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SFG3241 REV

**The World Bank Financed  
Liaoning Safe and Sustainable Water Supply Project**

**ENVIRONMENTAL AND SOCIAL MANAGEMENT  
FRAMEWORK (ESMF)**

**Liaoning Urban Construction and Renewal Project Office**

**May 2017**

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## ABBREVIATIONS AND ACRONYMS

|        |  |
|--------|--|
| DSP    | Dam Safety Plan  |
| EIA    | Environmental and Social Impact Assessment             |
| EMP    | Environmental and Social Management Plan               |
| EMCP   | Ethnic Minority Community Plan                         |
| ESMF   | Environmental and Social Management Framework          |
| GoC    | Government of China                                    |
| IAs    | Municipal Project Implementation Agencies              |
| LUCRPO | Liaoning Urban Construction and Renewal Project Office |
| MEP    | Ministry of Environment Protection                     |
| PCR    | Physical Cultural Resources                            |
| PMO    | Project Management Office                              |
| PMP    | Pest Management Plan                                   |
| RAP    | Resettlement Action Plan                               |
| SA     | Social Assessment                                      |

## **1. Introduction and objectives**

1. The World Bank is providing a loan in an amount of US\$ 250 million to the People's Republic of China (the PRC) for Liaoning Safe and Sustainable Water Supply Project (the Project). The proposed development objectives are to improve access to quality water supply services, and strengthen the operational efficiency of water supply utilities in the five project cities of Liaoning Province.

2. This Environmental and Social Management Framework (ESMF) is intended to ensure that, for all activities financed by the project, all efforts are made to avoid and minimize environmental and social impacts; and where they cannot be avoided, that these impacts are identified and necessary mitigation measures are developed and implemented following relevant Chinese laws and regulations and World Bank policies.

3. The ESMF will be referenced in the project's Legal Agreements. The ESMF consists of the main text and two annexes, which establish the objectives, procedures, institutional framework, and implementation arrangements for identifying and managing potential environmental and social impacts from project activities. It also addresses mechanisms for public participation and redress of possible grievances, and includes the specific screening tool that is recommended for use on all sub-projects.

## **2. Description of the project**

4. This World Bank financed Project is aimed to improve access to safe water supply services and strengthen the operational efficiency of water supply companies in the five project cities of Shenyang, Anshan, Fushun, Fuxin and Gaizhou in Liaoning Province, the People's Republic of China (the PRC). This objective will be achieved through investment in the construction, rehabilitation and upgrading of the water supply infrastructure facilities and the improvement of the water supply companies' operational and management capacity.

5. The project consists of four components: Component 1 - Water Supply Service Infrastructure Improvement; Component 2 - Water Supply Service Management Improvement; Component 3 - Institutional Strengthening and Capacity Building; and Component 4 - Project Implementation Support.

6. The project will provide the five participating water supply companies the World Bank loan of US\$250 million in Investment Project Financing to construct and renovate the water supply plants (WSP), piped distribution networks and boosting pumping stations as well as institutional ability to provide efficient services. The counterpart contribution is estimated at \$100 million.

7. Most of the project activities have been identified during project preparation. Mitigation measures for these activities have been proposed in the EMP for the project. The Project may

include some small investments which are not known during project preparation. These activities likely include construction and rehabilitation of water pipelines, pumping stations, and water treatment plants.

### **3. Policy Framework on Environmental and Social Issues**

8. The ESMF is developed in line with relevant national laws and regulations and World Bank Safeguards Policies as summarized below.

#### **(1) National Laws and Regulations**

9. The PRC has a wide range of laws, regulations, technical guidelines and standards that govern the way in which environmental protection and environmental impact assessment for construction projects must be implemented, including for pollution prevention and control on air, noise, water, ecology and solid waste, and technical guidelines on assessing ambient air, noise, water and ecological impacts. The major national laws and regulations relevant to the project are shown in Annex 2.

#### **(2) Relevant PRC Legal and Regulations on Resettlement**

10. For any land acquisition and resettlement activities in China, they will follow a set of national laws and regulations, the latest standard for compensation, which include:

- i) Land Administration Law of the People's Republic of China (issued in 1986 and amended in 1998 and 2004 respectively). The pertinent provisions of the Land Administration Law of the People's Republic of China (State Council Order No.256 1998).
- ii) Regulation on Dismantlement Basic Farmland Protection (State Council Order No.257 1998).
- iii) Regulation on the Compensation and Dismantlement of Houses on State- owned Land. (State Council Order No. 590, 2011).
- iv) Circular of the Ministry of Land and Resources Concerning the Issuance of the Guiding Opinions on Improving the System of Compensation for Requisition of Land (Circular No. 238, issued by Ministry of Land and Natural Resources (MLR) in 2004), regulations on deepening the reform provisions of strict land management (Guofa [2004] No.28). Circular of the State Council Concerning the Issues of Strengthening the Control of Land (Guofa [2006] No.31).
- v) Measures for Announcement of Land Acquisition (MLR Order No.10).
- vi) Circular of the General Office of the State Council on the approval and transmission of the Guidelines submitted by the State Council Ministry of Labor and Social Security on employment training and social security for Landless farmers (Guobanfa [2006] No.29).

- vii) Relevant Questions Concerning the social security for Landless farmers (Circular No. 14, issued by Ministry of Labor and Social Security in 2007).
- viii) Provincial and local implementation regulations.

11. These laws and regulations above form the legal basis for providing compensation and rehabilitation to those affected groups by land acquisition and resettlement activities.

