World Bank Loan
Jiangxi Shangrao Sanqingshan
Airport Project

Environmental Management Plan

October 2012
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1. Environmental Management Objective

The objective of preparing environmental management is to through developing practical prevention, reduction, relief or compensation for adverse environmental impacts to enhance advantageous environment effect of such measures, to improve the project selection, site selection, planning, design and implementation of activities; in short, in the entire project implementation process measures, mitigation and management the adverse environmental impacts; and through the implementation of environmental monitoring plan, to evaluate the actual effects of mitigation measures, according to the monitoring results further improve mitigation measures.

2. Laws, Regulations and Standards

2.1 Laws and Regulations

2.1.1 Environmental Protection Laws and Regulations


(2) “Law of the People's Republic of China on Prevention and Control of Air Pollution”, 2000.4.29;

(3) “Law of the People's Republic of China on Prevention and Control of Water Pollution”, 2008.6.1;

(4) “Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes”, 2005.4.1;

(5) “Law of the People's Republic of China on Prevention and Control of Pollution from Environmental Noise”, 1997.3.1;

(6) “Law of the People's Republic of China on Appraising of Environmental Impacts”, 2003.9.1;

(7) “Law of the People's Republic of China on Water and Soil Conservation”, 2011.3.1;


(9) “Law of the People's Republic of China on Cleaner Production Promotion”,
2002.06.29;

(10) “Regulations on the Administration of Construction Project Environmental Protection” Promulgated by Decree No. 253 of the State Council of the PRC of 1998, 1998.11.29;

(11) “Categorized Administrative List of Environmental Impact Assessment for Construction Projects” implemented on October 1, 2008;

(12) “Approval Regulations on Environmental Impact Evaluation (EIE) Approvals for Construction Projects”, No. 5 Decree of the Ministry of Environmental Protection, 2009.3.1


(14) “Notification on Strengthening Environmental Impact Assessment Management to Prevent Environmental Risks”, Huanfa [2005] No.152 issued by the SEPA;


(16) “Notification on Strengthening the Administration of Environmental Impact Assessment for Construction Projects Funded by the Loan from International Finance Corporations” issued by the State Environmental Protection Administration, the State Planning Commission, Ministry of Finance and People’s Bank of China, 1993, 6;

(17) The “Environmental Protection Administration Methods for Transportation Construction Projects” [1990] No.17 Decree issued by the Ministry of Communications in 1990;


2.1.2 Technical Specifications for Environmental Impact Assessment

(1) HJ2.1-2012 “Technical Guidelines for Environmental Impact
Assessment-General Provisions”;

(2) HJ/T2.3-93 “Technical Guidelines for Environmental Impact Assessment-Surface Water Environment”;

(3) HJ2.4-2009 “Technical Guidelines for Environmental Impact Assessment-Acoustic Environment”;


(7) HJ/T87-2002 “Technical Guidelines for Environmental Impact Assessment-Construction Project of Civil Airport”;

(8) HJ14-1996 “Zoning Principles and Technical Methods for Ambient Air Quality Function Zones”;

(9) GB/T15190-94 “Technical Zoning Specifications for Urban Environmental Noise Zones”;


(12) MH/T5105-2007 “Calculation and Prediction of Aircraft Noise Surrounding Civil Airport”;

(13) GB18218-2009 “Identification of Major Hazard Source of Hazard Chemicals”;

2.1.3 Project Files

(1) “The Feasibility Study of Shangrao Sanqing Mountain Airport Project in Jiangxi”, China Civil Aviation Airport Construction Group, 2011.12;


2.2 World Bank Safeguard Policy

(1) Safeguard policy---OP 4.01: Environmental Assessment

(2) Safeguard policy --OP 4.12: Involuntary Resettlement

(3) Safeguard policy --OP 4.11: Physical Cultural Resources

(4) World Bank Environmental, Health, and Safety Guidelines ---EHS:

GENERAL EHS GUIDELINES: INTRODUCTION

(5) IFC Environmental, Health, and Safety Guidelines ---EHS: AIRPORTS

(6) IFC Environmental, Health, and Safety Guidelines ---EHS: WASTEWATER AND AMBIENT WATER QUALITY

(7) IFC Environmental, Health, and Safety Guidelines ---EHS: ELECTRIC POWER TRANSMISSION AND DISTRIBUTION

(8) IFC Environmental, Health, and Safety Guidelines ---EHS: WASTE MANAGEMENT

2.3 Assessment Standards

2.3.1 Environment Quality Standards

(1) Surface Water

Surface water of the airport area mainly comes from Xinjiang, Fengxi River (main tributary of Xinjiang) and tributaries of Xinjiang which are close to the airport surroundings. All surface water of Xinjiang Water area near the airport implement Class III water standard limit stipulated in *Environment Quality Standards of Surface Water*. 
Water (GB3838-2002), see table 2-3-1 for specific standard limit.

Table 2-3-1 Environment Quality Standards of Surface Water (Unit: mg/L, except pH)

<table>
<thead>
<tr>
<th>Item</th>
<th>pH Value</th>
<th>Dissolved oxygen</th>
<th>Permananate Index</th>
<th>COD</th>
<th>BOD5</th>
<th>Ammonia Nitrogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Value</td>
<td>CLASS III</td>
<td>6.9</td>
<td>≥5</td>
<td>≤6</td>
<td>≤20</td>
<td>≤4</td>
</tr>
<tr>
<td></td>
<td>CLASS III</td>
<td>6.9</td>
<td>≥5</td>
<td>≤6</td>
<td>≤20</td>
<td>≤4</td>
</tr>
</tbody>
</table>

(2) Ground Water

Ground Water Environment Quality implements Class III standard of “Quality Standards of Ground Water” (GB/T14848-93), see table 2-3-2 for specific standard value.

Table 2-3-2 Environment Quality Standards of Ground Water (Unit: mg/L, except pH)

<table>
<thead>
<tr>
<th>Item</th>
<th>pH Value</th>
<th>Permanganate Index</th>
<th>Ammonia Nitrogen</th>
<th>Total Hardness</th>
<th>Nitrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Value</td>
<td>CLASS III</td>
<td>6.5-8.5</td>
<td>≤3.0</td>
<td>≤0.2</td>
<td>≤450</td>
</tr>
<tr>
<td></td>
<td>CLASS III</td>
<td>6.5-8.5</td>
<td>≤3.0</td>
<td>≤0.2</td>
<td>≤450</td>
</tr>
</tbody>
</table>

(3) Ambient Air

The proposed airport is located in rural area. The atmospheric pollutants (SO2, NO2, TSP, PM10) adopts Class II standards of “Quality Standards of Ambient Air” (GB3095-1996), non methane hydrocarbon refers to the fugitive emission monitoring concentration limit of 4.0 mg/m³ stipulated in the “Comprehensive Emission Standards of Atmospheric Pollutants” (GB16297-1996). See table 2-3-3 for specific value.

Table 2-3-3 Quality Standards of Ambient Air (mg/m³)

<table>
<thead>
<tr>
<th>Item</th>
<th>Data Collection Time</th>
<th>SO2</th>
<th>NO2</th>
<th>CO</th>
<th>PM10</th>
<th>TSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Value</td>
<td>Daily Average</td>
<td>0.15</td>
<td>0.12</td>
<td>4.00</td>
<td>0.15</td>
<td>0.30</td>
</tr>
<tr>
<td></td>
<td>Average per Hour</td>
<td>0.50</td>
<td>0.24</td>
<td>10.00</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

(4) Noise

Proposed airport is located in Zunqiao village, Shangrao county, the site area is village residence area. Current status acoustic environment standard implements Class 1 of Acoustic Environment Quality Standard (GB3096-2008), see table 2-3-4.
Table 2-3-4   Acoustic Environment Quality Standard (Unit: dB)

<table>
<thead>
<tr>
<th>Class</th>
<th>Daytime</th>
<th>Nighttime</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>55</td>
<td>45</td>
</tr>
</tbody>
</table>

During operation, acoustic environment standard of adjacent residence point implements Class 2 of *Environment standard of aircraft noise around airport* (GB9660-88), schools and hospitals in assessment scope implements Class 1 standards. Our use of airport noise standards for the use of noise level for the weighted equivalent continuous perceived noise level $L_{WECPN}$, the standard and the United States (except outside California) using the airport noise level $LDN$ about 14dB mathematical conversion relations, namely $L_{WECPN} ≈ L_{DN} + 14dB$, conversion of specific derivation process see Annex X. the United States developed Airport noise criteria for $L_{DN} ≤ 65dB$; therefore, the basic can be judged, our airport noise Evaluation standard than the United States of America’s Evaluation standard is stricter. Our noise specific Evaluation standard values are shown in table 2-3-5:

Table 2-3-5   Environment standard of aircraft noise around airport (Unit: $L_{WECPN}$ dB)

<table>
<thead>
<tr>
<th>Area</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1 (Special residence, cultural and educational area)</td>
<td>$≤ 70$</td>
</tr>
<tr>
<td>Class 2 (resident area not included in Class 1)</td>
<td>$≤ 75$</td>
</tr>
</tbody>
</table>

This project not only performs evaluation standard for domestic airport aircraft noise and World BankEHS, and refers to the implementation of the noise level of guidance value. Specific guidance values are shown in table 2-3-6.

Table 2-3-6 Noise Guidance Value of World Bank (Unit: $LA_{eq}$ dB)

<table>
<thead>
<tr>
<th>Receptor</th>
<th>dB (A)</th>
<th>07:00-22:00 in day</th>
<th>22:00-07:00 in night</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence; office; culture and education</td>
<td>55</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

(5) Electromagnetic Environment


2.3.2 Pollutant Emission Standards

(1) Standards of Recycle Water
After the proposed airport is put into operation, the sewage of the airport meets the water quality requirements of “Water Quality of Urban Recycling Water and Urban Miscellaneous Water Consumption” (GB/T18920-2002) after proper treatment, see table 2-3-7 for limit value, and the recycled water can be used for toilet flushing and car wash and other sectors.

Table 2-3-7 Water Quality Standard for Urban Miscellaneous Water Consumption

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Toilet Flushing</th>
<th>Car Wash</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>pH</td>
<td>6.0-9.0</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Color/Degree</td>
<td>≤</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>Smell</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Turbidity/NUT</td>
<td>≤</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Total Dissolved Solids(mg/L)</td>
<td>≤</td>
<td>1500</td>
</tr>
<tr>
<td>6</td>
<td>BOD(mg/L)</td>
<td>≤</td>
<td>10</td>
</tr>
<tr>
<td>7</td>
<td>Ammonia Nitrogen(mg/L)</td>
<td>≤</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>Anionic Surface Active Agent(mg/L)</td>
<td>≤</td>
<td>1.0</td>
</tr>
<tr>
<td>9</td>
<td>Iron (mg/L)</td>
<td>≤</td>
<td>0.3</td>
</tr>
<tr>
<td>10</td>
<td>Manganese (mg/L)</td>
<td>≤</td>
<td>0.1</td>
</tr>
<tr>
<td>11</td>
<td>Dissolved oxygen(mg/L)</td>
<td>≥</td>
<td>1.0</td>
</tr>
<tr>
<td>12</td>
<td>Total Residual Chlorine(mg/L)</td>
<td>≤</td>
<td>After 30min Contact ≥1.0, The End of Pipe Network≥2.0</td>
</tr>
<tr>
<td>13</td>
<td>Total Coliforms/(PC/L)</td>
<td>≤</td>
<td>3</td>
</tr>
</tbody>
</table>

(2) Standards for Air Pollutants Emission

The airport is heated by natural gas boiler. The boiler exhaust emission implements Class Two Area Period II standards of “Standards for Air Pollutants Emission of Boiler Exhaust” (GB13271-2001) see table 2-3-8 for standard values.

Table 2-3-8 Concentration Limits of the Boiler Air Pollutant Emission (unit: mg/m$^3$)

<table>
<thead>
<tr>
<th>Boiler Category</th>
<th>Applicable Area</th>
<th>Smoke Dust</th>
<th>The Blackness of Flue Gas</th>
<th>SO$$_2$$</th>
<th>Nitrogen Oxides</th>
<th>Chimney Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Boiler</td>
<td>Class Two Area, Period II</td>
<td>50</td>
<td>1</td>
<td>100</td>
<td>400</td>
<td>≥8m</td>
</tr>
</tbody>
</table>

Non methane hydrocarbon of the Oil Depot Area refers to “Comprehensive Emission Standards for Air Pollutants” (GB16297-1996) for 4.0mg/m$^3$ of concentration limit of fugitive emission monitoring.


Table 2-3-9 Emission Standards for Asphalt Smoke (New Pollution Source) (Extract) Unit: mg/m$^3$
Pollutants | Production Process | Maximum Emission Concentration, mg/m³ | Concentration Limit of Fugitive Emission Monitoring
--- | --- | --- | ---
Asphalt Smoke | Asphalt Melting & Mixing | 40-75 | There shall be no obvious fugitive emission

(3) Noise

“Noise Limits for the Boundary of Construction Sites” (GB12523-90) is applicable to noise assessment for construction period, as detailed in Table below:

Table 2-3-10 Noise Limit for the Boundary of Construction Sites

<table>
<thead>
<tr>
<th>Phase of Construction</th>
<th>Main Noise Source</th>
<th>Limit of Noise dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Day</td>
</tr>
<tr>
<td>Earthwork and stonework</td>
<td>Bulldozer, excavator, loader, etc.</td>
<td>75</td>
</tr>
<tr>
<td>Piling</td>
<td>All kinds of pile drivers and so on</td>
<td>85</td>
</tr>
<tr>
<td>Structure</td>
<td>Concrete mixer, vibrating spear, electrical saw, etc.</td>
<td>70</td>
</tr>
<tr>
<td>Decoration</td>
<td>Crane, elevator, etc.</td>
<td>65</td>
</tr>
</tbody>
</table>

(4) Electromagnetic Environment

(i) “Technical Specifications for Environment Impact Assessment on 500kV EHV Power Transmission and Transformation Engineering of Electromagnetic Radiation” (HJ/T24-1998) (Power Frequency electric field intensity: 4000V/m, Power Frequency magnetic field intensity: 0.1mT);

(ii) “Radio Interference Limit of AV High Voltage Overhead Power Transmission Line” (GB15707-1995): radio interference level at 0.5MHz, 110kV at 46dB (μV/m).

3 Project Overview

3.1 Project Goal

The project construction objectives are to improve regional airport layout, improve the local comprehensive transportation condition, society of simulative place economy and tourism development, and improve the emergency rescue and disaster relief and emergency aviation security. Shangrao Airport properties for domestic feeder machine field, a small airport, major service in the eastern region of Jiangxi Province’s tourism, official and business activities, and taking into account the protection of disaster relief and general aviation business development. The application of models for the B737 series, A320 series C aircraft and domestic
regional aircraft. Recently to opened to Beijing, Shanghai, Guangzhou, Wuhan, Changsha Airport routes. The Houmentang site of proposed Shangrao airport is located in the south of the city center, 8km distance in straight-line and 16km distance in road away from Shangrao city, and 75km distance in road from Sanqingshan scenic spot.

3.2 Project Description

The new Shangrao Airport project includes airport project, an external supporting engineering and related engineering. Construction details are shown in Table 3-2-1.

<table>
<thead>
<tr>
<th>Project Content</th>
<th>Project description</th>
<th>Remark</th>
</tr>
</thead>
</table>
| 1. Airport Projects | 1. Runway and Taxiway: Construct 1 runway, 2400m in length and 45m in width. Construct 1 taxiway, 208.5m in length and 23m in width, including a vertical contact way.  
2. Apron: an apron with 5 seats (5C), and the size of the apron is 290m×130m.  
3. Terminal building and Parking area: Construct a Terminal building of 6000m² and a parking lot of 6000 m².  
4. Storage and Transportation: Construct a 400 m² cargo storage house, a 500 m³ loading and unloading stacking yard and a 100 m² parking lot.  
5. Oil Supply: The oil depot of the airport is equipped with 2 ground lying steel aviation fuel storage tanks of 100 m³, 1 bottom tank of 5 m³. Build an automobile service station of 150 m², equipped with 4 buried Horizontal tanks of 25 m³ and 4 tanker aircrafts.  
6. Drainage: Construct 8 substitute discharge outlets for storm-water, 1 box culvert and airport storm-water pipe network.  
7. Sewage treatment: Construct 1 sewage treatment station with a processing capacity of 10m³/h, and airport sewage water pipe network.  
8. Refuse disposal: Build a Refuse Transfer Station of 50 m².  
9. Water supply: Construct a water supply station of 350 m³, a reinforced concrete reservoir of 300 m³, and a fire reservoir of 500 m³. The length of the on-site water main laid is about 2.5km.  
10. ATC: Build a control tower that is about 24m high.  
11. Other auxiliary facilities include: Navigation Engineering (Navigational Lighting Engineering, Approach Instrument Landing System, Meteorological Engineering, Communication Engineering etc.), a air-condition room of about 300 m², a 800 m² Airport Center substation and office etc. | World Bank loan projects |
2. **off-site and related projects** (airport approach road and auxiliary pipeline projects)

<table>
<thead>
<tr>
<th>Activities</th>
<th>Description for Activities</th>
<th>EA Instruments</th>
</tr>
</thead>
</table>
| 3. Airport | - A runway (2400mx45m) and a taxiway (208.5mx23m) connecting parking apron to the runway;  
- Passenger aircraft parking apron (290mx130m) for five aircrafts;  
- A passenger terminal building (6000m²) and a car park (6000m²);  
- One 400 m² cargo warehouse, one 500 m² handling yard, and one 100m² parking lot;  
- Fuel farm: 2x200m³ storage tanks and 1x5m³ underground tank;  
- One vehicle gas filling station(150 m³) with 4 x25 m³ underground fuel tanks;  
- Drainage system: eight storm water discharge outlets, one culvert underneath the Airport, and associated storm water pipes within the Airport;  
- A wastewater treatment facility(10 m³/h) and associated sewer within the Airport;  
- A 50 m² solid waste transfer station;  
- A 350m² water pressure booster station, one 300m³ water storage tank, one 500m³ fire-fighting tank, and 2.5km water distribution pipes within the Airport;  
- A 1,200m² fire-fighting station with 6.5km fire-fighting pipelines within the Airport;  
- An air traffic control tower(~24m high); | EA and EMP |

Non-WB-loan projects

**Activities subject to EMP and EMF are summarized as below:**

**Table Activities Subject to EMP and EMF**
### Environmental Management Plan of Shangrao Airport Project

| 4. Airport Connecting Road and associated utility pipelines | - ~4.65 km road connecting Shangrao city and the Airport;  
- ~7.6 km (DN 500) water supply pipeline connecting with the trunk pipeline in Shangrao city to the Airport;  
- ~5km natural gas pipeline to be laid along the connecting road;  
- ~10km sewer to be laid along the connecting road; | EMF |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Camphor trees transplantation</td>
<td>- 3,722 Camphor trees to be transplanted to a nursery base.</td>
<td>EMP</td>
</tr>
<tr>
<td>6. Household graves relocation</td>
<td>- 137 household graves will be relocated to sites selected by affected people.</td>
<td>RAP and EMP</td>
</tr>
<tr>
<td>7. A resettlement site</td>
<td>- A resettlement site has been selected for 14 relocated households.</td>
<td>EMP</td>
</tr>
</tbody>
</table>
| 8. Construction of two electric power transmission lines. | - One ~7.5km 10 kV power line from Maojialing transformer substation to the Airport  
- One ~8km 10 kV power line from Zaotou transformer substation to the Airport; | EMF |
| 9. Compensation or Restoration measures for people whose farms’ irrigation system will be affected by the project. | - The assessment from Shangrao Water Resources Institute shows that approximately 300mu (20ha) paddy farms relies on the irrigation water from two ponds occupied by the airport. The compensation/restoration measures will be proposed based on further study. | EMF |
| 10. Restoration of rural connectivity | - Two (~6 km in total) rural roads will be constructed to restore rural connectivity. | EMP |
11. Relocation two existing electric power transmission lines
   - Relocation of ~15km 110kV Mao-Zao electric power transmission line
   - Relocation of ~12.8km 110kV Wang-Zhao electric power transmission line
   EMF

