



Environmental Monitoring Report

Project Number: 37487
November 2009

PRC: HEILONGJIANG ROADS NETWORK DEVELOPMENT PROJECT Environmental Monitoring Report for Rural Link Roads (September 2009)

Prepared by Harbin Ying Xin Science and Technology Advisory Company Ltd
People's Republic of China

For Heilongjiang Province Jixi-Nehe Road Project Management Office

This report has been submitted to ADB by Heilongjiang Province Jixi-Nehe Road Construction Project Linqan Project Construction Management Office and is made publicly available in accordance with ADB's policy communications policy (2005). It does not necessarily reflect the views of ADB.

Asian Development Bank

**Heilongjiang Province Jixi-Nehe Road Jixi-Baiquan Section
Link roads project**

**Environmental Monitoring Report
in Construction Period
In 2009**

Harbin Ying Xin Science and Technology Advisory Co. Ltd.

September 2009

Contents

	Page
1. INTRODUCTION	1
1.1 Description of the Project	1
1.2 Contractors of the Road	2
2 THE PLAN OF ENVIRONMENTAL MANAGEMENT AND ENVIRONMENTAL MONITORING IN CONSTRUCTION PERIOD	4
2.1 Environmental Management Plan	4
2.2 Environmental Monitoring Plan in Construction Period.....	11
3 THE MANAGEMENT AND MONITORING OF ENVIRONMENT IN CONSTRUCTION PERIOD	12
3.1 Key Works of the Environmental Management in Construction Period	12
3.2 The Environmental Monitoring In Construction Period	13
3.3 Hulan River	26
4. The Implementation of the Environmental Protection Measures for Each Contractor	28
4.1 L01 Contractor.....	28
4.2 L02 Contractor.....	31
4.3 L03 Contractor.....	34
4.4 L04 Contractor.....	36
4.5 L05 Contractor.....	39
4.6 L06 Contractor.....	41
4.7 L07 Contractor.....	44
4.8 L08 Contractor.....	48
4.9 L09 Contractor.....	51
4.10 L10 Contractor.....	53
4.11 L11 Contractor	56
4.12 L12 Contractor.....	59
4.13 L13 Contractor.....	62
4.14 L14 Contractor.....	65

1. INTRODUCTION

1.1 Description of the Project

Jixi-Nehe Road Project (Jixi-Baiquan Section) starts from K193+570 of Heda Highway west of the Didao Dist. of Jixi City., ends at the Yian-baiquan Highway west of the Feixue Sugar Making Plant of Baiquan County, crosses Linkou county, Fangzheng County, Tonghe County, Tieli City, Qingan County, Suiling County, Hailun County. The total distance is 639.835 km, of which 211.84km will use the existing constructed road and the rest 427.995km of ClassI& ClassII will be newly built, it includes 8.277km of Classland 419.718km of ClassII road and a major new 2578.28m with bridge over the Songhua River.

There are 20 Link roads involved in Jixi-Baiquan Section of Jixi-Nehe Road Project, including the Gucheng Link road, Sandaotong Link road, Sandaotong-Mudanjiang bridge, Lianhua Link road, Diaoling Link road, Eight Woman Fighters Monument Link road, Malanghe Link road, Taiping forest farm Link road, Taoshan Link road, Qinlao Link road, Shangji Link road, Ni'erhe Link road, Changshan town Link road, Houtou Link road, Qianjin town Link road, Gonghe town Link road, Yonghe town Link road, Sandao town Link road, Xinsheng town Link road and Xingguo town Link road. The total length is 162.083 km and most of it belongs to class IV, including 5 bridges.

The total investment of the project is 4059.6 million RMB, of which 200 million US\$ from ADB and 1096.60 million RMB from the national bank.

Construction started in November 2008 and will be finished in September 2009 as planed.

1.2 Contractors of the Road

All the Link road projects are divided into 14 contract sections, the details are shown in Table 1-1.

Table 1-1 Distribution of the Contracted Sections

Contract Section	Link road names	Location	Length (km)	Contractor
L01	Gucheng Link road	K0+000-K1+386	1.386	Mudanjiang Road & Bridge Co.Ltd.
	Sandaotong Link road 1	K0+000-K14+000	13.597	
L02	Sandaotong Link road 2	K14+000-K27+487.76	13.585	Heilongjiang jian'an Road project Ltd.
L03	Sandaotong-Mudanjiang bridge	K26+600	0.368	Mudanjiang Dacheng Road & Bridge Co.Ltd.
		K27+225	0.158	
L04	Lianhua Link road 1	K0+000-K11+000	11.00	Heilongjiang jian'an Road project Ltd.
L05	Lianhua Link road 2	K11+000-K23+000	12.00	Heilongjiang Yuandong Road&Bridge Ltd.
L06	Lianhua Link road 3	K23+000-K34+355.52	12.005	China City Construction the eleventh works department Ltd.
L07	Diaoling Link road	K0+000-K5+978	5.978	Heilongjiang Huatong Road & Bridge Ltd.
	Memorial of eight-women casted river Link road	eight-woman bridge 245.04m	0.555	
L08	Malanghe Link road	K0+000-K0+900	0.900	Harbin Songhua River forestry building installation company
	taiping forest farm	K0+000-K12+092	12.092	
L09	Taoshan Link road	K0+000-K2+408 including bridge 106.34	2.408	Harbin Jinyang Road project Ltd.
L10	Qinlao Link road	K0+000-K14+692	14.692	Suihua City Beitong municipal engineering Ltd.
L11	Shangji Link road	K0+000-K1+402	1.402	Heilongjiang Guanhua Road & Bridge construction Co. Ltd.
	Ni'erhe branchne	K0+000-K4+719	4.719	
	Changshan town Link	K0+000-K9+172	9.172	
	Houtou Link road	K0+000-K5+181	5.181	
L12	Qianjin town Link road	K0+000-K4+445	4.445	Heilongjiang Sanjiang Road & Bridge construction Ltd.
	Gonghe town Link road	K0+000-K11+441	11.441	

Contract Section	Link road names	Location	Length (km)	Contractor
	Yonghe town Link road	K0+000–K1+503	1.503	
L13	Sandao town Link road	K0+000–K1+898	1.898	Qiqihar Xinhai Road & Bridge group Co. Ltd.
	Xinsheng town Link road	K0+000-K10+000	10.000	
L14	Xinsheng town Link road	K10+000-K19+597	9.597	Qiqihar Xinhai Road & Bridge group Co. Ltd.
	Xingguo town Link road	K10+000-K2+000	2.00	

2 THE PLAN OF ENVIRONMENTAL MANAGEMENT AND ENVIRONMENTAL MONITORING IN CONSTRUCTION PERIOD

2.1 Environmental Management Plan

Table 2-1 Environmental Management Plan in the Construction Period

Environmental Issue	Mitigation Measure(s)	References in Law/Contract Documents	Location	Responsible Organization
Loss of topsoil	Stockpiles of topsoil will be maintained in accordance with SEPP and Agriculture Department specifications	Soil Erosion Protection Law, No. 49-'91 and Reg. No. 120 of PRC	Throughout project	Contractor
Compaction of soil	(i) Construction vehicles, machinery and equipment will move or be stationed in designated areas (ii) Ensure that method of stockpiling materials, use of plant,	Contract	Throughout project	Contractor
		specifications Contract specifications	corridor and all temporarily used areas; at all cut and fill sites	

Environmental Issue	Mitigation Measure(s)	References in Law/Contract Documents	Location	Responsible Organization
	and siting of temporary buildings or structures do not adversely affect the stability of cut or fill machinery and equipment will move or be stationed in designated areas (ii) Ensure that method of stockpiling materials, use of plant, and siting of temporary buildings or structures do not adversely affect the stability of cut or fill	specifications Contract specifications	corridor and all temporarily used areas; at all cut and fill sites	
Material borrow areas	(i) The contractor will facilitate inspection of all borrow areas by Environmental Protection and Water Resources Bureaus (ii) No soil or aggregates will be borrowed from or spoil dumped on graveyards	PRC Law 49-'91 and Reg. No. 20 Contract specifications	All construction sites and borrow areas	Contractor
Borrow area rehabilitation	Borrow pits will be filled with spoil, top soiled and vegetated or left as fishponds in accordance with site operation plan and SEIA	Contract specifications	PRC Law 49-'91 and Reg. No. 120	Contractor
Soil erosion and siltation	(i) On road embankment slopes, slopes of all cuts, etc. shrubs and grass will be planted in accordance with the	Design requirement PRC Law 49-'91 and Reg. No. 120	Within construction corridor and all construction sites, all	Contractor

Environmental Issue	Mitigation Measure(s)	References in Law/Contract Documents	Location	Responsible Organization
	SEPP (ii) To control soil erosion and siltation from earthworks, slope drains, sedimentation ponds, grasses, etc. to be installed		borrow and spoil areas, service roads and equipment storage areas, etc.	
Soil contamination by fuel and lubricants	(i) Vehicles, machinery and equipment maintenance and re-fuelling to be carried out so that spillages do not seep into soil (ii) Fuel storage and refueling areas will be at least 300 m from drainage structures and important water bodies (iii) Fuel storage and refueling areas, if in agricultural land or vegetated areas, will have topsoil stripped, stockpiled, and returned after completion of refueling activities (iv) Oil traps will be provided for toll station areas and within drainage systems for bridges	Contract terms and conditions	Throughout project corridor, access roads, temporary sites and borrow/spoil disposal areas	Contractor
Soil contamination by construction material waste	(i) All spoil will be disposed of (ii) All waste materials will be disposed of as defined and the site fully cleaned before handing over to the		Throughout project corridor, access roads, temporary sites and	Contractor

Environmental Issue	Mitigation Measure(s)	References in Law/Contract Documents	Location	Responsible Organization
	operating unit		borrow/spoil disposal areas	
Loss of water sources	Any source of water for the community e.g. wells and ponds that are lost through construction works will be replaced immediately	Resettlement Plan requirement	Throughout project corridor, access roads, temporary sites and borrow/spoil disposal areas	Contractor
Flooding	Prevent temporary or permanent flooding of the site and any adjacent area	Contract terms and conditions	Throughout project corridor, access roads, temporary sites and borrow/spoil disposal areas	Contractor
Siltation into water bodies	Cofferdams will be constructed before bridge footings or pile driving in any major water course		Bridge construction sites	Contractor
Revegetation to prevent erosion and siltation	Revegetation will be done immediately after construction ceases at a site, and no tree or vegetation other than those approved for removal by Forestry Department will be cut	PRC Law 49-'91 and Reg. No. 20	Throughout project corridor, access roads, temporary sites and borrow/spoil disposal areas	Contractor and local unit retained to do replanting

Environmental Issue	Mitigation Measure(s)	References in Law/Contract Documents	Location	Responsible Organization
Alteration of drainage	(i) In sections along water courses, all waste construction materials will be properly disposed of (ii) Temporary irrigation and drainage systems will be built before permanent systems are blocked or removed		Throughout project corridor, access roads, temporary sites and borrow/spoil disposal areas	Contractor
Water contamination from construction wastes	(i) Measures will be taken to prevent contamination by wastewater during construction (ii) Construction work close to water bodies will be avoided during rainy periods (iii) Discharge standards in PRC regulation GB: 8978-1996 will be strictly complied with	PRC GB 8978-1996	Throughout project corridor, access roads, temporary sites and borrow/spoil disposal areas	Contractor
Water contamination from petrochemicals	Waste petrochemicals must be collected, stored and taken to approved disposal sites in compliance with PRC regulations	Law of the PRC on Prevention and Control of Water Pollution	Throughout project corridor and at associated work sites	
Sanitation and waste disposal in construction camps	(i) Work camps must be at least 200 m from the nearest residential area (ii) Sanitation facilities must be properly designed, built and operated (iii) Arrangement for		All construction workers' camps	Contractor

Environmental Issue	Mitigation Measure(s)	References in Law/Contract Documents	Location	Responsible Organization
	proper disposal of sewage must be made			
Generation of dust	(i) Vehicles delivering granular and/or fine materials will be covered (ii) Materials storage sites should be 300 m from residential areas and covered with canvas or sprayed with water (iii) Water will be sprayed on construction sites and unpaved roads at least twice a day during the dry season (iv) Dust from work sites, rock crushing machinery and equipment will not exceed 2.0 mg/m ³ within 150 m of the work sites	Law of the PRC on the Prevention and Control of Atmospheric Pollution	Throughout project corridor, access roads, temporary sites and borrow/spoil disposal areas	Contractor
Emissions from construction vehicles, equipment and machinery	(i) Discharge standards under Environmental Protection Law, 1989 will be strictly adhered to (ii) An inspection certificate will be initiated	PRC-GB 14761.7-93	Throughout project corridor, access roads, temporary sites and borrow/spoil disposal areas	Contractor

