World Bank Loan
Jiangxi Shangrao Sanqingshan Airport Project

Environmental Management Plan

October 2012
Environmental Management Plan of Shangrao Airport Project

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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”, 2005.4.1;
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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

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

**AIRPORTS**

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

**WASTEWATER AND AMBIENT WATER QUALITY**

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

**ELECTRIC POWER TRANSMISSION AND DISTRIBUTION**


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* (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>Permanganate 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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Item</th>
<th>TP</th>
<th>Volatile Phenol</th>
<th>Anionic Surface Active Agent</th>
<th>Petroleum</th>
<th>Fecal Coliform(pc/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Value</td>
<td>CLASS III</td>
<td>≤0.2</td>
<td>≤0.005</td>
<td>≤0.2</td>
<td>≤0.05</td>
<td>≤10000</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>6.5-8.5</td>
<td>≤3.0</td>
<td>≤0.2</td>
<td>≤450</td>
<td>≤20</td>
</tr>
<tr>
<td>Item</td>
<td>Nitrite</td>
<td>Anion Synthetic Detergent</td>
<td>Volatile Phenols</td>
<td>Total Coliforms(pc/L)</td>
<td></td>
</tr>
<tr>
<td>Standard Value</td>
<td>≤0.02</td>
<td>≤0.3</td>
<td>≤0.002</td>
<td>≤3.0</td>
<td></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 4.0mg/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>
<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 $L_{WECPN} = L_{DN} + 14$dB, conversion of specific derivation process see Annex X. the United States developed Airport noise criteria for $L_{DN} \leq 65$dB; therefore, the basic can be judged, our airport noise Evaluation standard is stricter. than the United States of America’s Evaluation standard Our noise specific Evaluation standard values are shown in table 2-3-5:

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

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

<table>
<thead>
<tr>
<th>Receptor</th>
<th>One Hour LAeq dB (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>07:00-22:00 daytime</td>
</tr>
<tr>
<td>Residence; office; culture and education</td>
<td>55</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>≤ 5</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Smell</td>
<td>All Pleasure</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Turbidity/NUT</td>
<td>≤ 10</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>Total Dissolved Solids(mg/L)</td>
<td>≤ 1500</td>
<td>1000</td>
</tr>
<tr>
<td>6</td>
<td>BOD(mg/L)</td>
<td>≤ 10</td>
<td>10</td>
</tr>
<tr>
<td>7</td>
<td>Ammonia Nitrogen(mg/L)</td>
<td>≤ 10</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>Anionic Surface Active Agent(mg/L)</td>
<td>≤ 1.0</td>
<td>0.5</td>
</tr>
<tr>
<td>9</td>
<td>Iron (mg/L)</td>
<td>≤ 0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>10</td>
<td>Manganese (mg/L)</td>
<td>≤ 0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>11</td>
<td>Dissolved oxygen(mg/L)</td>
<td>≥ 1.0</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Total Residual Chlorine(mg/L)</td>
<td>≤ After 30min Contact ≥1.0, The End of Pipe Network ≥2.0</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Total Coliforms/(PC/L)</td>
<td>≤ 3</td>
<td></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/m³)

<table>
<thead>
<tr>
<th>Boiler Category</th>
<th>Applicable Area</th>
<th>Smoke Dust</th>
<th>The Blackness of Flue Gas</th>
<th>SO₂</th>
<th>Nitrogen Oxides</th>
<th>Chimney Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Boiler 2x300kw</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/m³ of concentration limit of fugitive emission monitoring.

Emission of Asphalt smoke implements Class Two Standard of “Comprehensive
Environmental Management Plan of Shangrao Airport Project

Emission Standards for Air Pollutants” (GB16297-1996), see table 2-3-9.

Table 2-3-9 Emission Standards for Asphalt Smoke
(New Pollution Source) (Extract) Unit: mg/m³

<table>
<thead>
<tr>
<th>Pollutants</th>
<th>Production Process</th>
<th>Maximum Emission Concentration, mg/m³</th>
<th>Concentration Limit of Fugitive Emission Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Smoke</td>
<td>Asphalt Melting &amp; Mixing</td>
<td>40-75</td>
<td>There shall be no obvious fugitive emission</td>
</tr>
</tbody>
</table>

(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 Development Objective
The Project Development Objective (PDO) is to improve airline connectivity in Northeastern Jiangxi Province and demonstrate the environment sustainability of the development and operation of the Shangrao Sanqingshan Airport.

3.2 Project Description
The proposed Project will have two components: (i) Airport Infrastructure Development, and (ii) Institutional Development and Capacity Building.
Component 1a: The Airport Infrastructure Development component will finance the construction and installation of the following activities:

(a) Airfield – construction of runway, taxiway, etc;
(b) Terminal building;
(c) Air traffic control;
(d) Freight Facility;
(e) Supporting Infrastructure Facility (fuel storage farm, water supply, power supply, fire stations, heating, storm/water management, parking, fence, etc);
(f) Environmental Management Plan – Implementation of the EIA/EMP recommendations for inside and outside of the airport, including those related to access roads and re-routing of rural connectivity;
(g) Land Acquisition and Resettlement and Rehabilitation of Project Affected Families for inside and outside of the airport, including those related to access roads and re-routing of rural connectivity;
(h) Auxiliary Facility (office building, staff quarters, etc); and
(i) Service vehicles.

Component 1b: Storm water reuse system and ground aircraft auxiliary power unit. During the course of project preparation, the PMO identified additional measures to enhance the green airport design, which were not included in the original FSR. Specifically, the PMO proposed the inclusion of a storm water reuse system and a ground aircraft auxiliary power unit to further enhance the environment sustainability. After a review by the Bank, it was decided that these activities would be included as it would enhance the project “green airport” objectives.

In addition, the Shangrao Municipal Government (SMG) will be constructing an access road (4.65 km) to link the proposed airport with the nearest main road, as well as other utility infrastructure. The access road will be fully financed by SMG outside of the proposed project description. Nonetheless, the safeguard policies agreed for the proposed project will apply for the access road, as well as the other civil works associated with the airport.

Component 2: The Institutional Development and Capacity Building Component will finance the following consultant services, studies and training:

(a) Project Management Consultant to provide advisory services to support the PMO and SSAC with project coordination and monitoring;
(b) Management Consultant to Develop Airport Operation Model and support SSAC to prepare and implement Human Resource Development plan, Operational and financial manual (in accordance China’s company’s law), Compliance with CAAC regulations and international practices, and Develop marketing plan to attract airlines and assist in service agreement negotiations with airlines;
(c) Technical assistance to support the PMO to (i) document the lessons learned in
developing Green Airport concept, (ii) to share their experience widely with other potential cities considering building green airport in China though wider dissemination and holding workshops and road shows in selected cities; and (iii) other civil aviation related studies; (d) Training and study tours covering several aspects of airport construction and operations.

Activities subject to EMP and EMF are summarized as below:

