

AECOM



渠務署

Drainage Services Department

Agreement No. CE 3/2015 (DS)

Yuen Long Effluent Polishing Plant – Investigation, Design and Construction

Environmental Impact Assessment Report
Volume 1 - Main Text

(Final)

February 2019

[Blank Page]

TABLE OF CONTENT

1	INTRODUCTION	1-1
1.1	Project Background.....	1-1
1.2	Designated Projects under EIAO	1-1
1.3	Purpose of the EIA Study	1-2
1.4	Objectives of this EIA Study	1-2
1.5	Structure of the EIA Report.....	1-3
2	PROJECT DESCRIPTION	2-1
2.1	Introduction	2-1
2.2	Purposes, Objectives and Environmental Benefits of the Project	2-1
2.3	The Need for the Project.....	2-1
2.4	Location and Scope of the Project.....	2-3
2.5	Consideration of Alternative Design and Layout	2-5
2.6	Consideration of Alternative Designs to Minimize Emergency Discharges	2-10
2.7	Sustainability Consideration	2-11
2.8	Consideration of Alternative Construction Methods and Sequences of Works	2-13
2.9	Construction Programme	2-18
2.10	Concurrent Projects	2-18
3	AIR QUALITY IMPACT	3-1
3.1	Introduction	3-1
3.2	Environmental Legislations, Standards and Guidelines	3-1
3.3	Description of Environment.....	3-3
3.4	Identification of Air Sensitive Receivers	3-4
3.5	Identification of Environmental Impacts.....	3-6
3.6	Assessment Methodology.....	3-9
3.7	Prediction and Evaluation of Environmental Impacts	3-22
3.8	Mitigation of Adverse Environmental Impacts	3-30
3.9	Evaluation of Residual Impacts	3-31
3.10	Environmental Monitoring and Audit.....	3-32
3.11	Conclusion	3-32
4	NOISE IMPACT	4-1
4.1	Introduction	4-1
4.2	Environmental Legislation, Standards and Criteria	4-1
4.3	Description of Environment.....	4-4
4.4	Noise Sensitive Receivers	4-4
4.5	Identification of Environmental Impacts	4-5
4.6	Assessment Methodology.....	4-6
4.7	Prediction and Evaluation of Environmental Impacts	4-8
4.8	Mitigation of Adverse Environmental Impacts	4-9
4.9	Evaluation of Residual Impacts	4-11
4.10	Environmental Monitoring and Audit.....	4-11
4.11	Conclusion	4-11
5	WATER QUALITY IMPACT	5-1
5.1	Introduction	5-1
5.2	Environmental Legislation, Standards and Criteria	5-1
5.3	Description of Environment.....	5-4
5.4	Water Sensitive Receivers (WSRs)	5-15
5.5	Identification of Potential Impacts	5-16
5.6	Assessment Methodology.....	5-17
5.7	Water Quality Impact Assessment.....	5-22
5.8	Water Quality Mitigation Measures.....	5-28
5.9	Residual Water Quality Impacts	5-32
5.10	Environmental Monitoring and Audit Requirements	5-32
5.11	Conclusions	5-32
6	WASTE MANAGEMENT IMPLICATION	6-1