Environmental Issue	Mitigation Measure(s)	References in Law/Contract Documents	Location	Responsible Organization
Noise from vehicles, plant and equipment	(i) Equipment and machinery will strictly conform to PRC and local noise standard (ii) At construction sites within 150 m of residential areas, noisy construction work will be stopped between 22:00-06:00 hours	PRC GB 12523-90	Throughout project corridor, access roads, temporary sites and borrow/spoil disposal areas	Contractor
Noise from blasting	Blasting and the use of explosives will be strictly controlled		All blasting sites	Contractor
Loss or damage to flora and fauna	(i) All works will be carried out to minimize damage or disruption to flora and fauna (ii) It is prohibited to borrow materials from or dump spoil outside those sites identified in the construction design and SEPP (iii) Construction workers will be forbidden to harvest wild food or animals	Design requirement, SEIA	Throughout project corridor, access roads, temporary sites and borrow/spoil disposal areas	Contractor
Spread of HIV/AIDS and STIs	A prevention/education programme will be implemented. Information centers will be established at each construction site		Project corridor and neighbouring villages	NGO

Environmental Issue	Mitigation Measure(s)	References in Law/Contract Documents	Location	Responsible Organization
Loss of access	At all times, the contractor will provide safe and convenient passage for vehicles, pedestrians and livestock, to and from side roads and property access connecting to the Project road	As specified in Resettlement Plan documents	Throughout project corridor, access roads, temporary sites	Contractor
Use of hazardous and toxic materials	Herbicides or other toxic chemicals will be used strictly in accordance with the manufacturer's instructions and according to PRC regulations	PRC Reg No. 3130-88	Throughout project corridor, access roads, temporary sites	Contractor

2.2 Environmental Monitoring Plan in Construction Period

Table 2-2 Environmental Monitoring Plan in construction period

Environmental parameters	Monitoring Frequency & Location	Total Cost (CNY)	Implementing Agency
Air quality	(1) Monitoring project: TSP (2) Monitoring frequency: before construction; under construction: continuous TSP level monitoring 3 times/year quarterly (spring, summer, autumn) and random monitoring if necessary; after the construction. (3) Monitoring time: 24 hours (4) Monitoring sites: residential areas, schools and the sensitive areas near the granular mixing plants.	CNY 450,000	Local Environmental Monitoring Stations
Noise Control	(1) Monitoring project: Environmental noise (2) Monitoring frequency: before construction: continuous noise monitoring 3 times/year quarterly (spring, summer, autumn) and	CNY 190,000	Environmental Protection Management Engineers or Local Environmental Monitoring Stations

Environmental parameters	Monitoring Frequency & Location	Total Cost (CNY)	Implementing Agency
	random monitoring if necessary; After the construction. (3) Monitoring sites: random monitoring for the residential areas and schools within 100m of the proposed road		
Water Quality	(1) Monitoring project: PH, COD, SS and petroleum and so on (2) Monitoring frequency: before construction; under construction: continuous noise monitoring 3 times/year quarterly (spring, summer, autumn) and random monitoring (3) Monitoring time: 24 hour if necessary; After the construction (4) Monitoring sites: under 5 bridges	CNY 190,000	Local Environmental Monitoring Stations
Ecological Protection	Revegetation growth and soil erosion on side slopes and borrow pit/spoil disposal sites, for 3 years	CNY 200,000	Local Environmental Monitoring Stations and Water Bureaus

3 THE MANAGEMENT AND MONITORING OF ENVIRONMENT IN CONSTRUCTION PERIOD

3.1 Key Works of the Environmental Management in Construction Period

The roads in this project are constructed as Link roads, and the key of construction projects mainly focus on the construction period. The main forms include the excavation and filling of subgrade, the construction of bridges and the implementation of temporary projects. Large amount of earth and grave need to be transported, all kinds of machines and facilities are working on sites, so it may cause more pollution for air, water, noise and ecological environment. The key works of this phase are as following:

- a. Vegetation and Soil erosion---implementation of the mitigation measures to the borrowed areas and the borrowed pit/spoil disposal sites.
- b. Water quality---Cofferdams will be constructed before bridge stake footings or pile driving in any major water course, in order to control the siltation to the water body.
- c. Noise---Control the working time and maintance the machineries.
- d. Air quality---Control the dust from the construction sites.

- e. Construction camps---Collect and disposal the living waste from the camps; carry out the education on environmental protection and health protection.
- f. Construction safety---Focus on the workers and the local residences safety and health.
- g. Ancestral graves protection---Educate the workers to protect the ancestral graves.

3.2 The Environmental Monitoring In Construction Period

3.2.1 Distribution of the Environmental Monitoring Sites

According to the environmental monitoring plan, 18 air quality monitoring sites, 15 noise monitoring sites and 4 surface water quality monitoring sites has been distributed. They are in the Table 3-1, Table 3-2 and Table 3-3.

Table 3-1 Ambient Air Monitoring Sites

Road section	No	Monitoring Sites	The distance from road centerline(m)	Description	Samplings
Gucheng Link road	1	Samplings	20	Residential area	1
Sandaotong Link road	2	Jiangdong Village	30	Residential area	1
Lianhua Link road	3	Lianhua Village	10	Residential area	1
Diaoling Link road	4	Diaoling Town	15	Residential area	1
Malanghe Link road	5	Malang river Village	15	Residential area	1
Taiping forest farm Link road	6	Fengyang Village	80	Residential area	1
Taoshan Link road	7	Aimin village school	70	Primary school	1
Qinlao Link road	8	Shuguang village	15	Residential area	1
Shangji Link road	9	Shangji town	20	Residential area	1
Ni'erhe Link road	10	Ni'erhe town	20	Residential area	1
Changshan town Link road	11	Changshan town	15	Residential area	1
Houtou Link road	12	Houtou town	20	Residential area	1
Qianjin town Link road	13	Qianjin town	10	Residential area	1
Gonghe town Link road	14	Tianjia Gang	15	Residential area	1

Road section	No	Monitoring Sites	The distance from road centerline(m)	Description	Samplings
Yonghe town Link road	15	Yonghe town	15	Residential area	1
Sandao town Link road	16	Sandao town	15	Residential area	1
Xinsheng town Link road	17	Zhaojia shop	10	Residential area	1
Xingguo Town Link road	18	Xingguo Town	10	Residential area	1

Table 3-2 Surface Water Quality Monitoring Cross-Section

River name	Cross-section name	Cross-section location
Wushihun river	No.1, Eight-women bridge	500m downstream away from the flyover newly built.
Wushihun river	No.2, Diaolin bridge	500m downstream away from the flyover newly built.
Mudan river	No.3, Mudan river bridge	500m downstream away from the flyover newly built.
Mudan river tributary	No.4, Sihe bridge	500m downstream away from the flyover newly built.
Small hulun river	No.5, Taoshan bridge	500m downstream away from the flyover newly built.

Table 3-3 Noise Quality Monitoring Locations

Road Section	No.	Location	Description	Monitoring location
Sandaotong Link road	1	Dabaishun village	Residential district	1m away from the first row buildings by the road and 15 m away from the road centerline.
Lianhua Link road	2	Lianhua village	Residential district	1m away from the first row buildings by the road and 15 m away from the road centerline.
Malanghe Link road	3	Malanghe town	Residential district	1m away from the first row buildings by the road and 15 m away from the road centerline.
Taiping forest farm Link road	4	Taiping primary school	School	1m away from the classroom and 70 m away from the road centerline.
Taoshan Link road	5	Aimin village school	School	1m away from the classroom and 70m away from the road centerline.
Qinlao Link road	6	Qinli primary school	School	1 m away from the classroom and 60 m away from the road centerline.

Road Section	No.	Location	Description	Monitoring location
Ni'erhe Link road	7	Ni'erhe town	Residential district	1m away from the first row buildings by the road and 20 m away from the road centerline.
Changshan town Link road	8	Changshan town	Residential district	1m away from the first row buildings by the road and 15 m away from the road centerline.
Houtou Link road	9	Houtou town	Residential district	1m away from the first row buildings by the road and 20 m away from the road centerline.
Qianjin town Link road	10	Qianjin town	Residential district	1m away from the first row buildings by the road and 10 m away from the road centerline.
Gonghe town Link road	11	Wangxi village	Residential district	1m away from the first row buildings by the road and 15 m away from the road centerline.
Yonghe town Link road	12	Yonghe town	Residential district	1m away from the first row buildings by the road and 15 m away from the road centerline.
Sandao town Link road	13	Sandao town	Residential district	1m away from the first row buildings by the road and 10 m away from the road centerline.
Xinsheng town Link road	14	Minxin primary school	School	1 m away from the classroom and 40 m away from the road centerline.
Xingguo town Link road	15	Xingguo town	Residential district	1m away from the first row buildings by the road and 10 m away from the road centerline.

3.2.2 The Methods and Standards of the Monitoring Work

According to the monitoring plan, the process of the sampling and analysis has been done in accordance with the national standards and guidelines to guarantee the accuracy of the monitoring data. The monitoring parameters and the analysis methods&standards are in the table 3-4.

Table 3-4 List of Monitoring Parameters and Related Methods and Standards

Item	Frequency	Method standard	Instrument	Standard
TSP	Once per season	GB/T15432-95	TSP sampling instruments	GB3090-96
Noise	Once per season	GB/T14623-93	Noise statistical analysis instrument	GB3096-93
pH	Once per season	GB6920-86	Glass electrode method	GB3838-2002
COD	Once per season	GB7488-87	Biochemical cultivation case	GB3838-2002
SS	Once per season	GB11901-89	Analytic balance	GB3838-2002
Petroleum	Once per season	GB/T16488-96	Spectrophotometer	GB3838-2002

3.2.3 Monitoring Results Analysis and Assessment

3.2.3.1 Air Quality Monitoring Results Analysis and Assessment

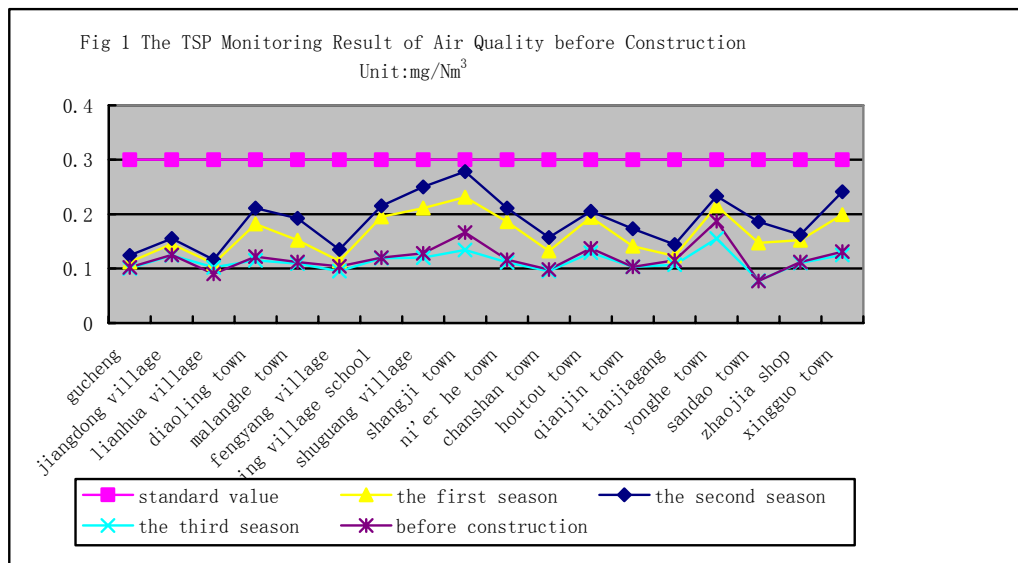
Take GB3095-96 class II as the assessment standard, the monitoring data in table 3-5 states that TSP at all of the sampling sites satisfy the standard in the 1st, 2nd and 3rd quarter of 2009, but a little bit difference existed between the former two seasons and before construction, the 1st season and the 2nd season results are bigger than before construction, it states the air quality in the former two seasons is lower than before construction during construction period. With the end of construction, road status is improved obviously and TSP at 3rd quarter is more superior than the former two seasons. Furthermore, some concentration value is lower than before construction in sensitive spot. The changing trend is shown in the Figure 1.