12. Burrow pits, disposal sites, temporary access roads to be determined during detail design stage.
   EMF

4 Environmental management mechanism

4.1 Environmental management institution allocation

See Fig. 4-1-1 and Table 4-1-1 for project environmental management organization of Shangrao Sanqingshan Airport. Institutions of environmental management plan include management institution, implementation institution (execution institution) and consultation service, etc.
Fig. 4-1-1 Structural Diagram of Environmental Management Institution
## Table 4-1-1 Composition institution of environmental management system

<table>
<thead>
<tr>
<th>Institutional nature</th>
<th>Name of institution</th>
<th>Tasks of Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management institution</td>
<td>Leader group of Sanqingshan Airport</td>
<td>Determine the construction plan, coordinate and solve major problems in airport engineering advance, to supervise the environmental protection work.</td>
</tr>
<tr>
<td></td>
<td>Project Office of Sanqingshan Airport</td>
<td>Appoint special environment manager, responsible for projects in the planning, design and implementation stages of the environmental protection work, determining the procedures to meet the domestic and the world bank on environmental assessment and environmental management requirements, with the supervision of environmental management plan, ensure that the environmental management plan related content in the implementation of contractor and engineer to invite public bidding and contract. See 4-2-1 for environmental management system with the agencies' responsibilities and staffing.</td>
</tr>
<tr>
<td></td>
<td>Sanqingshan Airport Co., Ltd.</td>
<td>Assigned exclusive environmental personnel, who are responsible for project construction period and the operation period of daily environmental supervision and management, responsible for the completion of the project completion acceptance of environmental protection and the daily monitoring of the project, the adverse impact on the environment is reduced to the minimum or the acceptable degree, and enables the engineering environmental benefits into full play; implement the project environment protection for the fund, and is responsible for the collation of relevant documents and archive, see 4-2-1 for environmental management system of the body functions and personnel allocation.</td>
</tr>
<tr>
<td></td>
<td>City Transportation Bureau, Construction Bureau</td>
<td>Responsible for road projects in the planning, design and implementation stages of the environmental protection work. Determine the procedures to meet the domestic and world bank on environmental assessment and environmental management requirements, with the supervision of environmental management plan; in charge of road project construction period and the operation period of daily environmental supervision and management, responsible for the completion of the project completion acceptance. See 4-2-1 for environmental management system with the agencies' responsibilities and staffing.</td>
</tr>
<tr>
<td>Supervision institution</td>
<td>Inspection Group of World Bank</td>
<td>Local environmental technology experts carry out supervision, inspection of the implementation of environmental protection regulations. See 4-2-1 for environmental management system of the body functions and personnel allocation.</td>
</tr>
<tr>
<td></td>
<td>Environmental protection administrative departments at all levels</td>
<td>Government administrative supervision Management institution, supervision, inspection items and work procedures of China to meet the requirement of environmental management, in the process of the implementation of pollution prevention and control measures to meet the need of environmental protection in China. See 4-2-1 for environmental management system of the body functions and personnel allocation.</td>
</tr>
<tr>
<td>Institution</td>
<td>Responsibilities</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Water conservancy department</td>
<td>Responsible for review, approval and inspection of soil conservation plan.</td>
<td></td>
</tr>
<tr>
<td>Electrical power department</td>
<td>Responsible for review, approval and inspection of relocation plan for electrical facilities.</td>
<td></td>
</tr>
<tr>
<td>Forestry department</td>
<td>Responsible for review, approval and inspection of replantation plan of amorphous trees.</td>
<td></td>
</tr>
<tr>
<td>Planning department</td>
<td>Responsible for planning of land use in the vicinity of the airport. In line with the land use control in the EMP, it make the land use planning and review, approval of the plan development plan in the area near the airport.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation institution</th>
<th>Construction project contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental assessment advisory unit</td>
<td>Equipped with environmental site engineer, fulfill the terms of the contract and bidding documents the environment protection and conservation of water and soil content, to meet the World Bank, the local competent administrative department of environmental protection environmental protection requirements, prepare and submit construction period environmental report. See 4-2-1 for environmental management system of the body functions and personnel allocation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consultation service institution</th>
<th>Design advisory unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental monitoring unit</td>
<td>Accept the Commission, preparation of project environmental impact assessment report. See 4-2-1 for environmental management system of the body functions and personnel allocation.</td>
</tr>
<tr>
<td>Design advisory unit</td>
<td>Accept the commission, prepare feasibility study report and construction design, and ensure that the environmental management plan measures, programmes to the compilation. See 4-2-1 for environmental management system of the body functions and personnel allocation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monitoring institution</th>
<th>Environmental monitoring institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water protection monitoring institution</td>
<td>Qualified environmental monitoring institution, responsible for project construction period and operation period of the environmental monitoring work. See 4-2-1 for environmental management system of the body functions and personnel allocation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monitoring institution</th>
<th>Water protection monitoring institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water protection monitoring institution</td>
<td>Quality of soil and water conservation Monitoring institution, responsible for project construction period and operation period of water and soil conservation monitoring. See 4-1-2 environmental management system of the body functions and personnel allocation.</td>
</tr>
</tbody>
</table>

4.2 Responsibilities and Personnel Allocation of each institution

In environmental management system of airport project, including management institution, supervision institution, implementation institution, consulting service
institution, monitoring institution, these institutions together constitute a complete project environmental management system, each undertaking different working content, have different responsibilities. The responsibilities and staffing of the project are shown in Table 4-2-1.

Table 4-2-1 Responsibilities and personnel allocation of environment management institution

<table>
<thead>
<tr>
<th>Name of institution</th>
<th>Type of institution</th>
<th>Personnel allocation</th>
<th>Responsibilities of Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Bank</td>
<td>Supervision institution</td>
<td>1 person</td>
<td>1. World Bank sends inspection team each year to take charge of the special inspection of project implementation; 2. Examine the execution conditions of project loan agreement and the implementation conditions of environmental management plan.</td>
</tr>
<tr>
<td>Environmental protection department at each level</td>
<td>Supervision institution</td>
<td>1 person</td>
<td>1. According to law, carry out whole-process monitoring and supervision management of the project, including approval of project environmental impact assessment report (including sub project environmental assessment), environmental monitoring and supervision management at project construction stage and operation stage.</td>
</tr>
<tr>
<td>Water conservancy department</td>
<td>Supervision institution</td>
<td>1 person</td>
<td>1. Supervise and inspect the implementation of the soil conservation plan, including the approval of the plan, and the review of the soil loss monitoring report.</td>
</tr>
<tr>
<td>Electrical power department</td>
<td>Supervision institution</td>
<td>1 person</td>
<td>2. Supervise and inspect the implementation of the electrical facilities relocation plan, including the approval of the plan, and the inspection of relocated works.</td>
</tr>
<tr>
<td>Forestry department</td>
<td>Supervision institution</td>
<td>1 person</td>
<td>3. Supervise and inspect the implementation of the amphous trees replantation plan, including the approval of the plan, and the inspection of replanted trees.</td>
</tr>
<tr>
<td>Airport office</td>
<td>Management institution</td>
<td>1 person</td>
<td>1. Supervise the implementation of environmental management plan to ensure that the corresponding environmental management procedures are incorporated into the project bidding documents and contracts for construction, and to organize and coordinate the relevant training; 2. Urge harmonious fulfill domestic and World Bank environmental management requirements; 3. Submit the report on the implementation of the environmental management plan every six months; 4. Each city (county) 4 check the environmental management work; 5. Other relevant departments to coordinate and solve major environmental problems; 6. Entrust external environment expert group on the project were examined;</td>
</tr>
<tr>
<td>Sanqingshan Airport Co., Management institution</td>
<td>Management institute</td>
<td>1 person</td>
<td>1. Supervise the implementation of project environmental management regulations;</td>
</tr>
</tbody>
</table>
## Environmental Management Plan of Shangrao Airport Project

<table>
<thead>
<tr>
<th>Role (Department)</th>
<th>Institution</th>
<th>Staff</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>City Transportation Bureau, Construction Bureau</strong></td>
<td>Management institution</td>
<td>1 person</td>
<td>1. Responsible for traffic engineering cost management; to organize the implementation of traffic engineering construction; responsible for traffic engineering quality and safety supervision; 2 for the road construction period and the operation period of the daily environmental supervision and management; 3 charge after the completion of the project completion acceptance</td>
</tr>
<tr>
<td><strong>Environmental assessment unit</strong></td>
<td>Environmental assessment institution</td>
<td>Several</td>
<td>1. Make on-the-spot investigation, the environmental evaluation; 2. Responsible for the preparation of environmental management plan content and to provide related advisory services</td>
</tr>
<tr>
<td><strong>Project supervisor (environmental supervision work)</strong></td>
<td>Consulting service institution</td>
<td>1-2 persons</td>
<td>1. engineering supervision division by Airport Company Limited commissioned; 2. supervision construction area living sewage treatment, wastewater treatment, soil erosion protection measures, waste gas, dust, noise control measures, production, waste and hygiene and disease prevention; 3. regular fill in environmental supervision report the check list; 4. construction unit in construction activities encountered on environmental issues and put forward rectification solution and follow up, including hair rectification notice, check list, check the file archive; 5. submit the project implementation conditions weekly to the airport limited company.</td>
</tr>
</tbody>
</table>
1. Develop the environmental protection measures in construction period;
2. accept project supervision division, the world bank and the environmental protection departments at all levels in the field of environmental protection supervision and inspection;
3. establish a feedback mechanism, received in the rectification notice, 3 working days to complete the rectification (requires Management institution of coordination in 10 working days to complete the rectification);
4. engineering supervision before construction together to complete the construction site verification table, reported to the airport company limited;
5. construction unit weekly report to project supervision division of engineering implementation

Environment Monitoring institution

<table>
<thead>
<tr>
<th>Monitoring institution</th>
<th>1-2 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In the project construction period and operation period in accordance with environmental monitoring plan project for environmental monitoring, archiving and reporting the Airport Company Limited;</td>
<td></td>
</tr>
</tbody>
</table>

Water Protection Monitoring institution

<table>
<thead>
<tr>
<th>Monitoring institution</th>
<th>1-2 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. In the project construction period according to water conservation monitoring plan the project of water and soil conservation monitoring, archiving and reporting the Airport Company Limited;</td>
<td></td>
</tr>
</tbody>
</table>

5. Environmental Management Plan

5.1 Main Environment Impack

5.1.1 Environment impact during construction period

(1) Noise environment

Noise influences in construction period will be those mainly from construction equipments during the phases of piling, structure, earth work, etc.

This new constructed airport project mainly includes aircraft movement area runway project, terminal area project, auxiliary facilities project and such projects as airport road, supporting pipelines and water drainage works; the natural villages 320m away from the border of the airport main body project and within 200m from the airport road are Huangwu, Tashuixiajia, Tashuixujia, etc.

It is predicted that, during the piling phase, night working is prohibited, the villages will not be influenced by the mechanical noises; during the structure phase, the noise to the villages may meet the standard in daytime, while in the night
construction, the noise of the concrete mixers is larger, the nearer villages around the airport will be influenced to some extent, the nearest 9 villages, such as Shanghuangwu, Tashuixiajia, Tashuixujia, etc. will be influenced by other mechanical noises; during the earth work phase, the construction noise to the villages near the airport will meet the standard, while in the night construction, the 9 villages within 283m from the construction border, such as Shanghuangwu, Tashuixiajia, Tashuixujia, etc. will be influence by noises from different construction machines.

(2) Ecological Environment

The land of an area of 176.6573hm² will be engineering construction land during the construction period, accounting for only 1.16% of the total land area of evaluation zone, which has less impact on the land use pattern of the evaluation zone. Besides, an overall biomass loss of 6874.928t is caused by the engineering construction, accounting for 1.48% of the total biomass (463021.3t) in the evaluation zone; the yield losses of crops and fruit trees respectively are 293.2861t/a and 47.6765t/a. During the construction period, the bad effects, such as vegetation deterioration and noise, will disturb the activities and habitats of the wildlife in surrounding area, but the effects will not lead to the significant changes or even disappearance of their population quantity.

The project covers a total earthwork volume of 6.16 million m³, of which the total excavated volume is 3.17 million m³ and the total fill volume reaches 3.09 million m³. After the balance and deployment of the earthwork, an abandoned soil volume of 80 thousand m³ is formed, so in order to reduce the occupation and effects on off-site land, the abandoned soil is backfilled into the on-site low-lying areas like fishpond, or evenly backfilled into the entire field, so that the total height of the field adds 5cm. The borrow pit and spoil ground are not set up for the project. The possible total amount of water and soil erosion caused by the construction of this project may reach 70251t, and the newly increased amount of water and soil erosion is 65015t. The newly increased water and soil erosion occurs mainly in construction preparation and construction periods in such areas as airfield area, terminal area, temporary
(3) Ambient Air

What mainly affects the ambient air during the construction period is the raising dust. Construction dust usually is caused by the earthwork excavation, site formation, handling and stacking of construction materials, vehicle transport, concrete mixing, etc. This project involves a large amount of earthwork excavation and vehicle transport, so the raising dust will have a significant impact on local ambient air. The pollution factor is chiefly TSP.

The average wind speed of Shangrao Airport Area is 1.2m/s. According to the analog data, the area affected by construction dust is within the scope of about 150m around the construction site where some inhabitants from Tashui Xujia and Shanghuangwu Zu live there. In addition, in the area within the range of 500m around the site, some inhabitants from Shanghuangwu Zu, Xiawutang Zu and Tashui Xujia distribute there. Furthermore, residential areas within the scope of 150m along the both sides of airport boulevard, supporting pipelines and reconstructed backroads will be affected to some extent. Therefore, the watering and dust suppression work should be conducted properly during the construction period.

The effects caused during the construction period are partial and short-term, and will disappear as the project is completed and put into operation.

(4) Surface Water Environment

Wastewater produced during the construction period mainly include: silty construction sewage, domestic sewage, etc. During the construction period, the implementation of space cleaning, pipe laying, concrete mixing, construction and installation will result in a certain amount of remaining construction water and waste water. During the rainy season, a relatively large amount of construction sewage will be produced at the site which always contains a lot of sludge. Thus, the sedimentation tanks should be set up at the site to discharge the sewage after sediment, thereby reducing the discharge of sludge. In addition, because a large number of construction workers are required during the construction period, a certain amount of domestic
sewage will also be produced in their daily life.

(5) Groundwater Environment

According to the results of geological exploration and the engineering geologic profile, the excavation and fill will directly undermine the region's original groundwater recharge-runoff-discharge conditions, and further damage the vadose zone and unconfined aquifer, but will not damage the underlying bedrock fissure aquifer. Regional groundwater is more influenced by the seasons and climate, and contains relatively small amount of water. Therefore, the excavation can only change the partial groundwater balance of shallow layer, leading to the change of the partial groundwater flow field. However, as the main aquifer in this region, the recharge, runoff and discharge of bedrock fissure water, which has poor water-abundance and non-uniform groundwater surface, are affected by the development degree of rock formation fractures and their connectivity. The groundwater yield will not change basically, and a new groundwater system will formed after the fill. Thus, the excavation of the project has a little impact on groundwater.

(6) Solid Wastes

If the construction wastes and household garbage produced during the construction period are not been disposed timely, it will not only lead to the unsightly environment, but also cause raising dust in windy and dry days. Therefore, the construction wastes should be cleared and transported away promptly after the completion of the construction. Besides, if timely household garbage treatment has not been conducted, mosquito will breed quickly around the stinking garbage in the conditions with moderate temperatures, which will easily lead to the spread of disease and has adverse impact on the surrounding environment. The household garbage should be disposed in municipal waste disposal system after having been temporarily stored.

5.1.2 Environmental Impact during the Operating Period

(1) Acoustic Environment

① $L_{WECPN}$ Evaluation of Aircraft Noise

It is predicted that after the operation of Shangrao Airport, there will be no
settlements within the area with a nose level greater than 75dB until 2020, the target year, and during 2015 to 2020, none noise-sensitive buildings such as schools and hospitals will be built within the area with a nose level of 70dB. Therefore, based on L_{WECPN} evaluation, the impacts of aircraft noise on nearby residents are acceptable.

② L_{eq} Evaluation of Aircraft Noise

After the operation of Shangrao Airport, 20 households will have witnessed excessive noise in the daytime and 217 households will have witnessed excessive noise at night by 2020, the target year. Therefore, based on Leq evaluation, aircraft noise of Shangrao Airport will have some impacts on nearby residents.

(2) Ecological Environment

During the operating period, soil erosion in the construction area of the airport will be gradually weakened. The airport's ecological impact on the surrounding area which is limited is mainly reflected by the impact of aircraft noise on animals such as birds. In the meanwhile, the job of scaring away birds should also be well done when the aircraft is taking off or landing to ensure flight safety.

(3) Ambient Air

The major environmental and air pollution source of Shangrao Airport is the airport heating boiler. Since the airport heating boiler is fueled by natural gas, which is clean energy, the discharged flue gas of the boiler is up to standards, having little impact on the atmospheric environment. Pollutants of aircraft exhaust and automotive emissions include NO_{2}, C_{m}H_{n}, CO, etc. all being flowing gases and emitted intermittently. As a regional airport, there will be fewer flights and vehicles entering and exiting the airport until the target year, therefore, the impact of unorganized emission sources on the surrounding environment is low.

(4) Surface-water Environment

In the target year of operation, the airport wastewater output will be 57.96m^{3}/d. The current project will have a sewage treatment station with a capacity of 10m^{3}/h newly built, and this sewage treatment station, which adopts the MBR process, can meet the requirements of treating all sanitary sewage and industrial wastewater at the airport. Water after the treatment by the sewage treatment station can be reused in
terms of water quality.

29.05 m³/d of the up-to-standard sewage after treatment will be used for car washing and toilet flushing, and the residual sewage will be discharged to Shangrao Jiangbei Sewage Treatment Plant for further treatment. Shangrao Urban Management Bureau has committed to building the sewage discharge pipeline linking the airport to the current municipal sewage pipe network and the sewage discharge pipeline is supposed to be completed before the completion of the airport. The supporting sewage discharge pipeline of the airport will be laid along the airport road. Thus, the airport sewage generated under normal circumstances will not impact on the surrounding surface water bodies.

(5) Underground water Environment

Based on engineering analysis, during the operating period, the airport may impact on underground water when the seepage-proofing measures of the regulating reservoir of the oil depot area, gas station or sewage treatment plant fails, leading to seepage with pollutants seeping into the ground and polluting underground water.

When there is leakage in the regulating reservoir of the oil depot area, gas station or sewage treatment plant and the bottom of the cofferdam is broken, the pollutants will slowly infiltrate into the surrounding underground water, resulting in a certain degree of pollution. As it is predicted, it takes a relatively long time for the oil tank leakage to infiltrate into the underground water, there will be sufficient time to take measures to separate pollutants to protect underground water against pollution. At the same time, the airport site is mostly covered by impermeable asphalt or concrete pavement, and partly covered by lawn, so the permeability of the soil is reduced because of these artificial treatments. Well collected through a pipe network, sewage of various kinds on the site will not infiltrate into the underground water. The underground water is less affected by airport drainage.

