrasonic Flow meter, Acoustic Rod, Pressure Recorder & Metal/Non Metal Detector are already available.	1 Source of Water Supply is Overhead Reservoir. • Capacity of OHR is 500000 Gallons • Height = 90ft • Time of Water Supply is: 4:30am to 6 30am 10:30am to 12:30pm 4:30pm to 6 30pm 2 Already Divided the City into DMZ. Now we select the *DMZ-7 & DMZ-1* • No. of Connections = 30000 3 Material of pipe: A C Pipe 4 Age of Pipe: 12 yrs. 5 Coordination with F.D.A & SNGPL	1. Reduced the N.R.W up to 2018. 2. Leakage Detection Survey & Pressure Recorded at Consumer end.	1. Leakage Detection Repairing on daily basis & enter the Data in G.I.S. 2. Leakage Detection Survey with Equipment's. 3. Replacement of Old Pipe lines	1. After having all the required Data, it is easy to Replace & Repair the Pipe Lines. 2. It's also helpful to provide Sufficient Pressure at the Consumer end.

WASA's	Preparation	Basic Survey	Plan	Action/Implement ation	Evaluation
		before started any work.			
Lahore	1. We should established the leakage Detection Team which consists of 3 persons & team should work on daily basis and will define the leakages points. 2. Water Supply Maps are the basic indicator for the location exiting Water Supply System. 3. For Detection of Leakage points we must have advance Equipment's in each Sub Division.	1. Basic step for Supply of Water is to Distribute Sufficient Water with Positive Pressure. 2. For Positive Pressure we need to divide the Areas into Different Blocks. 3. We should know the Age of the Exiting Pipe & Replaced the Old Age Pipes. 4. Preventive Work is very important for the Smooth Operation of Water Supply.	1 If Survey Team work daily basis & detect the Leakage Points, so it is easy for the Repairing of pipes. 2 If we found Difficulties in Area, we will set a plan for the repairing of the Pipes. • Priority of Work Done in 2017 is 20% • Priority of Work Done in 2018 is 30% • Priority of Work Done in 2019 is 20% 3 If we found 4 NOS complaints but due to not availability		

WASA's	Preparation	Basic Survey	Plan	Action/Implement ation	Evaluation
			of Funds. We should Replace it step by step like • 2 NOS in 2017 • 2 NOS in 2018 4 Requirement of Advance Equipment's for the Survey is very important.		
Lahore LDA Cell	1. Leak Detection Cell consist a team including • **X-EN:** Plan given by X-EN to SDO. • **SDO**: SDO will organize the team and assign duties to staff on daily basis. SDO will check the actual field condition like flow & pressure etc. • **Sub Engineer:**	1. Area: Johar Town 2. Analysis of Water Supplied & pressure 3. Divide the City into Blocks 4. While dividing the Area, check where the need of Valve, where is the replacement Pipe. 5. Study the Pipe Age, Material & Quality. 6. Data of Pipe will let us know which	1. Set the target Valve 2. Set the planning Year Decide the Survey Method: Basic Survey: **1. Base line Data** • If water is Contaminated so they may be leak • Number of connection either they are metered or unmetered • Life of Pipe		

WASA's	Preparation	Basic Survey	Plan	Action/Implement ation	Evaluation
	Supervise operation & collect the data • **Operators:** They will collect Data from Tube well and Water network and given the Data to SDO. 2. SDO will collect the Baseline Data of their particular DMA • Pipe size • Pipe Diameter • Pump Capacity • Age of Pipe • Material of pipe Equipment's: Pump: • Ultrasonic Flow Meter • Pressure Recorder	Pipe is needed to replace. 7. Water hammering should be avoided.	• Material of Pipe **2. Total volume of water in a system** • Discharge • Required Volume of Water • Pressure		

WASA's	Preparation	Basic Survey	Plan	Action/Implement ation	Evaluation
	Distribution System: • Metering is the ultimate solution to Balance the Water in DMA. • Ultra sonic Flow Meter System Require • Metal & Non Metal Pipe Detector				
Quetta	1. WASA Quetta has its leakage detection team in all Sub-Divisions. Gawalmandi Sub division has leakage near Ismail Colony No 1 Sirki Road. Gawalmandi sub division need improvement. Gawalmandi sub division. Detection Team has been established.	1. Analysis of Water Supplied and Pressure Pressure of water supply varies Mostly Pressure is 0.06 MPA. Pressure is Calculated by Pressure Gauge. 2. Divide the City into Blocks The city is divided into Blocks. The water supply Gawalmandi has Following Jurisdiction. Total House Connections: 400	1. It is planned that leakage will be checked On daily bases with proper Equipment provided. 2. Set the Planning year The Leakage detection will be started as soon as possible. 3. Decide the Survey Methods The survey method used is acoustic method of survey	1. Leakage Survey Survey was started from street to street for leakage and illegal connections. 2. Analysis of Causes of Leakage The causes of leakage are illegal connections via unskilled workers. 3. Leakage Volume Calculation	• Due to negligence of staff people inserted illegal connection, in such a way, they can damage the pipe. • In order to avoid such activities regular supervision of

WASA's	Preparation	Basic Survey	Plan	Action/Implement ation	Evaluation
	• Shoaib (Sub-Engineer) • Karam Hussain (Area Supervisor) • Khan Muhammad (Fitter) • Baig Muhammad (Coolie) • Shareef (Coolie) 2. Procurement of Equipment The Equipment Available Are: • Excavators • Sucker machine • All Plumbering Tools The Equipment Required are: • Acoustic Rods	Approx. Consumption Per House: 75 gallons Total Requirement: 30,000 Discharge: 60Gpm 3. Study of Pipe Age, Material and Quality Pipe Age: Pipe were led by Dutch Government in late 1980s. Material: Ductile Iron 4" Dia and P.E Pipes Quality: 100 years' service life. 4. Preventive Works Road Cutting has been Received From MCQ.		10% of total production is leaked. 4. Quick Repairs (Surface Leakage) Surface repair is done Via wooden. 5. Systematic Detection and Repair (Underground Leakage) Underground repair is done via clamp, socket and Gebault joint or pipe replacements if possible 6. Countermeasur es for Leakage Regular supervision of staff and check and balance.	the staff has directed.
Rawalpindi	1. SDO • Sub Engineer • Pipe Fitter • Helper	1. Analysis of water supplied & pressure:	4. Set the Target Value • 06 Nos tube wells for Block-A		

WASA's	Preparation	Basic Survey	Plan	Action/Implement ation	Evaluation
	2. Maps & Drawing of Distribution System is already prepared. 3. We need Equipment's: • Ultrasonic Flow Meters • Pressure Recorder • Non Metal Pipe Detector • Metal Pipe Detector • Metal Detector for buried sluice valves and chambers. • Acoustic Rod • Electronic Leak Detector • Sluice Valves • Non Return Valves • Air Valves • Gibault joint and Clamps with rubber sheet and nuts bolts.	Total 11 NOS Tube wells working 11*6000 =66000 gal/hrs. 66000 gal/hrs. *16/d =0.1 MGD/d Pressure = 1 Bar After Action Plan =1.5 Bar (Approx.) 2. We divided into two Blocks: • 06 NOS Tube well (Block A) • 05 NOS Tube well (Block B) 3. Pipe Lines are AC Pipes HDPE of 3 or 8-inch dia. 4. Preventive Works: • We have to check surface leakage. • Road Petrol and check the presence of construction activity going on. • Pressure survey for pipeline network.	• 05 Nos tube wells for Block-B 5. Set the Planning year • 2017 6. Decide the Survey Methods Acoustic survey (Door to Door & Road survey) Measuring Survey Other survey (Road Petroling,Water Pressure ,Water Quality)		

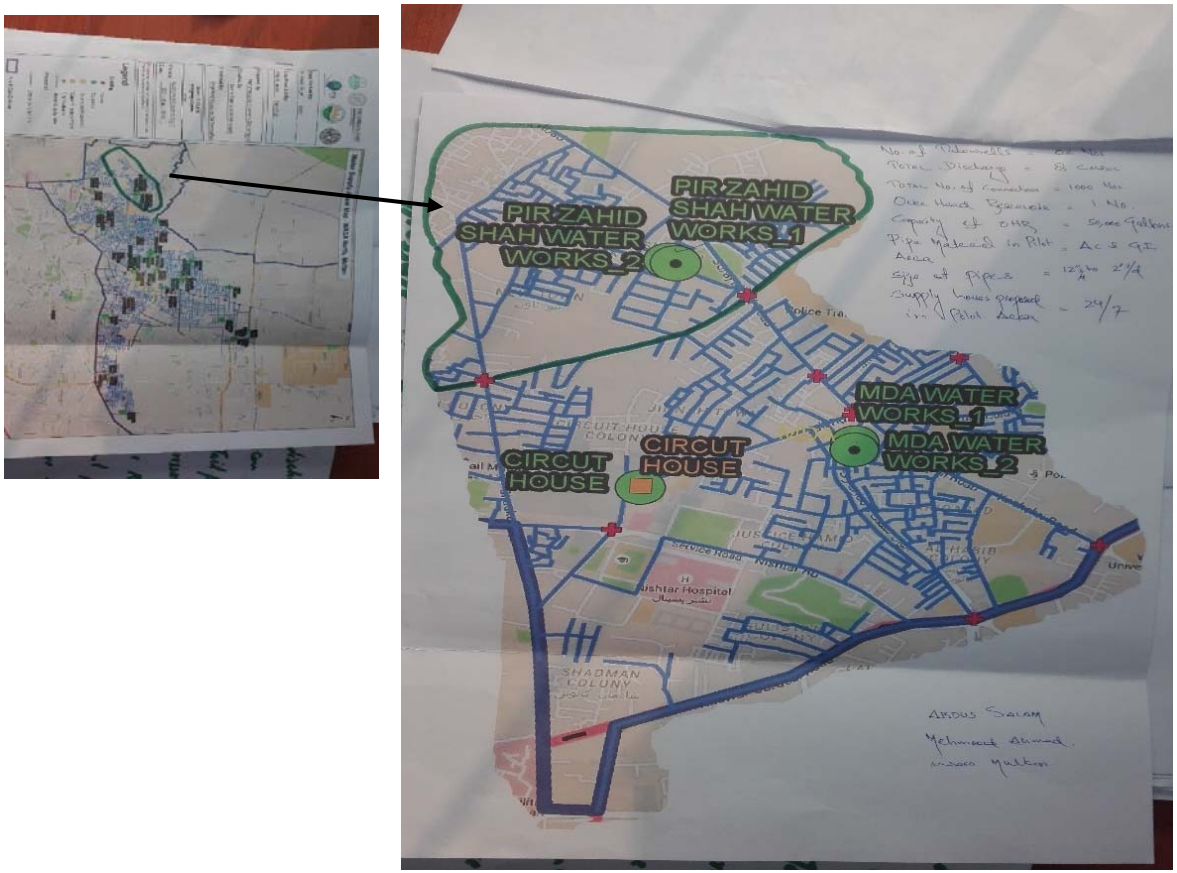
WASA's	Preparation	Basic Survey	Plan	Action/Implement ation	Evaluation
		• Installation of pressure regulators valves. • Security of pipeline.			
Gujranwal a	1. In WASA GRW Leakage Detection Cell is not established, if it should be established then two teams of four people are work for the Leakage Detection & Repairing of the Pipe Lines. 2. The concern area of *People Colony* & other WASA's Maps & Drawing are Available. 3. Now, we use Conventional method to overcome Leakage issues.	1. Maintain the Water Supply & Pressure, area should be Divided into Blocks. 2. We have Tube wells in that areas are of 2 cusecs. 3. Pressure of each Tube well is 4.5 Psi, which should be at consumer end. 4. We should check the age Water Supply Pipes & Material status (either it may be AC pipes, Cast Iron or PVC)	1. First choose the concern area like UC No. 5, either the leakage is in the Water supply line or any other pipe line. 2. Set the planning year, it means that the UC No. 5 will occur Leakage in year 2017.		

WASA's	Preparation	Basic Survey	Plan	Action/Implement ation	Evaluation
Multan	1. Establishment of Leakage Detection Cell and Team. 2. A Team comprising of 3 persons would be constituted for each sub division which will be monitored by sub Engineer & headed by Assistant Director of Leakage Detection cell. 3. Map of North Zone of Water Supply Sub Division of WASA Multan has been prepared. (Copy Enclosed) 4. Procurement of Equipment's: • Ultrasonic Flow Meter • Non Metal detector • Metal Detector • Pressure Recorder	1. The water supplied in this area is 88 cusec and approximate pressure is 3 bar. 2. The area can be divided in many blocks but pilot area is shown on map attached. 3. The pipes in the pilot area are AC and GI. The pipes were installed 10 years ago approximately. The pipes are in satisfactory condition. 4. The discharge from ultrasonic flow meter can be observed at inlet point and tail point of pilot area to find out the leakages. The	1. The NRW can be reduced to 5 % up to 2018 from the existing NRW 2. The total NRW will remain under 20 % up to 2025		

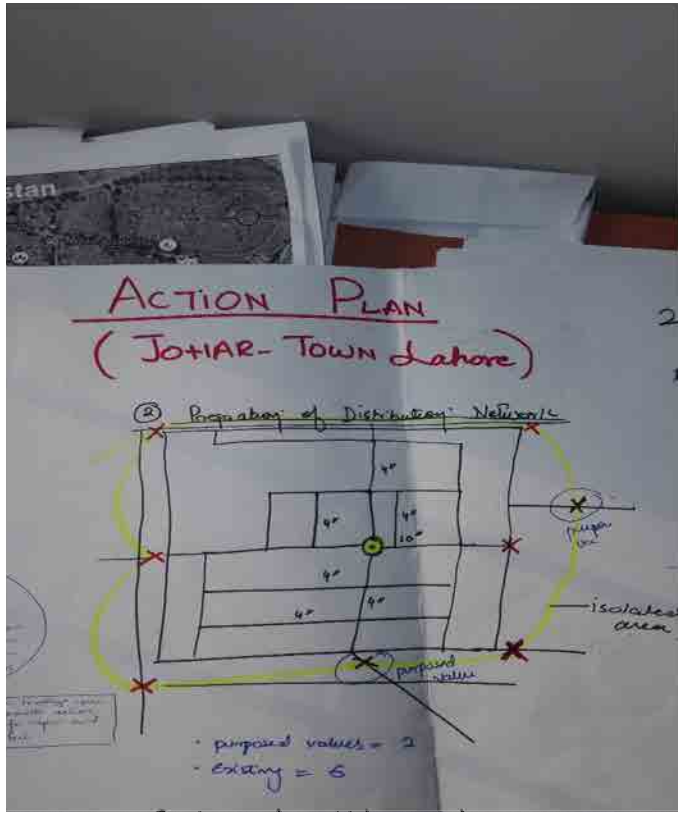
WASA's	Preparation	Basic Survey	Plan	Action/Implement ation	Evaluation
	• Digital Leak Detector • Acoustic Rod • Radar/ Scanner	pressure can be checked from pressure recorder at inlet and other different points to maintain the designed pressure in the system. Leakages can also be assessed from this method. If leakages observed in pilot area, then it can be pointed out exactly by using digital leak detector and Acoustic rod. The exact mapping can be done by using metal detector, Non-metal locator, Radar and cable locator.			