Table 3-5 The TSP Monitoring and Evaluation Results in 2009

Unit : mg/Nm³

Road section	NO.	Monitoring location	Monitoring value				Quality criterion
			Before construction	1 st	2 nd	3 rd	
Gucheng Link road	1	Gucheng	0.102	0.112	0.124	0.100	0.30
Sandaotong Link road	2	Jiangdong village	0.125	0.145	0.155	0.124	0.30
Lianhua Link road	3	Lianhua village	0.090	0.109	0.116	0.102	0.30
Diaoling Link road	4	Diaoling town	0.122	0.182	0.211	0.115	0.30
Malanghe Link road	5	Malanghe town	0.112	0.152	0.158	0.109	0.30
Taiping forest farm Link road	6	Fengyang village	0.104	0.114	0.135	0.095	0.30
Taoshan Link road	7	Aimin village school	0.120	0.195	0.215	0.119	0.30
Qinlao Link road	8	Shuguang village	0.128	0.211	0.250	0.120	0.30
Shangji Link road	9	Shangji town	0.166	0.231	0.278	0.134	0.30
Ni'erhe Link road	10	Ni'erhe town	0.116	0.186	0.211	0.111	0.30
Changshan town Link road	11	Changshan town	0.098	0.132	0.157	0.095	0.30
Houtou Link road	12	Houtou town	0.137	0.191	0.205	0.129	0.30
Qianjin town Link road	13	Qianjin town	0.103	0.141	0.173	0.103	0.30

Road section	NO.	Monitoring location	Monitoring value				Quality criterion
			Before construction	1 st	2 nd	3 rd	
Gonghe town Link road	14	Tianjia Gang	0.115	0.123	0.144	0.107	0.30
Yonghe town Link road	15	Yonghe town	0.187	0.215	0.233	0.155	0.30
Sandao town Link road	16	Sandao town	0.077	0.147	0.188	0.078	0.30
Xinsheng town Link road	17	Zhaojia shop	0.112	0.152	0.162	0.110	0.30
Xingguo town Link road	18	Xingguo town	0.131	0.199	0.241	0.125	0.30



3.2.3.2 Noise Monitoring Results and Assessment

According to the requirements from EIA and the monitoring plan during construction period, take GB3096-2008 and the document [2003]94 of the SEPA as the assessment standards to assess the noise quality of the protected sites along the road., take Class as the standard for the protected sites between the redline of the

road and 50m away, that is 70dB(A)day, 55 dB(A)night; take Class II as the standard to assess the schools in this section, that is 60 dB(A)day, 50 dB(A) night. Take Class I as the standard to assess the protected sites outside of the 50m of the redline, that is 55 dB(A)day,45 dB(A)night.

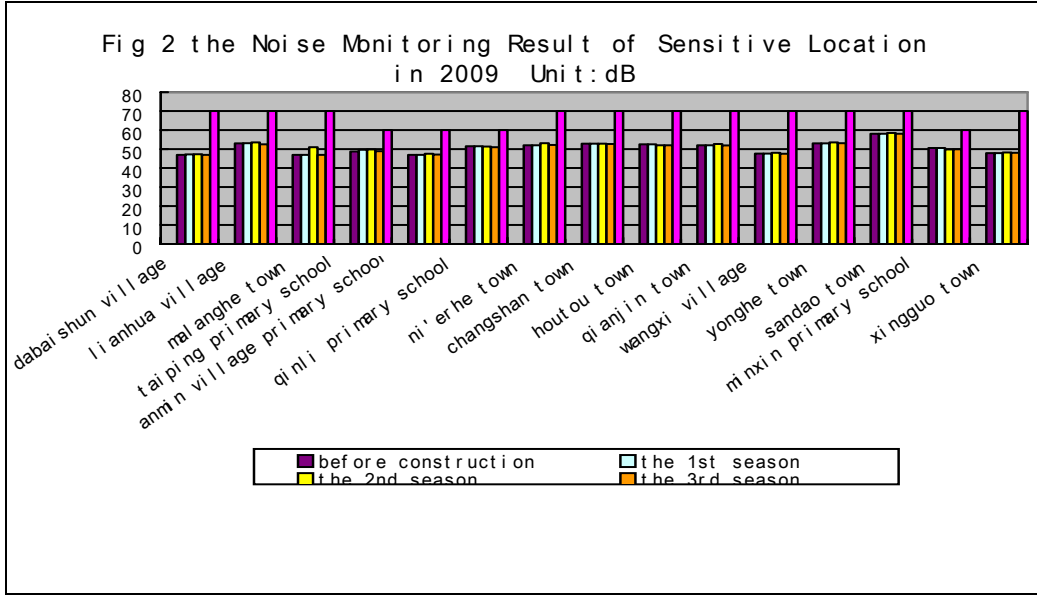
The noise monitoring results and analysis are in table3-6, all of the results satisfy the required standards. The noise standard in the 3rd season is lower than the former two seasons.The changing trend is in Figure2.

Table 3-6 The Noise Monitoring & Analysis Results

Unit:dB

Road section	NO.	Location		monitoring value dB(A)				Standard value dB(A)
				Before construction	The 1 st season	The 2 nd season	The 3 rd season	
Sandaotong Link road	1	Dabaishun village	Daytime	47.0	47.2	47.3	46.9	70
Lianhua Link road	2	Lianhua village	Daytime	53.0	53.1	53.5	52.5	70
Malanghe Link road	3	Malanghe town	Daytime	46.9	46.9	51.0	46.9	70
Taiping forest farm Link road	4	Taiping primary school	Daytime	48.7	49.7	49.8	48.9	60
Taoshan Link road	5	Anmin village primary school	Daytime	47.0	47.0	47.5	47.1	60
Qinlao Link road	6	Qinli primary school	Daytime	51.5	51.6	51.3	51.0	60
Ni'erhe Link road	7	Ni'erhe town	Daytime	52.0	52.5	53.1	52.2	70

Road section	NO.	Location		monitoring value dB(A)				Standard value dB(A)
				Before construction	The 1 st season	The 2 nd season	The 3 rd season	
Changshan town Link road	8	Changshan town	Daytime	52.8	52.6	52.8	52.6	70
Houtou Link road	9	Houtou town	Daytime	52.5	52.5	52.0	52.0	70
Qianjin town Link road	10	Qianjin town	Daytime	52.0	52.0	52.6	51.9	70
Gonghe town Link road	11	Wangxi village	Daytime	47.6	47.7	48.0	47.5	70
Yonghe town Link road	12	Yonghe town	Daytime	53.0	53.1	53.5	53.1	70
Sandao town Link road	13	Sandao town	Daytime	58.1	58.3	58.5	58.0	70
Xinsheng town Link road	14	Minxin primary school	Daytime	50.5	50.5	49.8	49.9	60
Xingguo town Link road	15	Xingguo town	Daytime	47.8	47.9	48.2	48.0	70



3.2.3.4 Surface Water Monitoring Results and Assessment

Take related standards as the assessment standards to the three water bodies with different function. According to the provincial local standard DB23/485-1998, take Class of the standard to assess Wushun River, Mudanjiang River and Hulan River.

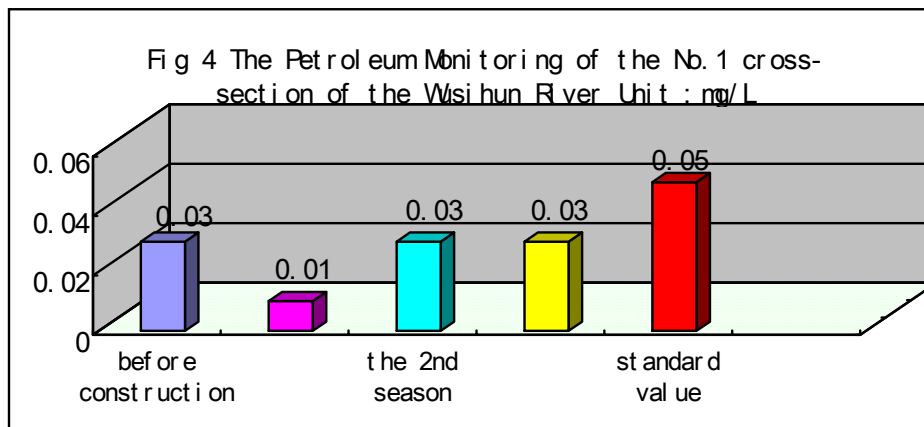
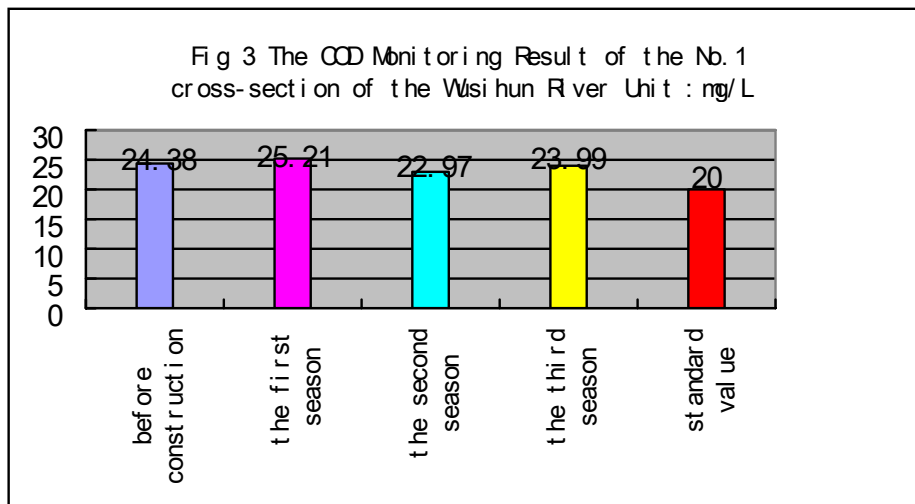
3.2.3.4.1 Wushun River

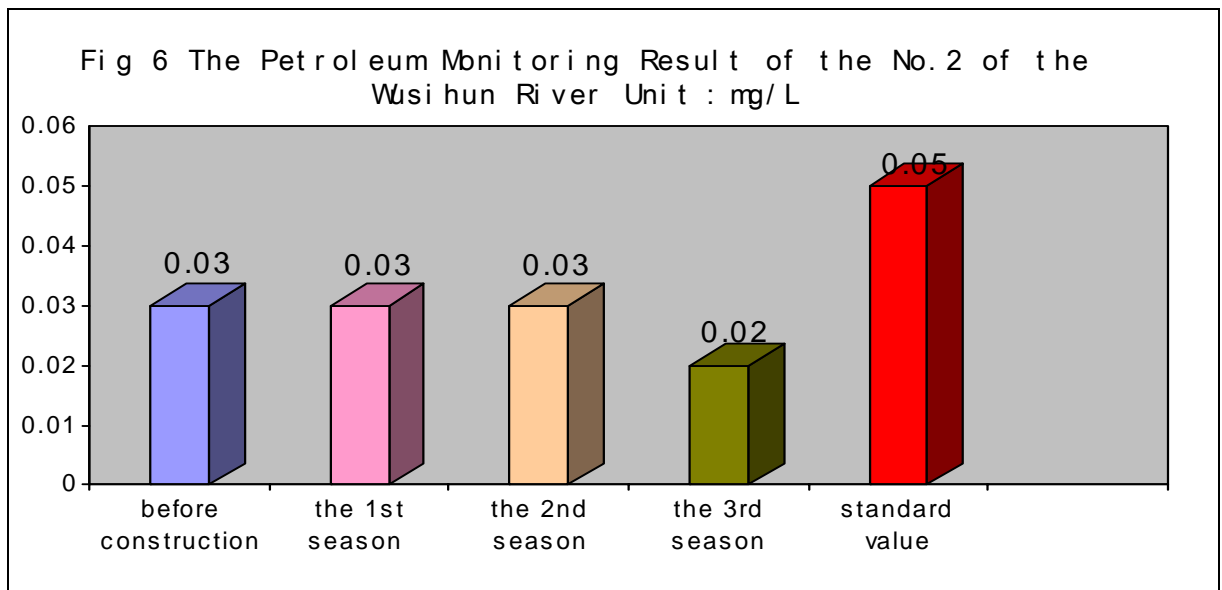
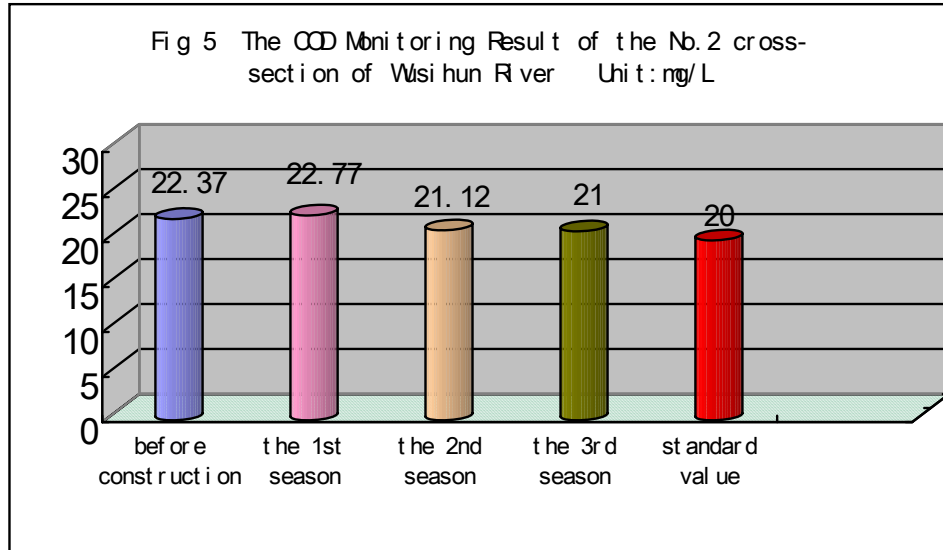
The monitoring results in construction period are in Table 3-7. It states the water quality did not change obviously, all monitored parameters data are lower than the related standards except COD, and the COD concentrations did not change more compare to the data monitored before construction. The changing trends of COD and Petroleum are in Figure 3, 4, 5 and 6.