### (3) World Bank Safeguard Policies

12. The following World Bank policies will or are likely to be triggered by the potential sub-projects:

- i) OP/BP 4.01 Environmental Assessment: Given the nature of the proposed program, this policy will be triggered. Individual sub-projects will be screened and assigned the appropriate environmental categorization and environmental due diligence will be conducted in accordance with OP 4.01.
- ii) OP/BP 4.04 Natural Habitats: Field visits and the location of potential sub-projects in urban areas indicate that natural habitats are unlikely to be adversely affected. Nevertheless, all sub-project proposals will be screened for potential adverse impacts on critical and non-critical natural habitats and suitable mitigation measures if any needed will be prepared as part of the sub-project specific EIA and EMP.
- iii) OP/BP 4.11 Physical Cultural Resources (PCR): Whenever a sub-project includes reconstruction or preservation of historic or archeological sites, PCR management plans would be prepared for those sub-projects, either as part of the sub-project specific EIA or as a stand alone document. All sub-projects will be reviewed for their potential impacts on PCR in the context of their respective EIA/EMP and procedures will be included in all relevant standard bidding documents to deal with chance finds during construction.
- iv) OP/BP 4.37 Safety of Dams: Subproject will be screened for dam safety issues, and dam safety plans (if applicable) will be developed and implemented.
- v) OP/BP 4.12 Involuntary Resettlement: Land acquisition and involuntary resettlement are anticipated under the project, particularly for sub-projects involving service expansion or reconstruction at new sites. Sub-projects will be screened for land-related impacts and resettlement action plans will be developed and implemented.
- vi) OP/BP 4.10 Indigenous Peoples: Field visits, initial discussions with experts of ethnic minorities in the region and desk review, have indicated that communities of ethnic minority people are unlikely to be present in the project areas. Nevertheless, all sub-project proposals will be screened as required by OP 4.10 to confirm these findings.

## **4. Approach to Address Environmental and Social Safeguard Issues**

13. Environmental and social impact screening, mitigation and management measures development and implementation will follow these steps:

Step 1 - Identification of sub-projects according to the selection criteria;

Step 2 - Screening for potential environmental and social safeguard impacts and determination of safeguards documents required according to Chinese regulations and World Bank policies;

Step 3 - Review of the safeguards screening;

Step 4 - Preparation of safeguard documents, consultation and disclosure;

Step 5 - Review and clearance of the safeguard documents within the government;

Step 6 - Implementation of agreed actions; and supervision, monitoring, and evaluation

#### **4.1 Step 1 – Identification of Sub-projects According to the Selection Criteria**

14. The sub-projects to be selected shall be: (i) designed based on a rational and efficient option analysis including technical, financial, social, environmental and safety considerations; and (ii) scaled and phased in accordance with current and appropriately projected demand.

15. During Step 1, the environmental and social specialists/consultants from the LUCRPO will participate in the identification and selection of sub-projects. They will evaluate and provide input, as appropriate, on ways to optimize the sub-project concepts to reduce environmental and social impacts.

#### **4.2 Step 2 - Screening for Potential Environmental and Social Safeguard Impacts and Determination of Safeguard Instruments for Each Sub-project**

16. Once sub-projects have been identified, the LUCRPO will screen each sub-project for potential environmental and social safeguard impacts to determine the nature and extent of the environmental and social due diligence needed before government and Bank approval of each sub-project. The choice of instruments (EIA, EMP, RAP, etc.) for each sub-project depends on the nature and magnitude of its potential impacts. Because the evaluation of the expected environmental and social impacts requires specialized technical skills, LUCRPO will employ qualified environmental and social specialists as well as consultants to assist them in this task.

17. Annex 1 provides guidance for an initial screening to determine the above. The results of the screening exercise will determine the categorization and the type of safeguards documents that will be required for each sub-project.

#### ***Environmental Safeguards Screening***

18. For specific screening according to World Bank policies, LUCRPO will use the screening tool in Annex 1 to propose an environmental classification for the each sub-project as follows:

- **Category A:** A sub-project of this type would have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area

broader than the physical works. As mentioned above, the Project may include construction and rehabilitation of water pipelines, pumping stations, and water treatment plants during project implementation. Based on the project design and Project Development Objective, it is highly unlikely that any subproject to be selected would be classified as Category A. Any Category A type sub-projects (refer to Annex I) should not be eligible under the project. Potential criteria for category A subprojects includes:

- Subprojects that permanently and significantly degrade protected areas or critical natural habitats; this would include subprojects that require the permanent conversion of significant amounts of public green space (such as recreational areas, parks, botanic gardens, community forests)
  - Subprojects that involve the construction of new waste water treatment plants.
  - Subprojects that require the removal or relocation of PCR (e.g. monuments, historical buildings, temples, cemeteries), change the cultural character of neighborhoods, or require the removal of ancient / spiritually significant trees
  - Subprojects that include large scale regulation of natural water bodies, especially rivers and streams, by the construction of weirs, dams, reservoirs, flood protection works or erosion protection.
- **Category B:** A proposed sub-project may have some adverse environmental impacts, but less adverse than those of Category A projects. These impacts are typically site-specific; few if any of them are irreversible; and in most cases mitigation measures can be readily designed. The great majority of sub-projects for rehabilitation and reconstruction works are likely to fall in this category.
  - **Category C:** A proposed sub-project is likely to have minimal or no adverse environmental impacts.

19. The screening results will be cross-checked with national regulations, in order to determine the applicable Chinese domestic EA documentation requirements. Three possible instruments are specified in the Chinese regulations: (a) Environmental impact assessment report; (b) Simplified environmental assessment (Simplified EA)<sup>1</sup>; and, (c) Environmental registration. In those cases where the EA documentation required by the Chinese regulations are not equivalent in depth and scope to those required by the World Bank safeguard policy requirements, the latter will apply.