(6) Solid Waste

Airport solid waste mainly includes household waste which is not toxic itself. The impact of solid waste on the environment lies in:
① Atmosphere: after being sorted out at the garbage sorting station, aviation waste and household waste at Shangrao Airport will be sent to the garbage disposal plant of Shangrao City. As organic content of aviation waste and household waste is high, the garbage piled is smelly, posing atmospheric impact.

② Body of Water: for weather conditions such as continuous rainfall and heavy rainfall, there will be leaching liquid coming out of the temporarily stored garbage because of rain wash, therefore, the garbage sorting station should attach much importance to seepage-proof. In order to prevent the leachate from seeping into the underground water, a canopy or water barrier may be set at the temporary garbage storage site. At the same time, there should be strict limitations on temporary garbage storage sites and the garbage should be carefully handled in accordance with the nature of the garbage to lower the impact on the water environment.

③ Human Health: in the process of stacking, solid waste may produce toxic substances and pathogens, which in addition to biological transmission, can be spread through water or air, posing harm to human health. At the same time, by strengthening disinfection and cleaning at the garbage disposal plant, the harm to human health can also be lowered.

5.2 Environmental Management Measures

Environmental management rules cover design, construction and operation stage.

Environmental management procedures include the construction period, construction period of general environmental management measures for environmental management procedures (related to sensitive point) and runtime environment management procedure (related to sensitive point). The management measures for construction camps are given in Annex 1, the codes for design of green airport are in Annex 2, the occupation health and safety measures in operation phase are in Annex 3, and the plan for amphous trees replantation is in Annex 4.
5.2.1 Generic environmental codes of practice during construction period (Generic ECOPs)

See Table 5-2-1 for mitigation measures for generic environmental impact of Shangrao Sanqingshan Airport Project.
<table>
<thead>
<tr>
<th>Item</th>
<th>Elimination Measures for Environmental Impact</th>
<th>Implementation institution</th>
<th>Supervision institution</th>
<th>Monitoring institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design stage</td>
<td>(1) Through selection, runway direction optimization measures to further optimize the adjustment of local site location design, the runway is far from as far as possible or reduction of sound environment sensitive points, and in line with the city (county) city, traffic, water supply and drainage planning. (2) To consider the protection covers the range of Ecological environment, minimize disturbance to vegetation, prevent soil erosion. (3) In the stage of site of locally confined conditions to avoid or from technical economy argumentation avoidance is not practicable, the affected sound environment sensitive targets from the flight procedure design should consider measures of noise reduction, while making the measures of cost estimate. (4) The environmental protection and engineering design of synchronization. (5) desing will follow Annex -GBT50378-2006 Green Building Evaluaton Standard</td>
<td>Design unit</td>
<td>Project office, owners, city (county) environmental protection agency and Department of transportation</td>
<td></td>
</tr>
<tr>
<td>Construction stage</td>
<td>(1) To determine the project covers an area of and permanent temporary area (construction production area, construction camp and road construction, construction material field) range, good for projects for the relevant procedures. (2) The construction area should make an existing pipeline survey work, avoid the construction destruction of existing pipelines. (3) Construction of the production area, construction camp, road construction and soil, abandoned dredge site away from surface water. (4) Construction unit and city (county) the project organization consultation to determine a suitable</td>
<td>Construction unit</td>
<td>Project office, owners, city (county) environmental protection agency and Department of transportation</td>
<td></td>
</tr>
<tr>
<td>Construction site environmental practice at preparation stage</td>
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<td>Owners in the form of a contract to entrust a qualified agency</td>
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<tr>
<td>Item</td>
<td>Elimination Measures for Environmental Impact</td>
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<td>public water, should use municipal tap water as drinking water source, no new drilled wells.</td>
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<td></td>
<td>(1) Note that watering dust, to reduce dust pollution.</td>
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<td></td>
<td>(2) The construction Slag should timely removal, engaged in earthwork, slag and construction waste transport, must use a closed transport vehicles.</td>
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<td></td>
<td>(3) The construction site watering dust reduces dust pollution.</td>
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<tr>
<td>Construction site</td>
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<tr>
<td>management</td>
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<td>Main construction</td>
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<tr>
<td>environmental</td>
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<td>impact control</td>
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<tr>
<td>Surface cleaning</td>
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</tr>
<tr>
<td>Roadbed construction</td>
<td>(1) Strict control of roadbed, pipeline excavation, avoid the overbreak damage to surrounding vegetation, prohibit the construction area of arbitrary cut down the trees.</td>
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</tr>
<tr>
<td></td>
<td>(2) The waste soil shall be timely removal, engaged in earthwork, slag and construction waste transport, must use a closed transport vehicles.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>(3) The construction site watering dust reduces dust pollution.</td>
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<tr>
<td>Airport pavement</td>
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<tr>
<td>engineering and entry</td>
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<tr>
<td>road engineering</td>
<td>Asphalt mixing station must adopt centralized mixing plant, mixing station construction should be located in production areas, strictly prohibited in the construction zone setting asphalt mixing station.</td>
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</tr>
<tr>
<td>Item</td>
<td>Elimination Measures for Environmental Impact</td>
<td>Implementation institution</td>
<td>Supervision institution</td>
<td>Monitoring institution</td>
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</tr>
<tr>
<td>Ecological recovery</td>
<td>(1) Completion of the construction project should destroy land ecological restoration, restoration of at least before construction. (2) In the process of construction of arable topsoil stripping should be temporarily stacked on a site within the relatively flat area, and the use of bagged soil temporary retaining, surrounding the establishment of temporary drain and settling measures, and the dustproof net cover, after the end of construction for the construction camp of ecological restoration.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction noise</td>
<td>(1) Strictly control construction time, away from the residential area to within 150m of the construction site, the construction machinery noise at night (22:00-06:00) to stop the construction. Must be continuous construction project, construction unit should depend on the specific situation in time with the local environmental protection departments made contact, according to the provisions of night construction permits, at the same time announcement maximum to gain public support. (2) The distance of construction site is near the sensitive points (less than 50m), which should take mobile or temporary sound barriers and other noise control measures. (3) The construction site should be kept away from surrounding schools, hospital school near strong noise mechanical construction time and the school agreed, try not to the school have an exam time construction.</td>
<td></td>
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</tr>
<tr>
<td>Others</td>
<td>(1) Construction site is strictly prohibited to burn all kinds of waste.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction of production area environment impact control</td>
<td>Surface cleaning (1) Note that watering dust, to reduce dust pollution. (2) The construction soil should be timely removed with reasonable disposition.</td>
<td></td>
<td></td>
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<td>Asphalt mixing (1) Give priority to rely on municipal asphalt mixing plant procurement. (2) For asphalt concrete mixing station shall be used and good sealing performance, high dust removal efficiency of mixing equipment, prohibit the use of semi closed asphalt boil operation process.</td>
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<td>Concrete mixing</td>
<td>(1) Preferred commodity concrete.</td>
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<td>(2) Concrete mixing wet mixing concrete with mixing process sealed state.</td>
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<td>Material handling</td>
<td>(1) Earth, cement and lime and other bulk material transport, temporary storage and handling process, should take the wind shielding measures or dust control measures.</td>
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<td>storage</td>
<td>(2) The material depositing area site should be flat and solid.</td>
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<td>(3) The construction materials such as cement, lime, gravel pile site should be located Weidang measures, and Gabon cloth cover to reduce rainwater pollution.</td>
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<td>Construction transport</td>
<td>(1) The construction site entrance set flush vehicle facilities, enters the vehicle must be clean, car cleaning equipment and site exit shall be paved with concrete roads, asphalt or hard core sediment, will not bring out of the site.</td>
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<td>vehicle</td>
<td>(2) Engaged in earthwork, slag and construction waste transport and use a closed transport vehicles.</td>
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<td>Precasting yard</td>
<td>(1) Concrete mixing wastewater may not discharge, collection and processing by sedimentation tank returned to field watering dust suppression measures, after the end of construction sedimentation tank shall be covered soil burying, and ecological restoration.</td>
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<td>Construction noise</td>
<td>(1) The large vibration of the fixed mechanical equipment (such as mixer etc.) should be the installation of vibration reducing machine.</td>
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<td>(2) Fixed noise source should be equipped with soundproof hood (such as the TRAM) or placed in indoor operation.</td>
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<td>(3) Strictly control construction time, away from the residential area to within 150m of the construction site, the construction machinery noise at night (22:00-06:00) to stop the construction.</td>
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<td>Others</td>
<td>(1) The works completed before responding to destroy the land ecological restoration, restoration of at least before construction.</td>
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<td>(2) In the process of construction of arable topsoil stripping should be temporarily stacked on a site.</td>
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<td>within the relatively flat area, and the use of bagged soil temporary retaining, surrounding the establishment of temporary drain and settling measures, and the dustproof net cover, after the end of construction for the construction camp of ecological restoration. (3) Construction site is strictly prohibited to burn all kinds of waste.</td>
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<td>(1) Try to use advanced equipment, machinery and effectively reduce the run, run, drip, leak quantity and mechanical repair times, thereby reducing oil and sewage production. (2) In the inevitable run, run, drip, leak process as the solid absorbent materials (such as cotton, wood, oil absorption paper), the waste oil collection into a solid material, avoid the generation of excessive oil sewage. (3) Machinery, equipment and transport vehicle repair and maintenance to focus on the various sections of the Department of repair points, in order to facilitate the oily sewage collection. (4) In mechanical repair facilities should be set of horizontal flow sedimentation tank, oil sewage from the sedimentation tank is collected, the acid-base neutralization, precipitation, grease, slag and other simple treatment before discharge, after the end of construction sedimentation tank shall be covered soil burying, and green. (5) Equipment repair places the ground should be hardened, anti-seepage treatment, to avoid leaking oil-contaminated soil. (6) The establishment of equipment repair, maintenance records, according to the running situation of the equipment for regular maintenance.</td>
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<td>(1) Construction unit must be selected in line with the relevant national standards of construction machinery and transport vehicles, as far as possible selection of low noise of construction machinery. (2) The large vibration of the mechanical equipment should install the damping frame is fixed, fixed the strong noise sources should be considered with sound-proof cover (such as the TRAM) or placed in indoor operation.</td>
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<td>(3) Strengthen the various types of construction equipment maintenance and repair, maintain its good operation, in order to fundamentally reduce the source of noise and vibration.</td>
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<td>Equipment tail waste gas control</td>
<td>(1) Construction unit must select construction machinery and transport equipment in line with national health standards to ensure that the waste gas emissions in line with national standards.</td>
<td>(1) The sporadic produce harmful wastes (oil gloves, gauze in first class) by the project department shall entrust qualified entity recycling disposal. &lt;br&gt; (2) Leak into the soil oil should be timely use of scraping device collection storage, transport to a qualified treatment field centralized treatment. &lt;br&gt; (3) In the machinery, equipment and transport vehicle repair maintenance can not be concentrated in various sections of the Department of repair points, should use the container or solid sorbent materials absorb device to generate the oily wastewater, collection storage after Sinotrans Sinotrans treatment, location should be selected with this kind of waste disposed near the qualification for disposal.</td>
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<td>Solid waste control</td>
<td>(1) Produce waste slag should be timely removal, engaged in earthwork, slag and construction waste transport, must use a closed transport vehicles. &lt;br&gt; (2) Watering dust to reduce dust pollution.</td>
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<td><strong>Life sewage control</strong></td>
<td>(1) Canteens should set up separate oil pool, and shall entrust the removal units timely cleaning, removal units required to hold the approval of relevant departments of waste disposal qualification certificate and business license. (2) The construction site should be set up temporary toilets and septic tanks, temporary toilets septic seepage treatment should do. (3) The construction site should set the drainage ditch and precipitation pool, dining room, bathroom, shower water pipelines should be set filters, construction sewage through precipitation before discharging into municipal sewage network or river, also should ensure that the drainage ditch is neat, smooth drainage. (4) The construction site should keep the drainage unobstructed, black smelly water, no anywhere soil phenomenon. (5) Ban direct to along the sewer dumping, the discharge of various life sewage, not on the construction camp stacked near waste and construction debris.</td>
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<td><strong>Life waste gas control</strong></td>
<td>(1) Construction camp food is subject to the local environmental protection departments, the use of natural gas, electric power and other clean energy.</td>
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<tr>
<td><strong>Solid waste control</strong></td>
<td>(1) Recyclable waste (such as paper etc.) should be entrusted to recycling and disposal. (2) The construction site should be set closed garbage station, and garbage collection, and shall timely removal treatment. (3) Canteens should set closed swill bucket, and shall timely removal. (4) Septic entrusted shall promptly cleaning, and construction will end in septic soil burial.</td>
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<td><strong>Ecological impact control</strong></td>
<td>(1) Completion of the construction project within a month, temporary facilities shall be removed prior to construction, and repair of the state. (2) In the process of construction, arable topsoil stripping should be temporarily stacked on a site within the relatively flat area, and the use of bagged soil temporary retaining, surrounding the</td>
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## Elimination Measures for Environmental Impact

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<td>Establishment of temporary drain and settling measures, and the dustproof net cover, after the end of construction for the construction camp of ecological restoration.</td>
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<td>Other requirements</td>
<td>(1) The construction site temporary facilities prohibit the use of clay brick, and shall comply with the safety, fire safety requirements and the relevant provisions of the state.</td>
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<td>(2) The construction camp and construction division is clear, and we should take corresponding measures, and guarantee the construction camp of neat and orderly.</td>
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<td>(3) The construction camp various wastes are prohibited to burn.</td>
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<td>Environment impact control of soil-taken field</td>
<td>(1) In the construction of deep excavation should be avoided as far as possible, the excavation and filling balance, such as debit, priority should be given to the procurement of goods of earth or coordination of urban construction projects soil, to avoid a single set of soil, can fundamentally eliminate the soil’s impact on the environment.</td>
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<td>(2) Projects should take soil soil concentrated manner, in order to reduce the amount of soil.</td>
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<td>Dust control</td>
<td>(1) In soil-taken operation, it is necessary to pay attention to watering dust, to reduce the excavation the dust pollution.</td>
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<tr>
<td>Ecological impact control</td>
<td>(1) In the excavation work, should be reserved for surface soil, land reclamation, soil should be temporarily stacked on a site within the relatively flat area, and the use of bagged soil temporary retaining, surrounding the establishment of temporary drain and settling measures, and the dustproof net cover, after the construction of ecological restoration for soil.</td>
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<td>(2) After completion of the project should be carried out in vegetation restoration.</td>
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<td>Landscape control</td>
<td>(1) In accordance with the project EIA report, take corresponding measures to protect the environment</td>
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## Environmental Management Plan of Shangrao Airport Project