Table 3-7 Water Quality Monitoring Results of the Wushun River

Item		pH	COD	Petroleum
Wushun river 1#	Cross-section			
	The 1 st season	7.39	25.21	0.03
	The 2 st season	7.34	22.97	0.01
	The 3 st season	7.40	23.99	0.03
	Before construction	7.44	24.38	0.03

Item		pH	COD	Petroleum
Cross-section				
	GB3838-2002 -Class	6-9	20	0.05
Wushihun river 2#	The 1 st season	7.56	22.77	0.03
	The 2 st season	7.48	21.12	0.03
	The 3 st season	7.65	21.00	0.02
	Before construction	7.70	22.37	0.03
	GB3838-2002 -Class	6-9	20	0.05





3.2.3.4.2 Mudanjiang River

The monitoring results in 2009 are in Table 3-8. It states the water quality did not change obviously, all monitored parameters data are lower than the related standards except COD, and the COD concentrations did not change greater compare to the data monitored before construction. The changing trends of COD and Petroleum are in Figure 7, 8, 9 and 10.

Table 3-8 Water Quality Monitoring Result of the Mudanjiang River

Item		pH	COD	Petroleum
Cross-section				
Mudanjiang 1#	Before construction	7.97	28.67	0.03
	The 1 st season	7.97	29.45	0.03
	The 2 nd season	7.77	28.97	0.02
	The 3 rd season	7.75	28.51	0.02
	GB3838-2002 -Class	6-9	20	0.05
Mudanjiang 2#	Before construction	7.50	28.50	0.03
	The 1 st season	7.61	29.05	0.03
	The 2 nd season	7.64	28.62	0.01
	The 3 rd season	7.55	28.45	0.01
	GB3838-2002 -Class	6-9	20	0.05

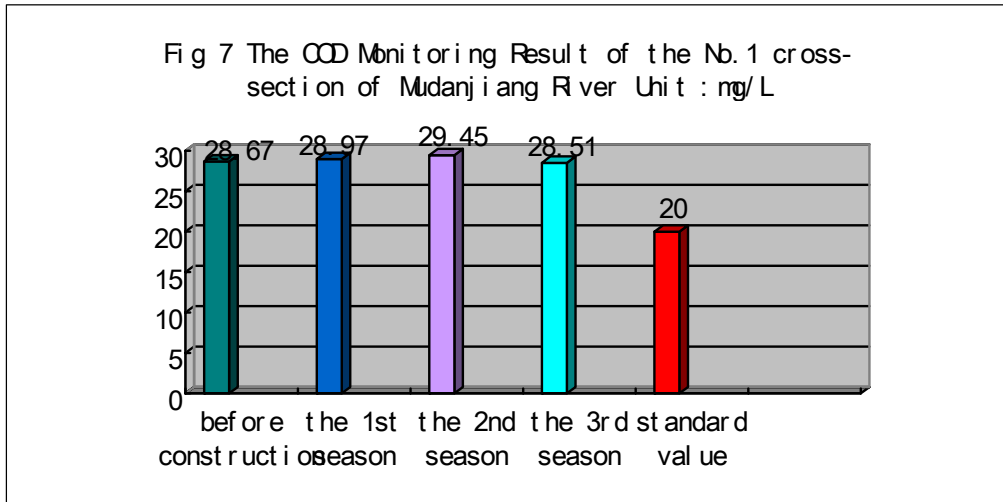


Fig 8 The Petroleum Monitoring Result of the No. 1 cross-section of Mudanjiang River Unit : mg/L

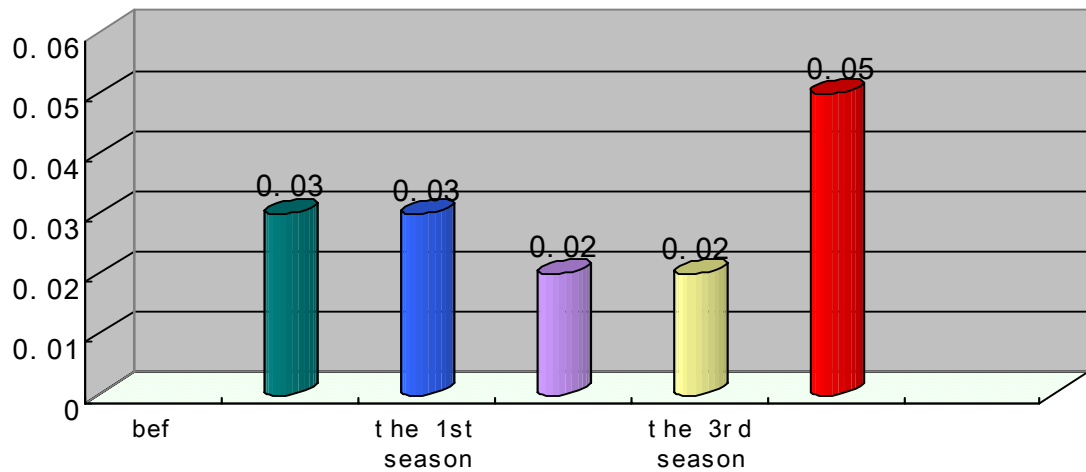


Fig 9 The COD Monitoring Result of the No. 2 of the Mudanjiang River Unit : mg/L

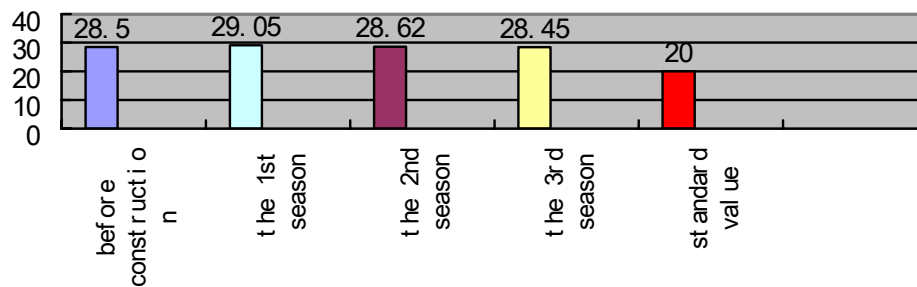
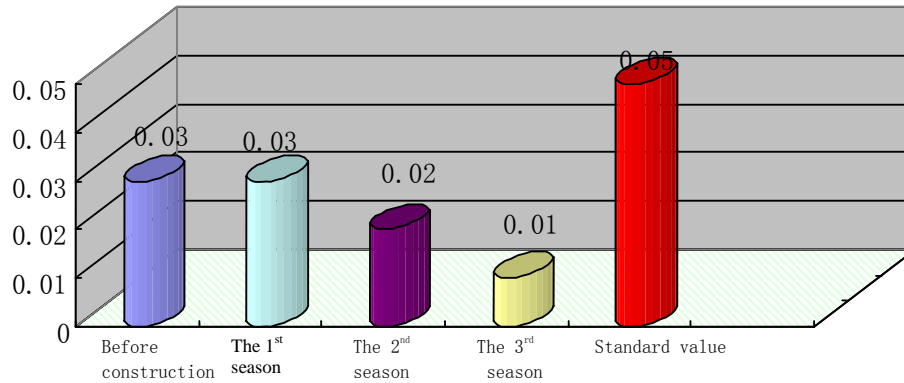


Fig 10 The petroleum monitoring result of the No.2 cross-section of Mudanjiang River
Unit: mg/L

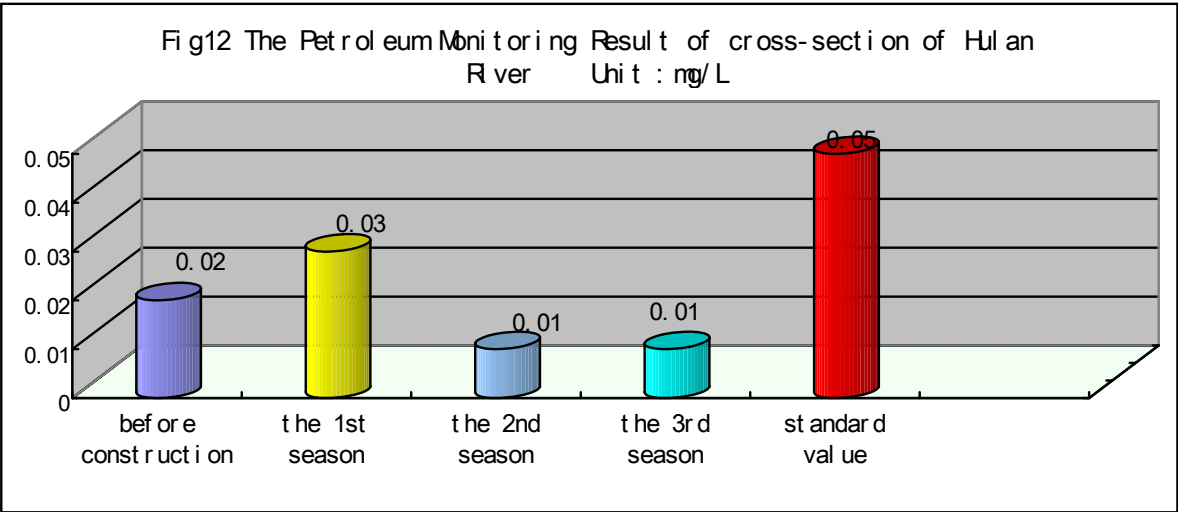
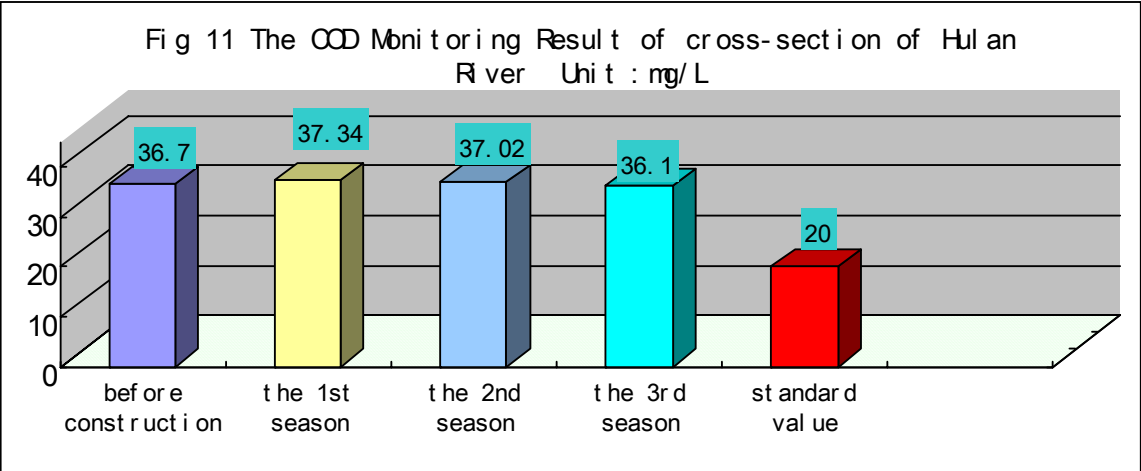


3.3 Hulan River

The monitoring results in 2009 are in Table 3-9. It states the water quality did not change obviously, all monitored parameters data are lower than the related standards except COD, and the COD concentrations did not change greater compare to the data monitored before construction. The changing trends of COD and Petroleum are in Figure 11 , 12.