Table 3-2-1 Activities Subject to EMP and EMF

<table>
<thead>
<tr>
<th>Activities</th>
<th>Description for Activities</th>
<th>EA Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Airport</td>
<td>- A runway (2400m×45m) and a taxiway (208.5m×23m) connecting parking apron to the runway;</td>
<td>EA and EMP</td>
</tr>
<tr>
<td></td>
<td>- Passenger aircraft parking apron (290m×130m) for five aircrafts;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- A passenger terminal building (6000m²) and a car park (6700m²);</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- One 400 m² cargo warehouse, one 500 m² handling yard, and one 100m² parking lot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Fuel farm: 3×100m³ storage tanks and 1×5m³ underground tank;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- One vehicle gas filling station (150 m³) with 4 ×25 m³ underground fuel tanks;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Drainage system: eight storm water discharge outlets, one culvert underneath the Airport, and associated storm water pipes within the Airport;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- A wastewater treatment facility (10 m³/h) and associated sewer within the Airport;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- A 50 m³ solid waste transfer station;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 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;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- A 1,200m² fire-fighting station with 6.5km fire-fighting pipelines within the Airport;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- An air traffic control tower (~24m high);</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Other auxiliary facilities: general aviation facilities (airfield lighting system, landing system, meteorological system, telecommunication system etc.), one 300m² air conditioning room, one 800m² transformer substation, and administration and operational offices etc..</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental Management Plan of Shangrao Airport Project</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Airport Connecting Road and associated utility pipelines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- ~4.65 km road connecting Shangrao city and the Airport;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- ~7.6 km (DN 500) water supply pipeline connecting with the trunk pipeline in Shangrao city to the Airport;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- ~5km natural gas pipeline to be laid along the connecting road;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- ~10km sewer to be laid along the connecting road;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMF</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Camphor trees transplantation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 3,722 Camphor trees to be transplanted to a nursery base.</td>
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<td>EMP</td>
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<tr>
<td>4.</td>
<td>Household graves relocation</td>
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<tr>
<td></td>
<td>- 137 household graves will be relocated to sites selected by affected people.</td>
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<td></td>
<td>RAP and EMP</td>
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<tr>
<td>5.</td>
<td>A resettlement site</td>
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<tr>
<td></td>
<td>- A resettlement site has been selected for 14 relocated households.</td>
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<td>EMP</td>
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<tr>
<td>6.</td>
<td>Construction of two electric power transmission lines.</td>
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<tr>
<td></td>
<td>- One ~7.5km 10 kV power line from Maojialing transformer substation to the Airport</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- One ~8km 10 kV power line from Zaotou transformer substation to the Airport;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMF</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Compensation or Restoration measures for people whose farms’ irrigation system will be affected by the project.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 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.</td>
<td></td>
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<td></td>
<td>EMP</td>
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<tr>
<td>8.</td>
<td>Restoration of rural connectivity</td>
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<tr>
<td></td>
<td>- Two (~6 km in total) rural roads will be constructed to restore rural connectivity.</td>
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<tr>
<td></td>
<td>EMP</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Relocation two existing electric power transmission lines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Relocation of ~15km 110kV Mao-Zao electric power transmission line</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Relocation of ~12.8km 110kV Wang-Zhao electric power transmission line</td>
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<td></td>
<td>EMP</td>
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<tr>
<td>10.</td>
<td>Burrow pits, disposal sites, temporary access roads to be determined during detail design stage.</td>
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<tr>
<td></td>
<td>EMF</td>
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</tr>
</tbody>
</table>
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

Supervise the execution of environment and management plan

Report the execution of environment and management plan
<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 project, to supervise the environmental protection work.</td>
</tr>
<tr>
<td>Management institution</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>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; allocate fund for the project environment protection, 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>
<td></td>
</tr>
<tr>
<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>
<td></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>Supervision institution</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 and Requirements</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 camphous 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 proposed measures in the EMP, making the land use planning, and review, approval of the plan development plan in the area near the airport.</td>
<td></td>
</tr>
<tr>
<td>Implementation institution</td>
<td>Construction project contractor 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>
<td></td>
</tr>
<tr>
<td>Consultation service institution</td>
<td>Environmental assessment advisory unit 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>
<td></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>
<td></td>
</tr>
<tr>
<td>Environmental supervision company</td>
<td>Accept the Commission, Contractor daily production activities carried out supervision and management, preparation of environmental supervision report. See 4-2-1 for environmental management system of the body functions and personnel allocation.</td>
<td></td>
</tr>
<tr>
<td>Monitoring institution</td>
<td>Environmental monitoring institution 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>
<td></td>
</tr>
<tr>
<td></td>
<td>Water protection monitoring institution Qualified soil and water conservation Monitoring institution, responsible for water and soil conservation monitoring in project construction period and operation period. See 4-1-2 environmental management system of the body functions and personnel allocation.</td>
<td></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>
<thead>
<tr>
<th>Name of institution</th>
<th>Type of institution</th>
<th>Personnel allocation</th>
<th>Responsibilities of Institution</th>
</tr>
</thead>
</table>
| World Bank          | Supervision institution | 1 person | 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. |
| Environmental protection department at state, province and city/county level | Supervision institution | 1 person | 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. |
| Water Resources department | Supervision institution | 1 person | 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. |
| Electrical power department | Supervision institution | 1 person | 2. Supervise and inspect the implementation of the electrical facilities relocation plan, including the approval of the plan, and the inspection of relocated works. |
| Forestry department | Supervision institution | 1 person | 3. Supervise and inspect the implementation of the camphor trees replantation plan, including the approval of the plan, and the inspection of replanted trees. |
| Project Office of Sanqingshan Airport | Management institution | 1 person | 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. check the environmental management work;  
5. Coordinate other relevant departments to solve major environmental problems;  
6. Entrust external environment expert group to supervise the project; |
<p>| Sanqingshan Airport Co., Ltd. | Management institution | 1 person | 1. Supervise the implementation of project environmental management regulations; |</p>
<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ltd.</td>
<td>2. to enter the measures in the environmental management plan into civil work contracts; 3. Hire, supervision, coordination of engineering supervision (qualification, responsibility, management); 4. Organize the implementation of environmental management training program; 5. Seminar on or about the investigation work; 6. Do a good job in engineering construction and operation process of complaint records, sorting, processing results to the public answer, solve the problem of public complaints; 7. Review of environmental supervision and environmental consulting report; 8. at each quarter send reports to the PMO of Airport Company, department of environmental management; 9. sign on site verification table from Contractor and supervision unit, verifying the environmental sensitive issues, and filed. 10. Underwent environmental inspection (including World Bank project inspection)</td>
</tr>
<tr>
<td>City Transportation Bureau, Construction Bureau</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>Environmental assessment unit</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>Project supervisor (responsible for environmental supervision work)</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 and the check list; 4. Contractor in construction activities encountered on environmental issues and put forward rectification solution and follow up, including rectification notice, check list, check the file archive; 5. submit the project implementation conditions weekly to the airport limited company.</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 airport project mainly includes aircraft movement area runway project, terminal area project, auxiliary facilities project and infrastructure such as airport road, supporting utility pipelines and water drainage works. Villages which are within 320m from the border of the airport 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 influenced by noises from different construction machines.

(2) Ecological Environment

The land of an area of 176.6573hm$^2$ 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 adverse 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 m$^3$, of which the total excavated volume is 3.17 million m$^3$ and the total fill volume reaches 3.09 million m$^3$. After the balance and deployment of the earthwork, spoil soil volume of 80 thousand m$^3$ is formed, so in order to reduce the occupation and effects on off-site land, the spoil 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 burrow pist and spoil disposal sites are not needed 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 potential 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,
(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 leveling, 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 dust will have 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 road, supporting pipelines and reconstructed rural roads will be affected to some extent. Therefore, the watering and dust suppression 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 wastewater, 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 wastewater 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 sedimentation, 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 survey and the geotechnical survey, the excavation and filling will directly undermine the region's original groundwater hydraulic 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, and a new groundwater system will be formed after the fill. Thus, the excavation of the project has a little impact on groundwater.

(6) Solid Wastes

If the construction wastes and domestic garbage produced during the construction period are not been transported in timely manner, it will not only lead to the visual impact on environment, but also cause 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 domestic 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 domestic 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 LWECPN Evaluation of Aircraft Noise

It is predicted that after the operation of Shangrao Airport, there will be no sensitive receptors within the area with a nose level greater than 75dB until year 2020,
the target year, and during 2015 to 2020, the noise-sensitive buildings such as schools and hospitals will not be built within the area with a noise level of 70dB. Therefore, based on $L_{WECPN}$ evaluation, the impacts of aircraft noise are acceptable.

② $L_{eq}$ Evaluation of Aircraft Noise

After the operation of Shangrao Airport, 20 households will be impacted by excessive noise in the daytime and 217 households will be impacted by excessive noise at night by year 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 reduced. The airport's ecological impact on the surrounding area which is limited to the 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

Since the airport heating boiler is fueled by natural gas, which is clean energy, the discharged flue gas of the boiler will meet the standards, having little impact on the atmospheric environment. Pollutants of aircraft exhaust and vehicular emissions include NO$_2$, CmHn, CO, etc. are from the moving sources and emitted intermittently. As a feeder airport, there will be fewer flights and vehicles entering and exiting the airport, 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 project will have a sewage treatment station with a capacity of 10m$^3$/h, and this sewage treatment station, which adopts the MBR process, can meet the requirements of treating all wastewater at the airport. Water after the treatment by the sewage treatment station can be reused.