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<th>Environmental impact control of residue field</th>
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| Overall requirements | (1) Such as the generation of waste, should be considered first in situ or to any other site recycling, or for the return of soil vegetation restoration, to avoid a single set of discarded soil field, can fundamentally eliminate the soil’s impact on the environment.  
(2) When it is cannot be recycled, should first investigate local whether a specified construction Slag satisfied eliminate the place, if any, should be in accordance with the provisions of Slag removal procedures, transported to the designated place of consumption. |  |  |  |
| Dust control | (1) Residue field should compaction in layers, can effectively inhibit the generation of dust.  
(2) To take water spray dust suppression mode and reduce the surface exposed to bring the dust pollution. |  |  |  |  |
| Ecological impact control | (1) Before approach of residue field, the surface soil digging out for land reclamation, soil should be temporarily stacked on a site within the relatively flat area, and the use of bagged soil temporary retaining, surrounding the establishment of temporary drain and settling measures, and the dustproof net cover, after the end of construction for the residue field ecological restoration.  
(2) Sampling should be performed after vegetation restoration. |  |  |  |  |
| Water loss and soil erosion prevention scheme | Construction area of main body project | (1) May not be in the ground runoff pool surface shall not be stacked in the stacking; project near roads or rivers sensitive area; shall not be stacked in affecting construction or road unobstructed areas; as stacked in the low-lying idle land, to reduce the protection engineering quantity. The topsoil is stacked on both sides of the subgrade requisition range; in order to avoid earth slide in the pile of earth, set around the braided bag temporary blocking; temporary storage of Topsoil Used in late slope greening soil.  
(2) Should be timely slope protection on subgrade slope protection, in principle, because this project contains the roads were so considering urban road, on both sides of the land development, ecological protection, should be the main light retaining supplemented. Combine with the engineering geological and hydrological conditions, the fill road section adopts the geonet grass protection local |  |  |  |
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<td>Construction production control area</td>
<td>Construction control points of the production zone for soil and water loss, due to the vehicle from the frequent and stacking need, it shall all the venues hardening of cement.</td>
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| Construction road control area | (1) The rainy season should be in the project area of low-lying land outside the boundary set temporary blocking gutter, in case of rain.  
(2) On Soil and pile material dust network coverage, and set the block, to prevent being washed.  
(3) Reasonable arrangements for the project, shorten the temporary land use time, completed the construction of Temporary Land Restoration Vegetation and reclamation.  
(4) For the new road construction, must do a good job of protective engineering and drainage engineering.  
(5) Reasonable arrangements for the project, shorten the temporary land use time, completed the construction of Temporary Land Restoration Vegetation and reclamation. | | | |
| Construction camp control zone | (1) The sheds and hardening region other than the part temporary green, sowing and planting grass shrub, afforest and beautify the environment to camp.  
(2) Built brick drainage ditch to quickly exclude site water.  
(3) At end of the project, demolish sheds and harden region, land renovation and restoration of vegetation. | | | |
<p>| Soil-taken field control zone | (1) Soil sampling operation before should advance construction essential drainage measures: in the soil surrounding the establishment of a drainage ditch, exports of desilting basin, the rain water is discharged into natural water sediment near; soil slope platform and soil slope is arranged on the outer side ditches, drainage ditch is communicated. | | | |</p>
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<td>(2) As far as possible to dig down a soil restoration, a green transformation, a piece of, prevent excavation causes large area bare surface, leading to severe soil erosion, greening measures before the implementation of the topsoil, filled to the Green Zone, and the implementation of land consolidation measures. (3) Soil slope vegetation measures is difficult in the short term rapid recovery, meet strong rainfall for temporary coverage, lest the runoff scouring slope. (4) Complete construction on Soil Restoration Vegetation and reclamation.</td>
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<td>Slag control zone</td>
<td>(1) If it is difficult to implement, need to set the residue field, should choose or low-lying land as the residue field. (2) Slag according to topographic features in the residue field of lower building slag blocking wall, slag retaining wall construction should be based on residue stacking position and terrain feature set, security, economic, reasonable. (3) In the abandoned dreg site upper repair intercepting ditch interception runoff, construction of desilting basin ends. When intercepting ditch terminal gradient is larger, with energy dissipation facilities. (4) Residue should be timely rolled out a drainage ditch. (5) Complete construction on ecological restoration of Abandoned Dreg Field.</td>
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<td>Ecological recovery</td>
<td>(1) Ecological restoration should make the best use of site cleaning process in the storage of topsoil, not the new earth. (2) Greening work should be used in combination with grass, i.e. selection of afforestation tree plant at the same time selection part of the growth of higher density of evergreen broad-leaved shrub destroyed plants, comprehensive afforest, leaving no space, to prevent the invasion of alien species. (3) Greening plants to prohibit the use of exotic species.</td>
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| **Protection of cultural relics** | (1) If the construction is found during the unmovable cultural relics (including ancient sites, ancient tombs etc.), it should immediately stop construction, the construction supervision to protect the site, without treatment, and immediately reported to the local cultural relics administrative departments.  
(2) In the cultural relics administrative departments for cultural relics were identified, after cleaning, the construction unit should develop cultural construction method, and with the consent of the departments of cultural relics consent before construction.  
(3) In case of discovery of movable cultural relics (including the time life, production and other objects), should take the initiative to give the cultural relics administrative departments, may not have been occupied.                                                          |                           |                        |                        |
| **Construction traffic management** | (1) Reasonable arrangements for the project, shorten the temporary land use time.  
(2) Engaged in earthwork, slag and construction waste transport, must use a closed transport vehicles.  
(3) In the construction of pavement 50m with patches of residents, the night should be banned in the road transport building materials.  
(4) The construction of transport vehicles should avoid local traffic peak hours, to prevent traffic congestion and accidents.  
(5) Construction vehicles should be provided in a lane, it is forbidden to travel route, damage to farmland and woodland.                                                                                     |                           |                        |                        |
| **Traffic safety**            | (1) For driver safety driving, the vehicle according to the road planning route running, shall not be arbitrarily changed routes and lane.  
(2) Improve driving technology, the provisions of driving personnel must have license.  
(3) Limit the running time, the driver turns driving. Avoid the dangerous road and time travel, thereby minimizing accidents, vehicles, pedestrians should be in accordance with the signals to pass, obey the traffic police command.  |                           |                        |                        |
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<td>(4)</td>
<td>Mounted on the truck speed control system, supervision and driver.</td>
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<td>(5)</td>
<td>The timely purchase of spare parts vehicle maintenance, avoid because of equipment failure or components of premature failure and serious accidents.</td>
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<td>(6)</td>
<td>Minimize the pedestrians and vehicles using the road construction of confounding, crossing the road to go the pedestrian crossings or pedestrian bridges, underpasses, and motor vehicle forcibly.</td>
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<td>(7)</td>
<td>Improve sign visibility and enhance traffic safety.</td>
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<td>(8)</td>
<td>In the vicinity of the school community traffic safety and pedestrian safety education.</td>
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<td>(9)</td>
<td>Emergency staff to coordinate to ensure that in the event of an accident to provide appropriate first aid to local procurement of materials to reduce the transport distance in construction use of large van in order to reduce the traffic volume. The traffic safety restrictions, by road signs and signals officer reminding pedestrians and other vehicles of dangerous traffic situation. In sensitive sections, such as schools, hospitals, nursing homes and residential area, commercial area to build a temporary footbridge to ensure the safety of pedestrians crossing the street</td>
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<td>(10)</td>
<td>As far as possible to obtain raw material locally to shorten the transportation distance, to use the bus and other transportation workers, as far as possible to reduce the use of foreign vehicles.</td>
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<td>(11)</td>
<td>To avoid the transportation vehicle overload, and to transport vehicle cover to avoid transportation there, want detailed plan vehicle transportation routes and time, avoid transport vehicles in the central area, the traffic to and area residents travel for demanding sections, according to the actual situation to make night transportation of transit. Lime soil leakage was clear in time to reduce dust pollution.</td>
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<td>(12)</td>
<td>In excavation of road to set the warning sign with light tip in night;</td>
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| Hazardous and flammable and explosive materials | (1) When gasoline and diesel oil delivery to the site, the inspection personnel should be carefully check the packaging is intact, whether there is leakage, such as leakage should be rejected returned.  
(2) The construction of production area for oil and chemical solvent such items should be a special warehouse, and set up warning signs, the ground should be seepage prevention treatment, and prepare the absorption bag/sand/sawdust and other emergency materials.  
(3) Emergency response plan, construction before approaching the workers responding to provide training. | | | |
| Public participation | (1) The bulletin board set at the construction site, name of the project, main construction contents of announcement, the construction time and other information, and shall make public announcement complaints with suggested contacts.  
(2) Arranged for environmental protection professional technical staff to answer the public about the environmental protection question.  
(3) Nocturnal continuous construction, shall handle the relevant formalities, and notice the surrounding residents, bulletin information should include continuous start-stop time and environmental protection departments of the night construction permits.  
(4) If the construction is required to break the municipal services (including water, electricity, telephone and bus lines, etc.) should be at least five days in the project and the affected residents, enterprises post notice to inform the public, and indicate the starting and ending time interrupt service.  
(5) From all the public opinions, problems should be documented, in response to public questions, should be timely answer, respond to all comments, answer, respond to the results should be recorded and archived, and accept the supervision institution examination. | | | |
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| Social environment impact control | (1) In strict accordance with the relevant provisions of national and Jiangxi Province the subsidy standard, and in light of local conditions, and the requisition, demolition households signed an agreement, will be land acquisition, relocation subsidies cost in time to concerned village group and individual to fully promote democracy and respect for citizens' basic rights, accomplish reasonable allocation, use the compensation fees; reasonable allocation of land and resettlement of labor, to implement the relevant policies.  
(2) The construction of transport vehicles should avoid local traffic peak hours, to prevent traffic congestion and accidents.  
(3) The proposed road construction during the occupation or destruction of the local road, after the end of construction should be carried out to shift or protective treatment, and pavement restoration and landscaping, and pay the local government a fee, to preserve the local government and residents' legitimate interests. |                           |                         |                         |
| Landscape impact control    | (1) In order to strengthen the project and surrounding landscape harmony, coordination, filling, excavation slope with the natural ground phase edge then, can use the arc slope to improve its visual effect. The slope surface should be a rough surface, so that the surface can be taken to prevent or grassing measures such as retaining wall can be used. Shielding method for planting, planting shrubs and trees often be masking, also can be planted vines, in order to improve the visual effect.  
(2) In view of road construction along the sides of many arrangement, should be advised to increase environmental propaganda, improve the management staff and construction staff awareness of environmental protection, the prohibition of the life and production of waste disposal.  
(3) Residue field, building materials of the dumps, strictly within the area of operations, which is prohibited due to arbitrarily discarded pollution landscape environment.  
(4) After the completion of the project, should be timely cleaning residue field, material field, road construction and construction camp and other venues within the dirt and garbage, leveling the |                           |                         |                         |
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<td>ground, try to restore the original landform and vegetation, the engineering construction and the surrounding natural environment harmony.</td>
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<td></td>
<td>Construction safety</td>
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<tr>
<td></td>
<td>(1) The construction site should be easy to produce the occupation disease harm in the job positions and equipment, places to set up warning signs or warning.</td>
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<tr>
<td></td>
<td>(2) Regularly engaged in toxic and hazardous operation personnel occupation health training and examination, guiding the operation of personnel in the proper use of occupation disease protection equipment and personal labor protection articles.</td>
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<tr>
<td></td>
<td>(3) Construction unit for the construction personnel safety helmet, safety belt and engages with the types of matching the safety shoes, clothing and other personal labor protection articles.</td>
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<tr>
<td></td>
<td>(4) The construction site should use the low noise equipment, promote the use of automation, the sealed construction process, reduce the mechanical noise when in operation, and the operator should wear ear plugs hearing protection.</td>
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<td></td>
<td>(5) The basement waterproof anti-corrosion, and other operations can not guarantee a good natural ventilation operation area, should be equipped with forced ventilation facility operators in toxic and harmful gas workplace should wear a mask or respirator.</td>
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<td></td>
<td>(6) In the workplace dusts, should take the watering and other facilities to reduce dust concentration, the operator should wear anti-dust masks; welding operation, the operator should wear protective masks, goggles and gloves and other personal protective equipment.</td>
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<tr>
<td></td>
<td>(7) The high temperature operation, the construction site should be equipped with cooling products, reasonable arrangements for work and rest time.</td>
<td></td>
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<tr>
<td>Item</td>
<td>Elimination Measures for Environmental Impact</td>
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</tbody>
</table>
| Health medical | (1) The staff meals, drinking water and rest places of construction site should conform to the hygiene standards.  
(2) The dormitory, dining room, bathroom, toilet due to ventilation, lighting, daily maintenance should be attended.  
(3) The construction site must be set to open the window of dormitory, dormitory beds shall not exceed two, prohibiting the use of beds.  
(4) Canteens should be relevant departments issued a valid health permit, all kinds of specification for apparatus for cleaning. Cook should hold valid health permit.  
(5) Canteens should be set up in the toilets, garbage station, away from toxic and hazardous sites and other pollution sources.  
(6) Canteens should be set up an independent production room, storage room, the door below should be not less than 0.2m rats preventing baffle.  
(7) The toilet, health facilities, drainage ditches and damp areas should be disinfected regularly.  
(8) Living area should be set a sealed container, regularly fly, timely removal.  
(9) The construction site should set up a clinic, with health care kit, commonly used drugs and bandages, tourniquet, neck support, stretcher and other emergency equipment.  
(10) Construction of infectious diseases, food poisoning, acute occupation poisoning, should be timely to the occurrence of the health and epidemic prevention departments and construction departments report, and in accordance with the health and epidemic prevention departments of the relevant provisions of the disposal. |
| Operation stage | (1) The formulation of operation period of dangerous goods transportation accident emergency measures.  
(2) Strengthen traffic management, the project start and finish setting speed, Jinming signs, to control Environmental risk control |

<table>
<thead>
<tr>
<th>Implementation institution</th>
<th>Supervision institution</th>
<th>Monitoring institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td>Provincial Project Management</td>
<td></td>
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</tbody>
</table>

42
<table>
<thead>
<tr>
<th>Item</th>
<th>Elimination Measures for Environmental Impact</th>
<th>Implementation institution</th>
<th>Supervision institution</th>
<th>Monitoring institution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>the traffic noise pollution.</td>
<td>Office, each county (city)</td>
<td>project office, owners,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3) In schools, hospitals, large residential</td>
<td></td>
<td>county (city)</td>
<td></td>
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<td></td>
<td>district department facilities painting</td>
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<td>environmental</td>
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<td></td>
<td>sidewalk (zebra), special environment</td>
<td></td>
<td>protection agency and</td>
<td></td>
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<td></td>
<td>sensitive point add signal lamp, protection</td>
<td></td>
<td>the Department</td>
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<td></td>
<td>of people travel.</td>
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<td>of transportation</td>
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</tr>
</tbody>
</table>
5.2.2 Generic environmental codes of practice during construction period (Special ECOPs)

See Table 5-2-2 for mitigation measures for environmental impact during construction period of the project;

Table 5-2-2 List of mitigation measures for special environmental impact during construction period

<table>
<thead>
<tr>
<th>Item</th>
<th>Mitigation measures for environmental impact</th>
<th>Implementation institution</th>
<th>Supervision institution</th>
<th>Monitoring institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mitigation measures for ecological impact</td>
<td>1) Land requisition relocation</td>
<td>Involving 14 households, 13 households have been relocated to the residential area, focused on the Shangrao County Zunqiao VillageZhouwu village. In Zaotou Town weeks village require the demolition of 1 abandoned temporary housing. World Bank Shangrao Sanqingshan loans in accordance with the Airport Project Resettlement action plan to implement the demolition work placement.</td>
<td>Sanqingshan Airport Co., Ltd.</td>
<td>Shangrao City airport office, Shangrao City Construction Bureau</td>
</tr>
<tr>
<td></td>
<td>2) Occupied farmland compensation</td>
<td>In the expropriation of farmland should be strictly in accordance with national and Shangrao City requirements, implementation of land acquisition approval procedures, ensure farmland occupy filling balance, quality and quantity is not reduced, at the same time attention topsoil stripping and protection.</td>
<td>Sanqingshan Airport Co., Ltd.</td>
<td>Shangrao City airport office, Shangrao City Land and Resources Bureau</td>
</tr>
<tr>
<td></td>
<td>3) Forest compensation</td>
<td>In accordance with the provisions of woodland requisition formalities, pay the recovery fee of forest vegetation.</td>
<td>Sanqingshan Airport Co., Ltd.</td>
<td>Shangrao City airport office, Shangrao City Forestry Bureau</td>
</tr>
<tr>
<td></td>
<td>4) Vegetation protection</td>
<td>Peel region accounted for surface mellow soil, temporarily stacked in syndrome region free, take temporary protective measures, after the end of construction for field construction area and outside the temporary area of the soil; green plant.</td>
<td>Construction unit</td>
<td>Shangrao City Environmental Protection Bureau, Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td></td>
<td>5) Camphortree transplant</td>
<td>In accordance with the established Camphortree transplant program, carry out transplant of Camphortree (3722 strains) distributed in occupied area as far as possible to ensure that the survival rate.</td>
<td>Jiangxi Yuanquan Co., Ltd.</td>
<td>Shangrao City Forestry Bureau, Sanqingshan Airport Co., Ltd.</td>
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</tr>
<tr>
<td>6) Animal protection</td>
<td>No construction project area for hunting birds, construction time and manner, reduce the construction noise on the birds interference.</td>
<td>Construction unit</td>
<td>Shangrao City Forestry Bureau, Sanqingshan Airport Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>2. Water and soil preservation measures</td>
<td>1) Main body project prevention area</td>
<td>Site leveling, first carry out the region's topsoil stripping. Site leveling, first along the field area flat area inside edge fixed drainage ditch, the water outlet of desilting basin, in the construction of road side drainage ditch excavation temporarily, and the field leveling area edge drains; The presence of two sides of side clearance excavation slope and embankment slope drainage ditch, to intercept and rainwater collected and drained to off-site drainage system; in the embankment slope setting drainage ditches to prevent rain erosion slope; The area around the junction after site formation will be formed in excavated slope and embankment slope, using masonry slope protection grid. Construction diversion of rain and sewage system; Terminal area is subject to the functional zoning of green plant, flight area the low grass green.</td>
<td>Construction unit, supervision unit</td>
<td>Shangrao City Water Conservancy Bureau, Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td></td>
<td>2) Temporary land prevention area</td>
<td>Construction site leveling, in venues surrounding the establishment of temporary drain, at the same time with the airport ditch connected; after the construction, the construction site resulting hardened layer removal and crushing treatment, removal of the hardened layer backfill soil. Topsoil temporary yard accumulation slope toe setting soil bag wall of temporary retaining, in the surrounding the construction of temporary drainage ditch drainage ditch, in the end of desilting basin, bare surface of the tarpaulin cover. To prevent road surface erosion, construction road side drainage ditch and the construction of temporary construction shortcut digging and filling in</td>
<td>Construction unit, supervision unit</td>
<td>Shangrao City Water Conservancy Bureau, Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Entrust the qualified unit to carry out monitoring of water loss and soil erosion</td>
</tr>
</tbody>
</table>
### Mitigation measures for noise impact

1. **Construction machinery**
   - Reasonably arrange construction machinery usage, reduce noise equipment use time, and strengthen all kinds of construction machinery repair and maintenance.

2. **Construction time**
   - Strictly limit the piling machinery used at night, the distance from the airport boundary near the water tower village and yellow dock Village residents of the nearby construction, should be arranged in the daytime.

3. **Noise protection**
   - In the structure of construction stage, on concrete pump, concrete tanker can make tents surrounding noise reduction.

### Mitigation measures for waste gas impact

1. **Construction waste water**
   - Construction area set sedimentation tank, the drainage into the sedimentation tank after precipitation the upper clean water can be used for the construction site dust and vehicle cleaning operations.
   - Flushing sandstone, concrete mixing and conveying equipment flushing waste water can be recycled without discharging into the settling tank.

2. **Life waste water**
   - In the construction site within the set of aqua, living wash and restaurant wastewater centralized collection way, by the sedimentation for field of dust.

### Mitigation measures for groundwater

1. **Drainage**
   - In the process of construction need to do a good job of surface drainage work, slope toe, Ma should set the drainage ditch, avoid the infiltration of sedimentation basin; slope, using the spray sowing grass shrub slope protection.
<table>
<thead>
<tr>
<th>Impact</th>
<th>Monitoring</th>
<th>Protection Bureau, Sanqingshan Airport Co., Ltd.</th>
<th>carry out monitoring of underground water</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) Monitoring of water quality and water quantity</td>
<td>Pay attention to the engineering deep lots of groundwater quantity and quality (including pH, permanganate index, total coliforms, ammonia nitrogen, total hardness, anion synthetic detergent, volatile phenols, petroleum) were monitored.</td>
<td>Construction unit, supervision unit</td>
<td>Shangrao City Environmental Protection Bureau, Sanqingshan Airport Co., Ltd.</td>
</tr>
</tbody>
</table>

7. Mitigation measures for solid waste impact

1) Construction garbage

Construction waste at the end of construction should be promptly after the removal.

2) Life garbage

Life rubbish temporary storage and sent to the municipal refuse treatment system for disposal.

8. Measures for cultural relics protection

According to world bank’s business policy for OP4.11 artifacts, the contractor assigned personnel before the approach to protect cultural relics shall organize the training and capacity strengthening and other activities, such activities. It is necessary to directly include in the project content, but not delay to possible future action for, the costs also should be included in the total cost of the project; construction if the accidental discovery of suspected artifacts should immediately stop construction and organization of the scene protection, notify the local cultural relics administrative departments, the related departments to confirm before continuing to operate; in suspected heritage identification and protection period, the contractor may arrange does not affect the suspected heritage identification and protection work of the other.

9. Public interference

Bulk material transport should avoid the town fair trade road or fair trade day; Transportation at night, to slow to a crawl, forbid whistle; Ensure the construction behavior without damaging adjacent public service facilities; The construction of the temporary occupation of the passageway, in addition to obtain municipal approval, must build temporary road pedestrian safety; construction site water or construction vehicles pedestrian splash effect, should be ruled out water, while the construction of transport vehicles in the sections of water retarder; The construction site is arranged in the position of billboard, including engineering contractor, construction supervision units and the local environmental protection bureau hotline phone number and name of the contact person, so that the masses by the construction will bring noise,
air pollution, traffic and other adverse effects with the relevant departments to contact.

10. Health and safety
For the construction to provide a contagious disease prevention knowledge;
To the construction workers with adequate supplies;
In the surrounding construction site to the public security knowledge;
At the construction site to set the hazard warning signs, banning the public into construction site and other dangerous places.

Construction unit, supervision unit
Shangrao City Environmental Protection Bureau,
Shangrao City Public Health Bureau,
Sanqingshan Airport Co., Ltd.

The team construction to implement environmental responsibilities in management, engineering contract, should include the provisions of the environmental protection, the construction machinery, construction method, construction schedule proposed environmental protection requirements, as well as in the process of construction dust, noise emission intensity and other constraints and measures. Require construction unit according to the requirements of environment protection and construction, and the construction the process of the implementation of environmental protection measures for inspection and supervision.

Construction unit, supervision unit
Shangrao City Environmental Protection Bureau,
Sanqingshan Airport Co., Ltd.

5.2.3 Specific Code of Environmental Management during operation period (Mitigation Measures in Operation Stage)
See Table 5-2-3 for mitigation measures for specific environmental impact during operation period of Shangrao Sanqingshan Airport Project.