Table 3-9 Water Quality Monitoring Result of the Hulan River

Cross-section		Item	pH	COD	Petroleum
		Before construction	7.64	36.75	0.02
Hulan river	The 1 st season	7.68	37.34	0.03	
	The 2 nd season	7.89	37.02	0.01	
	The 3 rd season	7.55	36.10	0.01	
	GB3838-2002 -Class	6-9	20	0.05	



4. The Implementation of the Environmental Protection Measures for Each Contractor

4.1 L 01 Contractor

Contractor		Mudanjiang Road & Bridge Co. Ltd.
Location		Gucheng Link road K0+000(=main road K73+273.96)~K1+386 Sandaotong Link road K0+000~K14+000
Current Construction Status		Details are in the Table 4.1.1.
Changes in design		No changes
Mitigation measures	Vegetation and water and soil conservation	Vegetation and water conservation were emphasized on the management of borrow pits and temporary land occupied. The environment management of the borrow pits, casting yard and asphalt-mixing sites are shown in the Table 4.1.2 & 4.1.3.
	Ancient graves protection	No ancient graves in this section
	Water quality and Water conservancy facilities protection	The original drainage system can work well. Disposal waste soil, waste gravels & mud residue in order to prevent water pollution.
	Noise prevention measures	Construction noise was monitored occasionally. Lowering truck speed near the sensitive sites.
	Ambient air protection measures	Sprinkled water and covered the bulky materials in order to prevent dust pollution.
	Construction camps	Wastewater treatment, garbage disposal and disease prevention in the Construction camps are shown in Table 4.1.4.
	Borrowed road	Environment impacts of the borrowed road were controlled. Details are shown in Table 4.1.5
	Health and safety	Keep camps and drinking water clean to meet the state standards.
	Public consultation	No
Training		The contractor organized construction personnel to learn essential knowledge of the environmental protection in order to improve their environment awareness.
Accidents		No

Table 4.1.1 The Completed Status of the L 01 Contractor after Project Completion

Items	Unit	Planned amount	Completed amount	Percent (%)
dig earthworks	m ³	78543	78543	100%
Fill earthworks	m ³	68013	68013	100%
Circle culvert	m/set	5	5	100%
Plank culvert	m/set	9	9	100%
Bridges	set	4	4	100%

Table 4.1.2 The recovered Status of Borrowed Areas and Spoil Areas of the L 01 Contractor in 2009

No.	Location	Area (m ²)	Type	Current status	Protected measures
1	Gucheng Link road Main road K71+776,right-2700m	29368	Borrowed pit	recovered	The topsoil will be stripped and stockpiled before dig. Cut slope and vegetated.
2	Sandaotong Link road K3+400, right-1500m	6400	Borrowed pit	restored	The topsoil will be stripped and stockpiled before dig. Cut slope and vegetated.
3	Sandaotong Link road K9+870,right-2000m	11100	Borrowed pit	restored	The topsoil will be stripped and stockpiled before dig. Cut slope and vegetated.

Table 4.1.3 The recovered status of Mixing Station and Casting Yard of the L 01 Contractor in 2009

No.	Location	Area(m ²)	Surroundings	Current	Protected
1	Sandaotong Link road K9+000,left-100m mixing station	20000	woodland	recovered	Clearing bottom-materials and recovering vegetation soil.

Table 4.1.4 The Construction Camps Status of the L 01 Contractor in 2009

No.	Camps	Person	Protected measures			Current status
			Garbage	Waste water	prevention	
1	Jiantang town construction camps	46	Collect garbage and send it to the garbage disposal station regularly.	Build settling tank and disinfect regularly. The wastewater was treated efficiently before discharged.	Check health and distribute the preventive medicines regularly.	Recultivating and recovering vegetation

Table 4.1.5 The recovered Status of Borrowed Road of the L01 Contractor in 2009

No.	Location	Surroundings	Recovered status	Protected measures
1	K71+776	Village (B-80m)	recovered	Scarification and vegetation
2	K6+700	Village (B-50m)	recovered	
3	K3+400	Away from sensitive points	recovered	
4	K9+870	Away from sensitive points	recovered	

4.2 L02 Contractor

Contractor		Heilongjiang Jian'an Road Engineering Ltd.
Location		Sandaotong Link Road K14+000~K27+478.76
Current Construction Status		Current engineering status is shown in Table 4.2.1.
Changes in design		No change in this section
Mitigation measures	Vegetation and water and soil conservation	Vegetation and water conservation were emphasized on the management of temporary land occupied. The environment management of the borrow pits, casting yard and asphalt-mixing sites are shown in the Table 4.2.2 & 4.2.3
	Ancient graves protection	No ancient graves in this section
	Water quality and Water conservancy facilities protection	The original drainage system can work well. Disposal waste soil, waste materials & mud residue in order to prevent water pollution.
	Noise prevention measure	Construction noise was monitored occasionally. Lowering truck speed near the sensitive point.
	Ambient air protection measures	Sprinkled water and covered the materials in order to prevent dust pollution.
	Construction camps	Wastewater, garbage treatment and disease prevention in the Construction camps are shown in Table 4.2.4.
	Borrowed road	Environment impacts of the borrowed road were controlled.
	Health and safety	Keep camps and drinking water clean to meet the state standards.
	Public consultation	No
Training		The contractor organized construction personnel to learn essential knowledge of the environmental protection in order to improve their environment awareness.
Accidents		No

Table 4.2.1 The Completed Status of the L02 Contractor after Project Completion in 2009

Items	Unit	Planned amount	Completed amount	Percent (%)
Dig earthworks	m ³	112353	112353	100%
Fill earthworks	m ³	168561	168561	100%
Circle culvert	m/ set	7	7	100%
Plank culvert	m/ set	6	6	100%
Large bridges	set	2	2	100%

Table 4.2.2 The recovered Status of Borrowed Areas and Spoil Areas of the L02 Contractor after construction in 2009

No.	location	Area (m²)	using type	Current status	Applied measures
1	K24+200, right-1000m	11000	Borrowed pit	recovered	Flattening and vegetation.
2	K27+487, left-2500m	15600	Borrowed pit	recovered	Flattening and vegetation.
3	K19+300, right -500m	3300	Spoil pit	recovered	Flattening and vegetation.

Table 4.2.3 The recovered Status of Mixing Station and Casting Yard of the L02 Contractor

No.	Location	Area (m²)	Surroundings	Current status	Protected measures
1	K21 + 500, left-500m	20000	Village (right-400m)	recovered	Clearing bottom-materials and recovering vegetation soil.

Table 4.2.4 The recovered Status of Construction Camps of the L02 Contractor in 2009

No.	camps	Person	Protected measures			Current status
			Garbage	Waste water	Diseases prevention	
1	Sandaotong town construction camps	55	Collect garbage and send it to the garbage disposal station regularly.	Build settling tank and disinfect regularly. The wastewater was treated efficiently before discharged.	Check health and distribute the preventive medicines regularly.	recultivation and vegetation

Table 4.2.5 The recovered Status of Borrowed Road of the L02 Contractor in 2009

No.	Location	Surroundings	Current status	Protected
1	K20+200	Village (S-150m)	The current situation is the same as before construction.	Recover vegetation
2	K21+500	Village (N-150m)	The current situation is the same as before construction.	
3	K24+200	Away from sensitive points	The current situation is the same as before construction.	
4	K27+487	resident houses (E-150m)	The current situation is the same as before construction.	
5	K19+300	Away from sensitive points	The current situation is the same as before construction.	

4.3 L03 Contractor

Contractor		Mudanjiang City Road & Bridge Co. Ltd.
Location		Sandaotong Mudanjiang BridgeK26+600, K27+25
Current Construction Status		Current engineering status is in Table 4.3.1.
Changes in design		No changes
Mitigation measures	Vegetation and water and soil conservation	Vegetation and water conservation were emphasized on the management of temporary land occupied. The borrowed pit and temporary land were recovered timely after construction. The environment management of the borrow pits, casting yard and asphalt-mixing sites are shown in the Table 4.3.2
	Ancient graves protection	No ancient graves in this section
	Water quality and Water conservancy facilities protection	The original drainage system can work well. Disposal waste soil, waste materials & mud residue in order to prevent water pollution.
	Noise prevention measure	No whistle, Lowering vehicle speed near the sensitive points.
	Ambient air protection measures	Sprinkled water and covered the bulky materials in order to prevent dust pollution.
	Construction camps	Wastewater, garbage treatment and disease prevention in the Construction camps are shown in Table 4.3.3.
	Borrowed road	Environment impacts of the borrowed road were controlled. Details are shown in Table 4.3.4
	Health and safety	Keep camps and drinking water clean to meet the state standards.
	Public consultation	According to the residents" demand the contractor maintained village road.
Training		The contractor organized construction personnel to learn essential knowledge of the environmental protection in order to improve their environment awareness.

**Table 4.3.1 The Completed Status of the L03 Contractor after Project Completion
in 2009**

Items	Unit	Planned amount	Completed amount	Percent (%)
Dig earthworks	m ³	-	-	-
Fill earthworks	m ³	-	-	-
Circle culvert	m	-	-	-
Plank culvert	m	-	-	-
Large bridges	set	2	2	100%

**Table 4.3.2 The Mixing Station and Casting Yard Status of the L03 Contractor in
2009**

No.	Location	Area (m ²)	Surroundings	Current status	Protected measures
1	K123+850, right-1000 Casting Yard	20000	Village (right-400m)	recovered	Clearing bottom-materials and recovering vegetation soil
2	K125+600, Left-100m Casting Yard	10000	Village (right-50m)	recovered	Clearing bottom-materials and recovering vegetation soil

**Table 4.3.3 The recovered status of Construction Camps of the L03 Contractor in
2009**

No.	camps	Person	Protected measures			Current status
			Garbage	Waste water	Diseases prevention	
1	Sandaotong Town Bridge camps	65	Collect garbage and send it to the	Build settling tank and disinfect regularly. The	Check health and distribute the	recultivation and vegetation

			garbage disposal station regularly.	wastewater was treated efficiently before discharged.	preventive medicines regularly.	
--	--	--	-------------------------------------	-------------------------------------------------------	---------------------------------	--

Table 4.3.4 The reconverted status of Borrowed Road of the L03 Contractor in 2009

No.	Location	Surroundings	Current status	Protected measures
1	K26+500	Village (right-400m)	Vegetation has been recovered.	Recover vegetation.
2	K27+350	Village (left-100m)	Vegetation has been recovered.	

4.4 L04 Contractor

Contractor		Heilongjiang Jian'an Road & Bridge Co. Ltd.
Location		Lianhua Link Road 1: K0+000~K 11+000
Current Construction Status		Current engineering status is shown in Table 4.4.1.
Changes in design		No changes in this section
Mitigation measures	Vegetation and water and soil conservation	Vegetation and water conservation were emphasized on the management of temporary land occupied. The borrowed pit and temporary land were recovered timely after construction. The environment management of the borrow pits are shown in the Table 4.4.2, 4.4.3.
	Ancient graves protection	No ancient graves in this section
	Water quality and Water conservancy facilities protection	The original drainage system can work well. Disposal waste soil, waste materials & mud residue in order to prevent water pollution.
	Noise prevention measure	Construction noise was monitored occasionally. Lowering truck speed near the sensitive point.
	Ambient air protection measures	Sprinkled water and covered the bulky materials in order to prevent dust pollution.
	Construction camps	Wastewater, garbage disposal and disease prevention in the Construction camps are shown

		in Table 4.4.4.
	Borrowed road	Environment impacts of the borrowed road were controlled. Details are shown in Table 4.4.5
	Health and safety	Keep camps and drinking water clean to meet the state standards.
	Public consultation	No consultation in this section.
Training		The contractor organized construction personnel to learn essential knowledge of the environmental protection in order to improve their environment awareness.
Accidents		No

Table 4.4.1 The Completed Status of the L04 Contractor after Project Completion in 2009

Items	Unit	Planned amount	Completed amount	Percent (%)
Dig earthworks	m ³	149910	149910	100%
Fill earthworks	m ³	119750	119750	100%
Circle culvert	m	13	13	100%
Plank culvert	m	9	9	100%
Large bridges	set	3	3	100%

Table 4.4.2 The Rrecovered Status Borrowed Areas and Spoil Areas of the L04 Contractor in 2009

No.	Location	Area (m ²)	Type	Current status	Protected measures
1	K3+200, Right-100m	10000	Borrowed pit	recovered	Strip and stockpile topsoil before borrowed. Make smooth, cover topsoil and sow grass seed.
2	K7+350, left- 150m	6400	Borrowed pit spoil pit	recovered	Strip and stockpile topsoil before borrowed. Make smooth, cover

					topsoil and sow grass seed.
3	K3+000, left-100m	4900	spoil pit	recovered	Strip and stockpile topsoil before borrowed. Make smooth, cover topsoil and sow grass seed.
4	K5+000, left-100m	7600	spoil pit	recovered	Strip and stockpile topsoil before borrowed. Make smooth, cover topsoil and sow grass seed.