#### ***Determination of Environmental Safeguards Documents for sub-projects***

20. The environmental safeguards documentation requirements for each sub-project will be determined based on the screening procedures, as follows:

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<sup>1</sup> Note that according to the Chinese EIA Law, the Simplified EA is called an “EA in Table form”. However, an EA in Table form is not a simple summary table, it is equivalent or more detailed than an EA that would be required by the Bank for Category B projects.

- **Category A:** No Category A subproject would be included.
- **Category B:** Sub-projects will require an EIA or simplified EIA (as required under the Chinese laws and regulations) and or an EMP (as per the Bank policy) consisting, at a minimum, of standard environmental codes of practices supplemented, if necessary, with additional analysis. The sub-project specific EMP and or standard environmental codes of practices, including chance-finds of physical cultural resources, will be included in all construction contracts/bidding documents.
- **Category C:** Sub-projects that are rated Category C do not require environmental safeguards documents, but will comply with the Chinese regulatory requirement for registration.

### ***Social Safeguards Screening***

21. Every sub-project will be screened by LUCRPO for social impacts, including: (a) the need, if any, for land acquisition and involuntary resettlement (permanent or temporary); (b) the population to be affected; and, (c) whether there is an ethnic minority community that would be affected by the sub-project (as determined through a review the demographic information in the sub-project areas). The LUCRPO will use the screening form in Annex 1 to determine the significance of these impacts and identify the Social Safeguards documents that need to be prepared.

22. In addition to any requirements to meet World Bank policies, LUCRPO will also screen the sub-projects for national/provincial laws and regulations regarding land acquisition and involuntary resettlement.

### ***Social Safeguards Documents***

23. The Social Safeguards documents for each sub-project depend on the sub-project's impacts, as follows:

- A resettlement action plan (RAP) if over 200 people will need to be involuntarily resettled. If fewer people need to be resettled, then an abbreviated RAP will be required.
- A social assessment (SA) if social impacts of significance are expected or there are affected ethnic minorities in the sub-project area.
- An Ethnic Minority Community Plan (EMCP) if an ethnic minority community would be affected by the sub-project.

## **4.3 Step 3 – Review of the Safeguards Screening**

24. The LUCRPO will prepare a safeguards screening summary for each sub-project (see Annex I). This will summarize: (a) the recommended categorization according to World Bank policies; and, (b) the proposed environment and social safeguards documentation requirements for the sub-project.

25. The Bank will review and confirm the safeguards screening of all sub-projects based on the information provided by the LUCRPO in the screening summary. Review of the screening of some complex B projects that require RAPs and/or EMCPs may require site visitation or additional review by the Bank. Reviews of the screening of other Category B and C projects will be conducted by the Bank on a selective basis to verify that the screening tools and choice of documents are being applied appropriately and consistently.

#### **4.4 Step 4 - Development of Safeguards Documents Including Consultation and Disclosure**

26. Once the screening and documentation requirements are agreed by the Bank and confirmed by the government, the subproject proponents, with assistance from the LUCRPO, will develop detailed safeguard documents and impact mitigation measures.

27. For Category B projects, subproject proponents and the LUCRPO are encouraged to liaise closely with the Bank if any issues arise that may require clarification from the Bank on the application of Bank policies.

28. Safeguard documents will be subject to consultation and disclosure in an accessible place, in a timely manner, in a form and language understandable to key stakeholders, prior to the finalization of the said documents. Particular attention will be given to ensure projected affected persons gets adequate time and ready access to draft documents before consultation takes place.

29. Consultation for projects that require RAPs, SA or EMCPs will be undertaken at least twice during the preparation: at the beginning of the preparation of documents to scope environmental and social issues as well as prior to finalization of the safeguards based on the preliminary results of the required safeguard documents in order to take into account public concerns before submitting final documents to the Bank.

#### ***Language of safeguards documents***

30. For Category B sub-projects, simplified EIAs and or EMPs, and abbreviated RAPs if any prepared will be submitted to the World Bank in Chinese language only, unless otherwise requested on a case-by-case basis by the World Bank.

31. All EMCPs required under the project must be submitted to the Bank for review in both English and Chinese language.

### ***Information disclosure and consultation***

32. Information disclosure and public consultation are important and necessary in sub-project preparation and implementation. These enable sub-project affected people and other stakeholders to participate in and contribute to the sub-project planning and implementation, and thereby help minimize sub-project adverse impacts and maximize sub-project benefits. The level of public consultation and the scope of information dissemination will be commensurate with the environmental category of the sub-project and the significance of the social impacts.

33. Information to be disclosed will include, at a minimum: sub-project design, impacts, and proposed mitigation measures. During the design and implementation phases, this information will be updated and continually made available to stakeholders. Disclosure means could vary, but may include posters, booklets, newspapers, the internet, and community meetings. All safeguard documents will be disclosed at a public place accessible to affected groups and other stakeholders prior to consultation to establish the basis for meaningful consultation. Disclosure and consultation mechanisms will be planned and detailed in the relevant safeguard documents.

### ***Grievance redress***

34. A grievance redress mechanism for the project is necessary for addressing legitimate concerns of affected individuals and groups who may consider themselves deprived of appropriate treatment under the project. The mechanism would include (i) a recording and reporting system, including grievances filed both verbally and in writing, (ii) designated staff with responsibility at various levels of governments, and (iii) a time frame to address the filed grievances. This mechanism will be detailed in the sub-project safeguards documents. The functioning of the grievance redress mechanism will be regularly monitored and evaluated by the LUCRPO during project implementation.