<p>| Table 5-2-3 List of mitigation measures for specific unfavorable environmental impact |
|-------------------------------------------------|------------------|------------------|
| III. Operation stage                           | 1. Mitigation measures for ecological impact | 2. Mitigation measures for ecological impact |
| 1) Field green                                 | Choose suited to the local climate, soil conditions and native plant, according to different purposes and different airport regional function, do point (single building near the small green), line (all kinds of traffic roads on both sides of the avenue, green belt), surface (concentrated in the terminal area of the big piece of green) combination, carefully configured, to achieve good greening effect. | Sanqingshan Airport Co., Ltd. |
| 2) Maintenance of Camphortree                   | In accordance with the established transplanting plan careful conservation, improve the survival rate. | Jiangxi Yuanquan Co., Ltd. |
|                                                |                                                               | Shangrao City Environmental Protection Bureau |
|                                                |                                                               | Shangrao City Forestry Bureau |</p>
<table>
<thead>
<tr>
<th>3) Measure for expelling bird</th>
<th>Develop a special management system, record information on bird activities and carry out bird prevention training.</th>
<th>Sanqingshan Airport Co., Ltd.</th>
<th>Shangrao City Environmental Protection Bureau</th>
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<tbody>
<tr>
<td></td>
<td>Adopt professional bird driving equipment.</td>
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<td></td>
<td>Carry out management of airport site environment and reduce the birds regularly to attract publicity surrounding the airport. People feeding Columba Livia on flight safety hazards, is strictly prohibited in the airport perimeter folk racing.</td>
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</tbody>
</table>

| 2. Mitigation measures for noise impact | 1) Planning control | The airport authorities and local government, should be combined with the future development of the airport, and do well the surrounding land use planning, according to the target year 2020 airport noise prediction results, at a distance of 3-4 km runway ends, sides 0.5 km within the scope of planning control to avoid planning and construction of residential, educational, medical and scientific research institutions are sensitive to noise building. | Sanqingshan Airport Co., Ltd., Shangrao City Planning Bureau, Shangrao City Land and Resources Bureau, Shangrao City Environmental Protection Bureau |                                               |

| 2) Sound insulation measures | According to the Leq results, to the airport around 563 households using noise control measures related to Shangrao Zunjiao Village Xiawutang110, Shanghuangwu 71 County households households, Shangrao Zaotou TownBeilong 90 Cangting 230 households households, county, district Maojia water tower Xujia 62 households, 563 households in total (including 227 noise influence households). The measures proposed combination of tracking to monitor the situation, implementing step by step to reduce social impact. | Sanqingshan Airport Co., Ltd. | Shangrao City airport office, Shangrao City Environmental Protection Bureau | Entrust the qualified unit to carry out monitoring of noise |

| 3. Waste gas impact mitigation measures | Boiler flue gas | The airport boiler use gas boiler, which belongs to the clean energy, flue gas through the chimney flue gas emissions higher than 8m. The concentration of pollutant emissions shall meet the boiler air pollutants emission standards (GB13271-2001) two kinds of zone II time standards, | Sanqingshan Airport Co., Ltd. | Shangrao City Environmental Protection Bureau | Entrust the qualified unit to carry out monitoring of |
### 4. Surface water impact mitigation measures

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Action Details</th>
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</thead>
<tbody>
<tr>
<td>1) Life sewage</td>
<td>Newly construct scale of 10m³/h sewage treatment station, with MBR process, part of the sewage treatment standard for washing, flushing, remaining sewage through municipal facilities sewage pipe networks into the sewage treatment plant of Shangrao City.</td>
<td>Sanqingshan Airport Co., Ltd., Shangrao City Environmental Protection Bureau</td>
</tr>
<tr>
<td>2) Initial sewage of oil depot area</td>
<td>The airport early rain (rainfall began 15 min after rain) can enter the cofferdam, the initial rainwater by type oil-water separator after pretreatment, which can enter the airport sewage treatment station for further processing.</td>
<td>Sanqingshan Airport Co., Ltd., Shangrao City Environmental Protection Bureau</td>
</tr>
</tbody>
</table>

### 5. Groundwater impact mitigation measures

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Action Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Seepage control measures</td>
<td>In order to prevent oil, gas station and sewage treatment plant modulates pool facilities such as leakage, should be regularly on oil and gas station cofferdam bottom and the sewage treatment plant modulates pool bottom investigation, suggested that once a month, if the breakage should be repaired in time, avoid contamination leakage and infiltration to groundwater.</td>
<td>Sanqingshan Airport Co., Ltd., Shangrao City Environmental Protection Bureau</td>
</tr>
<tr>
<td>2) Groundwater monitoring</td>
<td>At 50m of the area of oil depot and sewage treatment plant, regulate pond northwest side are respectively provided with groundwater monitoring well, stamped with the seal of groundwater samples collected regularly, on the collected water sample petroleum class and the COD pollution factors were monitored, once found anomalies, immediately stop the oil depot oil and sewage pool drain to check the leak point.</td>
<td>Sanqingshan Airport Co., Ltd., Shangrao City Environmental Protection Bureau</td>
</tr>
</tbody>
</table>

### 6. Mitigation measures for solid waste impact

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Action Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Aviation garbage and domestic garbage</td>
<td>Aviation and domestic garbage deposited in the rubbish temporary storage, sorting through the air after the non-recyclable garbage and refuse to refuse landfill of Shangrao City.</td>
<td>Sanqingshan Airport Co., Ltd., Shangrao City Environmental Protection Bureau</td>
</tr>
<tr>
<td>2) Effluent oil treatment</td>
<td>Oil depot oil stored in a slop tank, by the Jingdezhen Longteng Carbon Fuel Technology Co., Ltd. regularly receive treatment.</td>
<td>Sanqingshan Airport Co., Ltd., Shangrao City Environmental Protection Bureau</td>
</tr>
</tbody>
</table>
## 7. Environmental Risk Prevention Measures

| 1) Leakage Prevention Measures | In the oil storage area and related areas set up monitoring probes, to the surrounding environment of the flammable and explosive gas monitoring at all times, so that in the first time to find material leak accident, and determine the accident;  
Regular inspection of oil storage tanks, connecting pipelines and control valves, timely maintenance and replacement of damaged parts of the original, on the part of the components of the maintenance, to reduce the possibility of accidents;  
In strict accordance with the fuel storage area to standardize the operation, avoid material storage conditions changed as a result of accidents;  
Avoid in jet fuel storage area of civil construction, in order to reduce the accident resulting in the tank and pipeline valve failure;  
Oil tank zone patrolling, prevent the theft destroys the tank, piping, valves and related accessories, causing the accident; in the receiving oil tank valve interface, etc. shall set up warning signs;  
Once the occurrence of oil reservoir and oil spill, should immediately close all operations of the tank valve, stop fuel delivery, check the oil-water separation tank and tank bottom valve, closing the entrance and exit. In order to prevent the massive oil spill through the oil separation tank into the airport drainage system, should be promptly will reserve oil-absorbing cotton or sediment diffusion of spilled oil fixed, to avoid airport sewage treatment station shock; |
| 2) Fire Explosion Accident Prevention | Work area to prohibit all ignition sources (including high heat source).  
Set in the work area fire monitoring alarm, convenient in a fire, the first time signal, and take corresponding measures to further expand, avoiding fire.  
In the working area equipped with corresponding fire-fighting equipment, and ensure the quantity and quality of clearance.  
Gas station and storage tanks, piping, breathing valve, safety valve, flame |

### 1) Leakage Prevention Measures

- **Sanqingshan Airport Co., Ltd., Oil Material Company**
- **Shangrao City Environmental Protection Bureau**
- Entrust the qualified unit to carry out monitoring of accidents.
arrester, flange jumper and electrostatic grounding device must be inspected regularly, maintenance, maintain a good working state.
The production staff to master the operating technology and fire safety management regulations.

3) Accident water treatment measures

Use depot cofferdam as fire accident pool and ensure fire accident of water does not enter the outer environment.
5.3 Report Mechanism

5.3.1 Compiling and Saving of Monitoring Materials

This is carried out in accordance with relevant regulations of *Technical Specifications for Environmental Monitoring* and *Technical Code of Practice on Water and Soil Conservation Monitoring*. There are 4 pieces of original monitoring materials and compiled files in total. They should be submitted to environment management department to archive for reference and copied to the design unit as design information feedback.

5.3.2 Information Communication

Environment management requires necessary information communication between different departments and posts of Airport Office, Airport Company, contractor and operator, and the organization should report relevant information to external parties (relevant parties, the public, etc.)

Internal information communication can be in the forms of conference and internal brief report among others, but there should be at least one formal conference every month and all the communication information should be recorded and archived.

External information communication is conducted once half a year or a year, and the information communication with cooperative units should be summarized and archived.

5.3.3 Record

For the effective operation of environment management system, the owner must organize a perfect record system and keep the following records:

(1) Legal and regulatory requirements;
(2) Relevant project review and approval;
(3) Environment factors and relevant environment influence;
(4) Training;
(5) Examination, verification and maintenance activities;
(6) Monitoring data;
(7) Issues in environment management and environmental protection work;
(8) Effectiveness of mitigation measures;
(9) Relevant project information.

Besides, necessary control should be made to the above records, including identifying, gathering, cataloguing, archive, storage, management, maintenance, query, saving term and disposal of record.

5.3.4 Report

During project implementation, the Airport Office, Airport Company and environment supervision unit should record the project progress, EMP execution, environment quality monitoring results and promptly report to relevant departments. The details are as follows:

(1) The project environment supervision engineer makes detailed weekly and monthly record on EMP execution, and promptly submits the weekly and monthly report to airport company. The weekly and monthly report should contain the execution condition of environmental protection measures, environment monitoring implementation situation and monitoring data.

(2) The Airport Company or operator should make detailed quarterly record on project progress and EMP execution condition, and promptly submit the quarterly report to Airport Office and copy it to municipal environmental protection agency.

(3) After completing the authorized monitoring task, the monitoring unit should promptly submit the monitoring report to Airport Company and environment supervision engineer.

(4) The Airport Office should promptly submit the project progress report to airport leader group and copy it to the provincial environmental protection agency. The project progress report (e.g., monthly report, quarterly report, annual report, etc.) prepared by Airport Office should contain EMP progress, e.g., EMP execution progress and effects, especially environment monitoring results, etc.

(5) In case of severe illegal events in environmental protection, the environment supervision engineer and Airport Company will notify local environmental protection administration department and report to the next higher level of authority when
(6) The annual EMP execution report should be finished and submitted to the World Bank before March 31 of the next year. EMP execution report may include the following content:

a. Implementation condition of training plan;

b. Project progress;

c. Execution condition of environmental protection measures, environment monitoring implementation situation and main monitoring data;

d. Whether there is public complaint; if yes, record the main content of complaint, resolving method and public satisfaction;

e. Next year’s EMP execution plan.

5.4 Public grievance mechanism

During the environmental impact assessment of proposed project, by holding a forum and issuing questionnaires to gather residents’ opinions, the public can reflect their opinions in the forum or give advice by filling in the questionnaires from evaluation unit. The public can ask for the questionnaires actively or by letters, telegram, fax, email and other methods to give advice to construction unit or evaluation unit. What’s more, they also can put forward suggestion by the environmental protection agencies, complains offices in the project county.

During the construction period or operation period of proposed project, the public can give advice to construction unit or evaluation unit by letters, telegram, fax, email and other methods. What’s more, they also can put forward suggestion by the environmental protection agencies, complains offices in the project county. After the unit of environmental impact assessment or construction unit receiving environmental complaint or rectification notice of administrative departments, it shall organize visit and investigation with the relevant departments like design immediately. Rectify and reform in according with the real situation. The rectification and reform program shall publicize to solve the disputes of environmental protection.

To deal with the environmental complaint timely and effectively, based on the
local circumstances, the environmental management plan shall analyze the possible complain ways from residents surrounding the airport or related organizations. Such as figure 5-4-1, it suggests that the project office of Shangrao Sanqingshan airport set up the specialized department and personnel to deal with the public complaint events. Conduct the figure 5-4-1. The complaint handing mechanism is established.

![Public statement mechanism of environmental management](image)

5.5 Emergency plan

The risk emergency plan is mainly for the emergency remedial measures during the major risk accidents, which is used to avoid more casualties and property losses. In the emergent risk accidents, it can handle the emergency and control its development promptly and accurately, and reduce the losses to the minimum.
According to the relevant laws and regulations, based on the guiding ideology of “prevention first” with the principles of “unity of command, reasonable measures, effective measures, fast measures, and reduce the losses to the minimum”, draw up the emergency plan for the risk accident of the project.

5.5.1 Components of the plan

(1) Setting and responsibilities of executive body

The project plans to set up command team for emergency plan. The setting and responsibilities of executive body sees Table 5-5-1:

Table 5-5-1 Assignment of responsibility of members

<table>
<thead>
<tr>
<th>Institution setting</th>
<th>Member</th>
<th>Reasonability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leader for command team</td>
<td>General leader of company manager</td>
<td>Announce the start and end of emergency plan, entrust emergency headquarter to do the rescue work temporarily</td>
</tr>
<tr>
<td>Vice director of group</td>
<td>Vice-general manager and chief engineer</td>
<td>Make and revise the emergency plan, and organize to carry out regular learning. The leaders in decision layer organize and coordinate the head of the rescue team to carry out various emergency plan work</td>
</tr>
<tr>
<td>Members</td>
<td>production technology department</td>
<td>Take responsibility for the accident alarming of production technology department, search the cause of the accident timely, make the right judgment, report to executive level and deal with the processing work of the accident</td>
</tr>
<tr>
<td></td>
<td>Safety security</td>
<td>Control the site of accident, report the accident conditions to the superiors and join in emergency rescue operation actively</td>
</tr>
<tr>
<td></td>
<td>Security department</td>
<td>Control the personnel entrance strictly, and the site of accident, evacuate people rapidly, and find a safe place for them, and security work on site.</td>
</tr>
<tr>
<td></td>
<td>Health and medicine department</td>
<td>Join the rescue work on site rapidly, and guide the protection of rescue work on special site.</td>
</tr>
<tr>
<td></td>
<td>Logistics department of materials</td>
<td>Remedy the materials, give material and financial support to emergency rescue operation, and make sure the supply of production necessities and the requirements for rescue operation.</td>
</tr>
<tr>
<td></td>
<td>Fire rescue department</td>
<td>According to the command, join in rescue operation, put out a fire as fast as possible, protect and control the hazardous facilities; emergency rescue in emergency area, put forward the corresponding preventive measures for different accidents.</td>
</tr>
</tbody>
</table>

(2) Components of plan content

The components of plan content see Table 5-5-2.

Table 5-5-2 Components of plan content

| Oil depot (oil tank) | ① The plan shall divide the spill types into tanks leakage and pipeline leakage, and estimate the direct effect caused by the accident |
The plan shall refine the divisions of each functional department, and ensure the cooperation among each department when the accident happens;

- The plan shall make a level division for the accident;
- Determine the processing mode of leaking materials;
- Determine the collection of cleaning wastewater, processing mode and reuse way after the accident;
- Make sure to write the summary report on the accident.

The plan shall make a level division for the accident;

- Determine the signal alarm way;
- Determine the components of rescue team, and list the related department and their task clearly.
- The plan shall base on the predicting outcomes of this risk assessment, evacuate personnel in parts of sensitive area of downwind, implement information announcement at the same time and reduce the influence on the accident.
- Determine the collection of cleaning wastewater, processing mode and reuse way after the accident;
- Make sure to write the summary report on the accident.
- The plan shall summarize this accident and make the necessary revision on risk plan.

5.5.2 Execution of plan

1. Start and end of plan: The general director for plans announces the start and end of this plan.

2. Execution of plan Each function department makes a clear division of labor, follow the plan requirements strictly, take responsibility of their own and cooperate with each other, make appropriate adjustment for personnel, most efficient control on the accidents, abide by the command when execute the plan by personnel from each department, and obey the dispatch of general director;

3. The whole process of plan execution shall focus on controlling the influence of accidents, Treat environmental impact and the target of sensitive area as the purpose;

4. After the whole control of the accident, the plan is announced to suspend, each department is continuous to stick to their own post until the accident rescue finishes.

5.5.3 Regional emergency plan linkage

1. The construction unit shall confirm the executive agency of the emergency plan of the hospital, and contact in time, which gave back the accident information immediately when the accident happens;

2. Carry our regular practice, cooperate the emergency plan of local government,
ensure and complete the own task in the emergency, avoid the rescue conflict and the phenomenon of non-rescue when the accident of this project happens;

(3) Determine the closet route for each department of the emergency plan of local government as nearly as possible.

(4) Ensure to coordination with personal, responsibilities, and regret of the of executive agency of the emergency plan of local government;

(5) List the contact way and personnel list of each executive department for emergency plan of this unit and local government into the emergency plan

(6) Integrate the emergency plan of local government into the arrangements of learning of internal employees and list it into the exercise and implementation of risk accidents.

5.6 Punishment mechanism

As the manager of the environmental management plan of the project, Shangrao Sanqingshan Co., Ltd has the obligation to restrict the behaviors of the contractors of the project. The contract agreement includes the article of environmental protection, see appendix, and clear the relevant articles of punitive measures for violating the article of environmental protection.

Principles for punitive measures are:

(1) When the contractor has the conditions of violating the article of environmental protection during the construction, the client has the right to put forward a written warning and supervise the contractor to correct promptly and take remedial action. Before the contractor takes corrective action and obtains the confirmation of relevant environmental protection administrative department and the contractor, the client has the right to refuse to pay for residual contract payment. The contractor shall take responsibility for all expenses caused by remedial measures because the contractor violates the articles of environmental protection.

(2) The contract also shall take responsibility for the liability for damage because the contractor violates the articles of environmental protection in the contract.
6. Monitoring plan

6.1 Environmental monitoring plan

In order to control and relieve various bad effects on environment of the project effectively, Shangrao Sanqingshan Airport and the overall process of its auxiliary projects shall be in strict and scientific tracking and have standardized environment management and environment monitoring.

6.1.1 Environmental monitoring plan during construction

In order to inspect environmental problems caused by construction dust and noise during construction, monitoring for whole cause should be carried out. The environmental monitoring plan during construction is shown in table 6-1-1.

6.1.2 Environmental monitoring plan during operation

(1) Monitoring Objective

Monitoring objective is to monitor the effectiveness of environmental protection measures and intensity of pollutant emission, and avoid polluting accident, providing scientific basis for airport environmental management.