WASA Faisalabad:

WASA Multan:


PIR ZAHID SHAH WATER WORKS_1
PIR ZAHID SHAH WATER WORKS_2
MDA WATER WORKS_1
MDA WATER WORKS_2
CIRCUT HOUSE
CIRCUT HOUSE
SHADMAN COLONY

WASA Lahore (Johar Town):



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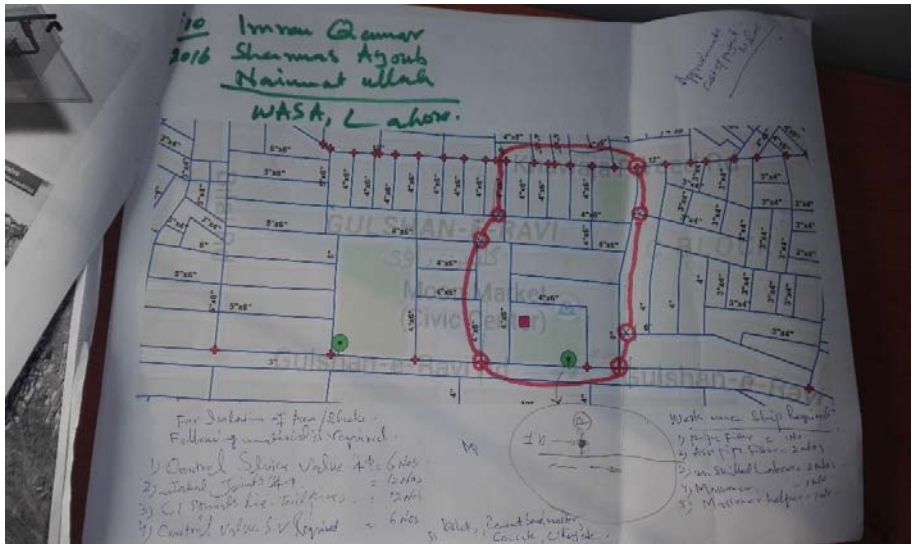
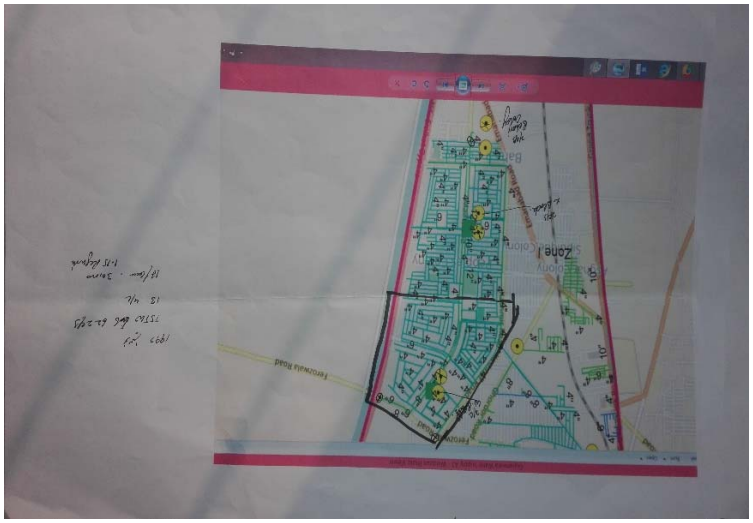
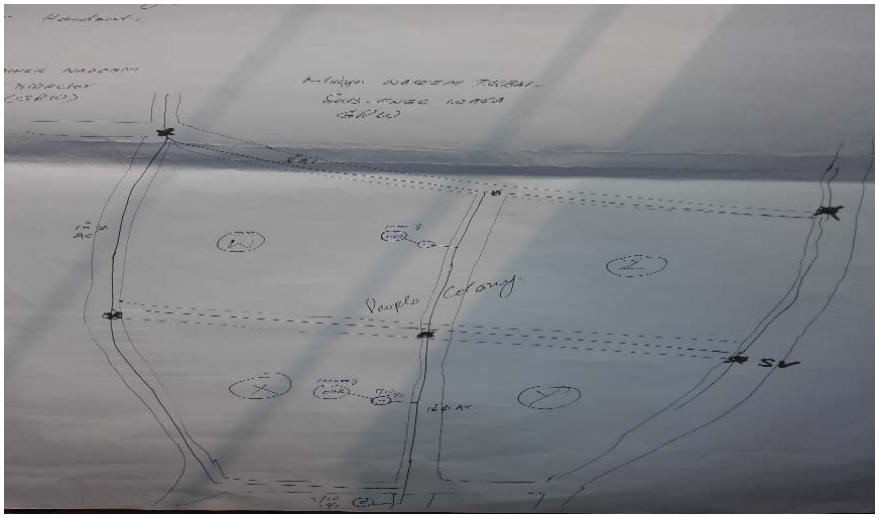


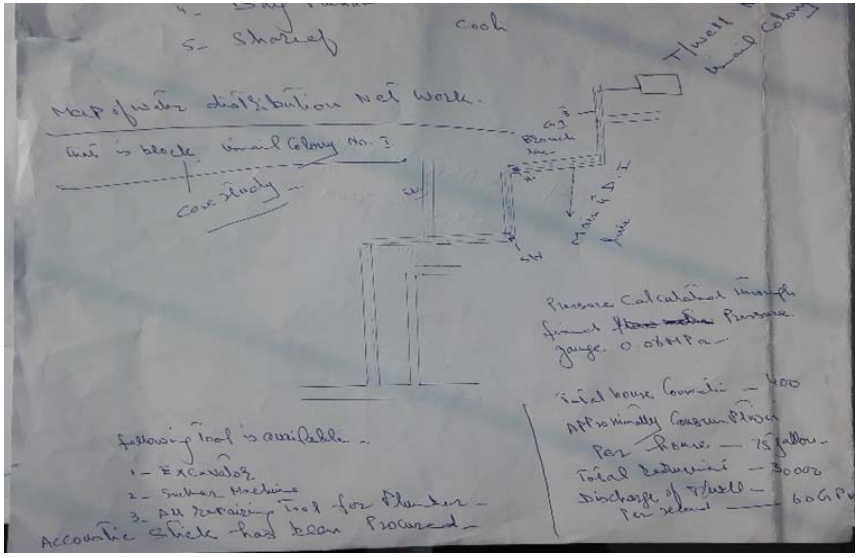
WASA Rawalpindi:

WASA Gujranwala:





WASA Quetta:



添付資料 3.64

2016 年秋期研修「O&M of Electrical Equipment」で作成されたアクションプラン 1

(12)

ALJAZARI ACADEMY

POST TRAINING ACTION PLAN

Training Title: O&M of Electrical & Mechanical Equipment (MODULE - 1) Date of Training: 25/NOV/16

Name of Participant: UMAIR ASGHAR

Name of Organization: WASA MULTAN.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. [redacted] Training of Staff members on operating MCC using HSE.
2. [redacted] Make sure the availability & correct filling of Records.
3. Make sure the correct maintenance adopted by the dedicated staff at sites.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item	Due Date
(3)	Figure out 3 persons from each site having MCC with the help of SDOs, Sub-Engineers 3 persons are selected, because ther are 3 shifts in a day at site	31/JAN/17 OR 45 Days after approval.
(1)	Practically perform & with my personal clamp meter & find the flaws at some site, where expectedly maintenance is required.	15/DEC/16
(2)	On the basis of flaws [redacted], make a report & convince the concerned authority, MD etc for approval of trainings for staff.	17/DEC/16
(4)	Ensure that the trained staff has been working as trained for maintenance & record keeping. Otherwise plan more training sessions.	March/2017

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Please identify required resources to implement this plan.

1. HSF, Meters & Equipments for performing, That would roughly cost about 100 thousand RS.
2. Environment in which trainigs are to be carried out.
3. Assitant / Assistance for training our staff.
4. Assistance required from Al Razi Experts in convincing the high ups.
5. A Specified training method for the audience of this course, instructions to carry out trainigs in our departments
6. Data Recording Templates availability.

Please identify any barriers or hindrances to the implement this plan.

- Approval from high ups.
- Interest of staff in implementation & learning

Other Comments or Notes:

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(11)

ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: O & M. Mechanical & Electrical Equip Date of Training: 25-11-2016

Name of Participant: Muhammad Arshad Latif

Name of Organization: WASA Multan.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. S.O.P کی ٹریننگ کی ہے۔ آپریٹروں کو ٹرینڈ کریں گے۔
Panel Box

2. Equipment maintenance implement.

3. Ensure the correct maintenance adopted by the operators.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item	Due Date
1	Panel Box کو operate اور Maintain کرنے کیلئے D/S پر کم از کم 2 operator کو Trained کریں گے۔	?
2	Log Book کو مکمل کرنے کیلئے ٹرینڈ کریں گے۔	
3	Demand of required Tools submitt کریں گے۔ تاکہ موقع پر تمام Tolls مکمل ہوں۔	
4	ہفتہ میں کم از کم ایک بار meeting کریں گے۔	

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Please identify required resources to implement this plan.

1. maintenance tools, Safty Equipment. ✓
2. Trained Personel.
3. Spare Parts.
4. Storage facility.
5.

Please identify any barriers or hindrances to the implement this plan.

Implementation approval.
Managment support.
Require tools.

Other Comments or Notes:

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ALJAZARI ACADEMY

(11)

POST TRAINING ACTION PLAN

Training Title: O & M of Electrical Equipment Date of Training: 25-11-16

Name of Participant: Shakeel Ahmad.

Name of Organization: WASA GRW.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. First I will try to give lower Staff regarding SOP, Record Keeping, PPEs
2. · Staff should use PPEs
3. In the MCC Relay is very important Component, its Setting/Adjustment should be necessary

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item (Record Keeping)	Due Date
1	Make Record Keeping for control Panels ~~Preventative maintenance Performance of Every Station~~	?
2	We should have right Check lists.	
3	Operator Should Know the PPEs	
4	An Meter, Volt meter shold Available	

Routinely data is beig checked

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Please identify required resources to implement this plan.

1. Trained Person
2. Log Books, Computer
3. Meters
4. Office Space
5. Testing and inspection

Please identify any barriers or hindrances to the implement this plan.

Higher Management gl approvals

Shortage of time.

Very minimum Trained Persons

Other Comments or Notes:

Schedule More Trainings

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ALJAZARI
ACADEMY

(13)

POST TRAINING ACTION PLAN

Training Title: O&M of Electrical & Mechanical Equipment WSD 5231 Date of Training: 25-11-16

Name of Participant: Anum Javed

Name of Organization: WASA Lahore

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Personal Protective Equipment availability & training on its necessity ✓
2. Record keeping of parts failure and prepare maintenance plan sheet accordingly ✓
3. ECRS of preventive maintenance (To reduce down time of preventive maintenance) [Eliminating, combining, Rearranging & sorting activities to complete maintenance in minimum time)

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item for preventive maintenance of electrical panel.	Due Date
1	→ Availability of Check list including the previous history of parts failure.	20-12-2016
	→ Training of personel to maintain the list	20-12-2016 ✓
2	→ Availability of tools i.e insulation tester, clamp meter, energy analyzer	23-12-2016
	→ Preparation of preventive maintenance Plan according to data collected	25-12-2016
3	→ Inventory keeping of frequent used parts.	25-12-2016
4	→ Comparison of breakdown before & after implementing maintenance Plan.	2-2-2017

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Please identify required resources to implement this plan.

1. Updated log books
2. Testing equipment (insulation Tester, clamp meter)
3. Personal Protective equipment
4. Trained personels
5. Basic inventory

Please identify any barriers or hindrances to the implement this plan.

→ Lack of awareness to use PPE.
→ Financial support to maintain inventory
→

Other Comments or Notes:

Maintenance plan must be implemented at least at 2,3 sites and then the results must be evaluated in terms of breakdown of installations and money spent on corrective maintenance so that its importance could be counted. and plan could be implented afterwards at all sites.

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ALJAZARI ACADEMY

(12)

POST TRAINING ACTION PLAN

Training Title: O&M of Electrical Equipments Date of Training: 23/11/2016

Name of Participant: HAFIZ M. RAHEEL ASHRAF

Name of Organization: WASA LHR

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. HSE & PPE will be mandatory as nothing is more important than life of worker.
2. To learn about the working of all i) Transformer iii) MCB v) PFI Electrical Machinery present in T/w i.e ii) Electricity metre iv) Cable specs vi) Electric motor
3. To maintain proper record of machinery as well as to collect all types of machinery manuals to get know how about its working.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item (HSE)	Due Date
1	~~Implementation of HSE~~ & PPE. Purchase applicable PPE.	Jan-17
2	~~To check all the parameters/ specs of machinery working in jurisdiction of installation.~~ Trained staff to use PPE.	Dec-16
3	There should be a policy to implement PPE & it should be compulsory for every worker to use PPE	Feb-17
4	Staff should be deployed who would make sure the implementation of PPE.	March-17

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Please identify required resources to implement this plan.

1. Enough financial resources to purchase PPE.
2. Hiring of trained staff that may consider the importance of PPE.
3. Training of existing personals as how to use PPE.
4. In case of any mishape, first aid box should be kept at each installation.
5. Training regarding first aid implementation should be arranged.

Please identify any barriers or hindrances to the implement this plan.

i) Tough Schedule
ii) To convince highee authority.
iii) Availability of funds
iv) Awareness of workers about the importance of PPE

Other Comments or Notes:

SOP should be developed to ↑ test ↑ quality for PPE.

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ALJAZARI ACADEMY

(12)

POST TRAINING ACTION PLAN

Training Title: WSD 5231 Modules Electrical control Panels Date of Training: 25-11-2016

Name of Participant: Ahsan Kajeer Khan

Name of Organization: Water and Sanitation Authority Quetta.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Visit the site and make sure the equipment we are using (panel) is safe and good condition. ✓
2. ~~We make~~ Record maintaing and ~~B~~ Importance of protective Tools ✓
3. Importance of asseries used in panal and importance of Their maintance. ✓

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item (maintance of MCC)	Due Date
1	visit all site and make a check list of equipment required.	15 Dec 2016 ✓
2	Ready a prentation to my higher authority regading importance of Those equipent and put a Samery to purchase The.	25 Dec 2016 ✓
3	make sure that all MCC, are working right and accesries are fitted ~~and Fell~~	26 Dec 2016 ✓
4	Try to make a Training Session with Lower Staff tell Them the Importance of The Tools Toward our Machinery and Safety of our Life.	01 Jan 2017 ✓
5-	visit the site to follow up the thing emplemnt on site. ✓	15 Jan 2017

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Please identify required resources to implement this plan.

1. higher Authority approval.
2. fiting These equpiment on site
3. Tesfeul that working Properly.
4. Traing of Lower Staff
5.

Please identify any barriers or hindrances to the implement this plan.

Taking approval from higer Authorities is diffecult keeping in view of Fredition built regading Maintane. and dont have Source and also to combined lowes Staff for a training.

Other Comments or Notes:

Need equipment and Sources to implent my Plan /

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ALJAZARI
ACADEMY

12

POST TRAINING ACTION PLAN

Training Title: WS-5231 O&M of Elect & Mech. Equipment Date of Training: 25-11-2016

Name of Participant: Muhammad Zaheer Rana

Name of Organization: WASA, Lahore.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Daily Basis Prepare Log Book all shifts. For collection of Data Like, 1) Leakage of water, 2) Gland Packing, valve, 3) MCU fault.
2. Collection for PP maintenance record Data, collection. 1) Pumps, 2) Pannel, 3) Transformer, 4) Tools & Equipment.
3. Make sure to make all safety measurs. 1) cleanless of Panell, 2) Chamber of T/W, 3) Lighting arrangment.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item	Due Date
1	collect the complete data about Parts, 1) circuit Breaker, 2) overload relay etc	10th Dec 2016
2	Specification of Parts.	10th Dec 2016
3	Awarenane to lower staff about Elect	11th Dec 2016
4		

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Please identify required resources to implement this plan.