### **4.5 Step 5 - Review and clearance of the safeguards documents**

35. Review and clearance of the environmental and social safeguards documents is the responsibility of the LUCRPO.

36. The requirements for review and clearance of the environmental documents by the World Bank are as follows:

- Category B: The Simplified EA (or EIA) and EMP for Category B sub-projects will not be subject to World Bank review and clearance prior to approval of the sub-project. However, these documents will be post-reviewed on a selective basis during supervision missions.
- Category C: No review required by the World Bank.

37. The requirements for review and clearance of the social documents by the World Bank are as follows:

- All RAPs, abbreviated RAPs, SAs and EMCPs will be subject to review and clearance by the World Bank prior to approval of the sub-project.

#### **4.6 Step 6 – Implementation of agreed actions and supervision, monitoring and evaluation**

##### ***Implementation***

38. Implementation of the safeguards measures during sub-project implementation is the responsibility of the sub-project proponents.

##### ***Supervision***

39. The LUCRPO will supervise the implementation of the EMP and social safeguard-related actions approved by the government and the Bank. The World Bank task team will regularly visit the sub-project areas throughout project implementation in order to:

- Provide guidance and assist in the preparation of safeguards instruments;
- Review the screening results, due diligence review report, and safeguard documents of proposed sub-projects;
- Supervise the implementation of the safeguards instruments to ensure they are implemented in compliance with the Bank policy requirements.

##### ***Monitoring and Evaluation***

40. The LUCRPO will engage qualified and experienced consultants to carry out the monitoring program to provide information on key environmental and social aspects of the sub-projects and the effectiveness of the planned mitigation measures. This will enable the government and the Bank to evaluate the performance of the environmental program and allow corrective action to be taken when needed. In case of sub-projects with RAPs, the LUCRPO will hire an independent third party consultant acceptable to the Bank to conduct external monitoring of RAP implementation. The external monitoring report will be submitted to the Bank and the LUCRPO.

#### **5. Organizational Arrangements**

41. In the environmental and social mitigation planning process, described above, the various institutional roles and responsibilities are:

- i) **Environmental and social impact screening:** LUCRPO with the assistance of its specialized staff and/or qualified consultants will undertake environmental screening of each proposed sub-project, the findings of which will be reviewed by the Bank, depending on the nature of the sub-project and expected type and magnitude of the impacts.
- ii) **Preparation of safeguard documents:** Individual sub-project proponents are responsible for planning, design and implementation of individual sub-projects, including environmental and social safeguard documents and mitigation measures, and will engage qualified consultants as needed.
- iii) **Supervision:** The county and municipality government and PMOs will guide, supervise and manage the process of safeguard planning and implementation work.
- iv) **Domestic review and clearance of the safeguard documents:** Safeguard documents will be reviewed and cleared within the government as part of the overall sub-project approval process. This will follow the government's procedures and regulations for capital investment review and clearance.
- v) **World Bank review and clearance of the safeguard documents:** As mentioned above, safeguard documents for all Category A sub-projects (EIA/EMP and other relevant documents such as: DSPs and PCR management plans) will be forwarded to the World Bank for prior review and clearance. The World Bank will also review and clear the social safeguards documents such as: RAPs, SAs, and EMCPs, before approving the sub-projects that require them. For all other Category B sub-projects projects, the World Bank will carry out sample post-reviews during supervision missions.
- vi) **Safeguard documents implementation:** The sub-project proponents will be responsible for the implementation of the safeguard documents, under the direction and supervision of relevant government line agencies (e.g. environmental protection bureau, land administration bureau, cultural relic bureau).
- vii) **Supervision, monitoring and evaluation:** LUCRPO will assume the overall responsibility for the supervision, monitoring, and evaluation of the safeguard document implementation. LUCRPO will plan, organize and lead the oversight effort, including appointing the external environment and social monitors.

## 6. Capacity Building

42. The capacity building in environmental and social safeguards will contain two aspects. First, the LUCRPO will determine the staffing needs for provincial/municipal level and propose

additional staff where required. Second, a project-wide safeguard training program will be developed and implemented for all environmental and social staff.

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## Annex 1: Environmental and Social Screening Form

The LUCRPO will use this Form to screen all sub-project applications.

- Name of Sub-project: \_\_\_\_\_
- Number of Sub-project: \_\_\_\_\_
- Proposing Agency: \_\_\_\_\_
- Sub-project Location: \_\_\_\_\_
- Infrastructure to be rehabilitated or constructed: \_\_\_\_\_
- Estimated Cost: \_\_\_\_\_
- Proposed Date of Commencement of Work: \_\_\_\_\_

For compliance with Chinese environmental regulations does this sub-project require any of the following safeguard documents?