(2) Monitoring item, frequency and position

See table 6-1-2.
<table>
<thead>
<tr>
<th>Project name</th>
<th>Monitoring items</th>
<th>Monitoring content</th>
<th>Monitoring time and frequency</th>
<th>Monitoring place</th>
<th>Monitoring factor</th>
<th>Reference price (ten thousand yuan)</th>
<th>Responsible organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport engineering</td>
<td>Ambient air</td>
<td>Construction fugitive dust</td>
<td>1 period/quarter Continuous monitoring for 3 days Or after getting complaints</td>
<td>Shanghuangwu, Tashui Xujia, Fangcun</td>
<td>TSP</td>
<td>0.5</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td></td>
<td>Noise</td>
<td>Construction noise</td>
<td>1 time/day (once for day and night) Or after getting complaints</td>
<td>Changjie, Shanghuangwu, Tashui Xujia, Fangcun</td>
<td>L_{Aeq}</td>
<td>0.1</td>
<td>The spot check is conducted by the qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd. and the routine observation is conducted by the construction organization</td>
</tr>
<tr>
<td></td>
<td>Ecology</td>
<td>Survival rate of transplanted trees</td>
<td>1 time/month (1~3 months after trees transplanting)</td>
<td>Transplanting garden of camphor tree</td>
<td>Survival rate of trees</td>
<td>Integrate into transplanting fees of protective plant</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td></td>
<td>Ground water</td>
<td>Quantity and quality of ground water</td>
<td>1 time/construction period of deep-cut district</td>
<td>Deep-cut district in the airport</td>
<td>pH, permanganate index, total coli form, ammonia nitrogen, total hardness, anion synthesitical detergent, volatile phenol, oil type</td>
<td>0.3</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td>Reconstructed project of country road</td>
<td>Ambient air</td>
<td>Construction fugitive dust</td>
<td>1 time/quarter, 1 time/day</td>
<td>Sensitive spot of atmospheric environment</td>
<td>TSP</td>
<td>0.3</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td>Project name</td>
<td>Monitoring items</td>
<td>Monitoring content</td>
<td>Monitoring time and frequency</td>
<td>Monitoring place</td>
<td>Monitoring factor</td>
<td>Reference price (ten thousand yuan)</td>
<td>Responsible organization</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------</td>
<td>--------------------</td>
<td>-------------------------------</td>
<td>------------------</td>
<td>------------------</td>
<td>-------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Construction noise</td>
<td>Noise</td>
<td>Construction noise</td>
<td>1 period/quarter Continuous monitoring for 2 days</td>
<td>Sensitive spot of acoustic environment</td>
<td>$L_{eq}$</td>
<td>0.1</td>
<td>The spot check is conducted by the qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd. and he routine observation is conducted by the construction organization</td>
</tr>
</tbody>
</table>

**Table 6-1-2 Location of monitoring point and monitoring content during operation period**

<table>
<thead>
<tr>
<th>Name of operational engineering</th>
<th>Monitoring items</th>
<th>Monitoring content</th>
<th>Monitoring time and frequency</th>
<th>Monitoring place</th>
<th>Monitoring factor</th>
<th>Reference price (ten thousand yuan)</th>
<th>Responsible organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport operation</td>
<td>Noise</td>
<td>Aircraft noise</td>
<td>2 times/year When the airport flights are well over the forecasting airport flights of this evaluation</td>
<td>Xiawutang, Tashui, Xujia, outside of Beilong</td>
<td>LWECPN $Leq$</td>
<td>1.2</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td>Source</td>
<td>Frequency</td>
<td>Location Description</td>
<td>Parameter(s)</td>
<td>Limit</td>
<td>Monitor Unit Authorization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>--------------------</td>
<td>-------</td>
<td>---------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indoor noise</td>
<td>2 times/year</td>
<td>When the airport flights are well over the forecasting airport flights of this evaluation</td>
<td>Xiawutang, Tashui Xujia, inside of Beilong resident, inside of terminal building</td>
<td>Leq</td>
<td>0.4</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>Waste water</td>
<td>1 time/year</td>
<td>Water from oil-water separator of airport oil depot</td>
<td>Water outlet of oil-water separator of oil depot</td>
<td>Water flow, pH, COD, oil type</td>
<td>2.0</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>Sewage treatment station</td>
<td>Routine monitoring</td>
<td>Water inlet and outlet of sewage station</td>
<td>Flow, pH, COD, BOD5, SS, oil type, NH3-N, TP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient air</td>
<td>1 time/year</td>
<td>Perimeter of oil depot</td>
<td>NMHC, TVOC</td>
<td>0.6</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground water</td>
<td>Water quality of ground water</td>
<td>1 time/month</td>
<td>50m away from the north side of tank farm, 50m away from the northwest side of the regulating reservoir of sewage treatment plant</td>
<td>pH, permanganate index, oil type</td>
<td>0.3</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------</td>
<td>-------------</td>
<td>----------------------------------------------------------------</td>
<td>--------------------------------</td>
<td>------</td>
<td>----------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Reconstruct the operation of country road</td>
<td>Noise</td>
<td>Noise</td>
<td>1 time/year</td>
<td>At the side of noise source nearest away from residents</td>
<td>Leq</td>
<td>0.1</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td>Name of operational engineering</td>
<td>Monitoring items</td>
<td>Monitoring content</td>
<td>Monitoring time and frequency</td>
<td>Monitoring place</td>
<td>Monitoring factor</td>
<td>Reference price (ten thousand yuan)</td>
<td>Responsible organization</td>
</tr>
<tr>
<td>Airport operation</td>
<td>Noise</td>
<td>Aircraft noise</td>
<td>2 times/year When the airport flights are well over the forecasting airport flights of this evaluation</td>
<td>Xiawutang, Tashui, Xujia, outside of Beilong</td>
<td>L_{WECPN} \ L_{eq}</td>
<td>1.2</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td>Category</td>
<td>Parameter</td>
<td>Frequency</td>
<td>Monitoring Location</td>
<td>Measurement Parameters</td>
<td>Standard</td>
<td>Monitor Unit Authorizing Company</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>------------------------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------</td>
<td>---------------------------------</td>
<td>----------</td>
<td>---------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Indoor noise</td>
<td>When the airport flights are well over the forecasting airport flights of this evaluation</td>
<td>2 times/year</td>
<td>Xiawutang, Tashui Xujia, inside of Beilong resident, inside of terminal building</td>
<td>$L_{eq}$</td>
<td>0.4</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>Waste water</td>
<td>Water from oil-water separator of airport oil depot</td>
<td>1 time/year</td>
<td>Water outlet of oil-water separator of oil depot</td>
<td>Water flow, pH, COD, oil type</td>
<td>2.0</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sewage treatment station</td>
<td>Routine monitoring</td>
<td>Water inlet and outlet of sewage station</td>
<td>Flow, pH, COD, BOD5, SS, oil type, NH3-N, TP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient air</td>
<td>Fugitive emission of organic gas</td>
<td>1 time/year</td>
<td>Perimeter of oil depot</td>
<td>NMHC, TVOC</td>
<td>0.6</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>Ground water</td>
<td>Water quality of ground water</td>
<td>1 time/month</td>
<td>50m away from the north side of tank farm, 50m away from the northwest side of the regulating reservoir of sewage treatment plant Set monitor well respectively, The well depth is 3m, monitor the unconfined aquifer</td>
<td>pH, permanganate index, oil type</td>
<td>0.3</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>Reconstruct the operation of country road</td>
<td>Noise</td>
<td>Noise</td>
<td>1 time/year</td>
<td>At the side of noise source nearest away from residents</td>
<td>$L_{eq}$</td>
<td>0.1</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
</tbody>
</table>
6.2 Monitoring plan of soil and water conservation

The monitoring areas of soil and water conservation of this project are movement area, terminal area, the area of navigation station, the area of spoil ground and direct area of influence, with a total area of 166.71 hm². The monitoring plan of soil and water conservation starts with the preparation period, and ends with design average year. The monitoring time is 56 months, and sees Table 6-2-1.

The monitoring areas of soil and water conservation of this project focuses on movement area, terminal area, slop cut and fill of spoil ground and temporary mound area. The monitoring content includes monitoring of the eco-environmental change of soil and water conservation, dynamic monitoring of soil and water loss, and monitoring of control efficiency of soil and water loss, which mainly adopts observation in fixed location, survey monitor and other methods.

According to the characteristics of engineering construction and predicting outcomes of soil and water loss, this project sets up three fixed sample plots, three monitoring points of survey sample plot. The monitoring frequency is decided by actual demand and the difference of monitoring items. The monitoring of background values of each subarea shall conduct random survey before the start of engineering construction. The monitoring frequency is one time every quarter; the construction period and commissioning period are in rainy period (from April to September), and it shall monitor one time every month, while in the non-rainy period, it shall monitor one time every three month. In storm period (daily rainfall ≥50mm), it shall monitor more times. For the using spoil ground and the measures of soil and water conservation in operation, it shall monitor every ten days. For the changes of topography, physiognomy and water system, the damages for lower reaches and peripheral areas as well, the monitoring frequency is one time every half a year.

The project shall entrust the units who have the corresponding monitoring qualification of solid and water conservation to conduct the monitoring. When the completion acceptance for soil and water conservation facilities of the project, the units who take the responsibility for the monitoring of solid and water conservation
shall submit the special report of the monitoring of solid and water conservation to the approval authority for the solid and water conservation scheme.

Table 6-2-1 Schedule of the monitoring of solid and water conservation

<table>
<thead>
<tr>
<th>Subarea</th>
<th>Monitoring content</th>
<th>Monitoring method</th>
<th>Monitoring frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aircraft movement area</td>
<td>Current situation of solid and water loss, area of disturbed ground, hazards of solid and water loss, construction measures of the project of solid and water conservation, control efficiency of solid and water loss, management of solid and water conservation</td>
<td>Survey monitor and site inspection</td>
<td>Before project construction: Survey one time</td>
</tr>
<tr>
<td></td>
<td>Solid and water loss amount</td>
<td>Observation in fixed location</td>
<td>During the project construction: For various engineering, plants, construction of temporary solid and water conservation measures and earth volume shall monitor and record at least one time each ten days;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Area of disturbed surface, the block effect of engineering measures of solid and water conservation and so on shall monitor and record at least one time each month;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Construction progress of the principal part of the project, influencing factors of solid and water loss, growth situation of plant measure of solid and water conservation and so on shall monitor and record at least one time each three month;</td>
</tr>
<tr>
<td>Terminal area</td>
<td>Current situation of solid and water loss, area of disturbed ground, hazards of solid and water loss, construction measures of the project of solid and water conservation, control efficiency of solid and water loss, management of solid and water conservation</td>
<td>Solid and water loss amount, solid and water loss degree shall adopt the observation in fixed location; Other contents adopt the survey monitor and site inspection.</td>
<td></td>
</tr>
<tr>
<td>Area of navigation station</td>
<td>Current situation of solid and water loss, area of disturbed ground, hazards of solid and water loss, construction measures of the project of solid and water conservation, control efficiency of solid and water loss, management of solid and water conservation</td>
<td>Adopt the survey monitor and site inspection</td>
<td></td>
</tr>
<tr>
<td>Area of spoil ground</td>
<td>Amount of waste slag, area of disturbed ground, hazards of solid and water loss, construction measures of the project of solid and water conservation, control efficiency of solid and water loss</td>
<td>Adopt the survey monitor, data collection and site inspection</td>
<td>During rainstorm, strong winds and other conditions, it shall monitor more times promptly.</td>
</tr>
<tr>
<td></td>
<td>Solid and water loss amount</td>
<td>Observation in fixed location</td>
<td>After the disasters of solid and water loss, it shall complete the monitor within one week.</td>
</tr>
</tbody>
</table>

6.3 Emergency Accident Monitoring Plan

(1) Oil Depot Area of the Airport

The oil storage of the oil depot is large, so there is accident hazard of fire, explosion, leakage, etc. Once there is accident, the emergency monitoring system should be launched. The emergency monitoring includes ambient air monitoring and
soil monitoring.

① Ambient Air

Monitoring Factor: CO.

Monitoring Point Position: set a monitoring point every 200m downwind of the oil depot (by combining with the resident place).

Monitoring Frequency: Within 12 hours after the accident, conduct monitoring every 1 hour till the pollutant concentration reduces, and then conduct monitoring once half a day till the pollutant reaches quality standard for ambient air.

② Soil

Monitoring Factor: Petroleum.

Monitoring Point Position: near the leakage point.

Monitoring Frequency: Within 24 hours after the accident, conduct monitoring by extending 20m and deepening 2m every 6 hours till the pollutant concentration reduces, and then conduct monitoring once half a day. For petroleum monitoring results, please refer to quality standard for ground water.

(2) Treatment of Monitoring Results

For the monitoring material of the above accident, promptly report to relevant environmental protection department, make brief analysis to the monitoring data, compare it to routine monitoring data, and determine the effect and damage degree of the accident for relevant departments to propose corresponding protection measures.

7. Institution Strengthening

7.1 Personnel training plan

Environmental protection training aims to make the project parties are familiar with the environmental management plan, as well as national and local related project construction and operation of environmental protection requirements, to promote environmental protection measures.

Environmental capacity building is the main object of environmental management and environmental supervision, their training is the project technical support part training courses include on Construction unit and worker training. In the
project before construction begins, all of the Construction unit, a business unit, construction supervision, environmental supervision required to attend mandatory environmental, health, safety training.

Sanqingshan Airport Co., Ltd. is responsible for is responsible for organizing the project before training, by the specific environment executive technical experts. Specific training programs are shown in table 7-1-1.

Table 7-1-1 Training plan for environmental management personnel

<table>
<thead>
<tr>
<th>Object</th>
<th>Training Contents</th>
<th>Number</th>
<th>Time (day)</th>
<th>Unit price (10,000 yuan/day)</th>
<th>Expense (10,000 yuan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor and construction site environment protection specialist</td>
<td>1. Introduction to environmental management plan in the construction phase of the environmental effect and protection measures; 2. Airport and related engineering environment sensitive areas and the existing problems, environmental protection target table; 3. Cultural relics, protection and respect the local custom of grave public education; 4. Construction noise and simple monitoring method and control measures of (self testing ); 5. Violations of law, regulations and the contract penalties; 6. Environmental management reporting system and environmental complaint handling mechanism; 7. Emergency measures.</td>
<td>Each contractor 2 persons</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Environment supervision engineer</td>
<td>1. Relevant measures and requirements of environmental management plan; 2. Construction laws and regulations of environmental protection, construction planning, supervision rules of environmental protection and the requirements of safety in production; 3. Ambient air monitoring and control technology, the noise monitoring and control technology; 4. Environmental supervision report requirements; 5. Emergency measures.</td>
<td>Each construction contract 1 person</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>
### 7.2 Procurement plan for environmental protection equipments

New Jiangxi Shangrao Sanqingshan Airport project executes environment friendly purchasing plan. Environment-friendly procurement principles can be extended to the contract management and payment, through the procurement documents to ensure that contractors implement environmental management plan outlined in the environmental mitigation measures and environmental monitoring requirements.

Because of the high cost of environmental protection activities such as soil and water conservation, ecological restoration, medical waste storage etc. are the corresponding engineering measures, materials and facilities have been included in the procurement plan; therefore, the corresponding procurement plan project by construction unit and operation unit is provided, and included in the cost of the project; environmental protection equipment (materials) procurement plans to purchase program request indication.

The construction in the implementation of environmental management plan mitigation measures and environmental monitoring should ensure that procurement of raw material, equipment manufacturers by the local administrative department of environmental protection environmental acceptance, refusal to buy at the expense of the environment and waste of resource the sources of energy at the expense of equipment, materials, even if the equipment, material may be low price, but also probably it is difficult to guarantee the quality.
Environment monitoring unit should promise: the site should make sure not to damage the vegetation, left behind by monitoring and analysis of monitoring of garbage, waste water produced by the waste gas, should be treated and discharged.

Vegetation restoration species saplings procurement, we should choose suitable for the local soil, climate, local or adjacent areas to prevent alien species, biological invasion.

In short, the procurement of raw materials and equipment to meet the process design quality, ability and standard requirements at the same time, must also meet the small environmental load, energy saving, long service life, saves resources, easy to recycle, easy disassembling and easy processing environment-friendly procurement requirements.

For not using World Bank loan project, but as a part of the whole equipment, material procurement, even may use other procurement procedures, must also meet the quality is satisfactory, and other equipment and materials matching or supporting, timely delivery completion, environment friendly, and the price is also not on the project economic and financial ability to cause negative impacts.

8. Estimation of environmental protection costs

The environmental impact deduction measure costs, monitoring costs and other costs in the environment management plan of “Jiangxi Shangrao Sanqingshan Airport Project” are shown in Table 8-1-1.

<table>
<thead>
<tr>
<th>Items</th>
<th>Name of project expenses</th>
<th>Rough Estimate value (10,000 Yuan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental protection investment</td>
<td>Sewage treatment systems (project investment)</td>
<td>485</td>
</tr>
<tr>
<td>period of construction and operation</td>
<td>Water reuse system (project investment)</td>
<td>175</td>
</tr>
<tr>
<td></td>
<td>Rain and sewage pipeline network (project investment)</td>
<td>220</td>
</tr>
<tr>
<td></td>
<td>Waste water, waste sedimentation pond, dry restroom during the construction period</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Oil water separator</td>
<td>30</td>
</tr>
<tr>
<td>Solid waste</td>
<td>Garbage sorting station (engineering investment)</td>
<td>10</td>
</tr>
<tr>
<td>Ground</td>
<td>Oil depot area, groundwater monitoring wells of</td>
<td>4</td>
</tr>
</tbody>
</table>
### Ecology

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetation and afforestation recovery</td>
<td>in the airfield, terminal area (project investment)</td>
<td>670.89</td>
</tr>
<tr>
<td>Forest vegetation recovery costs</td>
<td>(already included in forestry researching investment)</td>
<td>721</td>
</tr>
<tr>
<td>Bird repelling facilities</td>
<td></td>
<td>183</td>
</tr>
<tr>
<td>Water conservation measures cost</td>
<td>(already included in the water conservation investment)</td>
<td>231.97</td>
</tr>
<tr>
<td>Protection of plants (camphor) transplanting</td>
<td>costs</td>
<td>541.61</td>
</tr>
</tbody>
</table>

### Drainage works investment in the airport

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadening reinforcing downstream gully lines of the airport outfall</td>
<td>440</td>
</tr>
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</table>

### Rural roads reconstruction costs

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reconstructing the blocked rural roads due to the construction of the airport</td>
<td>510.6</td>
</tr>
</tbody>
</table>

### Environmental monitoring costs

<table>
<thead>
<tr>
<th>Description</th>
<th>Construction period</th>
<th>Operation period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.3</td>
<td>4.6</td>
</tr>
</tbody>
</table>

### Personnel training costs

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Training for contractors and environmental specialists in the construction sites</td>
<td>6</td>
</tr>
<tr>
<td>Training for the environmental supervision engineers</td>
<td>9</td>
</tr>
<tr>
<td>Training for Sanqingshan Airport Limited and its environmental managers</td>
<td>3</td>
</tr>
</tbody>
</table>
Annex 1  Management Measures for Construction Camps

1. Code of Behavior

A major concern during a construction of a project is the potentially negative impacts of the workforce interactions with the local communities. For that reason, a Code of Conduct shall be established to outline the importance of appropriate behavior, drug and alcohol abuse, and compliance with relevant laws and regulations. Each employee shall be informed of The Code of Conduct and bound by it while in the employment of the Client or its Contractors. The Code of Conduct shall be available to local communities at the project information centers or other place easily accessible to the communities. The Code of Conduct shall address the following measures (but not limited to them):

_ All workers and subcontractors shall abide by the laws and regulations of Vietnam.
_ Illegal substances, weapons and firearms shall be prohibited.
_ Pornographic material and gambling shall be prohibited.
_ Fighting (physical or verbal) shall be prohibited.
_ Workers shall not be allowed to hunt, fish or trade in wild animals.
_ No consumption of bush meat shall be allowed in camp.
_ No pets shall be allowed in camp.
_ Creating nuisances and disturbances in or near communities shall be prohibited.
_ Disrespecting local customs and traditions shall be prohibited.
_ Smoking shall be prohibited in the workplace.
_ Maintenance of appropriate standards of dress and personal hygiene shall be in effect.
_ Maintenance of appropriate hygiene standards in accommodation quarters shall be set in place.
_ Residing camp workforce visiting the local communities shall behave in a manner consistent with the Code of Conduct; and
Failure to comply with the Code of Conduct, or the rules, regulations, and procedures implemented at the construction camp will result in disciplinary actions.

2. Waste water management

Construction camp wastewater has two kinds, one is the construction of persons living in sewage, the main pollution factors of BOD5, COD, NH3-N, fecal coliforms count; another is the site of surface rainfall runoff water, after a wastewater mainly contains a small amount of sediment, environment without adverse effects.

Construction camp wastewater is mainly affected by life on surface water environment sewage disorderly discharge of polluting effect. Especially for environmental capacity, limited impact will be relatively large.

The construction camps will be located within the airport site, which produces sewage to sedimentation tank for collecting and treatment, effluent can be used in construction site dust sprinkler suppression, on water environment basic ignorance of developing sound.