1. To trained Lower staff Like, JPo's, ELectricians.
2. uses of tools
3. collection of Data, & maintave (log Books)
4. Funding Properly.
5.

Please identify any barriers or hindrances to the implement this plan.

1) Highups approval, Director, DMD etc.
2) Shortage of Funds.
3) Availibilty of ELectric Parts in Mkt.

Other Comments or Notes:

1) Required of tools, 1) clamp meter, 2) Insulation Meter etc
2) Manpower extra to Implemet the Plan.

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ALJAZARI ACADEMY

(12)

POST TRAINING ACTION PLAN

Training Title: WSD-5231 Date of Training: 25-11-2016

Name of Participant: SAEED AHMAD KHAN

Name of Organization: WASA LHR.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. To collect the Daily bases Record about Tiw like as Gland Leak, motor Tripping again Pagain, Electric Pannel faults ✓
2. To Collect the Preventive maintenance Data about Pannels, Pumps like as Tools & equipment ✓
3. To ensure the all safty measure like as Gloves, Helmet, Safty Shoes, etc. ✓

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item	Due Date
1	To Collect Complete Data about banning Parts, like as Magnetic Contactor 3RT1056	25-11-2016 ✓
2	Specification of Contactor, like as brand, Capacity, Replacemet of Periodic Time.	25-11-2016 ✓
3	To ensure Traing, required for Junior Leave like as J.P.O, Electricians etc.	25-11-2016 ✓
4	To Provide well enviorement to educated and Awarnace About safty measures.	25-11-2016

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Please identify required resources to implement this plan.

1. Collected Data
2. T & P
3. Trained electrician
4. Inventory about elvent Parts
5. Source of furnals

Please identify any barriers or hindrances to the implement this plan.

1- M.D. DMD Approval.
2- Previous History about Pannel.
3- Shortage of Furnals.
4- Parts not available in market.
5-

Other Comments or Notes:

1- To need Train Manpower to Sustain Preventive and Corrective maintenance
2- required T&P about Testing measure.
3-

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ALJAZARI
ACADEMY

(11)

POST TRAINING ACTION PLAN

Training Title: Peration & Maintenace of Elec. Equipment Date of Training: 25-11-16

Name of Participant: M. Ramzan

Name of Organization: WASA, Quetta

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Acquaintance with Electrical Equipment, installations & Now it is Possible To check the accessories ✓
2. Record keeping of all accessories, log book is Essential ✓
3. Importance of Protective Equipment (PPE) ✓

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item (Reord Keeping)	Due Date
1	Log books, Computer with Prior approval	28-11-16 ✓
2	define Parameters for log book	28-11-16 ✓
3	Ensure availability of all Testing Equipments.	29-11-16 ✓
4	assigned Teame at Supervisor To check & Record	30-11-16 ✓

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Please identify required resources to implement this plan.

1. Trained Personnel
2. approval of Competent authority
3.
4.
5.

Please identify any barriers or hindrances to the implement this plan.

Financial Resources

Other Comments or Notes:

Final.5

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ALJAZARI
ACADEMY

(11)

POST TRAINING ACTION PLAN

Training Title: O&M of mechanical & Electrical Equipment Date of Training: 25/11/16

Name of Participant: H. Fawaz Ali SI Engineer.

Name of Organization: TMA Sialkot

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. SOP is very important thing. we should maintain standard of work.
2. Old Record describe about efficiency of machining. Please proper maintain this.
3. we should Apply HSE. and safe eachother during the work.

Please identify a specific plan (in sequential steps) that you will implement upon your return to ~~WASA~~ TMA.

Sr. No.	Action Item	Due Date
1	Energy Adit.	4 dec to 8 dec.
2	After Energy adit, start work on Preventive maintenance.	9 dec to 15 dec.
3	Prepare the list we need these thing use in Preventive maintenance	16 dec to 18 dec
4	After this i get Approval and lay down these steps.	20 dec.

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Please identify required resources to implement this plan.

1. First of all we need to the buget in which approval.
2. Traind persons.
3. specified standredable material.
4. modern Tool, just like. Energy Analayizer.
5. Record keeping (issue from the store)

Please identify any barriers or hindrances to the implement this plan.

1- unskilled Labour.
2- office space.
3- unproper check and Blance.

Other Comments or Notes:

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ALJAZARI ACADEMY

12

POST TRAINING ACTION PLAN

Training Title: O&M Mechanical & Electrical Equipment Date of Training: 25-11-2016

Name of Participant: SHAFQAT MEHMOOD MALIK

Name of Organization: WASA RAWALPINDI

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Trouble Shooting & its rectification Traing
2. Implement SOPs (For operator only)
3. Implementaiin of Safety Precautions

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item #1 Trouble Shooting & its rectification	Due Date
1	Make a Cource out Line for (Types of faults & rectification)	15-12-2016
2	Conduct a Theory & OJT of operators.	19-12-2016
3	Display Chart for Trouble Shooting with SOP in TEN Chamber	22-12-2016
4	Establish a weekly Monitoring Plan Cross check with Logbook	22-12-2016

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Please identify required resources to implement this plan.

1. Material for Preprain of Coorce out Line (documents of Machinery, Stationery, Drawings, Pre-record) Computer
2. 2 Persons (1 Clerical & 1 from Technical Side)
3. Basic Tool Kit & Safety Kit only
4. Printing facility
5. Record Keeping

Please identify any barriers or hindrances to the implement this plan.

→ Need to be approval.
→ basic creteria of Twell operators
→ Procurement of Tools & Safety Kits
→ Small budget required for technician.

Other Comments or Notes:

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添付資料 3.65

2016 年秋期研修「O&M of Electrical Equipment」で作成されたアクションプラン 2

ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: WSD 5231, Date of Training: 02-12-2016

Name of Participant: SALMAN AHMED HASHMI

Name of Organization: WASA FAISALABAD.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. RECORD KEEPING, MAINTENANCE SHEETS
2. PUTTING OWNER'S MANUAL AT SITE
3. How TO RECTIFY MINOR FAULTS/TROUBLESHOOTING BY READING OWNER'S MANUAL & TO ALWAYS USE RECOMMENDED QUALITY SPARE PARTS

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item	Due Date
1	WILL PROVIDE RECORD KEEPING & MAINTENANCE SHEETS FOR EVERY GENERATOR. WILL CHECK THEM TIMELY.	30-12-16
2	I WILL, MYSELF, CHECK UNDER MY SUPERVISION, THE PERIODIC & PREVENTIVE MAINTENANCE IS DONE ACCORDING TO THE OWNER'S MANUAL	05-02-17
3	I WILL ENSURE THAT PROPER HSE ARE AVAILABLE AT SITE & ARE USED DURING PERIODIC OR PREVENTIVE MAINTENANCE	01-02-17
4	I WILL MAKE SURE THAT WHENEVER ANY SERVICE PART IS BEING REPLACED, ITS SUPPLIER IS APPROVED BY THE MANUFACTURER IN OWNER'S MANUAL	25-12-16

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Please identify required resources to implement this plan.

1. OWNER'S MANUAL
2. PROCUREMENT PLAN
3. TO FIND OUT THE SUPPLIER IN MY CITY
4. FUNDS
5. APPROVAL FROM THE HIGH UPS.

Please identify any barriers or hindrances to the implement this plan.

1) I MAY FACE HINDRANCE TO IMPLEMENT THE ACTION PLAN DUE TO LACK OF FUNDS & DELAYED APPROVAL FROM HIGH UPS.
2) SHORTAGE OF ORIGINAL PARTS FROM THE MANUFACTURER IN THE CITY.
3) PROCUREMENT POLICIES

Other Comments or Notes:

- PROCUREMENT POLICIES NEED TO BE UPDATED
- USING SUB-STANDARD PRODUCTS DECREASES THE LIFE CYCLE OF A MACHINE & THIS PRACTICE SHOULD BE STOPPED. A COMPLETE CHANGE OF MINDSET IS NEEDED.

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ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: WSD 5231 Module II Generators. Date of Training: 30 Nov to 2 Dec

Name of Participant: Ahsan Kajeer Khan

Name of Organization: WASA, Quetta.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Make Sure that owner manual is Present En the facilit
2. Safety measures Should be Taken to avoide any Life/asset lose
3. Record Keeping.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item	Due Date
1	I will find manul Through my old record or I will ask from old S.D.O or contract my equipement Suppler or I will Search from net	15 Dec
2	I will make Sure that no hazerd should be present their I will Train my operatin which I learn here as well as I will visit frequently to asses	15 Dec
3	I will make record which Tells about the condition I will actuly Tell us when we have to check / replace our Parts in order To maintain our equipent.	25 Dec
4	I will visit the the Site and visit my higher authorities and Show them the improvement where	15 Jan

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Please identify required resources to implement this plan.

1. Administrative Support.
2. our Generators are old So find Their Manual.
3. Place where I can Tell my operator regarding Safety
4. Print out the templetes / Record book.
5. ~~Er~~

Please identify any barriers or hindrances to the implement this plan.

The tradition we have in our city is different implemen
is diffcult or just to Tell The importance is also. arrange
the finds ~~an~~ to Printe out Record Book / Templetes.
and To Tell about Safety hazerd.

Other Comments or Notes:

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ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: Operation & Maintenance of Mechanical & Electrical Equipment (WSD 5231) Date of Training: 02-12-16

Name of Participant: UMAIR ASGHAR SANDHU.

Name of Organization: WASA MULTAN.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work *(please focus on SOP, Record Keeping, Preventive maintenance and HSE)*

1. ~~[illegible]~~ Ensure the availability of User Manuals at site.
2. Record keeping of regular cleanliness.
3. Maintenance of Fuel Water Separator

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item	Due Date
1	Consult User's Manual for setting up a formal of Action Plan. on all sites.	01/JAN/16
2	Train the concerned sub-engineers/Staff about consulting the manual & changing the fuel water separator & monitoring it.	08/JAN/16
3	Starting the 1st phase of monitoring/maintenance at all sites, by the disposal staff.	12/JAN/16
4	Checking their maintenance records & following it up.	22/JAN/16.

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Please identify required resources to implement this plan.

1. User Manuals.
2. Availability of Staff.
3.
4.
5.

Please identify any barriers or hindrances to the implement this plan.

- No trained staff.
- Permission from high ups.

Other Comments or Notes:

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ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: Operation & Maintenance of Electrical equipment WSD 5231 Date of Training: 30-11-16 - 2-12-16

Name of Participant: ANOM JAVED

Name of Organization: WASA Lahore

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Tagging of Generator parts
2. Understanding of Manufacturers O&M Manual
3. Preparation of Preventive Maintenance plan.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item (O& M Manual)	Due Date
1 →	Finding the relevant O&M Manual for a specific generator.	5-12-16
→	Understand & identify the main systems of generator.	
2 →	Components of each system & its function.	6-12-16
3 →	Tagging of these parts on Generator with the help of subordinates	8-12-16
4 →	Familiarity with the components codes and how to find them in the manual.	
→	Re pasting of tags on parts in case of Part replacement in maintenance	(ongoing)

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Please identify required resources to implement this plan.

1. Manufacturers O&M manual.
2. Appropriate or new generator for training of subordinates
3. Printed tags to be pasted.
4. .
5.

Please identify any barriers or hindrances to the implement this plan.

→ O& M manual availability in case of WASA
→ Willingness of staff to understand the manual.

Other Comments or Notes:

→ These parts of generators are supposed to be tagged so that the people posted from any other site understand & identify the system easily.

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ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: O&M of Electrical (Generator) Date of Training: 02-12-2016

Name of Participant: SHAFQAT MEHMOOD

Name of Organization: WASA RAWALPINDI

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Implemantaii of HSE & PPE for Generator
2. Prepration of Maintence Plan or Schedule
3. Prepraii & Implemantaii of SOPs for Gen Set

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item 2 - Prepration of Maintence Schedule for Generator	Due Date
1	Arrange Maintence Mannual of Manufacturer by vendor or office facility or by Internet	16-01-2017
2	Develpe a Annual Maintence Sheet (Schedule) with detail of items.	04-02-2017
3	Print & Show Said sheet on Site & in Log book	07-02-2017
4	Arrange a OJT for Concerned Staff for Said Implemaii	06-03-2017

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Please identify required resources to implement this plan.

1. Computer & Printer & Internet
2. Necessary apparel
3. Some Tools
4. Concerned Parts for OJT with PPEs
5. & related Technical Concerned Skill- Persons

Please identify any barriers or hindrances to the implement this plan.

1- Managment Support

2 - Fainancing

3- Basic relevant Qualificati / Skills of Concerned Staff which need To be Trained.

Other Comments or Notes:

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ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: O and M of Electrical Equipment Date of Training: 30th Nov to 2nd Dec.

Name of Participant: SHAKEEL AHMAD

Name of Organization: WASA (GRW).

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. In WASA GRW, There is no SOP, and no follow up.
2. And no Record Keeping, Implementation of Preventive maintenance and HSE.
3. I have learnt from this Training Record keeping, following HSE and Implementation of Preventive maintenance etc Now I will Try to Impl

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item	Due Date 2016.
1	Implementation of SOP's	15 Dec.
2	Record Keeping of Stations	20 Dec.
3	Implementation of PPE's	15 Dec.
4	Introduce to other Colleagues.	10 Dec.

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Please identify required resources to implement this plan.

1. BOQ and Approvals
2. Manuels.
3. Hindrance of Higher Management.
4. Parts of Very old generation.
5. Lenghty approval procedures.
6. Cooperation of Higher mangement.

Please identify any barriers or hindrances to the implement this plan.

Hindrance of Higher Mangement
Lenghty approval Procedures

Other Comments or Notes:

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ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: WSD 5231, Module 3 Genrator Date of Training: 2-12-16

Name of Participant: Muhammad Arshad Latif.

Name of Organization: WASA Multan.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Maintane to the record which I learn.
2. I myself check the items of Genrator Personly Fornightly.
3. How I change the item as manufactur desire.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item (O&M)	Due Date
1	Before we write Only hrs now I maintane record running hour, Oil change time and	
2	date, Oil Filter, Air Filter.	
3	in radiator Only Radiator coolant with use. and maintain its Level.	
4	Genrator service Parts	

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Please identify required resources to implement this plan.

1. Traind the Operator.
2. Personal intrest when buy the parts.
3. store the Parts.
4.
5.

Please identify any barriers or hindrances to the implement this plan.

Other Comments or Notes:

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ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: WSD.5231 Module.3 Generator Date of Training: 02-12-2016

Name of Participant: Muhammad Zaheer Rana

Name of Organization: WASA, Lahore.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Manual of Manufacturer of Generator.
2. House Keeping.
3. Specified Spare Parts for usage in Generators.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item (OSM)	Due Date
1	To Ensure the clean the Generator about Leakage, Ettara stuff. from remove from Generator	05-12-16
2	To Ensure the manual receive from Previous office SDO, S Manufacture.	05-12-16
3	Collect the Bom from about Generators.	10-12-16
4	Discuss the high-ups for Decission.	12-12-16

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Please identify required resources to implement this plan.

1. Requirment of Proper Tools. (TSP)
2. Trained staff.
3. Original Parts.
4. Required for (PPE) Shoes, Helmet, Jackets etc.
5.