- A full EIA: Yes:\_\_\_ No:\_\_\_
- A simplified EIA: Yes:\_\_\_ No:\_\_\_
- Other Environmental requirements: Yes:\_\_\_ No:\_\_\_

**Table 1 - Environment and social screening form.**

| Questions   | Answer |    | If Yes<br>WB Policy<br>triggered                               | Documents<br>requirement if<br>Yes                         |
|---|--------|----|--|--|
|   | Yes    | no |  |  |
| Are the subproject impacts likely to have significant adverse environmental and social impacts that are sensitive <sup>1</sup> , diverse or unprecedented? <sup>2</sup> Please provide brief description: |        |    | <i>OP 4.01<br/>Environmental<br/>Assessment<br/>Category A</i> | Category A subproject will not be supported by the project |
| Do the impacts affect an area broader than the sites or facilities subject to physical works and are the significant adverse environmental impacts irreversible? Please provide brief description:        |        |    | <i>OP 4.01<br/>Environmental<br/>Assessment<br/>Category A</i> | Category A subproject will not be supported by the project |
| Is the proposed project likely to have minimal or no adverse environmental impacts? <sup>3</sup> Please provide brief justification:  |        |    | <i>OP 4.01<br/>Environmental<br/>Assessment<br/>Category C</i> | No action needed beyond screening                          |

<sup>1</sup> Sensitive (i.e., a potential impact is considered sensitive if it may be irreversible - e.g., lead to loss of a major natural habitat, or raise issues covered by OP 4.04, Natural Habitats; OP 4.36, Forests; OP 4.10, Indigenous Peoples; OP 4.11, Physical Cultural Resources; or OP 4.12, Involuntary Resettlement; or in the case of OP 4.09, when a project includes the manufacture, use, or disposal of environmentally significant quantities of pest control products);

<sup>2</sup> Examples of projects where the impacts are likely to have significant adverse environmental impacts that are sensitive, diverse or unprecedented are large scale infrastructure such as construction of power plants, large scale mining operations, waste water treatment plants and solid waste collection and disposal, etc.

<sup>3</sup> Examples of projects likely to have minimal or no adverse environmental impacts are supply of goods and services, technical assistance, simple repair of damaged structures etc.,

|   |  |  |  |   |
|---|--|--|--|---|
| Are the subproject environment and social impacts likely to be less adverse, site-specific; and if any of the impacts are irreversible? <sup>4</sup> Please provide brief justification:  |  |  | <i>OP 4.01<br/>Environmental<br/>Assessment<br/>Category B</i> | EIA or EMP  |
| Will the project adversely impact physical cultural resources? <sup>5</sup> Please provide brief justification:   |  |  | <i>OP 4.11 Physical<br/>Cultural<br/>Resources</i>             | Addressed in EIA (EIA with PCR Management Plan and/or Chance Find Procedures)           |
| Will the project involve the conversion or degradation of non-critical natural habitats? Please provide brief justification:  |  |  | <i>OP 4.04 Natural<br/>Habitats<br/>Category A</i>             | Addressed in EIA  |
| Will the project involve the significant conversion or degradation of critical natural habitats <sup>6</sup> ?  |  |  | <i>OP 4.04 Natural<br/>Habitats</i>                            | Category A subproject will not be supported by the project                              |
| Does the sub-project construct a new dam or rely on the performance of an existing dam or a dam under construction?   |  |  | <i>OP 4.37 Dam<br/>Safety</i>                                  | Dam Safety Plan/ Category A subproject will not be supported by the project             |
| Does the project procure pesticides (either directly through the project, or indirectly through on-lending, co-financing, or government counterpart funding), or may affect pest management in a way that harm could be done, even though the project is not envisaged to procure pesticides? |  |  | <i>OP4.09 Pest<br/>Management</i>                              | Addressed in EIA (Pest Management Plan)   |
| Does the sub-project involve involuntary land acquisition, loss of assets or access to assets, or loss of income sources or means of livelihood? Please provide brief justification:  |  |  | <i>OP 4.12<br/>Involuntary<br/>Resettlement</i>                | Abbreviated Resettlement Action Plan (ARAP)/Resettlement Action Plan (RAP) <sup>7</sup> |
| Are there any ethnic minority communities present in the sub project area and are likely to be affected by the proposed sub-project negatively or positively? Please provide brief justification:   |  |  | <i>OP 4.10<br/>Indigenous<br/>People</i>                       | Ethnic Minority Development Plan/Indigenous Peoples Plan                                |

<sup>4</sup> Projects that do not fall either within OP 4.01 as a Category A or Category C can be considered as Category B. Examples of category B sub-projects include small scale *in-situ* reconstruction of infrastructure projects such as wastewater treatment plants, etc.

<sup>5</sup> Examples of physical cultural resources are archaeological or historical sites, including historic urban areas, religious monuments, structures and/or cemeteries particularly sites recognized by the government.

<sup>6</sup> Subprojects that significantly convert or degrade critical natural habitats such as legally protected, officially proposed for protection, identified by authoritative sources for their high conservation value, or recognized as protected by traditional local communities, are ineligible for Bank financing.

<sup>7</sup> If any subproject supported by this Project results in involuntary resettlement impacts that are minor (i.e. affected people are not physically displaced and less than 10% of their productive assets are lost) or fewer than 200 people are displaced, then the enterprise will prepare one or more abbreviated resettlement plans (ARAP) when specific siting is known and prior to the commencement of any works or subproject implementation. If, differently, the resettlement impacts of the Project are not minor or lead to the displacement of more than 200 people, the enterprise will prepare one or more resettlement action plans (RAP) when specific siting is known and prior to the commencement of any works or subproject implementation.

|   |  |  |   |  |
|---|--|--|---|--|
| Will the project have the potential to have impacts on the health and quality of forests or the rights and welfare of people and their level of dependence upon or interaction with forests; or aims to bring about changes in the management, protection or utilization of natural forests or plantations? Please provide brief justification: |  |  | <i>OP4.36 Forestry</i>                            | Addressed in EIA   |
| Will the project have the potential to have significant impacts or significant conversion or degradation of critical natural forests or other natural habitats?   |  |  | <i>OP4.36 Forestry (Category A)</i>               | Category A subproject will not be supported by the project |
| Is there any territorial dispute between two or more countries in the sub project and its ancillary aspects and related activities?   |  |  | <i>OP7.60 Projects in Disputed Areas</i>          | Governments concerned agreement                            |
| Will the sub project and its ancillary aspects and related activities, including detailed design and engineering studies, involve the use or potential pollution of, or be located in international waterways <sup>8</sup> ?  |  |  | <i>OP7.50 Projects on International Waterways</i> | Notification (or exceptions)                               |