29.05 m$^3$/d of the treated sewage after treatment will be used for car washing and toilet flushing, and the remaining sewage will be discharged to Shangrao Jiangbei
Sewage Treatment Plant via municipal sewers. Shangrao Urban Management Bureau has committed to building the sewer linking the airport to the existing municipal sewer network and the sewer is expected to be completed before the completion of the airport. The supporting sewer of the airport will be laid along the airport access 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 oil farm area, gas station or sewage treatment plant fails, leading to seepage with pollutants penetrating into the ground and polluting underground water.

When there is leakage in the fuel farm 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 predicted, it takes a relatively long time for the oil tank leakage to infiltrate into the ground 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 paved by impermeable asphalt or concrete pavement, and partly covered by lawn, so the permeability of the soil is reduced because of these barriers. Well collected through a pipe network, sewage of various kinds on the site will not infiltrate into the ground water. The ground water is not severely affected by airport drainage.

(6) Solid Waste

Airport solid waste mainly includes domestic waste which is not toxic itself. The impact of solid waste on the environment lies in:

①Atmosphere: after being sorted out at the garbage sorting station, aviation waste and domestic waste at Shangrao Airport will be sent to the garbage disposal plant of Shangrao City. As organic content of aviation waste and domestic waste is high, the garbage piled is smelly, posing atmospheric impact.

②Body of Water: for weather conditions such as continuous rainfall and heavy
rainfall, there will be leachate from the temporarily stored garbage because of rain wash, therefore, the garbage sorting station should given much attention to seepage-proof. In order to prevent the leachate from seeping into the underground water, a canopy or water barrier should 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 and environment management procedure in operation phase. 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, the Health and Safety Plan for the operation of the airport is given in Annex 5, and the Green Airport Design and Clean Development Machenism is given in Annex 6.

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 5-2-1 List of Elimination Measures for Common Environmental Impact of the 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><strong>Design stage</strong></td>
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<td></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.</td>
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<td></td>
<td>(2) To consider the protection covers the range of Ecological environment, minimize disturbance to vegetation, prevent soil erosion.</td>
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<tr>
<td></td>
<td>(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.</td>
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<td></td>
<td>(4) The environmental protection and engineering design of synchronization.</td>
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<tr>
<td></td>
<td>(5) desing will follow Annex -GBT50378-2006 Green Building Evaluatoin Standard</td>
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<tr>
<td><strong>Reference for location environment</strong></td>
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</tr>
<tr>
<td></td>
<td>(1) Take the control methods which is fit for the nature of risk (containment, auto alarm and closing system).</td>
<td>Project office, owners, city (county) environmental protection agency and Department of transportation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2) Provide the training on preventing leakage for operating personnel, including as one part of emergency preparedness and response training plan, and exercises for specific hazardous substances.</td>
<td>Project office, owners, city (county) environmental protection agency and Department of transportation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3) Implement the inspection plan to check the mechanical integrity and maneuverability of pressure vessel, storage tank, vention system, decompression and vent valve system, containment set, emergency closing system, control device, pump and other relevant processing equipments.</td>
<td>Design unit</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>(4) Refuel UST, AST or other container or device, and the transformation of operation shall be conducted by the staffs that have received the training of security transformation and refuel of</td>
<td></td>
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</tr>
<tr>
<td><strong>Security principles in oil depot</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>(1) Take the control methods which is fit for the nature of risk (containment, auto alarm and closing system).</td>
<td>Design unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2) Provide the training on preventing leakage for operating personnel, including as one part of emergency preparedness and response training plan, and exercises for specific hazardous substances.</td>
<td>Design unit</td>
<td></td>
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<tr>
<td></td>
<td>(3) Implement the inspection plan to check the mechanical integrity and maneuverability of pressure vessel, storage tank, vention system, decompression and vent valve system, containment set, emergency closing system, control device, pump and other relevant processing equipments.</td>
<td>Design unit</td>
<td></td>
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<tr>
<td></td>
<td>(4) Refuel UST, AST or other container or device, and the transformation of operation shall be conducted by the staffs that have received the training of security transformation and refuel of</td>
<td></td>
<td></td>
<td></td>
</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>
<td>----------------------------------------------------------------------</td>
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<td>Dangerous substance and prevention and treatment of leakage. Draw up the standard operating procedure (SOP) in written form. (5) For newly-built storage tank, set the seepage-proofing liner or structure (such as concrete arch, concrete base and bunded walls) below or around the storage tank and tubes and install any leakage products into the lowest place of monitoring of liner or structure. (6) Monitor whether the above ground of any tank has the indication of soil movement. (7) Use volume method, vacuum method, ultrasonic method and tracer method, and do integrity test for all tanks regularly.</td>
<td>Sop institution</td>
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<td>Monitoring institution</td>
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<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 dreg site away from surface water. (4) Contractor and city (county) the project organization consultation to determine a suitable public water, should use municipal tap water as drinking water source, no new drilled wells.</td>
<td>Contractor</td>
<td>Project office, owners, city (county) environmental protection agency and Department of transportation</td>
<td>Owners in the form of a contract to entrust a qualified agency</td>
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<td>Construction site environmental practice at preparation stage</td>
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<td>Surface cleaning</td>
<td>(1) Note that watering dust, to reduce dust pollution. (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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| 1. Roadbed construction (impact control) | (1) Strict control of roadbed, pipeline excavation, avoid the overbreak damage to surrounding vegetation, prohibit the construction area of arbitrary cut down the trees.  
(2) The waste soil shall be timely removal, engaged in earthwork, slag and construction waste transport, must use a closed transport vehicles.  
(3) The construction site watering dust reduces dust pollution. | | | |
| | Airport pavement engineering and entry road engineering | 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. | | | |
| | Ecological recovery | (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. | | | |
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| Construction noise            | (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. Contractor 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. |                             |                          |                        |
| Others                        | (1) Construction site is strictly prohibited to burn all kinds of waste.                                                                                                                                                                                      |                             |                          |                        |
| Construction of production area environment impact control | Surface cleaning  
(1) Note that watering dust, to reduce dust pollution.  
(2) The construction soil should be timely removed with reasonable disposition. |                             |                          |                        |
|                               | 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. |                             |                          |                        |
|                               | Concrete mixing  
(1) Preferred commodity concrete.  
(2) Concrete mixing wet mixing concrete with mixing process sealed state. |                             |                          |                        |
|                               | Material handling storage  
(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.  
(2) The material depositing area site should be flat and solid.  
(3) The construction materials such as cement, lime, gravel pile site should be located Weidang |                             |                          |                        |
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| Construction transport vehicle | (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.  
(2) Engaged in earthwork, slag and construction waste transport and use a closed transport vehicles.  
(3) Gabon cloth cover to reduce rainwater pollution. |                           |                          |                        |
| Precasting yard     | (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. |                           |                          |                        |
| Construction noise  | (1) The large vibration of the fixed mechanical equipment (such as mixer etc.) should be the installation of vibration reducing machine.  
(2) Fixed noise source should be equipped with soundproof hood (such as the TRAM) or placed in indoor operation.  
(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. |                           |                          |                        |
| Others               | (1) The works completed before responding to destroy the 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. |                           |                          |                        |
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<td>Dripping oil pollution control</td>
<td>(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, drip, leak quantity and mechanical repair times, thereby reducing oil and sewage production.</td>
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<td>(2) In the inevitable 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.</td>
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<td>(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.</td>
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<td>(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.</td>
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<td>(5) Equipment repair places the ground should be hardened, anti-seepage treatment, to avoid leaking oil-contaminated soil.</td>
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<td>(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>Equipment noise control</td>
<td>(1) Contractor 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.</td>
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<td>(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) Contractor 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>
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| Solid waste control | (1) The sporadic produce harmful wastes (oil gloves, gauze in first class) by the project department shall entrust qualified entity recycling disposal.  
(2) Leak into the soil oil should be timely use of scraping device collection storage, transport to a qualified treatment field centralized treatment.  
(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 treatment, location should be selected with this kind of waste disposed near the qualification for disposal. | | | |
| Site leveling | (1) Produce waste slag should be timely removal, engaged in earthwork, slag and construction waste transport, must use a closed transport vehicles.  
(2) Watering dust to reduce dust pollution. | | | |
| Life sewage control | (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 | | | |
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<td>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>Domestic waste gas control</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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<td>Solid waste control</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>Ecological impact control</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 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>Item</td>
<td>Environment impact control of soil-taken field</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. (2) The construction camp and construction division is clear, and we should take corresponding measures, and guarantee the construction camp of neat and orderly. (3) The construction camp various wastes are prohibited to burn.</td>
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<td>Environment impact control</td>
<td>Overall requirements</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. (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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<td></td>
<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. (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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<td>Environmental impact control of residue field</td>
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<td>Environmental impact control of residue field</td>
<td>Overall requirements</td>
<td>(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.</td>
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<td>Dust control</td>
<td>(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.</td>
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<td>Ecological impact control</td>
<td>(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.</td>
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<td>Water loss and soil erosion prevention scheme</td>
<td>Construction area of main body project</td>
<td>(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</td>
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<td><strong>Construction production control area</strong></td>
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<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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<td>(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.</td>
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<td>(2) On Soil and pile material dust network coverage, and set the block, to prevent being washed.</td>
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<td>(3) Reasonable arrangements for the project, shorten the temporary land use time, completed the construction of Temporary Land Restoration Vegetation and reclamation.</td>
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<td>(4) For the new road construction, must do a good job of protective engineering and drainage engineering.</td>
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<td>(5) Reasonable arrangements for the project, shorten the temporary land use time, completed the construction of Temporary Land Restoration Vegetation and reclamation.</td>
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<td><strong>Construction road control area</strong></td>
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<td>Construction camp control zone</td>
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<td>(1) The sheds and hardening region other than the part temporary green, sowing and planting grass shrub, afforest and beautify the environment to camp.</td>
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<td>(2) Built brick drainage ditch to quickly exclude site water.</td>
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<td>(3) At end of the project, demolish sheds and harden region, land renovation and restoration of vegetation.</td>
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<td><strong>Soil-taken field control zone</strong></td>
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<td>(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.</td>
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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>(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>Slag control zone</td>
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<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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<td>Ecological recovery</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 Contractor 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.  
Refer to Chance Finds Procedures                                                                 |                             |                        |                        |
| 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,                                                                                                                                                                                                                       |                             |                        |                        |
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<td>obey the traffic police command.</td>
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<td>(4) Mounted on the truck speed control system, supervision and driver.</td>
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<td>(5) 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) 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) Improve sign visibility and enhance traffic safety.</td>
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<td>(8) In the vicinity of the school community traffic safety and pedestrian safety education.</td>
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<td>(9) 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.</td>
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<td>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>
</tr>
<tr>
<td></td>
<td>(10) 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>
</tr>
<tr>
<td></td>
<td>(11) 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>
</tr>
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<td></td>
<td>(12) In excavation of road to set the warning sign with light tip in night;</td>
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<tr>
<td>Item</td>
<td>Elimination Measures for Environmental Impact</td>
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</tbody>
</table>
| 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. | | | |
<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>
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</thead>
<tbody>
<tr>
<td>Social environment impact control</td>
<td>(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.</td>
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<tr>
<td>Landscape impact control</td>
<td>(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 grasing 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</td>
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<td>Item</td>
<td>Elimination Measures for Environmental Impact</td>
<td>Implementation institution</td>
<td>Supervision institution</td>
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<tr>
<td></td>
<td>ground, try to restore the original landform and vegetation, the engineering construction and the surrounding natural environment harmony.</td>
<td></td>
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</tr>
<tr>
<td>Construction safety</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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<td></td>
<td>(3) Contractor 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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<td>(7) The high temperature operation, the construction site should be equipped with cooling products, reasonable arrangements for work and rest time.</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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Power Company               | Project Sponsor          | Monitoring institutions |
<p>| Re-routing power transmission lines | Follow the EHS Guidelines: Electric Power Transmission and Distribution, and relevant General EHS Guidelines                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                             |                         |                         |
| Operation stage           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                         |                         |</p>
<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>
</table>
| Environmental risk control | (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 the traffic noise pollution.  
(3) In schools, hospitals, large residential district department facilities painting sidewalk ( zebra ), special environment sensitive point add signal lamp, protection of people travel. | Owner                      | Provincial Project Management Office, each county (city) project office, owners, county (city) environmental protection agency and the Department of transportation |
Chances Finds Procedures.