Please identify any barriers or hindrances to the implement this plan.

1). For approval the Management support.
2) Original Parts shortage from mkt.
3)

Other Comments or Notes:

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ACADEMY

POST TRAINING ACTION PLAN

Training Title: WSD 5231 Date of Training: 02-12-2016

Name of Participant: SAEED AHMAD KHAN

Name of Organization: WASA LAHORE

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Manufacture Manual.
2. Specified and Quality useage Parts'
3. Trainig required for Technicans, operator, about Generator

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	Action Item	Due Date
1	Record Making about Generator (O&M) and Call vendors, about Parts, according to Manual.	02.12.2016
2	To Collect Quotation about Generator Parts, e.t.c	03.12.2016
3	Comparsion about Rates, Quality, Specification, Time Period.	04.12.2016
4	Discuss with high up and After That Finaal discision.	05.12.2016

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Please identify required resources to implement this plan.

1. Trained Technicians (Electrical and Mechical)
2. Inventory about Parts of (Generator)
3. Tool and equipment
4. to ensure Saftey measure like as Helmets, golves, Apron,
5. storage of Parts

Please identify any barriers or hindrances to the implement this plan.

1- Source of funds.
2- Management Hinderance.
3- Storage of Parts from for Manufacturers, vendors etc.
4- Policitical Influence.

Other Comments or Notes:

~~To Develpoe the cult~~

① To Develope the culture about Manual reading about Relevent Parts or Generator.

② To ensure Record keeping.

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添付資料 3.66

2016 年秋期研修「O&M of Mechanical Equipment」で作成されたアクションプラン 1

POST TRAINING ACTION PLAN

Training Title: O & M Module 1 and Module 4 Date of Training: Dec.26-Dec 30th, 2016

Name of Participant: Amir Tufail

Name of Organization: WASA Lahore

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Make a schedule of repair maintenance of the disposals&tubewells about machinery (Error) & check &balance the record on daily basis.

2. Normally maintenance manuals &the timing of operating machinery manuals all must be available on sites.

3. In relevant field like pumps,motors&different types of valves even chlorination &major thing is ultra-filtration plant which are the main thing of my department .Personally I learn above mention thing that how to create normally repair, their functions. Causes of their damaging much more.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Burn out the motor with and cause.	S.E	30-12-2016	31-12-2016	Due to workshop
2	Finalize the created plan	Sub Engg &SDO	30-12-16	5-1-1017	Team not available
3					
4					

Please identify required resources to implement this plan.

1. Laptop where I make schedule of all machinery.
2. Log books at all for daily check and balance.
3. Manuals/Printed sheets at site must.
4. Department permission& funds.
5. Good team

Please identify any barriers or hindrances to the implement this plan.

1. Trained workers shortage.
2. Latest equipment which need but not avail abled.
3. Bad team

Other Comments or Notes:

Due to short time of training I learn more about my relevant field my responsibilities but main things remain which I will trying to gain the knowledge a lot by training.

POST TRAINING ACTION PLAN

Training Title: O & M Module 1 and Module 4 Date of Training: Dec.26-Dec 30th, 2016

Name of Participant: Fayyaz Ahmed

Name of Organization: WASA Lahore

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Scheduling of repair, maintenance and cleanliness of installations(i.e tube wells, disposal stations, filtration plants)
2. Displaying Sop's, data sheets and schedule at all installations as well as maintain officials record
3. Monitoring, implementation and evaluation of schedules, SOP's, manuals and plans.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Collecting manuals and SOP's from manufacturers.	SDO	7-1-2017	10-1-17	Delayed by manufacturer
2	Scheduling of O&M in accordance with the SOP's or manuals	SDO and Sub- Engg	12-1-17	12-1-17	
3	Reviewing of plans plans/drafts and displaying for implementation	SDO and Sub- Engg, Supervisor ,Operators	15-1-17	20-1-17	Team not available
4					

Please identify required resources to implement this plan.

1. Computer system/laptop

2. Departmental permission/funding

3.Work force

4.Printed sheets

5. Log books/work space etc.

Please identify any barriers or hindrances to the implement this plan.

1. Trained workers shortage.
2. Latest equipment's unavailability
3. Managements restriction/centralization of authorities
4.

Other Comments or Notes:

1. Action plan can suffer due to interference of political or management's.
2. Non availability of resources can also disturb plan.
3. Multitasking duties and overburden of work can also fail the action plan.

ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: O & M Module 1 and Module 4 Date of Training: Dec.26-Dec 30th, 2016

Name of Participant: Souman Khalid

Name of Organization: WASA Lahore

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Implementation plans for Sop's, Record keeping, preventive maintenance and HSE.
2. Check for implementation of above mentioned plans on regular basis.
3. Always try to improve the plans and implement them.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Provision of maintenance plan for pumps	SDO&SE	15-1-2017		
2	Implementation of the plan(Regular basis)	Operator	20-1-17 weekly		
3	Inspections for regular proper implementation	Sub- Engg	27-1-17 weekly		
4	Make a better plan or follow previous one.	SDO&SE	15-2-17 Every Month		

Please identify required resources to implement this plan.

1. Time

2. Manuals

3. Trainer

4.Funds(For prizes)

Please identify any barriers or hindrances to the implement this plan.

1. Frequent public complaints(Time)
2. Political involvements
3. Attitude of workers

Other Comments or Notes:

The plan can be implemented with some efforts and the support of high-ups to ensure the decrease in political pressure .If implemented this plan can reduce a lot of breakdown complaints and may give a huge relief to public as well as departments budget.

ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: O & M Module 1 and Module 4 Date of Training: Dec.26-Dec 30th, 2016

Name of Participant: Waqas Liaqat

Name of Organization: WASA Lahore

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Preparation of maintenance history of every installation
2. Focus on problematic/weak areas and make improvement plan
3. Consultation with lower staff for important and then prepare plan for improvement with the consultation of higher ups.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Identify low performance installation	SDO			
2	Checking needs repair/	SE			
3	Make proper/Estimate	SE			
4	Pursue until job done	SDO			

Please identify required resources to implement this plan.

1. Installation history, its useful life etc.

2. Strong justification for its improvement

3. Required specification

4.Funds

Please identify any barriers or hindrances to the implement this plan.

1. Funds availability
2. Management interest
3.

Other Comments or Notes:

POST TRAINING ACTION PLAN

Training Title: O & M Module 1 and Module 4 Date of Training: Dec.26-Dec 30th, 2016

Name of Participant: M Shakeel Ahmed

Name of Organization: WASA Multan

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Keeping the all record that you need the time of maintenance.
2. Trained the supervisor and other staff to maintain the site.
3. Management is strong about the maintenance works.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Contact KSB to request for provide gate valves	SDO	5-1-2017	10-1-2017	Installed the gate valve
2	Review draft to finalize the plan according the mothod	Sub- Engg	15-1-17	15-1-2017	
3	Visit the site with technical team	SDO and Sub- Engg	20-1-17	23-1-2017	Completed the visited
4					

Please identify required resources to implement this plan.

1. Financial support for the body.

2. Key plan is ready to do the work at site

3. Man power is available for work.

4. Technical experts are provided the instructions to team.

5. All the work is to be done in specification.

Please identify any barriers or hindrances to the implement this plan.

1. Technical Team
2. Funds
3. Required tools for maintenance and operation

Other Comments or Notes:

All the team is to need the training about the maintenance provided the all tools at the site.
Management is also to strong .Responsible peoples are known about the site.

ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: O & M Module 1 and Module 4 Date of Training: Dec.26-Dec 30th, 2016

Name of Participant: Umair Ayub

Name of Organization: WASA Multan

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on SOP, Record Keeping, Preventive maintenance and HSE)***

1. Importance of preventive maintenance
2. The need to train the tube wells and pumps operators
3. Importance of record keeping

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Requesting of O&M manuals from our vendors	SDO	7-1-2017		
2	Training the operators about standard SOP's	SDO and Sub- Engg	1-2-17		
3	Maintain and develop a sustainable inspection plan for pumps and motors	SDO and Sub- Engg	1-2-17		
4					

Please identify required resources to implement this plan.

1. O&M manuals for all pumps, motors, valves and filtration plants

2. Standard maintenance products of required quality

3. Most important thing would be continuous inspection and maintenance plans regardless of the changing personal charge of facilities.

4.

Please identify any barriers or hindrances to the implement this plan.

1. Most difficult barrier can be the intra departmental communication about following a common plan for inspection of pumps, valves and motors.
2.
3.

Other Comments or Notes:

添付資料 3.67

2016 年秋期研修「O&M of Mechanical Equipment」で作成されたアクションプラン 2

POST TRAINING ACTION PLAN

Training Title: O & M Module 5 and Module 7 Date of Training: Jan 9th -Jan 13th , 2017

Name of Participant: Aamir Tufail

Name of Organization: WASA Lahore

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on assembly components, preventive maintenance, operating procedures and HSE)***

1. HSE
2. Understanding equipment components and their functions
3. Preventive maintenance plan
4. SOPs
5. Record keeping

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

"Develop equipment maintenance log for Ichra Sub Division O& M"

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Plan or discuss with SDO	SE	5-2-17	5-2-17	
2	Call a meeting to discuss detail	SDO	8-3-17	9-3-17	
3	Review draft list to finally list of vehicles driver	Computer operator/SE	15-3-17	16-3-17	
4	Meeting with team for discussion	SE/SDO	25-3-17	26-3-17	
5	Implementation	SE/SDO	2-4-17	2-4-17	

Please identify required resources to implement this plan.

1. Good team

2. Proper material

3. Effort of all team specially immediate boss

4.

5.

Please identify any barriers or hindrances to the implement this plan.

1.Bad team

2.Shoratge of time for planning

3.miner resources

Other Comments or Notes:

ALJAZARI ACADEMY

POST TRAINING ACTION PLAN

Training Title: O & M Module 5 and Module 7 Date of Training: Jan 9th -Jan 13th , 2017

Name of Participant: Fayyaz Ahmed

Name of Organization: WASA Lahore

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on assembly components, preventive maintenance, operating procedures and HSE)***

1. HSE 1.PPE
2. Understanding equipment components and their functions 2.Equipment Record
3. Preventive maintenance plan 3.Vehicles maintenance schedules
4. SOPs 4.store space management
5. Record keeping 5.Work time measurement

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
"Develop equipment maintenance log for South Drainage Yard"

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Meeting with staff	SDO	20-1-17		
2	Production of protective equipment lists from store	Sub Engineer	22-1-17		
3	Allocation of equipment's to staff as required	SE	24-1-17		
4	On job implementation distribution of equipment's	SE	26-1-17		
5	Finalizing of lists and reviews	SDO+SE	30-1-17		

Please identify required resources to implement this plan.

1. Stock register

2. Procured equipment's along with user manuals

3. Trained supervisor + workers

4. Office work place

5. Organizational SOP'S

Please identify any barriers or hindrances to the implement this plan.

1.Overloading of work

2.Multitasking job

3.Improper and non-maintained stocks/records

Other Comments or Notes:
The procurement of equipment's for safety is mostly carried out by the procurement and stores department, so the equipment's are most of the times are not procured as per requirements.

ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: O & M Module 5 and Module 7 Date of Training: Jan 9th -Jan 13th , 2017

Name of Participant: Souman Khalid

Name of Organization: WASA Lahore

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on assembly components, preventive maintenance, operating procedures and HSE)***

1. HSE
2. Understanding equipment components and their functions
3. Preventive maintenance plan
4. SOPs
5. Record keeping

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
"Develop equipment maintenance log for WASA workshop Lahore"

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Record keeping	SE/SDO	7-2-17		
2	SOP's	SE/SDO	17-3-17		
3	HSE	SDO/SE/XEN	15-4-17		
4	Inspection	Operators/SE/SDO	31-5-17		
5					

Please identify required resources to implement this plan.

1. Time

2. Funds

3. Manpower

4. Management

5.

Please identify any barriers or hindrances to the implement this plan.

1.Lack of time because of urgent official works.

2.No implementation of HSE in WASA ,Previously

3.No regular SE available of the moment

Other Comments or Notes:

POST TRAINING ACTION PLAN

Training Title: O & M Module 5 and Module 7 Date of Training: Jan 9th -Jan 13th , 2017

Name of Participant: Waqas Liaqat

Name of Organization: WASA Lahore

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on assembly components, preventive maintenance, operating procedures and HSE)***

1. HSE
2. Understanding equipment components and their functions
3. Preventive maintenance plan
4. SOPs
5. Record keeping

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
"Develop equipment maintenance log for water supply WASA liaqat Bagh Rawalpindi"

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Compile vehicles drivers license etc.	SE	18-1-17		
2	Vehicles fitness certificates	SE	25-1-17		
3	Vehicles preventive maintenance schedule	SE	30-1-17		
4	Making SOP's for drivers	SE	30-1-17		
5	Display of SOP's and reduce fitness and driver's license on 5S board	SE	2-2-17		

Please identify required resources to implement this plan.

1. Management support

2.

3.

4.

5.

Please identify any barriers or hindrances to the implement this plan.

1. Funds shortage for preventive maintenance.

2. Audit observation for preventive maintenance.

3.No specific SOP's for preventive maintenance present

Other Comments or Notes:
The induction policy of heavy machinery drivers should be streamlined in terms of merit and education .The vehicle/machinery health depends upon its user. If the operator is well aware of its job then the machine needs less repair and less resource ultimately required.

ALJAZARI ACADEMY

POST TRAINING ACTION PLAN

Training Title: O & M Module 5 and Module 7 Date of Training: Jan 9th -Jan 13th , 2017

Name of Participant: M.Zain ul abdin

Name of Organization: WASA Faisalabad

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on assembly components, preventive maintenance, operating procedures and HSE)***

1. HSE 1.5S Technique
2. Understanding equipment components and their functions 2.SOP of jetting machine/Sucker machine
3. Preventive maintenance plan 3.Safety arrangements before completion of jobs
4. SOPs 4.Computerized record
5. Record keeping 5.Schedule maintenance & preventive maintenance according to record to manual inspect

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

"Develop equipment maintenance log for South Drainage Yard"

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Call a meeting to discuss 5S in XEN office with staff	XEN	17-1-17	17-1-17	
2	Completion of all items list and location specification	SDO and Sub Engineer	20-1-17	29-1-17	
3	Machinery ,Dumper, Excavator ,for smooth surface	SE	03-2-17	5-2-17	
4	Implementation technique of 5S at office	SE	8-2-17	9-2-17	
5	Implementation of 5S technique at O&M store	SDO+SE			

Please identify required resources to implement this plan.

1. Dumpers and excavators from JICA parking road.

2. Boards

3. Racks

4.

5.

Please identify any barriers or hindrances to the implement this plan.

1.Budget

2.

3.

Other Comments or Notes:

POST TRAINING ACTION PLAN

Training Title: O & M Module 5 and Module 7 Date of Training: Jan 9th -Jan 13th , 2017

Name of Participant: M Shakeel Ahmed

Name of Organization: WASA Multan

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on assembly components, preventive maintenance, operating procedures and HSE)***

1. HSE 1.Checking the attendance the staff
2. Understanding equipment components and their functions 2.Check the work suction/jetting machine
3. Preventive maintenance plan 3.Desilting schedule of hasan parana sub division
4. SOPs 4.Safety equipment's are used in the field
5. Record keeping 5.Complete the log books and all old material

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

"Develop equipment maintenance log for South Drainage Yard"

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Check the daily performance of staff	SE	14-1-17		
2	Checking the complaints register and resolve complaints	SE	14-1-17	17-1-17	
3	Desilting schedule in sub division	SDO/SE	14-1-17	25-1-17	
4					
5					

Please identify required resources to implement this plan.