Table 4.4.3 The Recovered Status of Mixing Station and Casting Yard of the L04 Contractor in 2009

No.	Location	Area (m ²)	Type	Current status	Protected measures
1	K7+000, right-100m Mixing station	20000	dry land	recovered	Clearing bottom-materials and recovering vegetation soil

Table 4.4.4 The Recovered Status of Construction Camps of the L04 Contractor in 2009

No.	camps	Person	Protected measures			Current status
			Garbage	Waste water	Diseases prevention	
1	Lianhua Town construction camps	43	Collect garbage and send it to the garbage disposal station regularly.	Build settling tank and disinfect regularly. The wastewater was treated efficiently before discharged.	Check health and distribute the preventive medicines regularly.	recultivation and vegetation

Table 4.4.5 The Recovered Status of Borrowed Road of the L04 Contractor in 2009

No.	Location	Surroundings	Environment impacts	Protected measures
1	K3+200	Far away from sensitive site	recovered	Recover vegetation
2	K7+350	Far away from sensitive site	recovered	Recover vegetation
3	K3+000	Far away from sensitive site	recovered	Recover vegetation
4	K5+000	Village (N-50m)	recovered	Be used country lane after renovation
5	K10+500	Far away from sensitive site	recovered	Recover vegetation

4.5 L05 Contractor

Contractor		Heilongjiang Yuandong Road & Bridge Co. Ltd.
Location		Lianhua Link road 2: K11+000~K 23+000
Current Construction Status		Current engineering status is shown in Table 4.5.1.
Changes in design		No changes
Mitigation measures	Vegetation and water and soil conservation	Vegetation and water conservation were emphasized on the management of borrow pits and temporary land occupied. The borrowed pit and temporary land were recovered timely after construction. The environment management of the casting yard, asphalt-mixing sites are shown in the Table 4.5.2. The environment management of the borrowed pit, spoil pit are shown in the Table 4.5.3.
	Ancient graves protection	No ancient graves in this section
	Water quality and Water conservancy facilities protection	The original drainage system can work well. Disposal waste soil, waste materials & mud residue in order to prevent water pollution.
	Noise prevention measures	No whistle, Lowering vehicle speed near the sensitive point.
	Ambient air protection	Sprinkled water and covered the bulky materials in order to prevent dust pollution.

	measures	
	Construction camps	Wastewater, garbage treatment and disease prevention in the Construction camps are shown in Table 4.5.4.
	Borrowed road	Environment impacts of the borrowed road were controlled. Details are shown in Table 4.5.5
	Health and safety	Keep camps and drinking water clean to meet the state standards.

Table 4.5.1 The Completed Status of the L05 Contractor after Project Completion in 2009

Items	Unit	Planned amount	Completed amount	Percent (%)
Dig earthworks	m ³	74228	74228	100%
Fill earthworks	m ³	71611	71611	100%
Circle culvert	m	7	7	100%
Plank culvert	m	6	6	100%
Large bridges	set	1	1	100%

Table 4. 5.2 The Recovered Status of Borrowed Areas and Spoil Areas of the L05 Contractor in 2009

No.	Location	Area (m ²)	Type	Current status	Protected measures
1	k18+110 left 100m	7000	Borrowed pit	recovered	Strip and stockpile topsoil before borrowed. Make smooth and recover vegetation.
2	k11+500 right 100m	16900	Spoil pit	recovered	Build side ditch, and press the slope. Make smooth and recover vegetation.
3	k18+300 right 100m	6400	Spoil pit	recovered	Build side ditch, and press the slope. Make smooth and recover vegetation.

Table 4.5.3 The Recovered Status of Mixing Station and Casting Yard of the L05 Contractor in 2009

No.	Location	Area(m ²)	Surroundings	Current status	Protected measures
1	K16+000 Right 100m	20000	wild lands	recovered	Clearing bottom-materials and recovering vegetation soil

Table 4.5.4 The Recovered Status of Construction Camps of the L05 Contractor in 2009

No.	camps	Person	Protected measures			Current status
			Garbage	Waste water	Diseases prevention	
1	L05 Section Lianhua Town construction camps	48	Collect garbage and send it to the garbage disposal station regularly.	Build settling tank and disinfect regularly. The wastewater was treated efficiently before discharged.	Check health and distribute the preventive medicines regularly.	Recultivate soil and sow seeds and recover vegetation

Table 4.5.5 The Recovered Status of Borrowed Road of the L05 Contractor in 2009

No.	Location	Surroundings	Environment impacts	Protected measures
1	K18+110	Far away from sensitive site	recovered	Recover the original vegetation
2	K11+500	Far away from sensitive site	recovered	Recover the original vegetation
3	K18+300	Far away from sensitive site	recovered	Recover the original vegetation
4	K16+000	Far away from sensitive site	recovered	Recover the original vegetation

4.6 L06 Contractor

Contractor	China City Construction the NO. 11 Engineering Bureau Co. Ltd.
Location	Lianhua Link road 3: K23+000~K34+355.22

Current Construction Status		Current engineering status is shown in Table 4.6.1.
Changes in design		No changes
Mitigation measures	Vegetation and water and soil conservation	Vegetation and water conservation were emphasized on the management of borrow pits and temporary land occupied. The borrowed pit and temporary land were recovered timely after construction. The environment management of the casting yard, asphalt-mixing sites are shown in the Table 4.6.2. The environment management of the borrowed pit, spoil pit are shown in the Table 4.6.3.
	Ancient graves protection	No ancient graves in this section
	Water quality and Water conservancy facilities protection	The original drainage system can work well. Disposal waste soil, waste materials & mud residue in order to prevent water pollution.
	Noise prevention measures	No whistle, Lowering vehicle speed near the sensitive point.
	Ambient air protection measures	Sprinkled water and covered the bulky materials in order to prevent dust pollution.
	Construction camps	Wastewater, garbage treatment and disease prevention in the Construction camps are shown in Table 4.6.4.
	Borrowed road	Environment impacts of the borrowed road were controlled. Details are shown in Table 4.6.5
	Health and safety	Keep camps and drinking water clean to meet the state standards.
	Training	The contractor organized construction personnel to learn essential knowledge of the environmental protection in order to improve their environment awareness.
	paroxysmal emergency	No

Table 4.6.1 The Completed Status of the L06 Contractor after Project Completion in 2009

Items	Unit	Planned amount	Completed amount	Total amount	Percent (%)
Dig earthworks	m ³	65277	65277	65277	100

Fill earthworks	m ³	104756	104756	104756	100
Circle culvert	m	81.5/15	81.5/15	81.5/15	100
Plank culvert	m	52.09/5	52.09/5	52.09/5	100
All size bridges	set	-	-	-	-

Table 4.6.2 The Recovered Status of Borrowed Areas and Spoil Areas of the L06 Contractor in 2009

No.	Location	Area (m ²)	Type	Current status	Protected measures
1	K22+700, left 100m	5600	Borrowed pit	recovered	Dig ditch and stockpile topsoil before borrowed. Make smooth and recover vegetation after construction.
2	K31+200, left 50 m	13000	Borrowed pit	recovered	Dig ditch and stockpile topsoil before borrowed. Make smooth and recover vegetation after construction.
3	K32+750, left 300 m	4900	Spoiled pit	recovered	Dig ditch and stockpile topsoil before borrowed. Make smooth and recover vegetation after construction.

Table 4.6.3 The Recovered Status of Mixing Station and Casting Yard of the L06 Contractor in 2009

No.	Location	Area (m ²)	Surroundings	Current status	Protected measures
1	K29+400, left-1300m	20000	Villages (right-150m)	recovered	Clearing bottom-materials and recovering vegetation soil

Table 4.6.4 The Recovered Status of Construction Camps of the L06 Contractor in 2009

No.	camps	Person	Protected measures			Current status
			Garbage	Waste water	Diseases prevention	
1	L 06 Section Lianhua Town construction camps	55	Collect garbage and send it to the garbage disposal station regularly.	Build settling tank and disinfect regularly. The wastewater was treated efficiently before discharged.	Check health and distribute the preventive medicines regularly.	Recultivate soil and sow seeds and recover vegetation

Table 4.6.5 The Recovered Status of Borrowed Road of the L06 Contractor in 2009

No.	Location	Surroundings	Current status	Protected measures
1	K22+700, left-100m	Far away from sensitive site	The original landscape has been restored.	Recover vegetation
2	K31+200, left-50m	Far away from sensitive site	The original landscape has been restored.	Recover vegetation
3	K32+750, left-300m	Far away from sensitive site	The original landscape has been restored.	Recover vegetation
4	K29+400 left	The No.1 Water Conservancy Bureau(S-200m)	The original landscape has been restored.	Recover vegetation

4.7 L07 Contractor

Contractor	China City Construction the NO. 11 Engineering Bureau Co. Ltd.
Location	Diaoling Link road : K0+000(=main road K132+591.943) ~K5+978 Eight Woman Fighters Monument Link road: K0+000(=main road K144+261.321)~K0+555

Current Construction Status		Current engineering status is shown in Table 4.7.1.
Changes in design		No changes
Mitigation measures	Vegetation and water and soil conservation	Vegetation and water conservation were emphasized on the management of borrow pits and temporary land occupied. The environment management of the casting yard, asphalt-mixing sites, borrowed pit and spoil pit are shown in the Table 4.7.2..
	Ancient graves protection	No ancient graves in this section
	Water quality and Water conservancy facilities protection	Song Hua River system can work well. Disposal waste soil, waste materials & mud residue in order to prevent water pollution.
	Noise prevention measures	No whistle, Lowering vehicle speed near the sensitive point.
	Ambient air protection measures	Sprinkled water and covered the bulky materials in order to prevent dust pollution.
	Construction camps	Wastewater, garbage treatment and disease prevention in the Construction camps are shown in Table 4.7.3.
	Borrowed road	Environment impacts of the borrowed road were controlled. Details are shown in Table 4.7.4
	Health and safety	Keep camps and drinking water clean to meet the state standards.
	Training	The contractor organized construction personnel to learn essential knowledge of the environmental protection in order to improve their environment awareness. Details are shown in Table 4.7.5
	paroxysmal emergency	No

Table 4.7.1 The Completed Status of the L07 Contractor after Project Completion in 2009

Items	Unit	Planned amount	Completed amount	Percent (%)
-------	------	----------------	------------------	-------------

Dig earthworks	m ³	12457	12457	100%
Fill earthworks	m ³	47686	47686	100%
Circle culvert	m/set	1	1	100%
Plank culvert	m/set	1	1	100%
Bridges	set	1	1	100%

Table 4.7.2 The Recovered Status of Mixing Station and Casting Yard of the L07 Contractor in 2009

No.	Location	Area(m ²)	Surroundings	Current status	Protected measures
1	Diaoling Link road K3+000,right-200m	5600	50m away from rice fields	recovered	Clearing bottom-materials and recovering vegetation soil

Table 4.7.3 The Recovered Status of Construction Camps of the L07 Contractor in 2009

No.	camps	Person	Protected measures			Current status
			Garbage	Waste water	Diseases prevention	
1	Diaoling Town construction camps	53	Collect garbage and send it to the garbage disposal station regularly.	Build settling tank and disinfect regularly. The wastewater was treated efficiently before discharged.	Check health and distribute the preventive medicines regularly.	Recultivate soil and recover vegetation

Table 4.7.4 The Recovered Status of Borrowed Road of the L07 Contractor in 2009

No.	Location	Surroundings	Current status	Protected measures
1	Eight Woman Fighters Monument Link road: K0+256	Eight Woman Fighters Monument(Northeast-200m)	recovered	Recover vegetation
2	Bridge in Diaoling Link road:K1+814.625	Far away from sensitive site	recovered	
	Middle bridge in Diaoling Link road:K3+323.45	Far away from sensitive site	recovered	

Table 4.7.5 The EM&EP Training Status of L07 Contractor in 2009

No.	Time	Trainee	Person	Contents
1	2009.04.15	EMO and some builders	30	EM&EP
2	2009.05.18	EMO and some builders	23	EM&EP
3	2009.8.20	personnel of the Project Department	26	Recovering of borrowed road,stock ground and construction camps

4.8 L08 Contractor

Contractor	Harbin Songhuajiang Forestry Construction Co.	
Location	Malanghe Link road: K0+000–K0+900 Taiping forest farm Link road: K0+000 (= K319+891.901) ~K12+098	
Current Construction Status	Current engineering status is shown in Table 4.8.1.	
Changes in design	No changes	
Mitigation measures	Vegetation and water and soil conservation	Vegetation and water conservation were emphasized on the management of borrow pits and temporary land occupied. The borrowed pit and temporary land were recovered timely after construction. The environment management of the casting yard, asphalt-mixing sites are shown in the Table 4.8.2. The environment management of the borrowed pit, spoil pit are shown in the Table 4.8.3.
	Ancient graves protection	No ancient graves in this section
	Water quality and conservancy facilities protection	The original drainage system can work well. Disposal waste soil, waste materials & mud residue in order to prevent water pollution.
	Noise prevention measures	No whistle, Lowering vehicle speed near the sensitive point.
	Ambient air protection measures	Sprinkled water and covered the bulky materials in order to prevent dust pollution.
	Construction camps	Wastewater, garbage treatment and disease prevention in the Construction camps are shown in Table 4.8.4.
	Borrowed road	Environment impacts of the borrowed road were controlled. Details are shown in Table 4.8.5
	Health and safety	Keep camps and drinking water clean to meet the state standards.
	Training	The contractor organized construction personnel to learn essential knowledge of the environmental protection in order to improve their environment awareness. Details are shown in Table 4.8.6
	paroxysmal emergency	No

Table 4.8.1 The Completed Status of the L08 Contractor after Project Completion in 2009

Items	Unit	Planned amount	Completed amount	Percent (%)
Dig earthworks	m ³	43408	43408	100
Fill earthworks	m ³	169729	169729	100
Circle culvert	m/Set	33	33	100
Plank culvert	m/Set	-	-	-
Bridges	set	5	5	100

Table 4.8.2 The Recovered Status of Borrowed Areas and Spoil of the L08 Contractor in 2009

No.	Location	Area (m ²)	Type	Current status	Protected measures
1	K10+160, left-100 m	27770	Borrowed pit	recovered	Dig ditch and stockpile topsoil before borrowed. Make smooth and cover topsoil after construction.