According to the *Law of the Peoples Republic of China on Protection of Cultural Relics* (October 28, 2002) thirty-second in construction or agricultural production, any unit or individual to discover relics, shall protect the spot, immediately report to the local cultural relics administrative departments, the departments of cultural relics administration after the receipt of the report, such as the absence of exceptional circumstances, should be in the within twenty-four hours to the scene, and in seven days with deal with the views put forward. The departments of cultural relics administration can be submitted to the local people’s government to inform the public security organs to help protect the scene; discovery of important cultural relics shall be immediately reported to the State Council, the Department of cultural relics administration under the State Council, the Department of cultural relics administration shall be made within fifteen days after receiving the report in accordance with the preceding paragraph that opinion. Cultural relics belonging to the state, any unit or individual shall encroach upon, privately divide, hiding. and *Jiangxi Provincial Cultural Relics Protection Ordinance* (September 22, 2006) twenty-sixth in construction or in agricultural production, any unit or individual shall protect the spot, found artifacts, and promptly report to the local administrative department of cultural relics under the department of cultural relics administration. After receiving the report, should be rushed to the scene within 24 hours, and in 7 working days to deal with the views put forward. The departments of cultural relics administration can be submitted to the local people’s Government notify the public security organ to help protect the scene. The code of practice on environmental protection during construction of chance find puts forward as follows to management requirements:

If the artifacts found during construction, should immediately stop construction, protect the scene, without treatment, and immediately reported to the local cultural relics administrative departments.

On the cultural relics administrative departments offer handling opinions, the Contractor according to the cultural relics department issued by the processing opinion to develop cultural construction method, and obtain the approval of the departments of cultural relics archaeological excavation construction, in the end, no unit or individual shall be free of archaeological excavation area to continue the construction or production activities.

No unit or individual is allowed to encroach upon, privately divide, caches found artifacts.

See the figure below for artifacts found process during construction period:
Environmental Management Plan of Shangrao Airport Project

Suspected cultural relics are found during construction.

County Project

Provincial

County Bureau of cultural relics

Cultural relics

Put forward opinions in

No

Yes

Protect the scene (may request the public security organs for help)

Cultural relics identification

Cultural relics level identification

County/City/Provincial Cultural Relics Bureau

County/City/Provincial Cultural Relics Bureau

County/City/Provincial Cultural Relics Bureau

National Cultural Relics Bureau

State Cultural Relics Bureau

Put forward opinions in

Cultural

Movable cultural

Immovable cultural

Professional

Put forward construction and

County (city) Project

Contractor recovers construction after

County Project

Provincial

County Project

Carry out demonstration for

Treatment Process Diagram of Discovered Cultural Relics during Construction
### 5.2.2 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>
<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, in the Zunqiao Village and Zhouwu village of Shangrao County. In Zhou village of Zaotou Town 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 PMO of Airport Company, 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 balance, quality and quantity is not reduced, at the same time attention should be given to the topsoil stripping and protection.</td>
<td>Sanqingshan Airport Co., Ltd.</td>
<td>Shangrao City PMO of Airport Company, 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 procedure, pay the recovery fee of forest vegetation.</td>
<td>Sanqingshan Airport Co., Ltd.</td>
<td>Shangrao City PMO of Airport Company, Shangrao City Forestry Bureau</td>
</tr>
<tr>
<td></td>
<td>4) Vegetation protection</td>
<td>The topsoil should be removed and stockpiled in the area to be temporarily occupied before the construction, and soil erosion measure should be taken. After the construction is completed, the topsoil should be applied to the construction site and greening.</td>
<td>Contractor</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 Camphor tree transplantation program, carry out transplantation of Camphor trees (3722 strains) in occupied area to ensure that the survival rate.</td>
<td>Jiangxi Yuanquan Co., Ltd.</td>
<td>Shangrao City Forestry Bureau, Sanqingshan Airport</td>
</tr>
</tbody>
</table>
### 6) Animal protection

No construction project area for hunting birds, construction time and manner, reduce the construction noise on the birds interference.