*Screening Completed and Reviewed by:*

Signed by Environmental Specialist in LUCRPO:

Name: \_\_\_\_\_

Title and Date: \_\_\_\_\_

Signed by Social Specialist in LUCRPO

Name: \_\_\_\_\_

Title and Date: \_\_\_\_\_

Signed by Project Manager in LUCRPO:

Name: \_\_\_\_\_

Title and Date: \_\_\_\_\_

One copy of this Form and accompanying documentation will be kept in the LUCRPO, one copy will be sent to the World Bank, and a third copy, if necessary, sent to the concerned government agency.

<sup>8</sup> International waterways include any river, canal, lake or similar body of water that forms a boundary between, or any river or surface water that flows through two or more states.

**Annex 2: List of Key Laws and Regulations****Table 2 - National laws and regulations relevant to this project**

| <b>Law</b>   | <b>Year</b> | <b>Notes</b>                          |
|--|-------------|---------------------------------------|
| Environmental Protection Law   | 1989        |                                       |
| Urban and Rural Planning Law   | 2008        | Project supports city master plan     |
| Environmental Impact Assessment Law  | 2003        |                                       |
| Water Law  | 2002        |                                       |
| Cleaner Production Promotion Law   | 2002        | Project involves low carbon WSP issue |
| Air Pollution Prevention and Control Law   | 2000        |                                       |
| Noise Pollution Prevention and Control Law                                       | 1999        |                                       |
| Land Administration Law  | 1999        |                                       |
| Water and Soil Conservation Law  | 1991        |                                       |
| Water Pollution Prevention and Control Law                                       | 2008        |                                       |
| <b>Regulation</b>  |             |                                       |
| Pollution Control for Protection Zone of Drinking Water Source                   | 1989        |                                       |
| Regulation on EIA of Plans and Programs  | 2009        |                                       |
| Environmental Protection Management for Construction Projects                    | 2003        |                                       |
| Directive on Strengthening Wetland Protection and Management                     | 2004        | Project involves reservoirs           |
| Environmental Protection Supervision Rules for Construction Projects             | 1998        |                                       |
| Requirements for the EIA Summary of Construction Project                         | 2010        |                                       |
| Classification of Construction Project Environmental Protection Management (MEP) | 2001        |                                       |
| National Biodiversity Strategy and Action Plan (2011-2030)                       | 2010        |                                       |
| Requirement for Social Risk Assessment of Large Investment Projects              | 2012        |                                       |
| National regulation for public disclosure of EIAs (NDRC)                         | 2012        |                                       |

**Table 3 - Key Local Laws and Regulations**

| <b>Laws and regulations</b>  | <b>Year</b> |
|--|-------------|
| Regulations of Liaoning Province on environmental protection   | 2010        |
| Measures for the prevention and control of dust pollution in Liaoning Province   | 2013        |
| Notice on the management measures for the total amount of major pollutants in the construction project of Liaoning province (for Trial Implementation) | 2011        |
| Measures for the administration of environmental supervision of construction projects in Liaoning Province   | 2011        |

|   |      |
|---|------|
| Notice of implementation scheme of air pollution control action plan in Liaoning Province   | 2014 |
| Notice of water pollution prevention and control work plan in Liaoning Province   | 2015 |
| Opinions of the people's Government of Liaoning Province on the implementation of the "blue sky project"  | 2012 |
| Measures for the administration of the total amount of major pollutants in the construction projects of Liaoning province (for Trial Implementation)                              | 2011 |
| Industry development guidance catalogue in Liaoning province  | 2008 |
| Notice on the relevant issues concerning the strengthening of the total amount of major pollutants in the construction project, and strengthening the work of pollution reduction | 2007 |
| Directory of construction project of environmental impact assessment document examined and approved by EPA of Liaoning Province   | 2015 |

The implementation of environmental laws and regulations is supported by associated management and technical guidelines. Those applicable to the project are in Table 4

**Table 4 - Applicable environmental guidelines**

| <b>Guideline</b>  | <b>Year/Code</b> |
|---|------------------|
| Technical Guideline on EIA: Drinking Water Source Protection                                  | 2006             |
| List of Construction Projects Subject to Environmental Protection Supervision                 | 2008             |
| Guideline on EIA Classification of Construction Projects                                      | 2008             |
| Guideline on Jurisdictional Division of Review and Approval of EIAs for Construction Projects | 2009             |

| Guideline   | Year/Code     |
|---|---------------|
| Interim Guideline on Public Consultation for EIA                              | 2006          |
| Circular on Strengthening EIA Management to Prevent Environmental Risks       | 2005          |
| Technical Guideline on EIA: Surface Water Environment                         | HJ/T 2.3-1993 |
| Technical Guideline on Environmental Risk Assessment for Construction Project | HJ/T169-2004  |
| Technical Guideline on EIA: Acoustic Environment                              | HJ 2.4-2009   |
| Technical Guideline on EIA: Atmospheric Environment                           | HJ 2.2-2008   |
| Technical Guideline on EIA: Ecological Assessment                             | HJ 19-2011    |

Operation of the water supply plants and quality of the treated water to be provided to residents will require compliance with the PRC Drinking Water Quality Standard (GB5749-2006), in which 106 parameters must be met ( details in Table below ).