3. Solid waste management

Construction site to produce a small amount of domestic garbage, peak of construction site construction personnel is generally 1000 people, living garbage generated by the 0.5kg/•d, then the garbage output is 500kg/d.

Construction site has set trash, and in the season of spring and summer lime spray or buying drugs disinfection, domestic waste bagging collection, by the local sanitation departments to collect send each district living garbage disposal field of harmless disposal, construction personnel and the surrounding environment to protect the health of life, can effectively control the construction personnel and the surrounding environment for life garbage induced the incidence of infectious disease.

By adopting the measures for prevention and control of pollution, construction garbage’s impact on the environment can be reduced to the minimum, the environment can be accepted.

4. Sanitation

The construction site from drinking water using the nearest hospital canteen
boiling water or purchase of urban commercial catering departments selling bottled water, part construction personnel from home or rental housing owned drinking water.

Construction site centralized supply of drinking water by the person responsible for the management, water containers must be cleaned every day, disinfection, the use must be stamped, and must not be placed in the prone to dust, waste gas or wastewater local impact.

Strengthen the construction of staff diet and drinking water safety and health education, must wash hands before meals, prevention of disease enters by the mouth.

5. Disease control of construction site

Construction site setting select or part-time sanitation workers in construction sites, reasonable arrangement of trash, garbage box should be timely cleaning and disinfection (sprinkled the lime powder spraying disinfectant, etc.), forbidden occurrence garbage overflow phenomenon, at any corner should not be stacked rubbish.

Construction site centralized supply of drinking water by the person responsible for the management, water containers must be cleaned every day, disinfection, the use must be stamped, and must not be placed in the prone to dust, waste gas or wastewater local impact.

For the construction personnel as the main service targets small businesses and places of entertainment, are to be obtained from the local administration of industry and Commerce Department approval, for the prevention and control of infectious diseases.

The Contractor shall have a variety of emergency medicine, and strictly control the purchase channels, regularly check the inventory situation, in order to prevent counterfeit and expired drug use.
Annex 2  Evaluation Standard for Green Building

Foreword

This "Evaluation Standard for Green Building" is developed by the China Academy of Building Research, Shanghai Research Institute of Building Sciences and relevant organizations according to the requirements of the Document Jian Biao [2005] No.63 issued by the Ministry of Construction.

This is the first comprehensive green building evaluation standard that targets multiple objectives and functional levels. It is developed based on the experiences of recent green building practices, research outcomes as well as referencing advanced international experiences to meet the requirements of practically workable implementation of energy and natural resources conservation.

During the development of this standard, relevant opinions are widely sought. Important issues are specially investigated. Specific detailed contents are repeatedly discussed; amendments are coordinated and finally confirmed after examination.


The Ministry of Construction is in charge of the administration of this standard and the China Academy of Building Research (Address: 30 East Road of the North Third Ring Road, Beijing, Post code: 100013) is responsible for the explanation of specific technical contents. All relevant organizations are kindly requested to sum up and accumulate your experiences in actual practices during the process of implementing this standard.

Chief Development Organizations: China Academy of Building Research
Shanghai Research Institute of Building Sciences
Participating Development Organizations: China Academy of Urban Planning and Design
Tsinghua University
China State Construction Engineering Corporation
China Building Material Academy National Engineering Research Center for Urban Water & Wastewater Shenzhen Research Institute of Building Sciences
China Urban Construction Design and Research Institute
Chief Drafting Staff:
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1. General Principles
1.0.1 This standard is formulated with a view to implement state economic policies on resource
saving and environmental protection, improve sustainable development and standardize evaluations of green building.

1.0.2 This standard is to be used for the evaluation of residential buildings, and official buildings, commercial buildings and hotels in public building sector.

1.0.3 In evaluating green building, comprehensive consideration shall be given to energy, land, water, material savings and environmental protection throughout the whole building life cycle while satisfying different building functional requirements.

1.0.4 In evaluating green building, the appropriate site context, climate, natural resources and environment as well as the local economy and culture shall be integrally evaluated.

1.0.5 The evaluation shall not only be in accordance with this standard but shall also be in accordance with state laws and other related standards to reflect the integration of economic, social and environmental benefits.

2. Terms

2.0.1 Green Building
Green building is the building that maximizes conservation of resources (including energy, land, water and materials), protects the natural environment and minimizes pollution. It provides people with healthy, adaptive and efficient spaces during its life cycle and coexists in harmony with the natural environment.

2.0.2 Heat Island Index
The heat island index of the region in the city is the temperature difference between the region in the city and nearby suburbs. It is the index of the heat island effect.

2.0.3 Renewable Energy
Renewable energy is energy from nature that is renewable non-fossil energy, including wind, solar, hydro, biomass, geothermal and ocean energy, etc.

2.0.4 Nontraditional Water Source
Nontraditional water source is the water source other than the traditional surface water and ground water. It includes reclaimed water, rain water and sea water, etc.

2.0.5 Reusable Material
Reusable materials are materials that can be reused directly, or that can be reused after reassembly or restoration, under the premise of not changing the form of the material.

2.0.6 Recyclable Material
Recyclable materials are materials that can be changed to other forms and used again. The materials may undergo several cycles of such processes.

3. Basic Regulations

3.1 Basic Requirements
3.1.1 The green building evaluation shall target single building or groups of buildings. For outdoor environment of single building, the evaluation shall be based on the surrounding environment of this building only.

3.1.2 For new construction, extension and renovation of residential or public buildings, the evaluation shall be conducted one year after completion and occupation.

3.1.3 The application for the evaluation shall conduct the building technical and economic life cycle analyses, rationally determine the building scale, select appropriate technologies, system
installations and materials and deliver reports on all these analyses.

3.1.4 The application for the evaluation shall control the processes of planning, design and construction complying with the requirements of the standard and deliver related documents of the process control.

3.2 Evaluation and Rating

3.2.1 The index system of this standard includes land saving and outdoor environment, energy saving and utilization, water saving and utilization, material saving and utilization, indoor environment quality, operations and management. Each index includes prerequisite items, standard items, and outstanding items.

3.2.2 Green building shall satisfy all prerequisite items of requirements in Chapter 4: Residential Buildings, or Chapter 5: Public Buildings, and shall be evaluated to three different ratings according to the number of satisfied standard items and outstanding items. The required number of standard and outstanding item of the three ratings is shown in Tables 3.2.2-1 and 3.2.2-2.

Table 3.2.2-1 Items of requirements for evaluation of green building (Residential Buildings)

<table>
<thead>
<tr>
<th>Rating</th>
<th>Standard items (total 40 items)</th>
<th>Outstanding items (total 9 items)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Land saving and outdoor environment (total 8 items)</td>
<td>Energy saving and utilization (total 6 items)</td>
</tr>
<tr>
<td>★</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>★★</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>★★★</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 3.2.2-2 Items of requirements for evaluation of green building (Public Buildings)

<table>
<thead>
<tr>
<th>Rating</th>
<th>Standard items (total 43 items)</th>
<th>Outstanding items (total 14 items)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Land saving and outdoor environment (total 6 items)</td>
<td>Energy saving and utilization (total 10 items)</td>
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<tr>
<td>★</td>
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<td>4</td>
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<tr>
<td>★★</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>★★★</td>
<td>5</td>
<td>8</td>
</tr>
</tbody>
</table>
If provisions is not relevant for the location, climate and building type of the evaluated building, these provisions may not be evaluated and the total number of evaluation items will be correspondingly reduced. The rating may be determined by proportionately adjusting the items of requirements.

3.2.3 The result of the evaluation of qualitative provisions in the standard is Pass or Fail. For provisions with multiple requirements, all such requirements must be satisfied to pass.

4. Residential Buildings
4.1 Land Saving and Outdoor Environment

Prerequisite Items
4.1.1 Conserve site cultural heritage and relic, water eco-systems, wetlands, prime farmlands, forests and other protected areas.
4.1.2 Avoid flood-prone, landslide-prone, and radon-prone sites. No electromagnetic radiation, fire hazards, explosive, and poisonous material sources within safety distances.
4.1.3 Occupancy land use index (area per occupant) : Low-rise not more than 43m², multi-rise not more than 28m², mid-rise not more than 24m² , high-rise not more than 15m².
4.1.4 Residential district building configuration to guarantee indoor and outdoor sunlight, daylighting and ventilation requirements and satisfy related requirements of the sunlight standard in the current national standard "Code of Urban Residential Areas Planning &- Design" GB 50180.
4.1.5 Use site-suitable and climate-suitable indigenous plants, or plants that are low maintenance, durable, low pest, and non-harmful to humans.
4.1.6 Greening rate no less than 30% in residential districts and public green area no less than 1m² per occupant.
4.1.7 No pollution discharge source within the residential district exceeding standard.
4.1.8 Formulate and implement specific measures to protect the environment and control air, soil, noise, water and light pollution on site and the effects on surrounding areas during construction.

Standard Items
4.1.9 Provide public facilities according to master planning, based on mixed-use and residential district sharing principles.
4.1.10 Maximize rehabilitation and reuse of existing buildings.
4.1.11 Environmental noise of residential district to be in accordance with the current national standard "Standard of Environmental Noise of Urban Area" GB 3096.
4.1.12 Residential district average exterior heat island index not more than 1.5°C.
4.1.13 Residential district wind environment to be conducive to outdoor pedestrian comfort during winter and natural ventilation during summer and transit seasons.
4.1.14 Plant a variety of indigenous vegetation, in a multi-layer biocoenosis comprising the tall arbor layer, shrub layer and grass (floor) layer according to local climatic conditions and natural vegetation distribution characteristics. No less than 3 arbor trees every 100m².
4.1.15 Locate residential district and its entrance to ease access to public transport network. Entrance not to exceed 500m walking distance to public transport hub.
4.1.16 Adopt water permeable pavement to non-automotive paths, surface parking and other hard surfaces in residential district. Use planting to provide sun-shading. Water permeable surface ratio of outdoor ground to be no less than 45%.

Outstanding Items
4.1.17 Rationally exploit the use of underground spaces.
4.1.18 Rationally use abandoned sites for building. Treat polluted abandoned land to meet relevant standards.

4.2 Energy Saving and Energy Resource Utilization

Prerequisite Items
4.2.1 Heating, ventilation and air conditioning (HVAC) design to be in accordance with the requirements of the national and local energy saving standards.
4.2.2 The coefficient of performance (COP) and energy efficiency ratios (EER) of chilled water system for centralized air conditioning system, or single packaged air conditioning unit to be in accordance with the relevant requirements of the current national standard "Design Standard for Energy Efficiency of Public Buildings" GB 50189.
4.2.3 Provide adjustable thermostats and energy sub-metering when using centralized heating and/or centralized air conditioning system in individual residential unit.

General Items
4.2.4 Utilize natural site conditions in designing the building shape, orientation, spacing, and window to wall area ratios to achieve sunlighting, ventilation, daylighting, and install sun shading devices when needed.
4.2.5 Use of high efficiency equipments and systems. The heating energy ratio (EHR) of the hot water recirculation pump in the central water heating system, and the transport efficiency ratio (TER) of hot and cold water in air-conditioning systems to be in accordance with the requirements of the national standard "Design Standard for Energy Efficiency of Public Building" GB 50189.
4.2.6 The coefficient of performance (COP) and energy efficiency ratios (EER) of chilled water system for centralized air conditioning system, or single packaged air conditioning unit to be one grade above the relevant requirements of the current national standard "Design Standard for Energy Efficiency of Public Buildings" GB 50189.
4.2.7 Use efficient lamps, lampshades, low maintenance ballasts and energy saving control gear in public spaces. Use timers or dimming devices to control the artificial lighting in space where of daylighting is available.
4.2.8 Use energy recovery systems when using centralized heating and/or centralized air conditioning systems.
4.2.9 Maximize renewable energy sources (solar, geo-thermal, etc.) according to local climatic and natural resource conditions. Renewable energy use to be larger than 5% of the total energy consumption.

Outstanding Items
4.2.10 Heating and/or air condition energy use to be no more than 80% of the requirements of the
national and local energy saving standards.
4.2.11 Renewable energy use to be larger than 10% of the total energy consumption.

4.3 Water Saving and Water Resource Utilization

Prerequisite Items
4.3.1 During the planning and design stage, formulate the water system plan and integrate the use of various water resources.
4.3.2 Adopt effective measures to prevent leakage from water distribution system.
4.3.3 Install water-saving utensil and equipment to achieve water saving rate not less than 8%.
4.3.4 Eliminate the use of municipal water and self-provided underground well water for landscaping use.
4.3.5 Adopt safety precautions when using non-traditional water to avoid any adverse impacts on human health and the surroundings.

General Items
4.3.6 Rationally plan rainwater runoff of site and building roof surfaces to reduce surface runoff, and to increase infiltration of the site.
4.3.7 Use non-potable water such as reclaimed water and/or rainwater for landscaping and car washing.
4.3.8 Use sprinkling and micro irrigation and other efficient techniques for landscape irrigation.
4.3.9 When reclaimed water is used for non-potable purposes, give priority to nearby centralized reclaimed water plant. If there is no centralized reclaimed water plant nearby, rationally select other reclaimed water sources and treatment techniques after comparing technology and cost-benefit analyses.
4.3.10 In water scarce regions with heavy rainfall, rationally adopt cost-effective techniques for rainwater collection and utilization, after comparing technology and cost-benefit analyses.
4.3.11 Non-traditional water utilization rate not less than 10%.

Outstanding Items
4.3.12 Non-traditional water utilization rate not less than 30%.

4.4 Material Saving and Material Resource Utilization

Prerequisite Items
4.4.1 Limit of harmful contents in construction materials to be in accordance with the requirements of the current national standard GB 18580–GB 18588 and "Limit of Radionuclides in Building Materials" GB 6566.
4.4.2 Building shape and facade to be plain and simple without excessive decorative components.

General Items
4.4.3 Building materials manufactured within 500km from the construction site to be more than 70% of the total weight of all construction materials.
4.4.4 Use pre-mixed concrete for site-cast concrete works.
4.4.5 Use high performance concrete and high strength steel in building structures.
4.4.6 Sort solid debris generated during construction, demolition of old buildings and site clearing.
Recover any reusable and recyclable materials.

4.4.7 During design and materials selection, consider the recyclability of the materials. While ensuring safety and not polluting the environment, the use of recyclable building materials to be higher than 10% of the total weight of all construction materials.

4.4.8 Integrate construction and decoration to avoid damaging or demolishing completed building elements and installation.

4.4.9 Under the premise of ensuring performance, the use of discarded materials as raw materials for manufacturing certain construction materials to be no less than 30% compared to similar construction materials.

Outstanding Items
4.4.10 Use of energy efficient and minimal environmental impact structural systems.
4.4.11 Use of reusable construction materials rate to be larger than 5%.

4.5 Indoor Environmental Quality

Prerequisite Items
4.5.1 At least one room in each apartment to satisfy the requirements of the sunlight standard. At least two rooms in each apartment to satisfy the requirements of the sunlight standard if the apartment has four or more rooms.
4.5.2 Exterior windows to be sited in bedrooms, living rooms, study rooms and kitchen. Daylight index in rooms not to be lower than current national standard “Standard for Daylighting Design of Buildings” GB/T 50033.
4.5.3 Effective noise insulation and reduction measures for building envelope to be taken. Daytime permitted noise level under closed windows condition in bedrooms and living rooms to be no larger than 45dB (A); night-time level to be no larger than 35dB (A). Weighted airborne sound reduction across floors and party walls to be not less than 45dB; Weighted standardized impact sound level through floors to be not larger than 70dB. Weighted airborne sound reduction through apartment doors to be not less than 30dB; Weighted airborne sound reduction through exterior windows to be not less than 25dB and not less than 30dB when facing streets.
4.5.4 Area of openings for natural ventilation to be not less than 8% of floor area in hot summer warm winter and hot summer cold winter regions and not less than 5% in other regions.
4.5.5 Indoor airborne formaldehyde, benzene, ammonia, radon and TVOC contaminant concentration to be in accordance with the requirements of the current national standard "Code for Indoor Environmental Pollution Control of Civil Building Engineering" GB 50325.

General Items
4.5.6 Residential spaces with good field of view through exterior windows and avoid visual interference between apartments. When an apartment has two or more bathrooms, at least one bathroom has exterior windows.
4.5.7 No condensation on interior surfaces of roof, floor, exterior wall and exterior window under design room temperature and humidity conditions.
4.5.8 Under naturally ventilated conditions, the highest interior surface temperatures of roof, east and west external walls to satisfy requirements of current national standard "Thermal Design Code
4.5. 9 Room temperature control devices or measures to be adopted in apartments with heating and/or air-conditioning system.
4.5. 10 Use adjustable external sun shading devices to prevent direct solar radiation through windows during summer.
4.5.11 Install mechanical ventilation or indoor air quality (IAQ) monitoring devices.

Outstanding Items
4.5.12 Energy storage, humidity control, or materials that improve indoor air quality (IAQ) in bedrooms and living rooms.

4.6 Operation and Management

Prerequisite Items
4.6.1 Formulate integrated implementation of energy-saving, water-saving, material-saving and greening management policies.
4.6.2 Separate residential water, electricity and gas metering and charges.
4.6.3 Formulate waste management policies to effectively manage waste-streams, waste sorting and collection to avoid indiscriminate dumping and secondary pollution.
4.6.4 Install closed waste collection bins, with stringent cleaning procedures and store domestic waste in garbage bags.

General Items
4.6.5 Install washing and drainage systems in waste collection station. Waste collection station to be cleared in a timely manner without polluting the environment and emitting bad odors.
4.6.6 Properly implement intelligent building systems, deploy technologically advanced, practical, and reliable building security, management, equipment control and information communication network sub-systems to meet requirements.
4.6.7 Use non-hazardous pest prevention techniques, approved chemical agents, including pesticides, herbicides, fertilizers, and effectively prevent soil and groundwater pollution.
4.6.8 Survival rate of planting and transplanting of trees to be larger than 90% and vegetation in good growing conditions.
4.6.9 Facilities management services to be certified by ISO 14001 "Environmental Management System”.
4.6.10 Sorted waste collection rate (ratio of number of households practicing waste sorting to total number of households) to be larger than 90%.
4.6.11 Equipment and conduit installations should be easy to maintain, modify and replace.

Outstanding Items
4.6.12 Separate collection of biodegradable waste or installing biodegradable waste processing room. Waste collection or waste processing room to have ventilation or exhaust fans, washing and drainage facilities, with no secondary pollution from processing procedures.

5. Public Buildings
5.1 Land Saving and Outdoor Environment

Prerequisite Items
5.1.1 Conserve site cultural heritage and-relic, water eco-systems, wetlands, prime farmlands, forests and other protected areas.
5.1.2 Avoid flood-prone, landslide-prone, and radon-prone sites. No electromagnetic radiation, fire hazards, explosive, and poisonous material sources within safety distances.
5.1.3 No light pollution towards surrounding buildings and not affecting sunlight availability requirements of surrounding residential buildings.
5.1.4 No discharge of pollution sources within the site exceeding standard.
5.1.5 Formulate and implement specific measures to protect the environment and control various pollution on site and effects on the surrounding areas during construction.

General Items
5.1.6 Site environmental noise to be in accordance with the current national standard "Standard of Environmental Noise of Urban Area" GB 3096.
5.1.7 Wind speeds to be lower than 5m/s in pedestrian areas around buildings and does not affect outdoor activity comfort and building ventilation.
5.1.8 Rational use of green roofs and vertical greening.
5.1.9 Selection of site-suitable and climate-suitable indigenous plants and include composite arbor layer and scrub layer vegetation.
5.1.10 Rational site transportation planning. Site entrance not to exceed 500m walking distance to public transport hub.
5.1.11 Rationally exploit the use of underground spaces.