<table>
<thead>
<tr>
<th>2. Water and soil preservation measures</th>
<th>Co., Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Main body project prevention area</td>
<td>Contractor</td>
</tr>
<tr>
<td></td>
<td>Shangrao City Forestry Bureau, Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td></td>
<td>Supervision unit</td>
</tr>
<tr>
<td></td>
<td>Shangrao City Water Conservancy Bureau, Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td></td>
<td>Entrust the qualified unit to carry out monitoring of water loss and soil erosion</td>
</tr>
<tr>
<td>2) Temporary land prevention area</td>
<td>Contractor, supervision unit</td>
</tr>
<tr>
<td></td>
<td>Shangrao City Water Conservancy Bureau, Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td></td>
<td>Entrust the qualified unit to carry out monitoring of water loss and soil erosion</td>
</tr>
</tbody>
</table>
3. Mitigation measures for noise impact

<table>
<thead>
<tr>
<th>1) Construction machinery</th>
<th>Reasonably arrange construction machinery usage, reduce noise equipment use time, and strengthen all kinds of construction machinery repair and maintenance.</th>
<th>Contractor, supervision unit</th>
<th>Shangrao City Environmental Protection Bureau, Sanqingshan Airport Co., Ltd.</th>
<th>Entrust the qualified unit to carry out monitoring of construction noise</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) Construction time</td>
<td>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.</td>
<td></td>
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<tr>
<td>3) Noise protection</td>
<td>In the structure of construction stage, on concrete pump, concrete tanker can make tents surrounding noise reduction.</td>
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</tr>
</tbody>
</table>

4. Mitigation measures for waste gas impact

<table>
<thead>
<tr>
<th>1) Construction waste water</th>
<th>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 sand stone, concrete mixing and conveying equipment flushing waste water can be recycled without discharging into the settling tank.</th>
<th>Contractor, supervision unit</th>
<th>Shangrao City Environmental Protection Bureau, Sanqingshan Airport Co., Ltd.</th>
<th>Entrust the qualified unit to carry out monitoring of waste gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) Domestic waste water</td>
<td>In the construction site within the set of aqua, living wash and restaurant wastewater centralized collection way, by the sedimentation for field of dust.</td>
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</tr>
</tbody>
</table>

5. Mitigation measures for water impact

<table>
<thead>
<tr>
<th>1) Drainage</th>
<th>In the process of construction need to do a good job of surface drainage</th>
<th>Contractor, supervision unit</th>
<th>Shangrao City Environmental Protection Bureau, Sanqingshan Airport Co., Ltd.</th>
<th>Entrust the qualified unit to carry out monitoring of waste water</th>
</tr>
</thead>
<tbody>
<tr>
<td>for groundwater impact</td>
<td>work, slope toe, Ma should set the drainage ditch, avoid the infiltration of surface water groundwater pollution.</td>
<td>supervision unit</td>
<td>Environmental Protection Bureau, Sanqingshan Airport Co., Ltd.</td>
<td>qualified unit to carry out monitoring of underground water</td>
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<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>supervision unit</td>
<td>Environmental Protection Bureau, Sanqingshan Airport Co., Ltd.</td>
<td>qualified unit to carry out monitoring of underground water</td>
</tr>
<tr>
<td>7. Mitigation measures for solid waste impact</td>
<td><strong>1) Construction garbage</strong> Construction waste at the end of construction should be promptly after the removal.</td>
<td>Contractor, supervision unit</td>
<td>Shangrao City Environmental Protection Bureau, Sanqingshan Airport Co., Ltd.</td>
<td></td>
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<tr>
<td></td>
<td><strong>2) Life garbage</strong> Life rubbish temporary storage and sent to the municipal refuse treatment system for disposal.</td>
<td>Contractor, supervision unit</td>
<td>Shangrao City Environmental Protection Bureau, Sanqingshan Airport Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>8. Mitigation measures for impacts on irrigation system</td>
<td><strong>1) Ponds are entirely or partly occupied, the downstream paddy fields are remained</strong> Get water from other sources by creating new irrigation canals; Or change paddy fields into dry farmland, and compensate affected farmers.</td>
<td>Contractor, supervision unit</td>
<td>Shangrao City Environmental Protection Bureau, Sanqingshan Airport Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>2) Catchment areas of ponds are entirely or partly occupied, ponds themselves and the downstream paddy fields are remained</strong> Increas stormwater outlets in the airport, to compensate for the loss of area of catchment of the ponds.</td>
<td>Contractor, supervision unit</td>
<td>Shangrao City Environmental Protection Bureau, Sanqingshan Airport Co., Ltd.</td>
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</tr>
<tr>
<td>9. Measures for cultural relics protection</td>
<td>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</td>
<td>Contractor, supervision unit</td>
<td>Shangrao City Cultural Relics Bureau, Sanqingshan Airport Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>10. Public interference</td>
<td>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.</td>
<td>Contractor, supervision unit</td>
<td>Shangrao City Environmental Protection Bureau, Sanqingshan Airport Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>11. Health and safety</td>
<td>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.</td>
<td>Contractor, supervision unit</td>
<td>Shangrao City Environmental Protection Bureau, Shangrao CityPublic Health Bureau, Sanqingshan Airport Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>12. Magnetic Radiation</td>
<td>The height of the 110 kV voltage power lines should be bridged to a sufficient level. When crossing the non-residential areas, the power lines should be bridged at least 6 m from the ground; when crossing the residential areas, the power lines should be at least 7 m from the ground; Dueing the construction of the power lines, the route should be inspected to ensure there are sufficient height between the power lines and the ground.</td>
<td>Contractor, supervision unit</td>
<td>Shangrao City Environmental Protection Bureau, Shangrao CityPublic Health Bureau, Sanqingshan Airport Co., Ltd.</td>
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</tbody>
</table>
12. Construction camp

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 Contractor 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.

Re-routing /construction of power transmission lines

Follow the EHS Guidelines: Electric Power Transmission and Distribution, and relevant General EHS Guidelines, and ECOPs in the EMP

Re-routing of rural roads

Follow the ECOPs in the EMP.

---

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.

Table 5-2-3 List of mitigation measures for specific unfavorable environmental impact

<table>
<thead>
<tr>
<th>III. Operation stage</th>
<th>1. Mitigation measures for ecological impact</th>
<th>Co., Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Field green</td>
<td>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,</td>
<td>Sanqingshan Airport Co., Ltd.</td>
</tr>
</tbody>
</table>

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## 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.

### 2) Sound insulation measures

According to the Leq results, to the airport around 563 households using noise control measures related to Shangrao Zunqiao Village Xiawutang110, Shanghuangwu 71 County households households, Shangrao Zaotou TownBeilong 90 Canting 230 households households, county, district Maojialing 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.

### 3) Waste gas impact

Boiler flue gas

The airport boiler use gas boiler, which belongs to the clean energy, flue...
### Environmental Management Plan of Shangrao Airport Project

<table>
<thead>
<tr>
<th>Mitigation Measures</th>
<th>Description</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4. Surface water impact mitigation measures</strong></td>
<td>1) Life sewage</td>
<td>Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td></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>Shangrao City Environmental Protection Bureau</td>
</tr>
<tr>
<td></td>
<td>2) Initial sewage of oil depot area</td>
<td>Shangrao City Environmental Protection Bureau</td>
</tr>
<tr>
<td></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.</td>
</tr>
<tr>
<td><strong>5. Groundwater impact mitigation measures</strong></td>
<td>1) Seepage control measures</td>
<td>Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td></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>Shangrao City Environmental Protection Bureau</td>
</tr>
<tr>
<td></td>
<td>2) Groundwater monitoring</td>
<td>Shangrao City Environmental Protection Bureau</td>
</tr>
<tr>
<td></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.</td>
</tr>
<tr>
<td><strong>6. Mitigation measures for solid waste impact</strong></td>
<td>1) Aviation garbage and domestic garbage</td>
<td>Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td></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>Shangrao City Environmental Protection Bureau</td>
</tr>
</tbody>
</table>

Sanqingshan Airport Co., Ltd. entrust the qualified unit to carry out monitoring of waste gas.

Shangrao City Environmental Protection Bureau entrust the qualified unit to carry out monitoring of waste water.