6.1	Introduction	6-1
6.2	Environmental Legislation, Standards and Criteria	6-1
6.3	Description of the Environment.....	6-4
6.4	Assessment Methodologies	6-4
6.5	Identification and Evaluation of Wastes Implications.....	6-4
6.6	Mitigation of Adverse Environmental Impacts	6-11
6.7	Evaluation of Residual Impacts	6-20
6.8	Environmental Monitoring and Audit Requirements	6-20
6.9	Conclusion	6-20
7	LAND CONTAMINATION	7-1
7.1	Introduction	7-1
7.2	Environmental Legislation, Standards and Criteria	7-1
7.3	Assessment Methodology.....	7-1
7.4	Description of the Environment.....	7-2
7.5	Identification of Potential Land Contamination Concern.....	7-2
7.6	Site Investigation Plan	7-9
7.7	Prediction and Evaluation of Environmental Impacts	7-14
7.8	Mitigation of Adverse Environmental Impacts	7-14
7.9	Evaluation of Residual Impacts	7-15
7.10	Environmental Monitoring and Audit Requirements	7-15
7.11	Conclusion	7-15
8	ECOLOGY (TERRESTRIAL AND AQUATIC)	8-1
8.1	Introduction	8-1
8.2	Environmental Legislation, Standards and Criteria	8-1
8.3	Assessment Methodology.....	8-2
8.4	Baseline Conditions	8-6
8.5	Survey Findings	8-16
8.6	Ecological Value	8-28
8.7	Impact Identification and Evaluation	8-35
8.8	Evaluation of Ecological Impacts	8-46
8.9	Cumulative Impacts	8-54
8.10	Mitigation of Adverse Ecological Impacts	8-54
8.11	Evaluation of Residual Ecological Impacts	8-64
8.12	Environmental Monitoring and Audit.....	8-65
8.13	Environmental Benefit.....	8-66
8.14	Conclusion	8-66
8.15	References.....	8-67
9	FISHERIES IMPACT	9-1
9.1	Introduction	9-1
9.2	Environmental Legislation, Standards and Criteria	9-1
9.3	Assessment Approach and Methodology	9-1
9.4	Description of Baseline Condition	9-2
9.5	Identification and Evaluation of Environmental Impacts	9-6
9.6	Cumulative Impacts from Concurrent Projects	9-11
9.7	Mitigation Measures.....	9-11
9.8	Evaluation of Residual Environmental Impacts	9-12
9.9	Environmental Monitoring and Audit.....	9-12
9.10	Conclusion	9-13
9.11	References.....	9-13
10	LANDSCAPE AND VISUAL	10-1
10.1	Introduction	10-1
10.2	Environmental Legislation, Standards and Criteria	10-1
10.3	Assessment Methodologies	10-2
10.4	Review of the Planning and Development Control Framework	10-9
10.5	Baseline Study	10-9
10.6	Landscape Impact Assessment.....	10-19
10.7	Visual Impact Assessment.....	10-24

10.8	Landscape and Visual Mitigation Measures	10-31
10.9	Residual Impact	10-32
10.10	Environmental Monitoring and Audit.....	10-37
10.11	Conclusion	10-37
11	HAZARD TO LIFE ASSESSMENT	11-1
11.1	Introduction	11-1
11.2	Environmental Legislation, Standards and Criteria	11-1
11.3	Study Objectives and Methodology	11-3
11.4	Description of Surroundings	11-5
11.5	Hazard Identification	11-10
11.6	Frequency Analysis.....	11-15
11.7	Consequence and Impact Analysis	11-21
11.8	Risk Evaluation	11-23
11.9	Recommendations	11-27
11.10	Conclusion	11-29
11.11	Reference	11-29
12	ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS.....	12-1
12.1	Introduction	12-1
12.2	Air Quality Impact.....	12-1
12.3	Noise Impact	12-1
12.4	Water Quality Impact	12-1
12.5	Waste Management Implication	12-2
12.6	Land Contamination	12-2
12.7	Ecological Impact (Terrestrial and Aquatic)	12-2
12.8	Fisheries Impact.....	12-3
12.9	Landscape and Visual Impact.....	12-3
12.10	Hazard to Life.....	12-3
13	IMPLEMENTATION SCHEDULE OF RECOMMENDED MITIGATION MEASURES.....	13-1
13.1	Implementation Schedule of Recommended Mitigation Measures	13-1
14	CONCLUSIONS	14-1
14.1	Introduction	14-1
14.2	Summary of Key Environmental Outcomes.....	14-1
14.3	Overall Conclusion.....	14-7