Table 4.8.3 The Recovered Status of Mixing Station and Casting Yard of the L08 Contractor in 2009

No.	Location	Area(m ²)	Surroundings	Surroundings	Current status
1	K1+100, Left-200m	30000	Village (E-1100 m)	recovered	Clearing bottom-materials and recovering vegetation soil
2	K0+889, Left-100m	5000	Village (E-1000 m)	recovered	
3	K3+116, Left-50m	3000	Wild land, wooded area	recovered	
4	K6+957, Right-20m	3000	Mountain forestland	recovered	
5	K9+910, Right-30m	3000	Mountain	recovered	

			forestland		
6	K11+304, Right-20 m	5000	Mountain forestland	recovered	

Table 4.8.4 The Recovered Status of Construction Camps of the L08 Contractor in 2009

No.	camps	Person	Protected measures			Current status
			Garbage	Waste water	Diseases prevention	
1	Taiping forest farm camps of the Xinglong Forestry Administration	76	Collect garbage and send it to the garbage disposal station regularly.	Build settling tank and disinfect regularly. The wastewater was treated efficiently before discharged.	Check health and distribute the preventive medicines regularly.	Recultivate soil and recover vegetation

Table 4.8.5 The Recovered Status of Borrowed Road of the L08 Contractor in 2009

No.	Location	Surroundings	Current status	Protected measures
1	Near the K0+889	Village (E-900m)	recovered	Recover vegetation

Table 4.8.6 The EM&EP Training Status of L08 Contractor in 2009

No.	Time	Trainee	Person	Contents
1	2009.01.19	EMO and some builders	24	EM&EP

2	2009.02.18	EMO and some builders	25	EM&EP
3	2009.03.15	EMO and some builders	27	EM&EP
4	2009.8.20	EMO and some builders	50	Recovering of borrowed road and stock ground

4.9 L09 Contractor

Contractor	Harbin Jinyang Road Engineering Co.	
Location	Taoshan Link road: K0+000 (= K405+385.694) ~K2+408.03	
Current Construction Status	Current engineering status is shown in Table 4.9.1.	
Changes in design	No changes	
Mitigation measures	Vegetation and water and soil conservation	Vegetation and water conservation were emphasized on the management of borrow pits and temporary land occupied. The borrowed pit and temporary land were recovered timely after construction. The environment management of the casting yard, asphalt-mixing sites are shown in the Table 4.9.2. The environment management of the borrowed pit, spoil pit are shown in the Table 4.9.3.
	Ancient graves protection	No ancient graves in this section
	Water quality and Water conservancy facilities protection	The original drainage system can work well. Disposal waste soil, waste materials & mud residue in order to prevent water pollution.
	Noise prevention measures	No whistle, Lowering vehicle speed near the sensitive point.
	Ambient air protection measures	Sprinkled water and covered the bulky materials in order to prevent dust pollution.
	Construction camps	Wastewater, garbage treatment and disease prevention in the Construction camps are shown in Table 4.9.4.
	Borrowed road	Environment impacts of the borrowed road were controlled.

Health and safety	Keep camps and drinking water clean to meet the state standards.
The public consultation	No
Training	The contractor organized construction personnel to learn essential knowledge of the environmental protection in order to improve their environment awareness.
paroxysmal emergency	No

Table 4.9.1 The Completed Status of the L09 Contractor after Project Completion in 2009

Items	Unit	Planned amount	Completed amount	Percent (%)
Borrowed earthworks	m ³	1600	1600	100
Fill earthworks	m ³	8316	8316	100
Circle culvert	m/set	0	0	0
Plank culvert	m/set	0	0	0
All size bridges	m/set	1	1	100

Table 4.9.2 The Recovered Status of Borrowed Areas and Spoil Areas of the L09 Contractor in 2009

No.	Location	Area (m ²)	Type	Current status	Protected measures
1	K2+408 Right 1500 m	2139	Borrowed pit	recovered	Strip and stockpile topsoil before borrowed. Make smooth and recover vegetation soil after construction.

Table 4.9.3 The Recovered Status of Casting Yard of the L09 Contractor in 2009

No.	Location	Area(m ²)	Surroundings	Current status	Protected measures
1	K0+800 Left 50m	10000	dry land	recovered	Clearing bottom-materials and recovering original vegetation soil

Table 4.9.4 The Recovered Status of Construction Camps of the L09 Contractor in 2009

No.	camps	Person	Protected measures			Current status
			Garbage	Waste water	Diseases prevention	
1	the camps in Taoshan Forestry Administration	58	Collect garbage and send it to the garbage disposal station regularly.	Build settling tank and disinfect regularly. The wastewater was treated efficiently before discharged.	Check health and distribute the preventive medicines regularly.	Recultivate soil and recover vegetation

4.10 L10 Contractor

Contractor		Suihua Beitong Municipal Engineering Ltd.
Location		Qinlao Link road:K0+000 (=K458+690.70)~K14+692
Current Construction Status		Details are shown in Table 4.10.1.
Changes in design		No changes
Mitigation measures	Vegetation and water and soil	Vegetation and water conservation were emphasized on the management of borrow pits and temporary land

	conservation	occupied. The borrowed pit and temporary land were recovered timely after construction. The environment management of the borrow pits are shown in the Table 4.11.2
	Ancient graves protection	No ancient graves in this section
	Water quality and Water conservancy facilities protection	The original drainage system can work well. Don't discharge waste water into the farmland and drinking water resources. Disposal waste soil, waste materials, petroleum & mud residue in order to prevent water pollution.
	Noise prevention measures	No whistle, lowering vehicle speed when vehicles are passing village. Stop construction during nighttime.
	Ambient air protection measures	Sprinkled water often on the trunk and borrowed road to reduce dust. Covered powder materials in order to prevent dust to fly.
	Construction camps	The management and protected measures in construction camps are shown in Table 4.10.3.
	Borrowed road	No sensitive place around the borrowed road, the details are shown in the Table.4.10.4.
	Health and safety	Construction camps & life facilities hygiene and waste water drainage meet the EIA requirements.
	Public consultation	Farmland occupancy as less as possible.
Training		The contractor organized construction personnel to learn related knowledge of the environmental protection in order to improve their environment awareness.
Paroxysmal emergency		No

Table 4.10.1 The Completed Status of the L10 Contractor after Project Completion in 2009

Items	Unit	Planned amount	Completed amount	Percent (%)
Borrowed earthworks	m ³	34296	34296	100
Fill earthworks	m ³	95096	95096	100
Circle culvert	m/set	348.69/38	348.69/38	100
Plank culvert	m/set	18.12/2	18.12/2	100
All size bridges	set	3	3	100

Table 4.10.2 The Recovered Status of Borrowed Areas and Spoil Areas of the L10 Contractor in 2009

No.	Location	Area (m ²)	Type	Current status	Protected measures
1	K2+750 Right 100 m	10400	Borrowed pit	unused	-
2	K12+600 Right 100 m	10500	Borrowed pit	unused	-

Table 4.10.3 The Recovered Status of Construction Camps of the L10 Contractor in 2009

No.	camps	Person	Protected measures			Current status
			Garbage	Waste water	Diseases prevention	
1	The Qinlao Town construction camps	68	Collect garbage and send it to the garbage disposal station regularly.	Build settling tank and disinfect regularly. The wastewater was treated efficiently before discharged.	Check health and distribute the preventive medicines regularly.	Recultivate soil and recover vegetation

Table 4.10.4 The Recovered Status of Borrowed Road of the L10 Contractor in 2009

No.	Location	Surroundings	Current status	Protected measures
1	K3+750 Right-100m	Dry land	recovered	Recover vegetation
2	K12+600 Right-100m	Dry land	recovered	Recover vegetation

Table 4.10.5 The EM&EP Training Status of L10 Contractor in 2009

No.	Time	Trainee	Person	Contents
1	2009.8.15	The staff in contractor	42	carry out EIA properly
2	2009.8.23	The staff in contractor	42	carry out EIA properly

4.11 L11 Contractor

Contractor		Tianjin Road & Bridge Construction Co. Ltd.
Location		Shangji Link Road:K0+000 (= K475+284.00 right) ~ K1+402 Ni'erhe Link road: K0+000 (= K475+284.00 left) ~ K4+719 Changshan town Link road :K0+000 (= K481+772.00 right) ~ K9+172 Houtou Link road: K0+000 (= K495+046.5 left) ~ K5+181
Current Construction Status		Details are shown in Table 4.11.1.
Changes in design		No changes
Mitigation measures	Vegetation and water and soil conservation	Vegetation and water conservation were emphasized on the management of borrow pits and temporary land occupied. The environment management of the borrow pits are shown in the Table 4.11.2
	Water quality and Water conservancy facilities protection	Don't discharge waste water into the farmland and drinking water resources. Increasing the height and strengthen of the sedimentation pond in order to prevent dam broken and water pollution.
	Noise prevention measures	Monitored the construction noise of construction camps irregularly.
	Ambient air protection measures	Sprinkled water often on the trunk and borrowed road to reduce dust. Covered powder materials in order to prevent dust to fly.
	Construction camps	The management and protected measures in construction camps are shown in Table 4.11.3.
	Borrowed road	No sensitive place around the borrowed road, the details are shown in the Table.4.11.4.
	Health and safety	Construction camps & life facilities hygiene and waste water drainage meet the EIA requirements.
	Public consultation	Farmland occupancy as less as possible.
Training		The contractor organized construction personnel to learn related knowledge of the environmental protection in order to improve their environment awareness. See Table.4.11.5
Paroxysmal emergency		No

Table 4.11.1 The Completed Status of the L11 Contractor after Project Completion in 2009

Items	Unit	Planned amount	Completed amount	Percent (%)
Dig earthworks	m ³	23776	23776	100
Fill earthworks	m ³	70982	70982	100
Circle culvert	m/set	26	26	100
Plank culvert	m/set			
All size bridges	set	7	7	100

Table 4.11.2 The Recovered Status of Borrowed Areas and Spoil Areas of the L11 Contractor in 2009

No.	Location	Area (m ²)	Type	Current status	Protected measures
1	Shangji Link road: K1+030 left-100m	10×10 ³	Borrowed pit	recovered	Dig ditch and stockpile topsoil before borrowed. Make smooth and recover vegetation soil after construction.
2	Ni'erhe Link road: K3+850 right-100m	10×10 ³	Borrowed pit	recovered	Dig ditch and stockpile topsoil before borrowed. Make smooth and recover vegetation soil after construction.
3	Changshan town Link road: K4+100 left-800m	8.8×10 ³	Borrowed pit	recovered	Dig ditch and stockpile topsoil before borrowed. Make smooth and recover vegetation soil after construction.
4	Houtou Link road: K2+650 left-50m	10025	Borrowed pit	recovered	Dig ditch and stockpile topsoil before borrowed. Make smooth and recover vegetation soil after construction.