53
### 7. Environmental risk prevention measures

<table>
<thead>
<tr>
<th>1) Leakage prevention measures</th>
<th>Oil depot oil stored in a slop tank, by the Jingdezhen Longteng Carbon Fuel Technology Co., Ltd. regularly receive treatment.</th>
<th>Sanqingshan Airport Co., Ltd., Oil Material Company</th>
<th>Shangrao City Environmental Protection Bureau</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In the oil storage area and related areas set up monitoring probe, 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 tank, 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;</td>
<td>monitoring of waste water</td>
<td></td>
</tr>
<tr>
<td>2) Fire explosion accident prevention</td>
<td>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,</td>
<td>Sanqingshan Airport Co., Ltd., Oil Material Company</td>
<td>Shangrao City Environmental Protection Bureau</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Entrust the qualified unit to carry out monitoring of accidents</td>
<td></td>
</tr>
</tbody>
</table>

---
and ensure the quantity and quality of clearance. Gas station and storage tanks, piping, breathing valve, safety valve, flame 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 PMO of Airport Company, 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 PMO of Airport Company, 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 PMO of Airport Company 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 PMO of Airport Company 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 PMO of Airport Company 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 necessary.

(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. The public can ask for the questionnaires actively or by letters, telegram, fax, email and other methods to give advice to Contractor 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 Contractor 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 Contractor 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.

![Figure 5-4-1 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>
<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 agroup</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>
<thead>
<tr>
<th>Table 5-5-2 Components of plan content</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>61</td>
</tr>
</tbody>
</table>
### Plane crash

1. When drawing up the emergency response plan of the airport, it shall consider the weather in extreme cold and heat, snow, rain, wind and with low visibility, as well as the river system, road and hollows around the airport, to avoid affecting the rescue operation due to the extreme weather and the special terrain.

2. The plan shall be drawn up for the largest plane model available in the airport.

3. The airport authority shall draw the comprehensive grid map of airport emergency rescue, which should accurately indicate airport runway, taxiway, airport ramp, airport terminal, enclosure road and other facilities. In addition, it shall pay much attention to indicate fire control network, the position of hydrant, fire pool, other positions of ponds and river which are able to get dire demand, roads for fire engines, exit position of airport enclose and other unit positions having the ability of medical aid.

4. Formulate human urgent evacuation plan and exercise drills. The related personnel are responsible for coordinating the escape of passengers after the accident.

5. According to the annual aircraft movement in the airport, the airport authority shall configure the movement equipments of damaged aircraft which is corresponding to the largest plane model available in the airport, and make sure their intact application during the operation of airport.

### Safety breach

1. The entrance should be closed 10 minutes prior to the taking off of the aircraft;

2. For any materials or suitcases that no body claims, the public security department should be contacted immediately while the security staff of the airport should safeguard the site;

3. For any important equipment of the airport, double circuit power supply system should be provided.

### Oil depot (oil tank) spill accident

1. The plan shall divide the spill types into tanks leakage and pipeline leakage, and estimate the direct effect caused by the accident

2. The plan shall refine the divisions of each functional department, and sure the cooperation among each department when the accident happens;

3. The plan shall make a level division for the accident;

4. Determine the processing mode of leaking materials;

5. Determine the collection of cleaning wastewater, processing mode and reuse way after the accident;

6. Make sure to write the summary report on the accident

### 5.5.2 Execution of plan

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

2. (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. (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. (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 Contractor 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 6-1-1 Location of monitoring point and monitoring content during construction period

<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><strong>Airport engineering</strong></td>
<td><strong>Ambient air</strong></td>
<td>Construction fugitive dust</td>
<td>1 period/quarter</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></td>
<td>Continuous monitoring for 3 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Or after getting complaints</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Continuous monitoring for 3 days</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></td>
<td></td>
<td>Or after getting complaints</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Noise</strong></td>
<td>Construction noise</td>
<td>1 time/day (once for day and night)</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 he routine observation is conducted by the construction organization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Or after getting complaints</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ecology</strong></td>
<td><strong>Survival rate of transplanted trees</strong></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>
<td></td>
</tr>
<tr>
<td><strong>Ground water</strong></td>
<td><strong>Quantity and quality of ground water</strong></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 synthetical detergent, volatile phenol, oil type</td>
<td></td>
<td>0.3</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td><strong>Reconstructed project of country road</strong></td>
<td><strong>Ambient air</strong></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>
</tbody>
</table>
### Project name | Monitoring items | Monitoring content | Monitoring time and frequency | Monitoring place | Monitoring factor | Reference price (ten thousand yuan) | Responsible organization
---|---|---|---|---|---|---|---
Noise | Construction noise | 1 period/quarter Continuous monitoring for 2 days | Sensitive spot of acoustic environment |  | $L_{eq}$ | 0.1 | 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

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

| Name of operational engineering | Monitoring items | Monitoring content | Monitoring time and frequency | Monitoring place | Monitoring factor | Reference price (ten thousand yuan) | Responsible organization
---|---|---|---|---|---|---|---

65
Noise monitoring frequencies are as follows:

1. 1 time per month in the first two years of airport operation;
2. 2 times per year in the years after the first two years of airport operation;
3. Also monitor noise when the actual flight number is much more than the evaluated.

PS: Assess noise environment quality based on China relative standards and EHS guidelines respectively.

<table>
<thead>
<tr>
<th>Airport operation</th>
<th>Noise</th>
<th>Aircraft noise</th>
<th>Location</th>
<th>LWECPN Leq</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Xiawutang, Tashui, Xujia, outside of Beilong</td>
<td>3.0</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td>Source</td>
<td>Monitoring Points</td>
<td>Parameters</td>
<td>Frequency</td>
<td>Standard</td>
<td>Monitor Unit</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
<td>-------------------</td>
<td>-----------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Indoor noise</td>
<td>Xiawutang, Tashui Xujia, inside of Beilong resident, inside of terminal building</td>
<td>Leq</td>
<td>1 time per month</td>
<td>1.0</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td>Waste water</td>
<td>Water outlet of oil-water separator of oil depot</td>
<td>Water flow, pH, COD, oil type</td>
<td>1 time/year</td>
<td>2.0</td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td>Sewage treatment station</td>
<td>Water inlet and outlet of sewage station</td>
<td>Flow, pH, COD, BODs, SS, oil type, Fecal coliform</td>
<td>Routine monitoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Emission Type</td>
<td>Sampling Frequency</td>
<td>Monitored Parameters</td>
<td>Concentration Limit</td>
<td>Monitor Unit Authorization</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------</td>
<td>----------------------------------------------------------</td>
<td>----------------------</td>
<td>---------------------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>Ambient air</td>
<td>Fugitive emission of organic gas</td>
<td>(1) 1 time per month in the first year of airport operation &lt;br&gt; (2) 1 time per year in the years after first year of airport operation</td>
<td>Perimeter of oil depot</td>
<td>NMHC, TVOC</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td>Flue-gas of boiler</td>
<td>Temperature of flue-gas</td>
<td>(1) 1 time per month in the first year of airport operation &lt;br&gt; (2) 1 time per year in the years after first year of airport operation</td>
<td>Stack</td>
<td>Temperature</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Qualified monitor unit authorized by Shangrao Sanqingshan Airport Co., Ltd.</td>
</tr>
<tr>
<td>Ground water</td>
<td>Water quality of ground water</td>
<td>1 time/month &lt;br&gt; 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, and set upgradient as well as downgradient well, 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>
</tr>
<tr>
<td>Security monitor for underground oil tanks</td>
<td>Security index</td>
<td>1 time per month</td>
<td>Above underground oil tanks</td>
<td>If there is a sign showing that movement of the soil above underground oil tank; integrity of oil tanks</td>
<td>0.2</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 hm$^2$. 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 $\geq$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>
</table>
| Aircraft movement area      | 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 | Survey monitor and site inspection | Before project construction: Survey one time  
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;  
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;  
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;  
During rainstorm, strong winds and other conditions, it shall monitor more times promptly.  
After the disasters of solid and water loss, it shall complete the monitor within one week. |
| Solid and water loss amount | Observation in fixed location                                                                              |                                    |                                                                                                                                                      |
| Terminal area               | 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 | 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. |                                                                                                                                                      |
| Area of navigation station  | 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 | Adopt the survey monitor and site inspection |                                                                                                                                                      |
| Solid and water loss amount | Observation in fixed location                                                                              |                                    |                                                                                                                                                      |
| Area of spoil ground        | 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 | Adopt the survey monitor, data collection and site inspection |                                                                                                                                                      |
| Solid and water loss amount | Observation in fixed location                                                                              |                                    |                                                                                                                                                      |