1. Implement this plan in office

2. To manage the labor time table

3.

4.

5.

Please identify any barriers or hindrances to the implement this plan.

1.No hindrance

2.

3.

Other Comments or Notes:

ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: O & M Module 5 and Module 7 Date of Training: Jan 9th -Jan 13th , 2017

Name of Participant: Umair Ayub

Name of Organization: WASA Multan

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on assembly components, preventive maintenance, operating procedures and HSE)***

1. HSE 1.Creating maintenance schedule for jetting and sucker units
2. Understanding equipment components and their functions
3. Preventive maintenance plan
4. SOPs
5. Record keeping

Sewerage Division

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.

"Develop equipment maintenance log for South Drainage Yard"

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Vehicle list with vehicle number	SDO/SE	20-1-17		
2	List of drivers with their license number	Sub Engineer	20-1-17		
3	Arranging maintenance manufacturer for all vehicles	SDO/SE	25-1-17		
4	Create a maintenance log for monthly inspection	SDO/SE	25-1-17		
5	Quarterly review of maintenance log	SDO+SE			

Please identify required resources to implement this plan.

1. Company maintenance manual’s for trucks and tractor and for the jetting and suction limits

2.

3.

4.

5.

Please identify any barriers or hindrances to the implement this plan.

1.Budget

2.

3.

Other Comments or Notes:

ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: O & M Module 5 and Module 7 Date of Training: Jan 9th -Jan 13th , 2017

Name of Participant: Aamir Hussain shah

Name of Organization: WASA Rawalpindi

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on assembly components, preventive maintenance, operating procedures and HSE)***

1. HSE 1.Tube well
2. Understanding equipment components and their functions 2.Filtration plant
3. Preventive maintenance plan 3.Overhead reservoir
4. SOPs 4.Site office
5. Record keeping 5.Water meters

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
"Develop equipment maintenance log for water supply WASA liaqat Bagh Rawalpindi"

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Meeting held	SDO	18-1-17		
2	Tube well check	T.W inspector	21-1-17		
3	Filtration plant cleaning	T.W inspector	25-1-17		
4	OHR	Supervisor	28-1-17		
5	Site office	SE	30-1-17		

Please identify required resources to implement this plan.

1. Tube well log book
2. Safety material
3. Shoes
4. Gloves
5. Torch light

Please identify any barriers or hindrances to the implement this plan.

1.Acceptance by the staff
2.
3.

Other Comments or Notes:

ALJAZARI
ACADEMY

POST TRAINING ACTION PLAN

Training Title: O & M Module 5 and Module 7 Date of Training: Jan 9th -Jan 13th , 2017

Name of Participant: Noshad Aslam

Name of Organization: WASA Rawalpindi

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work ***(please focus on assembly components, preventive maintenance, operating procedures and HSE)***

1. HSE 1.Tube well
2. Understanding equipment components and their functions 2.Filter plant
3. Preventive maintenance plan 3.Overhead reservoir
4. SOPs 4.Ground storage tanks
5. Record keeping 5.Valve chamber

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
"Develop equipment maintenance log for ''Shamsabad water supply Rawalpindi"

Sr. No.	**Action Item (what)**	**Responsible (who)**	**Due Date (when)**	**Date Completed**	**Comments**
1	Check the tube wells	T.W inspector	17-1-17		
2	Check filter plants	T.W inspector	19-1-17		
3	Overhead reservoir	W/S Supervisor	22-1-17		
4	Valves chamber	W/S supervisor	24-1-17		
5	Ground storage tank	W/S Supervisor	28-1-17		

Please identify required resources to implement this plan.

1. Staff equipment’s
2. Helmet
3. Gloves
4. Shoes
5. Torch light

Please identify any barriers or hindrances to the implement this plan.

1.Acceptance by the office staff
2.
3.

Other Comments or Notes:

添付資料 3.68

2016 年秋期研修、2017 年春期研修、2017 年秋期研修、2018 年春期研修「Leak Detection」の OJT 実施手順書

Procedure of On the Job Training

JICA Expert of Leak Detection

1 Leakage Detection

No.	Items	Check
1.	Preparation of the pipeline map (based on GIS data)	
2.	Preparation of the pipeline map of the leak detection site	
3.	Confirmation of the start and end point of leak detection	
4.	Confirmation of the leakage repair history/record near detection site	
5.	Information of the pipe (location, depth, material, diameter and lying age)	
6.	Information of the valve chamber, fire hydrant, and mother meter	
7.	Information of the kind of pavement (Co/As/None) and thickness	
8.	Preparation of the transportation	
9.	Confirmation of the leak detection team member's role	
10.	Confirmation of the departure time	
11.	Check of the traffic condition and the event near the detection site	
12.	Preparation of the working shoes, reflection vest and headlight	
13.	Check and charging of the battery of leak detector and equipment	
14.	Reporting of the result of leak detection (Survey length, No. of leak found)	

Checked by _____, Date _____

Approved by _____, Date _____

Approved by _____, Date _____

Procedure of On the Job Training

JICA Expert of Leak Detection

2 Leakage repairing

No.	Items	Check
1.	Confirmation of the leakage occurrence contact receiving date and time	
2.	Confirmation of the location/address of the leakage repairing site	
3.	Confirmation of the visible scale of leakage (Large/Moderate/Small)	
4.	Confirmation of the road condition (Spouting/Submergence/Subsidence)	
5.	Preparation of the pipeline map of the leakage site	
6.	Confirmation of the shutdown valves location	
7.	Confirmation of the non-passage road area and detour (bypass) route	
8.	Confirmation of the leakage repair equipment, material and quantity	
9.	Confirmation of the leakage repair team member's role	
10.	Check of the traffic condition and the event near the leakage point	
11.	Preparation of the transportation	
12.	Confirmation of the departure time	
13.	Preparation of the working shoes, reflection vest and headlight	
14.	Information of the pipe (location, depth, material, diameter and lying age)	
15.	Information of the valve chamber, fire hydrant, and mother meter	
16.	Information of the kind of pavement (Co/As/None) and thickness	
17.	Contact to the Police and relative traffic organization	
18.	Reporting of the repair work result (Consumption material, quantity)	

Checked by _____, Date _____

Approved by _____, Date _____

Approved by _____, Date _____

添付資料 3.69

2016 年秋期研修「O&M of Electrical Equipment」の OJT 実施手順書 1

OJT Implementation Plan for Record Keeping, SOP & Preventive Maintenance Activity of Electrical Panel

WASA : Lahore Division : XEN (OCM-1) GBT Gulshan-e Ravi Sub Division: Gulshan-e-Ravi S/Div

Approved by

Prepared by SAEED AHMAD KHAN LAHORE WASA

Administrative Information							Contents of Activity	2016				2017					
	Location		Name of the Persons in Charge					Nov		Dec		Jan		Feb		Mar	
Site No.	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator		Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
1.	Gulshan e-Ravi	G-Block Gulshan e Ravi	Shohail Aslam Sindhu	Shokat Ali	Saeed Ahmad Khan		Daily Operation Record	29/11/2016	O								
							SOP Check List		O								
							Preventive Maintenance Record		O *								
2.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
3.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
4.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
5.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
6.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										

* insulation resistance couldnt be performed.

OJT Implementation Plan for Record Keeping, SOP & Preventive Maintenance Activity of Electrical Panel

M. Zaheer Rana
WASA L HR

Approved by

Prepared by

WASA : Lahore Division : Iqbal Town Sub Division: Johar Town

Site No.	Administrative Information						Contents of Activity	2016				2017					
								Nov		Dec		Jan		Feb		Mar	
	Location		Name of the Persons in Charge					Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator											
1.	Johar Town	A-Block T/W	Sohail Qadir Cheema	Salman Nisar	Hassan	Imran Ali	Daily Operation Record	29th									
							SOP Check List										
							Preventive Maintenance Record										
2.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
3.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
4.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
5.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
6.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										

OJT Implementation Plan for Record Keeping, SOP & Preventive Maintenance Activity of Electrical Panel

Approved by Rafique Ch

Prepared by Anum Javed

WASA : Lahore Division : Gulberg Sub Division: Gulberg

Administrative Information							Contents of Activity	2016				2017					
								Nov		Dec		Jan		Feb		Mar	
Site No.	Location		Name of the Persons in Charge					Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator											
1.	Gulberg	A-3	Danish	Amjad	–	–	Daily Operation Record	28-11-2016									
							SOP Check List										
							Preventive Maintenance Record										
2.	Gulberg	A-1	Danish	Amjad	—	–	Daily Operation Record	29-11-2016									
							SOP Check List										
							Preventive Maintenance Record										
3.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
4.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
5.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
6.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										

UMAIR ASGHAR.

OJT Implementation Plan for Record Keeping, SOP & Preventive Maintenance Activity of Electrical Panel

Approved by

Prepared by

WASA : MULTAN Division : P&D Sub Division: —

Administrative Information							Contents of Activity	2016				2017					
								Nov		Dec		Jan		Feb		Mar	
Site No.	Location		Name of the Persons in Charge					Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator											
1.	Faroopura SOUTH	Faroopura	Ishtiaq	Aijum	Arshad	Ahsan	Daily Operation Record	29	O								
							SOP Check List		O								
							Preventive Maintenance Record		—								
2.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
3.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
4.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
5.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
6.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										

OJT Implementation Plan for Record Keeping, SOP & Preventive Maintenance Activity of Electrical Panel

WASA : GRW Division : III (Model Town) Sub Division: B. (Alam chowk)

Approved by

Prepared by Shakeel Ahmad.

Administrative Information							Contents of Activity	2016				2017					
								Nov		Dec		Jan		Feb		Mar	
Site No.	Location: Sub Division	Location: Site Name	Name of the Persons in Charge: XEN	SDO	Sub Engineer	Operator		Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
1.	III	Camp No.2	Kashan	M. Iqbal	Shakeel Ahmad.	Salman	Daily Operation Record	29 NOV									
							SOP Check List										
							Preventive Maintenance Record										
2.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
3.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
4.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
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							SOP Check List										
							Preventive Maintenance Record										
6.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										

OJT Implementation Plan for Record Keeping, SOP & Preventive Maintenance Activity of Electrical Panel

WASA : LHR Division : Nishter Town-I Sub Division: GREEN TOWN

Approved by SHAMAS AYOUB

Prepared by H.M. RAHEEL

Site No.	Administrative Information						Contents of Activity	2016				2017					
	Location		Name of the Persons in Charge					Nov		Dec		Jan		Feb		Mar	
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator		Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
1.	GreenTown	Ameer Chowk	Ishfaq Tiwana	Shamas Ayub	Imran		Daily Operation Record	29th Nov									
							SOP Check List										
							Preventive Maintenance Record										
2.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
3.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
4.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
5.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
6.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										

OJT Implementation Plan for Record Keeping, SOP & Preventive Maintenance Activity of Electrical Panel

Approved by

WASA : Lahore. Division : Nishter town (Opn-I). Sub Division: Green Town. Prepared by ADEEL SHARIF

Administrative Information							Contents of Activity	2016				2017					
								Nov		Dec		Jan		Feb		Mar	
Site No.	Location		Name of the Persons in Charge					Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator											
1.	Green Town.	Bmaer chowk	Tirmizi Sha.	Shams Ajob.			Daily Operation Record	29 - N - 2016									
							SOP Check List										
							Preventive Maintenance Record										
2.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
3.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
4.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
5.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
6.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										

ARSHAD LATIF.

OJT Implementation Plan for Record Keeping, SOP & Preventive Maintenance Activity of Electrical Panel

Approved by

Prepared by

WASA : Multan Division : Disposal Div. Sub Division: South.

Administrative Information							Contents of Activity	2016				2017					
								Nov		Dec		Jan		Feb		Mar	
Site No.	Location		Name of the Persons in Charge					Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator											
1.	South	Qaim bela	Mr. Ishtiaq	Mr. Anjum Zaman	Arshad Latif.	Ghulam Rasool.	Daily Operation Record	28									
							SOP Check List										
							Preventive Maintenance Record										
2.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
3.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
4.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
5.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
6.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										

OJT Implementation Plan for Record Keeping, SOP & Preventive Maintenance Activity of Electrical Panel

Approved by SHAFQAT MALIK

WASA : RAWALPINDI Division : BULK W/SUPPLY Sub Division: FILTRATION PLANT

Prepared by SHAFQAT MALIK

Administrative Information							Contents of Activity	2016				2017					
								Nov		Dec		Jan		Feb		Mar	
Site No.	Location: Sub Division	Location: Site Name	Name of the Persons in Charge: XEN	Name of the Persons in Charge: SDO	Name of the Persons in Charge: Sub Engineer	Name of the Persons in Charge: Operator		Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
1.	Filtration plant	RAWAL LAKE FILTRATION PLANT RAWAL DAM	AHMED MANZOOR	SHAFQAT MALIK	MUHAMMAD ALI	MUHAMMAD KHALID	Daily Operation Record	NOV		~~JAN~~		JAN				Mar	
							SOP Check List	29		~~31~~		31				10	
							Preventive Maintenance Record										
2.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
3.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
4.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
5.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
6.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										

M. Ramzan.

OJT Implementation Plan for Record Keeping, SOP & Preventive Maintenance Activity of Electrical Panel

Approved by Director Water Supply

Prepared by Executive Engineer Zargh

WASA : Quetta Division : Zarghoon Sub Division: MaliBagh.

Administrative Information							Contents of Activity	2016				2017					
								Nov		Dec		Jan		Feb		Mar	
Site No.	Location		Name of the Persons in Charge					Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator											
1.	MaliBagh	VES-8	Rayan	ihsan	Qadir	Ali Ahmed	Daily Operation Record	15 dec.									
							SOP Check List			20 dec							
							Preventive Maintenance Record										
2.	"	VES-11	"	"	"	M. Ali	Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
3.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
4.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
5.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
6.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										

OJT Implementation Plan for Record Keeping, SOP & Preventive Maintenance Activity of Electrical Panel

WASA : Quetta Division : Zarghoon Sub Division: Malibagh

Approved by X EN

Prepared by S.D.O Ahsan Kajeer

Site No.	Administrative Information						Contents of Activity	2016				2017					
	Location		Name of the Persons in Charge					Nov		Dec		Jan		Feb		Mar	
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator		Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
1.	Malibagh	VS-II	Ramzan Achakzai	Ahsan Kajeer	Qadir Shawani	Shaib	Daily Operation Record										
							SOP Check List			15 Dec							
							Preventive Maintenance Record										
2.	Pashtoonabad	Abdul Wali	Ramzan Achakzai	Shaib Badini	—	Shakoor	Daily Operation Record										
							SOP Check List			18 Dec							
							Preventive Maintenance Record										
3.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
4.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
5.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
6.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										

OJT Implementation Plan for Record Keeping, SOP & Preventive Maintenance Activity of Electrical Panel

Approved by Javaid Iqbal Jadan (XE.