**Table 5 - Drinking water quality standards (GB5749-2006)**

| No.  | Parameter  | Limit |
|--|--|-------|
| <b>Routine Parameter of Drinking Water Quality</b>       |  |       |
| <i>Microbiological parameter<sup>2</sup></i>             |  |       |
| 1  | Total coliform (MPN/100ml or CFU/100ml)                      | LD    |
| 2  | Thermotolerant coliform (MPN/100ml or CFU/100ml)             | LD    |
| 3  | Escherichia Coli (MPN/100ml or CFU/100ml)                    |       |
| 4  | Total plant count (CFU/ml)                                   | 100   |
| <i>Toxicological parameter</i>                           |  |       |
| 5  | Arsenic (As, mg/L)   | 0.01  |
| 6  | Cadmium (Cd, mg/L)   | 0.005 |
| 7  | Chromium Hexavalent (Cr <sup>6+</sup> , mg/L)                | 0.05  |
| 8  | Lead (Pb, mg/L)  | 0.01  |
| 9  | Mercury (Hg, mg/L)   | 0.001 |
| 10   | Selenium (Se, mg/L)  | 0.01  |
| 11   | Cyanide (CN <sup>-</sup> , mg/L)                             | 0.05  |
| 12   | Fluoride (mg/L)  | 1.0   |
| 13   | Nitrate (mg/L)   | 10    |
| 14   | Trichloromethane (mg/L)                                      | 0.06  |
| 15   | Carbon tetrachloride (mg/L)                                  | 0.002 |
| 16   | Bromate (when O3 is applied) (mg/L)                          | 0.01  |
| 17   | Formaldehyde (when O3 is applied) (mg/L)                     | 0.9   |
| 18   | Chlorite (when ClO2 is applied) (mg/L)                       | 0.7   |
| 19   | Chlorate (when compound chlorine dioxide is applied ) (mg/L) | 0.7   |
| <b>Sensory Properties and General Chemical Parameter</b> |  |       |
| 20   | Chromaticity (Unit of platinum cobalt color)                 | 15    |

<sup>2</sup> MPN= Most Probable Number; CFU: Colony forming unit.

| No.  | Parameter                                  | Limit              |
|--|--|--------------------|
| 21   | Turbidity (diffusing turbidity unit) NTU   | 1                  |
| 22   | Odor and Taste                             | No odor, no taste  |
| 23   | Appearance                                 | None               |
| 24   | pH   | $6.5 \leq X < 8.5$ |
| 25   | Aluminum (Al, mg/L)                        | 0.2                |
| 26   | Iron (Fe, mg/L)                            | 0.3                |
| 27   | Manganese (Mn, mg/L)                       | 0.1                |
| 28   | Copper (Cu, mg/L)                          | 1.0                |
| 29   | Zinc (Zn, mg/L)                            | 1.0                |
| 30   | Chloride (Cl <sup>-</sup> , mg/L)          | 250                |
| 31   | Sulfate (SO <sub>4</sub> -mg/L)            | 250                |
| 32   | TDS (mg/L)                                 | 1000               |
| 33   | Total Hardness (CaCO <sub>3</sub> ) (mg/L) | 450                |
| 34   | CODMn (mg/L)                               | 3                  |
| 35   | Volatile phenols (phenol) (mg/L)           | 0.002              |
| 36   | LAS (mg/L)                                 | 0.3                |
| <b>Radioactivity Parameter<sup>3</sup></b> |  |                    |
| 37   | Total $\alpha$ radioactivity (Bq/L)        | 0.5                |
| 38   | Total $\beta$ radioactivity (Bq/L)         | 1                  |
| <b>Non-Routine Parameter</b>               |  |                    |
| Microbial indicators                       |  |                    |
| 39   | Giardia cysts (count/10L)                  | <1                 |
| 40   | Cryptosporidium oocysts (count/10L)        | <1                 |
| <b>Toxicological parameter (mg/L)</b>      |  |                    |
| 41   | Antimony (Sb, mg/L)                        | 0.005              |
| 42   | Barium (Ba, mg/L)                          | 0.7                |
| 43   | Beryllium (Be, mg/L)                       | 0.002              |
| 44   | Boron (B, mg/L)                            | 0.5                |
| 45   | Molybdenum (Mo, mg/L)                      | 0.07               |
| 46   | Nickel (Ni, mg/L)                          | 0.02               |
| 47   | Silver (Ag, mg/L)                          | 0.05               |
| 48   | Thallium (Tl, mg/L)                        | 0.0001             |
| 49   | Cyan chloride (CN <sup>-</sup> mg/L)       | 0.07               |
| 50   | Chlorodibromomethane (mg/L)                | 0.1                |
| 51   | Bromodichloromethane (mg/L)                | 0.06               |

<sup>3</sup> Radionuclide phase analysis is conducted if radioactivity value exceeds limits, to determine if the water is drinkable.