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 Contractor and worker training. In the project
before construction begins, all of the Contractor, 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 environmental 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>
<tr>
<td>Object</td>
<td>Training Contents</td>
<td>Number</td>
<td>Time (day)</td>
<td>Unit price (10,000 yuan/day)</td>
<td>Expense (10,000 yuan)</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------</td>
<td>--------</td>
<td>------------</td>
<td>------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Sanqingshan Airport Co., Ltd. and its environmental management personnel</td>
<td>1. all of the above construction period; 2. environmental management plan operation measures; 3. environmental protection facility operation and maintenance; 4. environmental management reporting system and environmental complaint handling mechanism; 5. emergency plan</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Subtotal</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>18</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 Contractor 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. Estimates of environmental protection costs

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

Table 8-1-1 Estimate table of environmental protection costs

<table>
<thead>
<tr>
<th>Items</th>
<th>Name of project expenses</th>
<th>Estimate value (10,000 Yuan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental protection investment during the period of construction and operation</td>
<td>Sewage treatment systems (engineering investment)</td>
<td>485</td>
</tr>
<tr>
<td></td>
<td>Water reuse system (engineering investment)</td>
<td>175</td>
</tr>
<tr>
<td></td>
<td>Rain and sewage pipeline network (engineering 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 water</td>
<td>Oil depot area, groundwater monitoring wells of downstream of the sewage treatment plant</td>
<td>4</td>
</tr>
<tr>
<td>Environmental Management Plan of Shangrao Airport Project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Noise mitigation in operation phase</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installation of noise insulation windows for 5 villages</td>
<td>1995</td>
<td></td>
</tr>
<tr>
<td><strong>Ecology</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetation and afforestation recovery in the airfield, terminal area (engineering investment)</td>
<td>670.89</td>
<td></td>
</tr>
<tr>
<td>Forest vegetation recovery expenses (included in forestry researching investment)</td>
<td>721</td>
<td></td>
</tr>
<tr>
<td>Bird repelling facilities</td>
<td>183</td>
<td></td>
</tr>
<tr>
<td>Water conservation plant the measures expenses (included in the water conservation investment)</td>
<td>231.97</td>
<td></td>
</tr>
<tr>
<td>Protection of plants (camphor) transplanting fee</td>
<td>541.61</td>
<td></td>
</tr>
<tr>
<td><strong>Drainage works investment in the airport</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broadening reinforcing downstream gully lines of the airport outfall</td>
<td>440</td>
<td></td>
</tr>
<tr>
<td><strong>Rural roads reconstruction expenses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reconstructing the blocked rural roads due to the construction of the airport</td>
<td>510.6</td>
<td></td>
</tr>
<tr>
<td><strong>Supervision fee</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction period</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>Operation period</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td><strong>Personnel training expenses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training for contractors and environmental specialists in the construction sites</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Training for the environmental supervision engineers</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Training for Sanqingshan Airport Limited and its environmental managers</td>
<td>3</td>
<td></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:
Wang Youwei, Han Jihong, Zeng Jie, Yang Jianrong, Fang Tian, Pei Wangwei, Qin Youguo, Mao Zhibing, Ma Juanrong, Chen Li, Ye Qing, Xu Wenlong, Lin Haiyan, Lang Siwei, Cheng Zhijun, An Yu, Zhang Beihong, Fan Hongyu, Wang Weihua, Lin Borong, Zhao Ping, Yu Zhenping, Guo Xingfang, Tu Yingshi, Liu Jingli

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>4 2 3 3 2 4 4 4 4 3 5 5 4 6 5 6 10</td>
<td></td>
</tr>
<tr>
<td>★★</td>
<td>5 3 4 4 3 5 6 5 6 5 5 6 6 6 6 6 10</td>
<td></td>
</tr>
<tr>
<td>★★★</td>
<td>6 4 5 5 4 6 6 6 6 6 6 6 6 6 6 6 10</td>
<td></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>3 4 3 5 3 4 4 4 4 5 5 6 5 6 6 10</td>
<td></td>
</tr>
<tr>
<td>★★</td>
<td>4 6 4 6 4 5 5 6 6 6 6 6 6 6 6 10</td>
<td></td>
</tr>
<tr>
<td>★★★</td>
<td>5 8 5 7 5 6 6 6 6 6 6 6 6 6 6 10</td>
<td></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 bioenvironment 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 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 no 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
Environmental Management Plan of Shangrao Airport Project

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 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.
Annex 5 Health and Safety Plan

1 Nature of Institution
The Nature of the medical institution of Shangrao Airport is a small clinic (infirmary)

2. Main Responsibilities
The main responsibilities of the medical institution include to give first aid treatment in the field, deal with trauma, move the patient, give nursing on the way, put first-aid case, replace the medicine, have health training for the staffs in the field and so on.

3. Clinic Settings
At least have consulting room, treatment room and therapeutic room.
The floor area shall no less than 40m² and each room must be independent.

4. Institution Settings
At least have two physicians who have worked in clinic of five years or more after get the doctor qualification;
At least have two nurses;
At least have one ambulance driver.

5 Equipments
(1) Basic device: checkup bed, checkup table, checkup chair, stethoscope, sphygmomanometer, medical kit for home visit, thermometer, dirt bucket, tongue depressor, disposal table, hypodermic syringe, gauze jar, square plate, medicine cabinet, UV-lamp and high-pressure sterilization equipment.
(2) First aid equipments: ambulance, oxygen device, pacemaker and breathing machine.

6 Emergency Procedures
Because the airport infirmary is smaller with simple equipments and there have no conditions for hospitalization and treatment, it is not able to rescue the critical patients. Therefore, the doctors in the field shall screen in accordance with the injury or state of an illness of the patients, the rescue procedures can be divided into two types in general:
(1) If the injury or pathogenic conditions of the patient is minor, the airport infirmary shall take the measures of treatment, wound management and bind to stabilize the injury or pathogenic conditions of the patients;
(2) For critical patients that the airport infirmary does not have the capacity to rescue, it shall transport the patients to hospital in Shangrao downtown for treatment. In order to buy time for rescue, it shall provide professional care on the way of transformation.
Annex 6  Green airport design and clean development mechanism

1 Requirements on green airport design

In order to realize the goal of environmental protection and make use of resource reasonably and economically, based on the guidance of World Bank, Shangrao Sanqingshan airport office follows the design principle of green airport to design, construct, and operate an environmental-friendly airport. The evaluation standard for green building sees appendix.

1.1 Advantages of green airport

(1) Saving cost

By reducing infrastructure cost, usage of materials, disposal of construction waste, scale of mechanical equipment to save initial cost, green airport use lower energy and water resource cost and have longer serviceable cycle, relatively few maintenance, hence, green airport can save the operation costs effectively.

(2) Environmental benefits

Green airport is helpful to reduce the impact on global warming, the local and regional air pollution and water pollution, protect the biological diversity, and natural vegetation, promote the environmental awareness of the operators and users of airport, hence, green airport has good environmental benefits.

(3) External benefits

In addition, green airport also can raise the governmental and inter-governmental profile, and promote the environmental awareness of airport, the attraction to passenger and other external benefits.

1.2 Basic principles of green airport

Green airport shall abide by the following principles:

(1) Energy conservation

(2) Fuel saving

(3) Water resource saving

(4) Make use of natural light effectively

(5) Effective management of rain

(6) Vegetation restoration
(7) Sewage treatment

(8) Make use of alternative source

(9) Face the public

1.3 Method and way to construct the green airport

(1) Increase the efficiency of energy, fuel and light

- Provide high-efficient power and system;
- Provide high-efficient illuminated system;
- Organize the illuminated system of the building, relative to sunlight and heating/cooling area, each single area can realize the individual lighting;
- Optimize the structure of building and promote for maximally absorb solar energy and/or sunlight
- Optimize the architectural features, which is convenient for natural lighting and strong light control. Set up shading cover, roof design, window position and curtain;
- On the prerequisite of not damaging life safety, install the motion sensor in stairs, bathroom, storehouse, equipment room and other places.
- Install “Energy Star” compliance and equipment
- Energy-saving building: Energy-saving lamp, energy efficiency window, which can maximally reduce the usage of electrical equipment (elevator), roof with heat reflection, roof with heat insulation;
- Local renewable energy sources (photosynthesis, wind power generation)
- Increase sunshine by installing skylight and Pyrex glass
- Airport lighting shall adopt LED (light-emitting diode) technology,
- Strengthen the natural ventilation: Open the surface, produce thermal effect by ventilation an lighting, store the fuel fume into the internal of airport terminal, and reduce the requirements on mechanical system;
- Design of the direction and exterior of the building shall reduce solar radiation and cooling requirements, such as install double window in curtain board of sunlight, reduce the number of windows on the sunny side, light well of roof; Regulate solar radiation by using curtain board;
Setting of runway can improve energy efficiency in many ways: The orientation of runway shall be same with wind direction, be suitable for linear continuous approach, both ends of the runway can provide short-term taxiing which can be regarded as exit of high-speed taxiway.