Prepared by H. Faraz Ali

WASA : TMA Sialkot Division : Sub Division:

Administrative Information							Contents of Activity	2016				2017					
								Nov		Dec		Jan		Feb		Mar	
Site No.	Location: Sub Division	Location: Site Name	Name of the Persons in Charge: XEN	Name of the Persons in Charge: SDO	Name of the Persons in Charge: Sub Engineer	Name of the Persons in Charge: Operator		Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
1.	TMA Sialkot	Ahatta water work's	Javaid Iqbal Chadar	Mohammad Ashiq Bajwa	Faraz Ali	Zeeshan	Daily Operation Record		0				0				0
							SOP Check List	Nov	0			Jan	0			Mar	0
							Preventive Maintenance Record	29	0			31	0			8	6
2.	11	Tube well Shah Khati Ghali Rangpura					Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
3.	11	Tube well Lambiyan Baiyan Rangpura					Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
4.	11						Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
5.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										
6.							Daily Operation Record										
							SOP Check List										
							Preventive Maintenance Record										

添付資料 3.70

2016 年秋期研修「O&M of Electrical Equipment」の OJT 実施手順書 2

OJT Implementation Procedure for O&M Manual, Record Keeping & Preventive Maintenance Activity of Generator

Put "O" when you conplete the activity

WASA FAISALABAD

Division : WASTE WATER MANAGEMENT (EAST)

Approved by

Prepared by

Administrative Information							Contents of Activity	Planning Date	Completed
Site No.	Location		Name of the Persons in Charge						
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator			
1.	EAST	PS-31	KAMRAN RAZA	SALMAN HASHMI	TAHIR SHABBIR	ASGHAR	1. O&M Manual	20-12-16	
							2. Basic Specification ➡Vender, Type, Capacity	20-12-16	
							3. Daily O&M Record	20-12-16	
							4. Preventive Maintenance Plan	20-12-16	
2.	EAST	MANSOORA-BAD	KAMRAN RAZA	SALMAN HASHMI	TAHIR SHABBIR	ADNAN	1. O&M Manual	30-12-16	
							2. Basic Specification ➡Vender, Type, Capacity	30-12-16	
							3. Daily O&M Record	25-12-16	
							4. Preventive Maintenance Plan	25-12-16	
3.	EAST	ABDULLAHPUR	KAMRAN RAZA	SALMAN HASHMI	TAHIR SHABBIR	ADNAN	1. O&M Manual	05-01-17	
							2. Basic Specification ➡Vender, Type, Capacity	05-01-17	
							3. Daily O&M Record	25-12-16	
							4. Preventive Maintenance Plan	25-12-16	

OJT Implementation Procedure for O&M Manual, Record Keeping & Preventive Maintenance Activity of Generator

Put "O" when you conplete the activity

Approved by

Prepared by SHAFQAT MEHMOOD MALIK

WASA Division :

Administrative Information							Contents of Activity	Planning Date	Completed
Site No.	Location		Name of the Persons in Charge						
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator			
1.	Filtration Plant	RAWAL LAKE FILTRATION PLANT RAWAL DAM ISBD	M. AHMED MANZOOR	SHAFQAT MEHMOOD	MUHAMMAD ALI	MUHAMMAD YAMEEN	1. O&M Manual	16-01-2017	
							2. Basic Specification ➡Vender, Type, Capacity	20-01-2017	
							3. Daily O&M Record	07-02-2017	
							4. Preventive Maintenance Plan	06-03-2017	
2.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		
3.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		

OJT Implementation Procedure for O&M Manual, Record Keeping & Preventive Maintenance Activity of Generator

Put "O" when you conplete the activity

WASA GRW. Division : III (B)

Approved by

Prepared by SHAKEEL AHMAD.

Administrative Information							Contents of Activity	Planning Date	Completed
Site No.	Location		Name of the Persons in Charge						
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator			
1.	Alam Chowk III (B)	Tube Well Camp No.2	Kashan Hafeez	M. Iqbal	Shakeel Ahmad	M. Salman	1. O&M Manual	03 Dec	
							2. Basic Specification ➡Vender, Type, Capacity	03 Dec	
							3. Daily O&M Record	03 Dec	
							4. Preventive Maintenance Plan	03 Dec	
2.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		
3.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		

OJT Implementation Procedure for O&M Manual, Record Keeping & Preventive Maintenance Activity of Generator

Put "O" when you conplete the activity

WASA Quetta Division : Malibagh

Approved by XEN Zarghoon

Prepared by S.D.O

Administrative Information							Contents of Activity	Planning Date	Completed
Site No.	Location		Name of the Persons in Charge						
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator			
1.	Malibagh	VS-11	Zarghoon	Ahsan Kjan	Qadir	Nabi	1. O&M Manual	15 Jan	
							2. Basic Specification ➡Vender, Type, Capacity	15 Jan	
							3. Daily O&M Record	20 Jan	
							4. Preventive Maintenance Plan	23 Jan	
2.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		
3.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		

OJT Implementation Procedure for O&M Manual, Record Keeping & Preventive Maintenance Activity of Generator

Put "○" when you complete the activity

WASA Lahore. Division : Iqbal Town

Approved by XEN

Prepared by M. Zaheer Rana

Administrative Information							Contents of Activity	Planning Date	Completed
Site No.	Location		Name of the Persons in Charge						
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator			
1.	Johar Town	Sakhi Chowk T/W	Sohail Qadir	Salman Nisar	Hassan	Imtiaz	1. O&M Manual	06-12-16	
							2. Basic Specification ➡Vender, Type, Capacity	06-12-16	
							3. Daily O&M Record	06-12-16	
							4. Preventive Maintenance Plan	10-12-16	
2.	~~Director~~ Drainage (centre) OFF.	Director Drainage OFF	Adeel Sharif	M. Zaheer Rana	Ayaz Hanif	Abdullah	1. O&M Manual	08-12-16	
							2. Basic Specification ➡Vender, Type, Capacity	08-12-16	
							3. Daily O&M Record	08-12-16	
							4. Preventive Maintenance Plan	10-12-16	
3.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		

OJT Implementation Procedure for O&M Manual, Record Keeping & Preventive Maintenance Activity of Generator

Put "O" when you complete the activity

WASA LAHORE Division : XEN(O&M-I)GBT

Approved by SAEED AHMAD KHAN

Prepared by Nawaz - Abdul Aziz

Administrative Information							Contents of Activity	Planning Date	Completed
Site No.	Location		Name of the Persons in Charge						
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator			
1.	Gulshan e-Ravi	Gulshan e-Ravi Disposal Station	Shohail Aslam Sindhu	Shoukat Ali	Saeed Ahmad Khan	Nawaz	1. O&M Manual	05DEC	
							2. Basic Specification ➡Vender, Type, Capacity	05DEC	
							3. Daily O&M Record	05 DEC	
							4. Preventive Maintenance Plan	10 DEC	
2.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		
3.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		

OJT Implementation Procedure for O&M Manual Record Keeping & Preventive Maintenance Activity of Generator

Put "O" when you conplete the activity

Approved by Rafique Ch

Prepared by Anum Javed

WASA Lahore Division : Gulberg

Administrative Information							Contents of Activity	Planning Date	Completed
Site No.	Location		Name of the Persons in Charge						
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator			
1.	Gulberg	G-5	Danish	Amjad			1. O&M Manual	5-12-16	
							2. Basic Specification ➡Vender, Type, Capacity	7-12-16	
							3. Daily O&M Record	8-12-16	
							4. Preventive Maintenance Plan	10-12-16	
2.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		
3.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		

OJT Implementation Procedure for O&M Manual, Record Keeping & Preventive Maintenance Activity of Generator

Put "O" when you conplete the activity

WASA Multan Division : Disposal

Approved by S. D. O.

Prepared by Muhammad Arshad Lathi.

Administrative Information							Contents of Activity	Planning Date	Completed
Site No.	Location		Name of the Persons in Charge						
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator			
1.	South	Qasim bella	Mr. Ishtiq	Anjam Zaman	Arshad Lathi.	Ghulam Rasool.	1. O&M Manual	13 Dec.	
							2. Basic Specification ➡Vender, Type, Capacity	13 Dec.	
							3. Daily O&M Record	13 Dec.	
							4. Preventive Maintenance Plan	13 Dec.	
2.	South	Garden Town	Mr. Istiaq	Anjam Zaman	Arshad Lathi.	Amar Iqbal	1. O&M Manual	14 Dec.	
							2. Basic Specification ➡Vender, Type, Capacity	14 Dec	
							3. Daily O&M Record	14 Dec.	
							4. Preventive Maintenance Plan	14 De.	
3.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		

OJT Implementation Procedure for O&M Manual, Record Keeping & Preventive Maintenance Activity of Generator

Put "O" when you conplete the activity

Approved by XEN Disposal

Prepared by UMAIR ASGHAR.

WASA MULTAN Division :

Administrative Information							Contents of Activity	Planning Date	Completed
Site No.	Location		Name of the Persons in Charge						
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator			
1.	Disposal (North)	Changi # 9.	Ishtiaq	Hafiz Muhammad Waqas			1. O&M Manual	13/DEC/16	
							2. Basic Specification ➡Vender, Type, Capacity	13/DEC/16	
							3. Daily O&M Record	13/DEC/16	
							4. Preventive Maintenance Plan	20/DEC/16	
2.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		
3.							1. O&M Manual		
							2. Basic Specification ➡Vender, Type, Capacity		
							3. Daily O&M Record		
							4. Preventive Maintenance Plan		

添付資料 3.71

2016 年秋期研修「O&M of Electrical Equipment」の OJT 実施手順書 3

OJT Implementation Procedure of 5S and HSE activity for Electrical Facility

Approved by SHAFQAT MEHMOOD MALIK

WASA : RAWALPINDI Division : Filtration Plant Prepared by "

Site No.	Administrative Information: Location – Sub Division	Location – Site Name	Name of the Persons in Charge – XEN	SDO	Sub Engineer	Operator	Contents of Activity	2016 Dec – Planning Date	2016 Dec – Completed	2017 Jan – Planning Date	2017 Jan – Completed	2017 Feb – Planning Date	2017 Feb – Completed	2017 Mar – Planning Date	2017 Mar – Completed
1.	F/PLANT	RAWAL LAKE F/PLANT	Ahmed Mazhar	SHAFQAT MEHMOOD	MUHAMMAD ALI	Khalid Mehmood	1. 5S Activity								
							2. Improve PPE/First Aid Kit			25					
							3. Job Safety Analysis			25					
2.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
3.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
4.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								

OJT Implementation Procedure of 5S and HSE activity for Electrical Facility

Approved by Ch Rafique

WASA : Lahore Division : Gulberg Prepared by Anum Javed

Administrative Information							Contents of Activity	2016		2017					
								Dec		Jan		Feb		Mar	
Site No.	Location		Name of the Persons in Charge					Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator									
1.	Gulberg	G-5	Danish Amjad	—	-		1. 5S Activity	15-12-16							
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis	15-12-16							
2.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
3.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
4.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								

OJT Implementation Procedure of 5S and HSE activity for Electrical Facility

SALMAN AHMED HASHMI

Approved by

WASA : FAISALABAD Division : EAST - WWM

Prepared by

Site No.	Location		Name of the Persons in Charge				Contents of Activity	2016 Dec		2017 Jan		2017 Feb		2017 Mar	
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator		Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
1.	East	PS-31	Kamran Raza	Salman Hashmi	Tahir Shabbir	Asghar	1. 5S Activity	17		05		05		05	
							2. Improve PPE/First Aid Kit	28		10		10		10	
							3. Job Safety Analysis	23		10		10		10	
2.	East	Elahiabad	Kamran Raza	Salman Hashmi	Tahir Shabbir	Shaukat	1. 5S Activity	20		05		05		05	
							2. Improve PPE/First Aid Kit	23		10		10		10	
							3. Job Safety Analysis	23		10		10		10	
3.	East	Abdulhpur	Kamran Raza	Salman Hashmi	Tahir Shabbir	Iftikhar	1. 5S Activity	22		05		05		05	
							2. Improve PPE/First Aid Kit	26		10		10		10	
							3. Job Safety Analysis	28		10		10		10	
4.	East	PS-42	Kamran Raza	Salman Hashmi	Tahir Shabbir	Husain Shah	1. 5S Activity	22		05		05		.5	
							2. Improve PPE/First Aid Kit	26		10		10		10	
							3. Job Safety Analysis	28		10		10		10	

OJT Implementation Procedure of 5S and HSE activity for Electrical Facility

Approved by Sohail Aslam Sindhu

WASA: LAHORE Division: XEN (O&M-I) GBT

Prepared by SAEED AHMAD KHAN

Site No.	Administrative Information						Contents of Activity	2016		2017					
	Location		Name of the Persons in Charge					Dec		Jan		Feb		Mar	
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator		Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
1.	Gulshan e-Ravi	Skandra Colony T/w	Sohail Aslam Sindhu	Shokat Ali	Saeed Ahmad Khan	NAWAZ	1. 5S Activity	15, Decber							
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
2.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
3.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
4.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								

OJT Implementation Procedure of 5S and HSE activity for Electrical Facility

Approved by M. Zaheer Rana

Prepared by

WASA : Lahore Division : XEN (OSM-II) N. Town.

Administrative Information							Contents of Activity	2016		2017					
								Dec		Jan		Feb		Mar	
Site No.	Location		Name of the Persons in Charge					Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator									
1.	Green Town	C/I T/W	Shams Ayub	Shams Ayub	Imran Qamar	Nadeem	1. 5S Activity	15th							
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
2.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
3.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
4.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								

OJT Implementation Procedure of 5S and HSE activity for Electrical Facility

Approved by

Prepared by Shakeel Ahmad.

WASA : Gujranwala Division : III

Site No.	Administrative Information: Location – Sub Division	Location – Site Name	Name of the Persons in Charge – XEN	SDO	Sub Engineer	Operator	Contents of Activity	2016 Dec – Planning Date	2016 Dec – Completed	2017 Jan – Planning Date	2017 Jan – Completed	2017 Feb – Planning Date	2017 Feb – Completed	2017 Mar – Planning Date	2017 Mar – Completed
1.	III	Model Town	Kashan Hafeez	M. Iqbal	Shakeel Ahmad	Liaqat Ali	1. 5S Activity	to		Jan.10					
							2. Improve PPE/First Aid Kit	Jan		Jan 15					
							3. Job Safety Analysis			Jan 15					
2.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
3.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
4.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								

OJT Implementation Procedure of 5S and HSE activity for Electrical Facility

Approved by H.M. RAHEEL

Prepared by

WASA : LHR Division : Nishtar Town

Site No.	Administrative Information: Location: Sub Division	Location: Site Name	Name of the Persons in Charge: XEN	SDO	Sub Engineer	Operator	Contents of Activity	2016 Dec: Planning Date	Dec: Completed	2017 Jan: Planning Date	Jan: Completed	2017 Feb: Planning Date	Feb: Completed	2017 Mar: Planning Date	Mar: Completed
1.	GREEN Town	C-II T/w	ISHFAQ	SHAMAS AYOUB	QAMAR	XYZ	1. 5S Activity	12/12/16	01/01/17						
			FIRMBI				2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
2.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
3.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
4.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								

OJT Implementation Procedure of 5S and HSE activity for Electrical Facility

Approved by

WASA : MULTAN. Division : Disposal Division. Prepared by UMAIR ASGHAR.

Administrative Information						Contents of Activity	2016		2017					
							Dec		Jan		Feb		Mar	
Site No.	Location		Name of the Persons in Charge				Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator								
1.	NORTH	Chungi # 9	Ishtiaq	Hafiz Waqas	[illegible] Tariq									
							1. 5S Activity							
							2. Improve PPE/First Aid Kit							
							3. Job Safety Analysis	15						
2.							1. 5S Activity							
							2. Improve PPE/First Aid Kit							
							3. Job Safety Analysis							
3.							1. 5S Activity							
							2. Improve PPE/First Aid Kit							
							3. Job Safety Analysis							
4.							1. 5S Activity							
							2. Improve PPE/First Aid Kit							
							3. Job Safety Analysis							

OJT Implementation Procedure of 5S and HSE activity for Electrical Facility

Approved by

Prepared by. ARSHAD LATIF.