| No. | Parameter   | Limit  |
|-----|---|--------|
| 52  | Dichloroacetic acid (mg/L)                        | 0.05   |
| 53  | 1,2-dichloroethane (mg/L)                         | 0.03   |
| 54  | Dichloromethane (mg/L)                            | 0.02   |
| 55  | THMs  | 1      |
| 56  | 1,1,1 - trichloroethane (mg/L)                    | 2      |
| 57  | Trichloroacetic acid (mg/L)                       | 0.1    |
| 58  | Trichloroaldehyde (mg/L)                          | 0.01   |
| 59  | 2,4,6- trichlorophenol (mg/L)                     | 0.2    |
| 60  | Bromoform (mg/L)                                  | 0.1    |
| 61  | Heptachlor (mg/L)                                 | 0.0004 |
| 62  | Malathion (mg/L)                                  | 0.25   |
| 63  | PCP (mg/L)  | 0.009  |
| 64  | HCH (total amount, mg/L)                          | 0.005  |
| 65  | Hexachlorobenzene (mg/L)                          | 0.001  |
| 66  | Dimethoate (mg/L)                                 | 0.08   |
| 67  | Parathion (mg/L)                                  | 0.003  |
| 68  | Bentazone (mg/L)                                  | 0.3    |
| 69  | Parathion-methyl (mg/L)                           | 0.02   |
| 70  | Chlorothalonil (mg/L)                             | 0.01   |
| 71  | Carbofuran (mg/L)                                 | 0.007  |
| 72  | Lindane (mg/L)                                    | 0.002  |
| 73  | Chlopyrifos (mg/L)                                | 0.03   |
| 74  | Glyphosate (mg/L)                                 | 0.7    |
| 75  | DDVP (mg/L)                                       | 0.001  |
| 76  | Arazine (mg/L)                                    | 0.002  |
| 77  | Deltamethrin (mg/L)                               | 0.02   |
| 78  | 2,4 - dichlorobenzene oxygen ethanoic acid (mg/L) | 0.03   |
| 79  | Dichloro-diphenyl-dichloroethane (mg/L)           | 0.001  |
| 80  | Ethylbenzene (mg/L)                               | 0.3    |
| 81  | Dimethylbenzene (mg/L)                            | 0.5    |
| 82  | 1,1- dichloroethylene(mg/L)                       | 0.03   |
| 83  | 1,2- dichloroethylene(mg/L)                       | 0.05   |
| 84  | 1,2- dichlorobenzene(mg/L)                        | 1      |
| 85  | 1,4- dichlorobenzene(mg/L)                        | 0.3    |
| 86  | Trichloroethylene(mg/L)                           | 0.07   |
| 87  | Trichlorobenzene(mg/L)                            | 0.02   |
| 88  | Hexachlorobutadiene(mg/L)                         | 0.0006 |
| 89  | Acrylamide (mg/L)                                 | 0.0005 |

[键入文字]

| No.  | Parameter                                  | Limit                        |                                |                                  |                                       |
|--|--|------------------------------|--------------------------------|----------------------------------|---------------------------------------|
| 90   | Tetrachloroethylene (mg/L)                 | 0.04                         |                                |                                  |                                       |
| 91   | Toluene (mg/L)                             | 0.7                          |                                |                                  |                                       |
| 92   | DEHP (mg/L)                                | 0.008                        |                                |                                  |                                       |
| 93   | ECH (mg/L)                                 | 0.0004                       |                                |                                  |                                       |
| 94   | Benzene (mg/L)                             | 0.01                         |                                |                                  |                                       |
| 95   | Styrene (mg/L)                             | 0.02                         |                                |                                  |                                       |
| 96   | Benzopyrene (mg/L)                         | 0.00001                      |                                |                                  |                                       |
| 97   | Chloroethylene(mg/L)                       | 0.005                        |                                |                                  |                                       |
| 98   | Chlorobenzene(mg/L)                        | 0.3                          |                                |                                  |                                       |
| 99   | Microcystin-LR(mg/L)                       | 0.001                        |                                |                                  |                                       |
| <b>Physical Properties and General Chemical parameters (mg/L)</b>          |  |                              |                                |                                  |                                       |
| 100  | Ammonia Nitrogen(NH <sub>3</sub> -N, mg/L) | 0.5                          |                                |                                  |                                       |
| 101  | Sulfide (S, mg/L)                          | 0.02                         |                                |                                  |                                       |
| 102  | Sodium (Na, mg/L)                          | 200                          |                                |                                  |                                       |
| <b>General Parameters and Requirements for Drinking Water Disinfectant</b> |  |                              |                                |                                  |                                       |
|  | Disinfectant                               | Exposure duration with Water | Limit in water supplied (mg/L) | Residue in water supplied (mg/L) | Residues in network peripheral (mg/L) |
| 103  | Chlorine and free chlorine (mg/L)          | ≥30 min                      | 4                              | ≥0.3                             | ≥0.05                                 |
| 104  | Monochloramine (total chlorine, mg/L)      | ≥120 min                     | 3                              | ≥0.5                             | ≥0.05                                 |
| 105  | Ozone (O <sub>3</sub> , mg/L)              | ≥12 min                      | 0.3                            | -                                | 0.02/ ≥0.05 if chlorine is added      |
| 106  | Chlorine Dioxide (ClO <sub>2</sub> , mg/L) | ≥30 min                      | 0.8                            | ≥0.1                             | ≥0.02                                 |

Wastewater generated during construction, including machine wash-down, gravel cleaning, and muddied water generated during excavation, will not exceed standard Grade II of the PRC Integrated Wastewater Discharge Standard (GB8978-1996) ( See details below in Table 6 below).

**Table 6 - Integrated Wastewater Discharge Standards (mg/L, except for pH)**

| Parameter         | pH  | CODCr | BOD5 | SS  | NH <sub>3</sub> -N | Oil |
|-------------------|-----|-------|------|-----|--------------------|-----|
| Grade II Standard | 6–9 | 150   | 30   | 150 | 25                 | 10  |

Key: CODCr = chemical oxygen demand, BOD5 = 5 days biochemical oxygen demand, SS = suspended solids, NH<sub>3</sub>-N = ammonia nitrogen.