(2) Save water resource

- Install the saving equipment of water resource in the internal of airport terminal, maximally improve the use efficiency of water resource;
- Install the dual-flush toilet and waterless urinal to reduce sewage quantity.

(3) Storm water management

- Set up the porous surface level in parking place and other non-operational area;
- Recycle of rainwater and use the rainwater as non-potable water
- Establish water supply system, use reclaimed water and drained water to clean car rather than using potable water;
- Irrigate by using the collected rainwater or recovery water, save the potable water. Grow cold-tolerance and natural vegetation.

(4) Waste water/ solid waste

- Innovative sewage disposal technology
- Water circulation Sewage recycle, collect rainwater for vegetation irrigation, project and equipment of solid waste recycle
- Set up a convenient area in the whole airport terminal, which is used for the separation, collection and storage of reusable materials, including (as small as) a piece of paper, corrugated paper, glass, plastic, mental and so on.

(5) Vegetation

- Plant various plants on the large areas of land on the airport;
- When plant the vegetation, it shall considerate local floral and/ or the conservation of biological diversity;
- Water-saving vegetation
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- Rain-proof and sun block: Enclosed plaza and building direction shall make the most of tree and vegetation windshield, insulation roof, install the large creasing on the exposed surface for sunshade;
- Collect water by using water sucking plants in wetland and release them into natural water reserve;
- Maintain the local biomass

(6) Construction management and design feature

- Building materials include the reconstituted materials;
- Thermal inertia concrete floor and intermediate concrete or wood floor;
- Balance mining and backfill construction to reduce the demands for transporting soil;
- Public transmit facilities provide bicycles for workers;
- According to the bearing capacity for weather, disaster and human malicious damage to choose materials, not only take the factor of cost into consideration;
- Pavement materials: Reduce the energy consumption of asphalt and concrete
- Building management system (BMS): Building management system is used to track and control the ventilation, illumination, water consumption, heating and cooling system of the building;
- Design of ground vehicles The public transport services of the airport extends to bus stops, which link with the transfer station of urban bus or regional bus/ bus station;
- Make up the scheme of balance backfill construction;
- Confirm the shunt target of refuse landfill and carry out the management plan of building fertilizer to realize these targets.

2 Clean development mechanism

Implement clean development to make the airport operation with water-saving and energy conservation, reduce the noise, emission reduction of air and water pollutants, control the influence on solid waste efficiently, improve the construction and management level of the airport, and decrease the environmental influence on the airport and relevant constructions. In the preliminary design stage of the construction,
it also can conduct optimizing by various schemes. Consider that after the completion of the airport construction and put it into operation, the whole system can meet with the requirements of low power, recycling use, low operating costs and so on to realize circular economy and sustainable development and establish an environmental-friendly airport.

1. Floor planning

Under the principles in accordance with airport planning, the principle of “adjust measures to local conditions” makes site planning land as compact as possible, which is beneficial to the effective use of land and makes the public facilities of the airport, such as water supply, power supply, cold supply, heat supply, air supply and other central stations close to the load center possibly. Or according to different users and regions to set up central station to shorten the pipeline, which reduces the energy loss of long-distance transmission of the public facilities

2. Architectural design

(1) The structure of airport terminal adopts heat insulation and thermal insulation materials. The roof design of airport terminal shall not only consider the aesthetics of façade, but also make the most of natural lighting and ventilation, striving to meet with the requirements of comfortable terminal environment and minimum energy consumption.

(2) The wall and roof of the ordinary buildings adopt the building materials with higher thermal insulation, and the roof has the heat preservation and insulation layer. It is appropriate to consider the direction of the building, pay attention to make the most of natural lighting and ventilation, reduce the consumption of air-conditioning, ventilation and illumination within the building layout.

3. Power supply and lighting

(1) Energy-saving design of distribution system

According to loading capacity, power distance and distribution, characteristics of electric equipments and other elements, design the distribution system reasonably, which make the system simple and reliable possibly, with easy operation, and make
the transformer substation close to the load center as near as possible to shorten the
distribution radius and reduce line loss.

(2) Energy-saving design of transformer

The energy-saving design of transformer is mainly used to reduce the active loss of transformer and reduce the no-load loss of transformer by using the energy-saving transformer. Besides, the confirmation of transformer capacity shall base on the most economic and energy-saving load rate, generally between 75% and 80%.

(3) Reduce line loss

When the resistor and current flow, the distributing line will generate power loss, hence, it shall choose the conductor with smaller resistivity (ρ) in the construction, like copper core cable best, and aluminous wire takes second place. Besides, reduce the wire length possibly and it shall choose the straight line rather than curve road in the wire as far as possible.

Enlarge the section area of conductor, for long line, based on satisfying the carrying capacity, thermal stability, and protection cooperation and voltage drop, increase the scaled of the wire section when choosing. Hence, for the increased wire cost, because energy-saving consumption reduces the annual operating cost, it is economical when considerate the energy-saving economy comprehensively.

(4) Energy-saving design of illumination

Energy-saving design of illumination is on the basis of ensuring not to reduce the visual requirements of working plane and the quality of illumination, to strive to reduce the light loss in illumination system to make the most of light energy.

Generally, the energy-saving measures are shown as follow:

①Make full use of natural light, which is one of the most important approaches for lighting energy saving.

②Based on meeting the lighting quality, the average room (places) shall adopt the high-efficient and lighting fluorescent lamp and compact fluorescent lamp preferentially. It is appropriate for general outdoor illumination to adopt high-pressure sodium lamp, metal halide lamp and other high-efficient gas-discharge sources.
③ Use the electric accessories of light source with low-energy and good performance, such as electronic ballast, energy-saving inductive ballast, electron flip operator, electronic transformer and so on. The fluorescent lamp in public building shall adopt the lamps and lanterns with reactive power compensation, the compact fluorescent lamp chooses electronic ballast preferentially while gas-discharge selects electron flip operator.

④ Improve the control mode of lamps and lanterns, and adopt various energy-saving switches or devices, which is an effective power-saving method. The public places and outdoor lighting can adopt program control, photo electricity, voice operated switch, while the pavement and stairs and other public places for short stay of personnel can adopt energy-saving self-extinction switch.

4 Cooling and heating air-conditioning system

(1) Air-conditioning system adopts power saving devices possibly. By the running status of mechatronics regulating system, make the system operate in the stats of efficiency and low power.

(2) The model selection of cooling and heating equipment shall take full account of the factor of energy-saving, and choose the products with good performance and low power among the like products possibly.

(3) In the case that the scale of the refrigeration equipment of air conditioning is not large, the first consideration is to adopt wind-cooling system. If it is necessary to adopt the refrigeration equipment of air conditioning with water cooling system and the cooling system shall use the circulating water cooling system with high quality and water saving, which reduce the consumption of water resources.

(4) For different functional areas, different energy-efficient equipments are adopted.

(5) The thermal insulation materials for cooling pipe and heating pipe shall adopt high quality products.

5 Water supply system

(1) Water supply shall use governor impeller, control the running status of water
pump by using the variable voltage and carious frequency, reduce the power consumption water supply system and according to the requirements of customers, the pressure and flow of pipe network can implement automatic regulation.

(2) Improve the availability factor of water supply network by optimizing the scheme of water supply pipe network.

6 Airport operation

In the process of airport operation, it shall adopt oil-saving model (the unit consumption of different models in the range from 0.2 to 1.4 kg/ton km), strengthen management, improve load factor, passenger load factor and the turnover ability of transportation, increase fuel efficiency and reduce fuel consumption.