Outstanding Items
5.1.12 Rationally use abandoned sites for building. Treat polluted abandoned land to meet relevant standards.
5.1.13 Maximize the reuse of old buildings and include into project planning.
5.1.14 External water permeable surface ratio to be no less than 40%.

5.2 Energy Saving and Energy Resource Utilization

Prerequisite Items
5.2.1 Building envelope thermal performance index to be in accordance with the requirements of the national and local energy saving standards.
5.2.2 Cooling and heating system energy efficiency ratios (EER) to be in accordance with the requirements of the current national standard "Design Standard for Energy Efficiency of Public Buildings" GB 50189—2005, Articles 5.4.5, 5.4.8 and 5.4. 9. Boiler energy efficiency to be in accordance with Article 5.4.3.
5.2.3 No use of electric boilers and electric water heaters for direct heating or as heating source for air conditioning systems.
5.2.4 Lighting power densities (LPD) in all building spaces and site to be no higher than the actual
values in the current national standard "Standard for Lighting Design of Buildings" GB 50034.
5.2.5 Implement separate energy sub-metering for systems including heating and cooling, delivery, and lighting systems in new buildings.

General Items
5.2.6 Design of building layout to be conducive to sun-lighting but avoids prevalent winds in winter, and conducive to natural ventilation in summer.
5.2.7 Operable external window area to be no less than 30% of total external window area; curtain wall facade to have operable openings or ventilation installations.
5.2.8 External window air tightness to be not less than Grade 4 requirements of the current national standard "Graduation and Test Method for Air Performance of Windows" GB 7107.
5.2.9 Rational use of heating and cooling thermal storage technologies.
5.2.10 Preheat (or precool) intake air using exhaust air and reduce total load from outdoor air.
5.2.11 Implement full outside air or adjustable outside air mixer for all-air air conditioning systems.
5.2.12 Adopt effective energy saving measures for ventilation and air conditioning systems when building is under partial heating and cooling load condition, and when partially occupied.
5.2.13 Use high efficiency equipments and systems. Air conditioning system fan efficiency and cold/hot water systems energy efficiency ratios (EER) to be in accordance with the requirements in Articles 5.3.26 and 5.3.27 of the current national standard "Design Standard for Energy Efficiency of Public Buildings" GB 50189—2005.
5.2.14 Use methods such as excess or reject heat capture to provide necessary steam or domestic hot water needs of the building.
5.2.15 Implement separate energy sub-metering for systems including heating and cooling, delivery, and lighting systems in renovation and extension public building.

Outstanding Items
5.2.16 Building design total energy use level to be less than 80% of the requirement value in the current national and local energy saving standard.
5.2.17 Use of distributed combined heat and power (CHP) technology and increase integrated energy use efficiency.
5.2.18 Maximize renewable energy use (solar, geo-thermal, etc.) according to local climatic and natural resource conditions. Renewable energy use for domestic hot water to be not less than 10% and not less than 2% of building electricity use.
5.2.19 Lighting power densities (LPD) in all building spaces and site to be no higher than the objective values in the current national standard "Standard for Lighting Design of Buildings" GB 50034.

5.3 Water Saving and Water Resource Utilization

Prerequisite Items
5.3.1 During the planning and design stage, formulate the water system plan and integrate the use of various water resources.
5.3.2 Rational installation and comprehensive water supply and drainage systems.
5.3.3 Adopt effective measures to prevent leakage from water distribution system.
5.3.4 Rationally adopt water-saving utensil and equipment.
5.3.5 Adopt safety precautions when using non-traditional water to avoid any adverse impacts on human health and the surroundings.

General Items
5.3.6 Rationally adopt cost-effective techniques for rainwater collection and utilization, after comparing technology and cost-benefit analyses.
5.3.7 Use non-traditional water for landscaping, scenic environment use and vehicle washing.
5.3.8 Use sprinkling, micro irrigation and other efficient techniques for landscape irrigation.
5.3.9 Use centralized reclaimed water nearby for non-potable purposes, or adopt other reclaimed water sources and treatment techniques after cost-benefit analysis.
5.3.10 Install water metering for different use.
5.3.11 Non-traditional water utilization rate not less than 20% for office and commercial buildings, not less than 15% for hotel buildings.

Outstanding Items
5.3.12 Non-traditional water utilization rate not less than 40% for office and commercial buildings, and not less than 25% for hotel buildings.

5.4 Material Saving and Material Resource Utilization

Prerequisite Items
5.4.1 Limits on harmful contents in construction materials to be in accordance with the requirements of the current national standard GB 18580 — GB 18588 and "Limit of Radionuclides in Building Materials" GB 6566.
5.4.2 Use plain and simple building elements without excessive decorative components.

General Items
5.4.3 Building materials manufactured within 500km from the construction site to be higher than 60% of the total weight of all construction materials.
5.4.4 Use pre-mixed concrete for site-cast concrete works.
5.4.5 Use high performance concrete and high strength steel rationally in building structures.
5.4.6 Sort solid debris generated during construction, demolition of old buildings and site clearing. Recover any reusable and recyclable materials.
5.4.7 During design and materials selection, consider the recyclability of the materials. While ensuring safety and not polluting the environment, the use of recyclable building materials to be more than 10% of the total weight of all construction materials.
5.4.8 Integrate construction and decoration to avoid damaging or demolishing completed building elements and installation, and repeating the renovation work.
5.4.9 Use flexible partitions in office, and commercial buildings to reduce material waste and amount of trash generated during renovation work.
5.4.10 Under the premise of ensuring performance, the use of discarded materials as raw materials
for manufacturing certain construction materials to be no less than 30% compared to similar construction materials.

Outstanding Items
5.4.11 Use of energy efficient and minimal environmental impact structural systems.
5.4.12 Use of reusable construction materials rate to be larger than 5%.

5.5 Indoor Environmental Quality

Prerequisite Items
5.5.1 When using centralized air conditioning, the room temperature, humidity, wind speed, etc. to be in accordance with the calculated design value requirement of the current national standard "Design Standard for Energy Efficiency of Public Buildings" GB 50189.
5.5.2 No condensation or mold on inside and interior surfaces of building envelope.
5.5.3 When using centralized air conditioning, outside air supply volume to be in accordance with the design requirements of the current national standard "Design Standard for Energy Efficiency of Public Buildings" GB 50189.
5.5.4 Indoor airborne formaldehyde, benzene, ammonia, radon and TVOC contaminant concentration to be in accordance with the requirements of the current national standard "Code for Indoor Environmental Pollution Control of Civil Building Engineering" GB 50325.
5.5.5 Hotel and office building background noise levels to be in accordance with the Grade 2 requirements of the current national standard "Code for Sound Insulation Design of Civil Buildings" GBJ 118. Commercial building background noise levels to be in accordance with the current national standard "Hygienic Standard for Shopping Centre and Book Store" GB 9670.
5.5.6 Building lighting indexes, such as interior illumination level, unified glare rating, and color rendering index to be in accordance with current national standard "Standard for Lighting Design of Buildings" GB 50034.

General Items
5.5.7 Adopt measures to promote natural ventilation in building and structural design.
5.5.8 Use air conditioning system terminal components that are easy to control and improve occupant comfort levels.
5.5.9 Noise insulating performance of building envelope components in hotel buildings to be in accordance with the Grade 1 requirements of the current national standard "Code for Sound Insulation Design of Civil Buildings" GBJ 118.
5.5.10 Rational building plan layout and arrangement of functional spaces to reduce noise interference between adjacent rooms and noise effect from outside.
5.5.11 Daylighting index in more than 75% of main functional spaces in office and hotel buildings to be in accordance with the requirements of the current national standard "Standard for Daylighting Design of Buildings" GB/T 50033.
5.5.12 Barrier-free access to building entrances and main activity spaces.

Outstanding Items
5.5.13 Use adjustable external sun-shading devices to improve indoor thermal environment.
5.5.14 Use indoor air quality (IAQ) monitoring and control systems to ensure healthy and comfortable indoor environment.
5.5.15 Use rational measures to improve daylighting in indoor or underground spaces.

5.6 Operation and Management

Prerequisite Items
5.6.1 Formulate and implement integrated resource saving, including energy-saving, water-saving, etc. and landscaping management policies.
5.6.2 Exhaust air and waste water discharge during building operation to be in accordance with standards.
5.6.3 Sort and process waste collection, with no secondary pollution during collection and processing.

General Items
5.6.4 Balanced earthworks and use of construction facilities such as construction roadways during building operation.
5.6.5 Facilities management services to be certified by ISO 14001 "Environmental Management System".
5.6.6 Equipment and conduit installations should be easy to maintain, modify and replace.
5.6.7 Conduct periodic inspection and cleaning of air conditioning systems in accordance with the requirements of the current national standard "Cleaning Code for Air Duct System in Heating, Ventilating and Air-conditioning Systems" GB 19210.
5.6.8 Rational intelligent building systems, with full functioning information communication network systems.
5.6.9 Rational and high operating efficiency automatic monitoring control systems for building ventilation, air conditioning and lighting systems.
5.6.10 Meter electricity, cooling and heating charges in office and commercial buildings.

Outstanding Items
5.6.11 Implement resource management encouragement mechanism, facility management achievements link with resource savings and economic benefit.

Explanation of Wording in This Standard

1. Words used for different degrees of strictness are explained as follows in order to mark the differences in executing the requirements in this standard:
   1) Words denoting a very strict or mandatory requirement; "Must" is used for affirmation; "must not", for negation.
   2) Words denoting a strict requirement under normal conditions: "Shall" is used for affirmation; "shall not" for negation.
   3) Words denoting a permission of a slight choice or an indication of the most suitable choice when conditions permit: "Should" is used for affirmation; "should not" for negation.
"May" is used to express the option available, sometimes with the conditional permit.

2. "Shall comply with" or "Shall meet the requirements of" is used in this standard to indicate that it is necessary to comply with the requirements stipulated in other relative standards and codes.
Annex 3  Occupational Health and Safety in Operation Phase

1. Noise management

Aircraft noise source intensity is larger, research shows that long-term exposure to noise, sound environment, will not only cause hearing impairment, leading to noise-induced hearing loss, but also to the human nervous system, cardiovascular system, digestive system and metabolism influence.

Control of noise from the control sound source, acoustic transmission control, protected by the sound in three aspects. Due to aircraft noise particularity, aircraft noise source intensity cannot be effectively weakened. Therefore, slow the aircraft noise on the airport staff affected control from the acoustic transmission and protected by the voice of the two aspects. Methods are as follows:

(1) Airport building sound insulation and the use of hearing protectors

Airport interior staff because of building sound insulation effect, by the image noise, airport building should be in accordance with the relevant noise standards to be constructed, has reached the ideal sound insulation effect. The airport outdoor work staff, particularly flight staff, since there is no effective sound insulation structures, should be in use of hearing protectors in to hearing protection purpose.

(2) To control exposure time

Reduce staff at sound environment noise under continuous exposure time can be effectively protected by the hearer. Airport can be reasonable to take shift, job management methods to reduce airport noise on human noise effects.

(3) Periodic noise assessment and hearing conservation program

The airport shall organize professional personnel on a regular basis different regional airport noise intensity is monitored, by monitoring the reasonable adjustment of outdoor staff working in different periods of the work site. In addition, the airport also should make the hearing conservation program, for example, through training to improve staff hearing protection consciousness; staff on a regular basis to hearing assessment, in order to timely understand the employees affected by noise.

2 Health and safety of fuel management personnel

The airport oil depot area, oil and other fuel storage, transportation, gas system has greater security risk, related to the management, operating personnel life safety threat, in addition, the fuel is corrosive, volatile, and contain a variety of toxic and
harmful chemical composition, if not handled when the airport staff health adversely affected. Therefore, should strengthen oil disposal, management safety management.

According to the civil airport aviation fuel supply safety operation regulations, according to Shangrao Sanqingshan Airport projects, aiming at the airport oil disposal management should do the following work:

(1) Establishment of safety management, its primary responsibility for the implementation of national production safety laws, regulations, rules and standards; production safety inspection work; to evaluate the safety of operation conditions, eliminates the safety hidden trouble of safety accident investigation;

(2) Establish the safe supply of jet fuel management system;

(3) On the staff began a safety management system of training and examination;

(4) According to the safe operation of the actual situation, organize the assessment of safe supply of jet fuel management system conformity, timeliness, and timely adjust and improve;

(5) Engage with the safe supply of jet fuel to run the relevant employees shall be certified;

(6) Organize periodic safety inspections, the inspection found problems should be corrected, and the formation of safety inspection records.

(7) Develop fuel management and disposal of emergency and rescue system.

3. Health and safety of dangerous waste disposal personnel

Airport depot area dirty oil and hazardous waste, the waste oil shall be reasonable collection and temporary storage, to avoid the human toxic and adverse effects.

(1) for hazardous waste disposal personnel to carry out strict safe operation training, to fully understand the nature of hazardous waste and ensure the safety of human body health method;

(2) Right choice, qualified waste oil collection, storage equipment, and regularly check;

(3) Disposed of personnel in operation should wear protective clothing and masks, avoid hazardous waste direct contact with the skin, eyes, and respiratory system.

(4) If the field use, processing, storage of corrosive, oxidation, reactive chemicals at any time, must meet the requirements of the emergency personnel. In the workplace should be set easily using a first aid station; if specific workstation
suggested first-aid measures is immediately rinse with water, should be in the workstation located near the eyewash station and/or emergency shower equipment.

4. Other physical hazards

According to the specific responsibilities, work at the airport ground service personnel may be influenced by a variety of different physical (physical) damage. The main occupation hazards may include the following causes fatigue phenomenon: carrying heavy loads; baggage and cargo handling repetitive activity/aircraft service operation; and moving ground service vehicle cargo or taxiing aircraft collision; and severe weather hazards.

In order to avoid the airport staff were subjected to physical harm, should take the following measures:

(1) In order to facilitate ground support vehicles operation, operators in passenger ladder, taxiway and other ground vehicles and aircraft collision where provide safety signs and the channel logo. Provisions of the safe zone to high risk locations were considered, such as a jet engine exhaust area, so as to provide protection for aircraft service personnel;

(2) The operator to all in the airport's staff training and issuance of certification. Related to the aircraft support equipment operating staff to be familiar with the passenger and taxiway traffic safety procedures, including the control tower and air contact;

(3) To keep the ground support vehicle safety features, including backup alarm, moving parts and protection, emergency brake switch;

(4) Engage all the baggage and cargo handling staff, whether it is formal employee or temporary employees, will receive appropriate handling, bending and turning skills training, in order to avoid back injury or stress. Special attention should be paid to the cargo hold of the aircraft handling, where the height is usually not suitable for staff standing (requires special handling or push-pull skills), and may have stumbled and slipping hazards to personnel with appropriate personal protective equipment (PPE), such as into the cargo hold work wear knee pads;

(5) Operator should coordinate with airlines, on the implementation of personal
baggage weight limit of the necessity of carrying out the assessment, according to the local laws and regulations on personal baggage weight limit, if there are no relevant local regulations, while allowing individuals carrying baggage weight limit of 32000 grams (70 pounds);

(6) To pass the shift and prescribed rest time to reduce the staff engaged in carrying heavy loads of work frequency and duration;

(7) The operator must consider the use of mechanized cargo and baggage handling work, such as the use of leads to the cargo delivery device;

(8) Operators provide staff to prevent excessive cold or heat training, including the early symptoms and management skills (such as hydration, rest). For the staff to provide the necessary clothing, to prevent the emergence and weather related to stress, and the use of relevant work environment temperature.
Annex 4. Camphor Tree Transplant

Through on-the-site survey, there are 3722 camphor trees (belong to Secondary-class plants under protection in China) in area of this project. The transplant plan is shown as below:
1. Transplanting Place
The Dongtuan Village base of Jiangxi Yuanquan limited liability company.
2. Transplanting Executor
Jiangxi Yuanquan limited liability company.
3. Transplanting Timing
The anticipated time will be between Oct. 2012 and Apr. 2013.
4. Transplanting Expense
Transplanting expense includes worker payment, lifting job, construction shortcut, management and care etc. approximately 460,000 RMB in total.
5. Survival Rate
Scientific and effective transplanting methods should be applied to ensure that a survival rate of 85% or higher can be reached.
6. Transplanting Technique
(1) Camphor Tree Disposing
Necessary disposing works must be carried out before transplanting, trimming is required, and 1/3 to 1/2 of leaves is generally need to be cut. If transplanting is proceeded in inappropriate seasons, more trimming work is needed to minimize transpiration area. Basically, camphor trees under 5cm need to be gently trimmed on leaf as well as root, and soil ball is unnecessary; those of 6-20cm need to be significantly trimmed on leaves, and a soil ball of 50cm is needed; those taller than 20cm need to be significantly trimmed, and a soil ball of 80-100cm is needed. If necessary, huge trees should be supported by backbones.
(2) Soil Ball in Transplanting
Pay attention to moisture of the soil when transplanting. One or two days prior to the transplanting, adjust the moisture of soil according to actual status so as to avoid breakdown of soil ball. Emphasize the old soil ball and maintain 10-20 centimeters’ fresh soil. Bind up the soil ball with straw ropes and keep a relatively long taproot so as to avoid nutrient loss due to siphon action.
(3) Digging and Package
Camphor trees will be manually dug and packaged by soft material according to size.
(4) Lifting and Transportation
Generally, camphor trees are lifted by crane and transported by vehicle. When packing into vehicle crowns should be towards to the stern while roots should be close to the driver room. Tress trucks should be packaged by soft material, and placed and tied on wooden stands. If transporting in inappropriate seasons, should pay attention to shielding, moisturizing, and water evaporation.
(5) Planting
Camphor trees must be planted as soon as possible when transported to destination, soil balls must be totally buried under ground, after planting adequate water is needed.
(6) Maintaining after Transplant
① Tree Trunk Support
The trunks of the transplanted camphor trees must be fixed to prevent the crowns from becoming oblique as a result of wind, and fastening the root system is good for the growth of the root system.

② Watering and Fertilizer Management
Conduct a penetrable irrigation once for the camphor tree after the transplant to ensure close combination of the root and the soil and boost root system growth. Then, conduct the penetrable irrigation for three successive times and then seal the tree stump or conduct plastic preservation of soil moisture to prevent the topsoil from dehiscence and being pervious to wind. In future, water the trees according to the changes in soil moisture. Watering should follow the principle of “watering dry soil only and penetrable watering only” and spray more water onto the earth’s surface and the crown in summer to increase ambient humidity and reduce steam rising. Apply quick-acting fertilizer once in the first autumn after the transplant and at least twice or triple in early spring and autumn of the second year to improve the nutrition level and boost healthy growth of the tree.

③ Auxin Application
To accelerate growing new roots, 200mg/I 1-naphthlacetic acid or ABT rooting powder can be added when watering to accelerate the root system growth.

④ Trunk Package
To maintain humidity of the trunk and reduce water evaporation of the bark, closely twine the soaked straw rope from the trunk base up to the top and then fully paste the straw rope with modulated clay slurry. In future, we can also frequently spray water to the trunk to keep moisture and build shelter or hang straw screen around the trunk in the height of summer. In the north, twining the trunk with straw rope or plastic strip can protect against wind and frost.

⑤ Root System Protection
After transplant of the camphor tree, personnel should be designated for a series of maintenance management including pruning, sprouting, watering, draining, wind barrier setup, trunk packaging, winter protection, insect-proofing, fertilizer application and so on. Normal management can be conducted only after we can confirm that the transplanted camphor tree survives.