WASA : Multan Division : Disposal Stations

Site No.	Administrative Information: Location – Sub Division	Location – Site Name	Name of the Persons in Charge – XEN	SDO	Sub Engineer	Operator	Contents of Activity	2016 Dec – Planning Date	Dec – Completed	2017 Jan – Planning Date	Jan – Completed	Feb – Planning Date	Feb – Completed	Mar – Planning Date	Mar – Completed
1.	South	Qasim bela	Mr. Ishtiaq	Mr. Anjam Zaman	Arshad Latif	Gulam Rasool	1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
2.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
3.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								
4.							1. 5S Activity								
							2. Improve PPE/First Aid Kit								
							3. Job Safety Analysis								

OJT Implementation Procedure of 5S and HSE activity for Electrical Facility

Approved by

Prepared by ADEEL SHARIF.

WASA :

Division :

Site No.	Location		Name of the Persons in Charge				Contents of Activity	2016 Dec		2017 Jan		2017 Feb		2017 Mar	
	Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator		Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
1.	Drainage South I	Township Drainage Office	Adeel Sharif	Rahul Ashraf	Thapar.		1. 5S Activity	25	25.						
							2. Improve PPE/First Aid Kit			10	12.				
							3. Job Safety Analysis			11-	15				
2.							1. 5S Activity			25.	30				
							2. Improve PPE/First Aid Kit					5	8		
							3. Job Safety Analysis					8.	9		
3.							1. 5S Activity					9-	10		
							2. Improve PPE/First Aid Kit					11	12		
							3. Job Safety Analysis					13	14.		
4.							1. 5S Activity					15	16		
							2. Improve PPE/First Aid Kit					17.	18		
							3. Job Safety Analysis					19	20		

添付資料 3.72

2016 年秋期研修、、2017 年春期研修、2017 年秋期研修「O&M of Mechanical Equipment」の OJT 実施手順書

OJT Implementation plan for Record Keeping,SOP &Preventive Maintenance Activity of Pump,Motor and Valves

Course: WSD 5231 modules 1, 4

Team and Site Information								Parameters to check	2017													
									Jan		Feb		March		April		May		June	
Site No.	Site Iformation			Detailed Team Information					Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
	Participant Name	WASA/Division/Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator													
1.	Amir Tufail	Lahore/Allama Iqbal Town/Ichra	LOS Tube well	Sohail Qadir Cheema	Saif Ch.	Amir Tufail	Ashfaq	**Daily operations record**	15-Jan											
								Facility inspection sheet												
								Maintenance plan												
								O&M Manuals for Equipment												
2.	Souman Khalid	Lahore/Ravi Town/Main Outfall	Out fall Dewatering workshop	Saleem Ashraf	Souman Khalid	Atif	Adnan Javed	**Daily operations record**	15th											
								Facility inspection sheet	25th											
								Maintenance plan			5th									
								O&M Manuals for Equipment			15th									
3.	Fayyaz	Lahore/Drainage south/Drainage South-1	Tank # 3 Township	Adeel Shareef	Hafiz Raheel Asraf	Fayyaz Ahmed Ch.	Muhammad Arif	**Daily operations record**	16th											
								Facility inspection sheet												
								Maintenance plan												
								O&M Manuals for Equipment												
4.	Waqas Liaqat	Lahore/Drainage south/Drainage South-1	Tank # 3 Township Komatsu Excuvator	Adeel Shareef	Waqas	Ghaffar	Ilyas	**Daily operations record**	1st	30th	1st	28th	1st	30th						
								Facility inspection sheet		30th		28th		30th						
								Maintenance plan		15th		15th		15th						
								O&M Manuals for equipment		1st		1st		1st						
5.	Umair Ayub	Multan/Sewerage south/Hassan Parwana	Sewerage (Hassan Parwana South)	Irfan Ali	Umair Ayub	shakeel Ahmad		**Daily operations record**	15th											
								Facility inspection sheet												
								Maintenance plan												
								O&M Manuals for Equipment												

OJT Implementation plan for Record Keeping,SOP &Preventive Maintenance Activity of Pump,Motor and Valves

Course: WSD 5231 modules 1, 4

Team and Site Information								Parameters to check	2017													
									Jan		Feb		March		April		May		June	
Site No.	Site Iformation			Detailed Team Information					Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed	Planning Date	Completed
	Participant Name	WASA/Division/Sub Division	Site Name	XEN	SDO	Sub Engineer	Operator													
6.	Shakeel Ahmad	Multan/Sewerage south/Hassan Parwana	Sewerage (Hassan Parwana South)	Irfan Ali	Irfan Ali	shakeel Ahmad	Ismaeel	Daily operations record	1st to											
								Facility inspection sheet	15th											
								Maintenance plan												
								O&M Manuals for Equipment												

WASA Lahore

WASA Multan

添付資料 3.73

2016 年秋期研修「Asset Management」の OJT 実施手順書

04-Sohail Cheema & 06-Abdul Rehman

Assignment 1: OJT Implementation Procedure (asset monitoring, Asset register/ database updating)

		Current	Future Requirement	Remarks
Task 1: Monitoring	what to do	Monitoring the existing assets: daily, weekly, monthly, quarterly		
	in charge	O & M department (Division Level)		
	Number of staffs	04 Number (01 Person each Sub division)	08 Number (02 Person each Sub division)	(02 Person for field work in each sub division).
	Training	NIL	Quarterly Basis	Capacity Building.
	Budget	52,000/- (PKR)	220,000/- (PKR)	
	Computers	NIL	NIL	
	Others	-	08 Numbers (Android Phones)	01 Number for each monitoring Official.
Task 2: Recording	what to do	Keeping records of the monitoring results		
	in charge	O & M department (Division Level)		

	Number of staffs	**04 Number (01 Person each Sub division)**	**08 (02 Person each Sub division)**	**02 Persons each sub division.**

Task 2: Recording	**Training**	**-**	**Quarterly Basis**	**Capacity Building.**
	Budget	**72,000/- (PKR)**	**244,000/- (PKR)**	
	Computers	**04 Number**	**09 Number**	**01 Number for each data entry operator, 01 Number for each SDO, and 01 Number for XEN.**
	Others	**-**	**-**	
Task 3: Updating GIS/Asset Database	**what to do**	**Updating GIS/ Asset database with the monitoring results**		
	in charge	**Director P&E**		
	Number of staffs	**03 Numbers**	**09 Numbers**	**03 Numbers in Head Office, 01 Number in each town.**
	Training	**-**	**Quarterly Basis**	
	Budget	**150,000/-**	**450,000/-**	

	Computers	**03 Numbers**	**09 Numbers**	
	Others	**-**	**-**	

Task 4: New asset register	**what to do**	**New asset register/ database updating**		
	in charge	**Sub Division Officer**		
	Number of staffs	**04 Number**	**08 Number**	**02 Person each Sub Division**
	Training	**NIL**	**Quarterly basis**	**How to evaluate conditions of assets, how to maintain the asset record/history.**
	Budget	**100,000/- (PKR)**	**400,000/- (PKR)**	
	Computers	**NIL**	**04 Number**	**01 Number in each sub division.**
	Others	**-**	**-**	

Sohail Sindhu & Waqas

Assignment 1: OJT Implementation Procedure (asset monitoring, Asset register/ database updating)

		Current	Future Requirement	Remarks
Task 1: Monitoring	what to do	Monitoring the existing assets: daily, weekly, monthly, quarterly		
	in charge	O & M department		
	Number of staffs	03	03	1- 1 no. Installations montoring 2- 1 no water supply system montoring. 3- 1 no sewerage system monitoring.
	Training	no	yes	
	Budget(PKR)	No particular budget for asset monitoring	5 lacs for 1st year 1.6lac yearly onwards	3 bikes and 3 mobiles. 3 bikes with fuel 60 lit/bike/month.
	Computers	no	no	
	Others	No other facility	Need bikes with fueling. Android Mobile phones.	
Task 2:	what to do	Keeping records of the monitoring results		

Recording	**in charge**	**O & M department**		
	Number of staffs	**2**	**3**	

Task 2: Recording	**Training**	**no**	**Need training**	
	Budget	**exists**	**Needs upgradation**	
	Computers	**1**	**1**	
	Others	**nil**	**nil**	
Task 3: Updating GIS/Asset Database	**what to do**	**Updating GIS/ Asset database with the monitoring results**		
	in charge	**sdo**	**sdo**	
	Number of staffs	**0**	**1**	**GIS Trained staff is required**
	Training	**nil**	**Required**	
	Budget	**nil**	**3.5 lacs/annum**	

	Computers	**0**	**1**	
	Others	**nil**	**GIS equipment.**	

Task 4: New asset register	**what to do**	**New asset register/ database updating**		
	in charge	**GIS / Asset database sections and procurement sections**		
	Number of staffs	**1 sub engr**	**1 sub engr**	
	Training	**nil**	**Required**	
	Budget	**exist**	**50,000/-**	
	Computers	**0**	**1**	
	Others	**nil**	**nil**	

15-Ms Burrira & 16-Ms Zoya WASA Faisalabad

Assignment 1: OJT Implementation Procedure (asset monitoring, Asset register/ database updating)

		Current	Future Requirement	Remarks
Task 1: Monitoring	what to do	Monitoring the existing assets: daily, weekly, monthly, quarterly	There must be written schedule and constant check on these proceedings	
	in charge	WWM department (SDOs)		
	Number of staffs	Disposals: SE=3, Electrician=4, Mechanic=4 Vehicle/Machinery: SE=1, Supervisor=1, Mechanic=1	Number of staff is sufficient	
	Training	Nil	Technical trainings should be given in specific fields	
	Budget	No specific budget for monitoring, managed using O&M budget	Specific head should be there for monitoring	
	Computers	Nil	Min=3	
	Others	Level sensors, vehicle tracking system	Sufficient	
Task 2:	what to do	Keeping records of the monitoring results		

Recording	**in charge**	**WWM department (SDOs)**		
	Number of staffs	**Computer Operator=3 Data collection=4**	**Operators=4 min**	

Task 2: Recording	**Training**	**No formal training. AD(s) guide staff as per requirement**	**MS office training should be compulsory**	
	Budget	**No specific budget. O&M budget is used for recording results**	**Specific head should be there for recording**	
	Computers	**3**	**4 min**	
	Others	**-**	**-**	
Task 3: Updating GIS/Asset Database	**what to do**	**Updating GIS/ Asset database with the monitoring results**		
	in charge	**GIS Analyst(s)**	**3 GIS Analyst (minimum) must be there**	
	Number of staffs	**AD=2 Work charge/Surveyors=10**	**For surveys and ground truthing minimum 10 people are required in each project**	
	Training	**No formal training executed**	**Formal trainings and workshops specially for lower staff must be arranged specially to handle equipment**	

	Budget	**Budget is not allocated specifically for GIS section; GIS work is completed in respective project individually**	**-**	
	Computers	**2**	**Central repository/server required Arcpad/GPS devices Android Phones**	
	Others	**-**	**-**	

Task 4: New asset register	**what to do**	**New asset register/ database updating**		
	in charge	**GIS / Asset database sections and procurement sections**		
	Number of staffs	**0 for DB records** **Manual recording=1 SE in each subdivision**	**Present staff must take responsibility of DB updates regarding Assets. other department's cooperation would be required for that task to complete systematically**	
	Training	**1**	**some formal trainings and workshops required specifically on Faisalabad's system and data type**	
	Budget	**Nil**	**A specific amount of budget solely dedicated for making and timely updates of assets must be considered**	
	Computers	**0**	**Min 3 with central server**	
	Others			

Muhammad Tauseef

Assistant Director Engineering

WASA (GDA)

Gujranwala

Assignment 1: OJT Implementation Procedure (asset monitoring, Asset register/ database updating)

		Current	Future Requirement	Remarks
Task 1: Monitoring	what to do	Monitoring the existing assets: daily, weekly, monthly, quarterly		
	in charge	Assistant Director Engineering	Assistant Director Engineering	Regular Visits
	Number of staffs	1(One sub engineer for each subdivision) 3(One team for 2 subdivisions)	2(Two sub engineers for each subdivision) 3(One team for each subdivision)	Monitoring will be more efficient
	Training	No Training	Trainings for each level of staff	Technical skills will improve
	Budget	No Budget Allocation	Allocation of Budget for procurement of Monitoring Equipment's	Quality of Monitoring will be Accurate
	Computers	No Computers	3 Computers for each subdivision	ADE can analyze instantly

	Others	**No Vehicles**	**Vehicles for each level staff**	**Response time of staff will improve**
Task 2: Recording	**what to do**	**Keeping records of the monitoring results**		
	in charge	**Sub Engineer**	**Sub Engineer**	**Regular Visits**
	Number of staffs	**3(One team for 2 subdivisions) (Electrician, mechanical supervisor & a helper)**	**3(One team for each subdivision)**	**Monitoring will be more efficient**

Task 2: Recording	**Training**	**No Training**	**Trainings for each level of staff**	**Technical skills will improve**
	Budget	**No Budget Allocation**	**Allocation of Budget for procurement of Recording Equipment's**	**Quality of Recording will be Accurate**
	Computers	**No Computers**	**3 Computers for each subdivision**	**ADE can analyze Recording practice instantly**
	Others	**No Vehicles**	**Vehicles for each level staff**	**Response time of staff will improve**
Task 3: Updating GIS/Asset Database	**what to do**	**Updating GIS/ Asset database with the monitoring results**		
	in charge	**No One**	**GIS Expert is required**	**Overall Monitoring of Updating**
	Number of staffs	**No staff**	**2 Assistants for GIS Expert**	**Record will be updated on AIMS**

	Training	**No Training**	**Trainings for both level of staff**	**Technical skills will improve**
	Budget	**No Budget Allocation**	**Allocation of Budget for Establishment of GIS / Asset database**	**Assets will be evaluated and located**
	Computers	**No Computers**	**3 Computers for each subdivision**	**Asset database will be saved in Computers**
	Others	**No Phones**	**Android Phones should be given to staff**	**Very necessary for Asset database in field**

Task 4: New asset register	**what to do**	**New asset register/ database updating**		
	in charge	**Assistant Director Engineering**	**Assistant Director Engineering**	
	Number of staffs	**1(One sub engineer)**	**1 store keeper 2 helpers**	**Asset Register will be updated**
	Training	**No Training**	**Trainings for both level of staff**	**Technical skills will improve**
	Budget	**No Budget Allocation**	**Allocation of budget**	
	Computers	**No Computers**	**1 Computer**	**Balance Assets**
	Others	**No vehicles**	**2 vehicles**	**To provide in field**

Waqas & Sajid WASA Multan

Assignment 1: OJT Implementation Procedure (asset monitoring, Asset register/ database updating)