Table 4.11.3 The Recovered Status of Construction Camps of the L11 Contractor in 2009

No.	camps	Person	Protected measures			Current status
			Garbage	Waste water	Diseases prevention	
1	Shangji Town construction camp	80	Collect garbage and send it to the garbage disposal station regularly.	Build settling tank and disinfect regularly. The wastewater was treated efficiently before discharged.	Check health and distribute the preventive medicines regularly.	Recultivate soil and recover vegetation

Table 4.11.4 The Recovered Status of Borrowed Road of the L11 Contractor in 2009

No.	Location	Surroundings	Current status	Protected measures
1	K3+850 right-100m(Ni'erhe Link road)	Wild land	recovered	Recover vegetation
2	K4+637 right-100m(changshan Link road)	Wild land	recovered	Recover vegetation
3	K1+052 left-100m (houtou Link road)	Wild land	recovered	Recover vegetation
4	K3+395 right-100m (houtou Link road)	Wild land	recovered	Recover vegetation

Table 4.11.5 The EM&EP Training Status of L11 Contractor in 2009

No.	Time	Trainee	Person	Contents
1	2009.02.05	EMO and some workers	24	EM&EP
2	2009.04.19	EMO and some workers	29	EM&EP
3	2009.08.12	EMO and some workers	27	EM&EP

4	2009.8.25	The staff in L11 constructor	80	carry out EIA properly
---	-----------	------------------------------	----	------------------------

4.12 L12 Contractor

Contractor		Longjian Road & Bridge Co. Ltd.
Location		Qianjin town Link road:K0+000 (= K553+039.978) ~K4+445.495 Gonghe town Link road:K0+000 (= K568+027.026) ~K11+444.586 Yonghe town Link road:K0+000 (= K568+030.012) ~K1+500
Current Construction Status		Details are in the Table 4.12.1.
Changes in design		No change.
Mitigation measures	Vegetation and water and soil conservation	Vegetation and water conservation were emphasized on the management of borrow pits, temporary land occupied and waste material. The borrowed pit and temporary land were recovered timely after construction. The environment management of the borrow pits, casting yard and asphalt-mixing sites are shown in the Table 4.12.2 & 4.12.3.
	Water quality and Water conservancy facilities protection	Keep the original drainage system work well. Treating waste soil, waste materials & mud residue in order to prevent water pollution.
	Noise prevention measure	No whistle, lowering vehicle speed when vehicles passing through village. Stop construction during nighttime.
	Ambient air protection measures	Sprinkled water and covered the bulky materials in order to prevent dust pollution.
	Construction camps	Wastewater, garbage treatment and disease prevention in the Construction camps are shown in Table 4.12.4.
	Health and safety	Keep camps and drinking water clean to meet the state standards.
	Public consultation	According to the local people's suggestion, change a few of plank culverts in some places.
Training		The contractor organized construction personnel to learn essential knowledge of the environmental protection in order to improve their environment awareness.

Paroxysmal emergency	No
----------------------	----

Table 4.12.1 The Completed Status of the L12 Contractor after Project Completion in 2009

Items	Unit	Planned amount	Completed	Percent (%)
Dig earthworks	m ³	23517	23517	100
Fill earthworks	m ³	82525	82525	100
Circle culvert	m/set	100/11	100/11	100
Plank culvert	m/set	-	-	-
All size bridges	set	2	2	100

Table 4.12.2 The Recovered Status of Borrowed Areas and Spoil Areas of the L12 Contractor in 2009

No.	Location	Area (m ²)	Type	Current status	Protected measures
1	Qianjin town Link road: K4+445 right-1000 m	7000	Borrowed pit	recovered	Make smooth and recover vegetation soil
2	Gonghe town Link road: K2+990 right-600	7000	Borrowed pit	recovered	Make smooth and recover vegetation soil
3	Gonghe town Link road: K9+440 Left-100	8000	Borrowed pit	recovered	Make smooth and recover vegetation soil
	Yonghe town Link road: K0+000 Left-3600	1300	Borrowed pit	recovered	Make smooth and recover vegetation soil

Table 4.12.3 The Recovered Status of Mixing Station and Casting Yard of the L12 Contractor in 2009

No.	Location	Area(m ²)	Surroundings	Current status	Protected measures
-----	----------	-----------------------	--------------	----------------	--------------------

1	Qianjin town Link road: K0+000 left-50m	7000	Village (right-150m)	recovered	Clearing bottom-materials and recovering original vegetation soil
2	Gonghe town Link road: K0+000 K318+010 left-60m	7000	Village (right-150m)	recovered	Clearing bottom-materials and recovering original vegetation soil
3	Yonghe town Link road: K0+000	7000	Village (right-150m)	recovered	Clearing bottom-materials and recovering original vegetation soil

Table 4.12.4 The Recovered Status of Construction Camps of the L12 Contractor in 2009

No.	camps	Person	Protected measures			Current status
			Garbage	Waste water	Diseases prevention	
1	Qianjin Town construction camps	105	Collect garbage and send it to the garbage disposal station regularly.	Build settling tank and disinfect regularly. The wastewater was treated efficiently before discharged.	Check health and distribute the preventive medicines regularly.	Recultivate soil and recover vegetation

Table 4.12.5 The EM&EP Training Status of L12 Contractor in 2009

No.	Time	Trainee	Person	Contents
1	Apr. 26, 2009	the project manager, foreman	4	The reduction of pollution and garbage

4.13 L13 Contractor

Contractor	Qiqihar Xinhai Road & Bridge Co. Ltd.
Location	<p>Sandao town Link road: K0+000 (=K583+560.347) ~ K1+897.850</p> <p>Xinsheng town Link road 1: K0+000 (= Sandao town Link road K1+868.444) ~K10+000</p>
Current Construction Status	.Details is in the Table 4.13.1.
Changes in design	<p>There is a deep groove at the junction of Sandao town Link road K0+000 and main road, and desilting and filling grit must be done. There is a lack of 161.41m in project amount, Solution is to fill soil 2m for roadbeds, to creasing 8cm padding layers and 20cm cement concrete layers, to stabilize grit with 15cm cement. And pave steel fabric to cement concrete such as earthing up shoulder 200mm, 150mm and 80mm.</p> <p>Vegetation and water conservation were emphasized on the management of borrow pits and temporary land occupied. The environment management of the borrow pits, casting yard and asphalt-mixing sites are shown in the Table 4.13.2 & 4.13.3.</p>
Mitigation measures	<p>Vegetation and water and soil conservation Ancient graves protection Water quality and conservancy facilities protection Water</p> <p>No ancient graves in this section</p> <p>Keep the original drainage system work well. Treating waste soil, waste materials & mud residue in order to prevent water pollution.</p> <p>Noise prevention measure Ambient air protection measures Construction camps Borrowed road Health and safety Public consultation</p> <p>No whistle, lowering vehicle speed when vehicles passing through village. Stop construction during nighttime.</p> <p>Sprinkled water and covered the bulky materials in order to prevent dust pollution.</p> <p>Wastewater, garbage treatment and disease prevention in the Construction camps are shown in Table 4.13.4.</p> <p>Environment impacts of the borrowed road were controlled. Details are shown in Table 4.13.5</p> <p>Keep camps and drinking water clean to meet the state standards.</p> <p>According to the local people's suggestion, changing a few small size structures.</p>

Training	The contractor organized construction personnel to learn essential knowledge of the environmental protection in order to improve their environment awareness. See Table 4.13.6
Paroxysmal emergency	No

Table 4.13.1 The Completed Status of the L13 Contractor after project completion in 2009

Items	Unit	Planned amount	Completed	Percent (%)
Dig earthworks	m ³	16347.8	16347.8	100%
Fill earthworks	m ³	46821.91	46821.91	100%
Circle culvert	m/set	17	17	100%
Plank culvert	m/set	2	2	100%
All size Bridges	set	3	3	100%

Table 4.13.2 The Recovered Status of Borrowed Areas and Spoil Areas of the L13 Contractor in 2009

No.	Location	Area (m ²)	Type	Current status	Protected measures
1	Sandao town Link road: K1+868 left-2100 m	2000	Borrowed pit	recovered	Strip and stockpile topsoil before borrowed. Make smooth and recover vegetation soil.
2	Xinsheng town Link road: K7+178 right-300	7000	Borrowed pit	recovered	Strip and stockpile topsoil before borrowed. Make smooth and recover vegetation soil.

Table 4.13.3 The Recovered Status of Mixing Station and Casting Yard of the L13 Contractor in 2009

No.	Location	Area(m ²)	Surroundings	Current status	Protected measures
1	Sandao town Link road:	10000	Dry land	recovered	Clearing bottom

	K1+870					materials and recover vegetation soil.
2	Xinsheng town Link road: K0+000	14000	Dry land	recovered		Clearing bottom materials and recover vegetation soil.

Table 4.13.4 The Recovered Status of Construction Camps of the L13 Contractor in 2009

No.	camps	Person	Protected measures			Current status
			Garbage	Waste water	Diseases prevention	
1	Xinsheng town construction camps	60	Collect garbage and send it to the garbage disposal station regularly.	Build settling tank and disinfect regularly. The wastewater was treated efficiently before discharged.	Check health and distribute the preventive medicines regularly.	Recultivate soil and recover vegetation

Table 4.13.5 The Recovered Status of Borrowed Road of the L13 Contractor in 2009

No.	Location	Surroundings	Current status	Protected measures
1	K1+870 Left-2400 m	Dry land	recovered	Recover vegetation
2	K7+178 Right-300 m	Dry land	recovered	

Table 4.13.6 The EM&EP Training Status of L13 Contractor in 2009

No.	Time	Trainee	Person	Contents
-----	------	---------	--------	----------

1	2009.5.10	EMO and some workers	60	EM&EP
2	2009.8.20	The staff in Project department	29	The Recovered status of borrowed road and stock ground

4.14 L14 Contractor

Contractor		Qiqihar Xinhai Road & Bridge Co. Ltd.
Location		Xinsheng town Link road 2: K10+000~K16+597 Xingguo town Link road: K0+000 (= K607+830.848) ~ K2+000
Current Construction Status		Details are in the Table 4.14.1.
Changes in design		No chang
Mitigation measures	Vegetation and water and soil conservation	Vegetation and water conservation were emphasized on the management of borrow pits and temporary land occupied. The borrowed pit and temporary land were recovered timely after construction. The environment management of the borrow pits, casting yard and asphalt-mixing sites are shown in the Table 4.14.2 & 4.14.3.
	Ancient graves protection	No ancient graves in this section
	Water quality and conservancy facilities protection	Keep the original drainage system work well. Treating waste soil, waste materials & mud residue in order to prevent water pollution.
	Noise prevention measure	No whistle, lowering vehicle speed when vehicles passing through village. Stop construction during nighttime.
	Ambient air protection measures	Sprinkled water and covered the bulky materials in order to prevent dust pollution.
	Construction camps	Wastewater, garbage treatment and disease prevention in the Construction camps are shown in Table 4.14.4.
	Borrowed road	Environment impacts of the borrowed road were controlled. Original landform was recovered timely after construction. Details are shown in Table 4.14.5

Health and safety	Keep camps and drinking water clean to meet the state standards.
Public consultation	According to the local people's suggestion, changing a few small size structures.
Training	The contractor organized construction personnel to learn essential knowledge of the environmental protection in order to improve their environment awareness.
Paroxysmal emergency	No

Table 4.14.1 The Completed Status of the L14 Contractor after project completion in 2009

Items	Unit	Planned amount	Completed amount	Percent (%)	
Dig earthworks	m ³	26080.2	26080.2	100%	
Fill earthworks	m ³	37759.06	37759.06	100%	
Circle culvert	m/set	8	8	100%	
Plank culvert	m/set	0	0	0	
Bridges	set	0	0	0	0

Table 4.14.2 The Recovered Status of Borrowed Areas and Spoil Areas of the L14 Contractor in 2009

No.	Location	Area (m ²)	Type	Current status	Protected measures
1	Xinsheng town Link road 2: K12+250 Right-300 m	4500	Borrowed pit	recovered	Strip and stockpile topsoil before borrowed. Make smooth and recover vegetation soil.
2	Xingguo town Link road: K0+000 Left-5200m	2000	Borrowed pit	recovered	Strip and stockpile topsoil before borrowed. Make smooth and recover vegetation soil.

Table 4.14.3 The Recovered Status of Mixing Station and Casting Yard of the L14 Contractor in 2009

No.	Location	Area(m ²)	Surroundings	Current status	Protected measures
1	Xingguo town Link road: K0+000	7000	Dry land	recovered	Clearing bottom materials and making smooth and loose.

Table 4.14.4 The Recovered Status of Construction Camps of the L14 Contractor in 2009

No.	camps	Person	Protected measures			Current status
			Garbage	Waste water	Diseases prevention	
1	L14 Section Xinsheng town construction camps	53	Collect garbage and send it to the garbage disposal station regularly.	Build settling tank and disinfect regularly. The wastewater was treated efficiently before discharged.	Check health and distribute the preventive medicines regularly.	Recultivate soil and recover vegetation

Table 4.14.5 The Recovered Status of Borrowed Road of the L14 Contractor in 2009

No.	Location	Surroundings	Environment impacts	Protected measures
1	Xinsheng town Link road 2: K12+250 Right-300m	Farmland	recovered	Make loose and smooth, and recover vegetation.
2	Xingguo town Link road: K0+000 Left-5200m	Farmland	recovered	