		Current	Future Requirement	Remarks
Task 1: Monitoring	what to do	Monitoring the existing assets: daily, weekly, monthly, quarterly	Categorization of assets on monitoring period basis and device specific SOPs. Deployment of skilled person for monitoring	At each sub-division level
	in charge	Concerned Sub-divisions	Concerned Sub-divisional staff	Capacity development of the sub divisions is necessary.
	Number of staffs	Operators and supervisors	Mechanic, electrician supervisors at each sub-division level	
	Training	Nil	Concerned sub-divisional staff must be trained and fully equipped in their own capacity.	Specific training how to monitor and judge the condition of the assets
	Budget	Nil	A specific budget must be allocated.	
	Computers	Nil	1x Laptop and 1x computer must be provided at each sub-division	If computerized SCADA system is installed
	Others	Nil	Vehicles & digital cameras, android mobile phones	For communication & monitoring
Task 2:	what to do	Keeping records of the monitoring results	Record must be computerized at each sub-division level	

Recording	**in charge**	**Concerned Sub-divisions**	**Concerned Sub-divisions**	**SDO, S/E & skilled persons.**
	Number of staffs	**Nil**	**Computer & data entry operators**	**1 each to prepare and update the database.**

Task 2: Recording	**Training**	**Nil**	**Concerned sub-divisional staff must be trained and fully equipped in their own capacity.**	**Asset recording & updating Training**
	Budget	**Nil**	**Specific budget**	
	Computers	**Nil**	**1x Laptop and 1x computer must be provided at each sub-division**	**For recording, updating and keeping the data base**
	Others	**Nil**	**Printers, scanners**	
Task 3: Updating GIS/Asset Database	**what to do**	**Updating GIS/ Asset database with the monitoring results**	**Yes**	
	in charge	**Nil**	**A Separate GIS Cell**	**P & D Directorate**
	Number of staffs	**Nil**	**2 x GIS analysts, 1 x Assistant Director Engineering and assistant staff.**	**GIS Posts must be created.**
	Training	**Nil**	**How how to input and update data into assets database.**	**In Aljazari Academy Lahor.**
	Budget	**Nil**	**Specific Budget**	

	Computers	**Nil**	**3 x Laptops and 3 x Computers**	
	Others	**Nil**	**Nil**	

Task 4: New asset register	**what to do**	**New asset register/ database updating**	**Yes**	**Especially an asset with worth 1 million and service life more than 1 year should be register immediately.**
	in charge	**Nil**	**Register a new assert in separate GIS Cell/ Asset database section**	**Assistant Director**
	Number of staffs	**Nil**	**2 x GIS analysts, 1 x Assistant Director Engineering and assistant staff.**	**Total 5 No. of staff (including assistants)**
	Training	**Nil**	**How to evaluate conditions of assets, how to input and update data into assets database.**	**How to update new asset register/ database**
	Budget	**Nil**	**Specific budget**	
	Computers	**Nil**	**3 x Laptops and 3 x Computers**	
	Others	**Nil**		

1. **Hafiz Muhammad Waqas**
2. **Muhammad Sajid**

(WASA Multan)

11&12 Asim & WASA Rawalpindi

Assignment 1: OJT Implementation Procedure (asset monitoring, Asset register/ database updating)

		Current	Future Requirement	Remarks
Task 1: Monitoring	what to do	There is no proper monitoring system is working in R WASA. However, some assets are being monitored on daily or whenever visited by the in charge or any higher authority.	It is proposed that there must be a separate Assets Management Directorate, which have sufficient staff tools and budget for monitoring, recording of assets on GIS basis.	Will ensure the assets recording and updating GIS data base
	in charge	Two, supervisors or higher officer	Director Assets Management	
	Number of staffs	No proper staff is being engaged for monitoring purpose.	Director, Deputy Director, 2 Assistant Director, 4 sub engineer with office and field staff. (20 no)	From existing staff
	Training	nil	All staff must be trained at their own levels	
	Budget	No specific budget is allocated. The O&M budget is used	5 millions / annum	
	Computers	nil	4 laptop and 2 no's desk top	
	Others	nil	Transport (4 small vehicles and 6 no's motor bikes	

Task 2: Recording	**what to do**	**Yes there is a property register, stock register are using for this purpose**	**There should be a proper recording and updating system using GIS data base**	
	in charge	**Accounts department and store in charge**	**Director assets management**	
	Number of staffs	**4 no's**	**1 assistant director with 2 sub engineers and GIS specialist**	

Task 2: Recording	**Training**	**nil**	**Must be trained at their own level**	**Capacity building**
	Budget	**nil**	**As above**	
	Computers	**nil**	**1 no lap top and 1 desk top**	
	Others	**nil**	**1 small vehicle and 2 motor bike**	
Task 3: Updating GIS/Asset Database	**what to do**	**No GIS system**	**There must be GIS based assets data base system**	
	in charge	**nil**	**Director Assets management**	
	Number of staffs	**nil**	**1 GIS specialist with1 assistant**	**May be engaged from market**
	Training	**nil**	**Must be trained with up to date knowledge and latest technology**	

	Budget	**nil**	**1.5 million**	
	Computers	**Nil**	**1 lap top**	
	Others	**nil**	**1 motor bike**	

Task 4: New asset register	**what to do**	**No asset register is maintaining**	**There must be assets register maintained**	
	in charge	**nil**	**Director assets management**	
	Number of staffs	**nil**	**1 accountant with 1 assistant**	**From existing staff**
	Training	**nil**	**Must be trained**	**Capacity building**
	Budget	**nil**	**0.1 million**	
	Computers	**nil**	**1 desk top**	
	Others	**nil**	**nil**	

M Ali - NSUSC

Assignment 1: OJT Implementation Procedure (asset monitoring, Asset register/ database updating)

		Current	Future Requirement	Remarks
Task 1: Monitoring	what to do	Monitoring the existing assets: daily, weekly, monthly, quarterly		
	in charge	O & M department (Assistant Director)	Assistant Director(AM)	Regular visit and log signed at station
	Number of staffs	Junior Engineer's at their sector with their foreman's (3) as per assets requirment	SAME AS CURRENT Urgent Replacement required of retired person	
	Training	No training	Quarterly training program	
	Budget	Not define	Should be prepare with the help of AM	
	Computers	3 computers have in region	Laptop required for AM	
	Others	No vehicles	Vehicles Required for AM and junior Engineers	800 cc for AM & Bikes for Junior Engineers
Task 2: Recording	what to do	Keeping records of the monitoring results		
	in charge	O & M department (Junior Engineers)	Junior Engineers	

	Number of staffs	**03 (JEs)**	**03**	

Task 2: Recording	**Training**	**No training**	**Quarterly Training Required for Fresh their brains**	
	Budget	**No define**	**Should be prepared with the help of AM**	
	Computers	**No Computer**	**01 system Required for recording**	
	Others		**Vehicles required**	
Task 3: Updating GIS/Asset Database	**what to do**	**Updating GIS/ Asset database with the monitoring results**		
	in charge	**No Any**	**Separate Engineer required for record the all GIS ,Assets coding,**	
	Number of staffs	**No any**	**1 Engineer only**	
	Training	**No any**	**Quarterly**	
	Budget	**No any**	**Arrange for Engineer**	
	Computers	**No**	**Laptop or system**	

	Others			

Task 4: New asset register	**what to do**	**New asset register/ database updating**		
	in charge	**GIS / Asset database sections and procurement sections (GM capital works)**	**Engineer**	
	Number of staffs	**01**	**1 Engineer required for Operation and Services** **2 which already mentioned in Task 3**	
	Training	**No**	**Quarterly required**	
	Budget	**No**	**For Engineer facilitation**	
	Computers	**1 system**	**Laptop or system for O&S**	
	Others	**No**	**At least bike for visiting the sites for recording of New Assets**	

Muhammad Ali

NSUSC

添付資料 3.74

2017 年春期研修「O&M of Tube Well and Pump Facility」で作成された

アクションプラン

O&M Action Plan of Water Supply

Participant Name: M Tahir Rehman
Designation: Sub Engineer (WASA Lahore)

Sr. No	Issue	Cause	Mitigation Measure
1	Leakage of Water Supply Lines	Contamination of clean drinking water	Repair of Lines
2	Low Pressure of water supply network		New reservoir / new t/w is operation
3	Connected Water Supply Lines to sewer line	Contamination of clean drink	New Water Supply line opposite site
4	Leaking of poor valve, jointing material	Poor water drinking	Replacent of good quality of valve jointing materi
5	Contamination of source point/ distribution lines		Chlorination
6	Laying of old cast iron pipe lines	Cause of contamination	New water supply line for good product

Participant Nam: Lal Tab
Designation: Tube Well Incharge (WSSC Mardan)

1. Separation of sewerage line to water supply line

2. No chlorination

Participant Nam: Aamir Hussain Shah
Designation: Sub Engineer RWP WASA

Sr. No	Issue	Cause	Mitigation Measure
1	Shortage of water	Ground water depletion problem	New Tube well Surface Water
2	Low Pressure	Shortage of water	Repair of OHR
3	Biological Contamination		
4	Leakage	Old rusty	Repair of pipe/ Change the pipe line

Participant Name: Shafiq ur Rehman
Designation: Field Supervisor (WSSC Kohat)

Sr. No	Issue	Cause	Mitigation Measure
1	Paip lieking		
2	Olds paip		

Participant Name:	Waqar Anjum
Designation:	Pipe Fitter WSSC Kohat KDA

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Participant Name:	Asim Nazir
Designation:	Deputy Director M&E WASA/RWP

Sr. No	Issue	Cause	Mitigation Measure
1	Shortage of water	Ground water depletion population	New tube well surface water
2	Low Pressure	Shortage of water/ OHR	Provision of OHR New Machinery

3	Biological Contamination	Mixing of water with sewage / leakage	Chlorination
4	Contamination in distribution	Old rusting network and mixing issue	F/plants
5	Leakages	Old network/ incidents	Repair/ replacement of lines
6	Wastage of water	Lack of awareness	Public awareness
7	Political / Social Influence	Political system	Better management
8	Line Breakage	Old line	Replacement of old line
9	Ground treatment	Surface water contaminated	Treatment plant
10	Electricity Failure	Load Shedding	Generators

添付資料 3.75

2017 年春期研修「Leak Detection」で作成されたアクションプラン

Leakage Prevention Plan

WASA Multan

M. Waqas (Assistant Director)
Amir Hussain Bukhari (Sub-Engineer)

- Leakage detection team at WASA Multan consists of 2 plumbers, 4 linemen and they are reported to Sub- Engineer who is reporting to SDO.
- Water distribution maps and drawings must be available at sub-division level for efficient working of leak detection team.
- Latest Leak detection equipment must be provided.
- Leak Detection team will visit the area on daily basis and provide the gathered information for record maintaining and necessary action.
- Pressure gauges and flow meters should be installed at each tube well as well as each distribution.
- Analysis will be performed on pipe design life, quality of pipe on quarterly basis for better planning future.
- By establishing the leak detection teams, leakage losses could be reduced up to 5-10 % during the current year.
- Patrolling survey method is usually feasible for data collection of leakage.
- The SDO and Sub-Engineer will quickly move their repair team to repair the observed leakages.
- After field counter measures, analysis will be done under the supervision of SDO and Sub-Engineer to determine the causes of leakage.
- Following the mentioned action plan, N.R. W's would be reviewed so that comparison could be done.
- Thus a system could be established for smooth operation and maintenance of water supply network.

WASA Gujranwala

Ali Qumain (RA)
Urban Unit

Preparation

1. Formation of Leak Detection Team.
2. Select one zone and conduct this plan on one zone.
3. Prepare GIS maps which shows the condition of pipelines of each zone.
4. Calculate the discharges at regular intervals in selected area.
5. Select the exact leakage points in survey.
6. Repair the leakages with most feasible practices available.

Equipment

1. Pressure Recorder
2. Acoustic Leak Detector
3. Metal Pipe Locator
4. Non Metal Pipe Locator
5. Ultrasonic Flow Meter

Plan

1. Current NRW is 50 % and the target is to reduce it each year by 10 %
2. Repeat the similar plan in all the zones.

Evaluations

1. Conduct the surveys at regular intervals to evaluate the results.
2. Compare the current results with the past result so that improvement can be made in plan.

WASA Rawalpindi

Samran Zahid (Sub Engineer)
Noushad Aslam (Sub Engineer)

- **Preparation**

1. We already have leakage detection cell which consists of 1 supervisor, 1 pipe fitter and 2 helpers.
2. We already have GIS maps.
3. Leak Detection equipment are needed for better results.

- **Basic Survey**

1. We will analyze the water supply pressure and flow by using the equipment.
2. We already have separate maps of each area and pipe lines.

- **Plan**

1. NRW is 40% and the target is to reduce every year by 10 %.
2. We will choose survey method according to the area.

- **Action/Implementation**

1. We will repair the pipelines immediately and also calculate the volume of leakages.

Water and Sanitation Services Peshawar

Engr. Amir Khattak

- **Preparation**

1. Establishment of Leakage detection cell and team which already consists of plumbers, pipe fitters and helpers.
2. Preparation of water distribution network maps and drawings which is under preparation.
3. Procurement of leak detection equipment which depends upon the availability of funds.

- **Basic Survey**

1. Analysis of water supply (pressure and flow measurements), which has yet to be planned**.**
2. Divide the city into the Blocks, city is divided in 4 blocks which is further divided into small units.
3. Study and analysis of pipe's design life and material quality.

- **Action Implementation**

1. Counter measures for leakage are under process which would be more effective if the equipment are available.
2. Leakage detection cell will organize the survey for leak detection which would focus particularly on conditions of pipe, workmanship and causes of leakage.
3. Leakage volume will be calculated provided that the equipment is available.
4. For surface leakages quick repairs are being done but for underground leakages more funds and equipment is needed.

- **Evaluation**

1. Analysis of the results will be done by calculation of discharges at various locations, also the metering system will be upgraded.
2. Plan vs Action will be reviewed keeping in view the reduction in NRW %.

Water and Sanitation Services Mardan

Muhammad Khalil Akbar
Manager Municipal Services

- We will establish the leakage detection cell which will be consists of Assistant Manager (Water Supply), pipe line supervisor and plumbers.
- We will develop GIS maps of distribution network.
- We will procure Acoustic Leak Detector, Metal Pipe Locator and non-metal pipe locator.
- We will analyze one tube well network for 3 days and collect the previous data about pipe laying (year, type etc.)
- We will conduct walk through survey throughout the length of distribution pipe.
- Leakage will be find out by using Acoustic Leak Detector.
- As most of the pipes in Mardan are GI so we will analyze the causes of leakage and also prepare the GIS maps of pipe network.
- We have 22 tube wells in Mardan, so the survey will take 66 days.

Evaluation

- The analysis of leak prevention plan will enable us to decide whether the pipe needs repair or it should be replaced with a better quality.
- Our action plan will help us to improve the quality of water by reducing the contaminations.

Water and Sanitation Services Kohat

Azmat Ali
Ibrar Ali

- **Formation of Teams**

1. There are 30000 number of connections and 150 tube wells.
2. Total pipe Length is 10000 meters.
3. Blocks = 6, Helpers = 12, Pipe Fitters = 6, Supervisors = 6, Engineers = 2 and Manager = 1
4. There is one leak detection team and 6 sub teams.
5. Preparation of drawings and maps will be done.

- **Basic Survey**

1. Use of pressure recorders and flow meters to determine the flow and losses in network.
2. Use of the leakage detectors to pinpoint the leaks.

- **Plan**

1. Number of leakages to repair
2. Pipe length to be replaced.

- **Action**

1. Set the teams along with their targets and equipment.
2. Teams will be divided by the types of pipes e.g. AC pipes, GI pipes and HDPE pipes etc.

- **Evaluation**

1. Check the flow meters and pressure recorders in pipe networks at night to identify the results and compare them with the past results.