Bi-Annual Environmental Monitoring Report

Project Number: 46145-001
Bi-annual Report
July 2015

Kazakhstan: CAREC Transport Corridor 3 (Shymkent–Tashkent Section) Road Improvement Project

Prepared by D Davies Resident Engineer SMEC International Pty Ltd / Zhol Sapa JV R McIntyre International Environmental and Community Liaison Specialist for the Ministry of Investment and Development, Committee for Roads, Astana, Kazakhstan and the Asian Development Bank.

Bi-annual Environmental Monitoring Report

Loan: 2916 – Kaz

PERIOD COVERED: JANUARY TO JUNE 2015

Kazakhstan: CAREC Transport Corridor 3 (Shymkent – Tashkent Road) Rehabilitation Project (Road Section Km 705 – 742)

Road widening at Kazygurt Pass

Contract Number : 001 – ADB / CW – 2013

Contractor : JV Todini – Impreglio - Accord

Prepared by : D Davies Resident Engineer SMEC International Pty Ltd / Zhol Sapa JV

R McIntyre International Environmental and Community Liaison Specialist.

Monitoring data provided by : Limited Liability Partnership «Eco-Test» Laboratory

Employer: Ministry of Investment and Development, Committee for Roads, Astana, Kazakhstan

Financed by : Asian Development Bank

July 2015

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Definitions and Abbreviations

Maximum permissible concentration (MPC) - the maximum amount - per unit of volume or mass that is allowable under the Kazakhstan Legislation for environmental requirements.

Sanitary protection zone (SPZ) - specially dedicated area between the industry and the nearby residential or public buildings. SPZ is created to protect the public from the effects of harmful factors (noise, dust, gases and other harmful emissions containing industrial pollution).

Environmental monitoring- systematic observation and assessment of the environmental conditions to measure the impact that the construction project is having on components including noise levels, water quality, soil quality and air quality.

EMP : Environmental Management plan.

CSC : Construction Supervision Consultant.

PMC : Project Management Consultant.

EXECUTIVE SUMMARY

- This Environmental monitoring report covers the period 1st January 2015 – 30th June 2015.
- The Contractor has conducted monthly environmental monitoring of the worksite using licensed laboratory LLP "Eco – Test" to monitor air, soils, water, radiation and noise emissions. He is submitting monthly reports.
- All results are within the Maximum Permitted Concentration levels specified under Kazakhstan Legislation.
- The Contractor is generally following the requirements of the project specific EMP. There has been considerable improvement since the previous bi-annual report with the Contractor taking actions based on previous recommendations of the Engineer.
- The Contractor has made considerable improvement in all areas of Environmental monitoring and also on site awareness and activities.
- The Consultant has integrated the Site Specific EMP and ADB EMP, with definitions of sources that would be used in determining contractor compliance. This will be used as the key approach and criteria during auditing of 2015 Environmental management practices by the contractor and further environmental management practices conducted during 2015.

D Davies
Resident Engineer

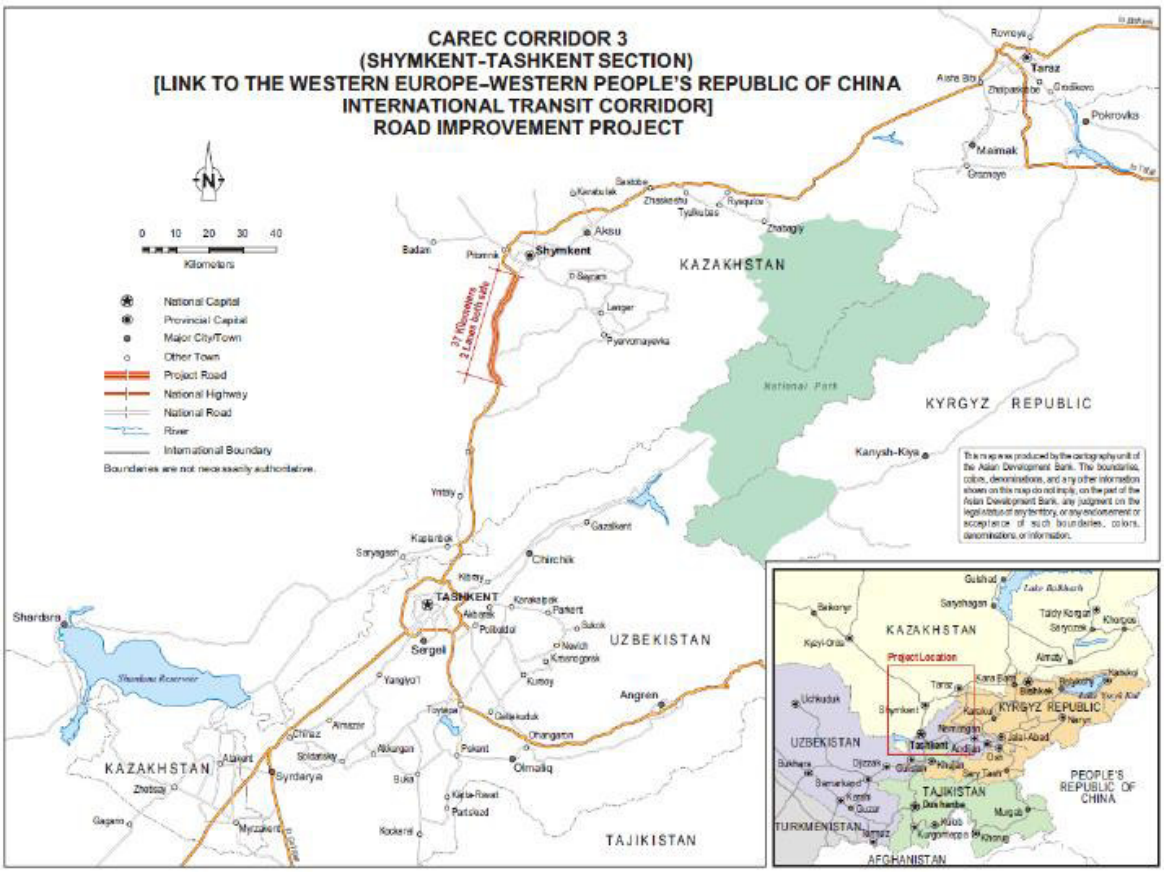
1 INTRODUCTION

1.1 Background

The CAREC Corridor 3 is just one of 6 transport and infrastructure networks currently in development in Central Asia. It has 6,900 km of roads and 4,800km of railways, running from west and south of Siberian region of the Russian Federation through Kazakhstan, the Kyrgyz Republic, Tajikistan, Uzbekistan, Turkmenistan and Afghanistan to the Middle East and South Asia (Figure 1).

The Ministry of Investment and Development of the Republic of Kazakhstan has obtained a loan from the Asian Development Bank for procurement of the works for Rehabilitation of Almaty-Korday-Blagoveshenka-Merke-Tashkent-Termez Road Section km 705 to 742 (37.5 km).

Figure 1 – Project Road



1.2 Project Description

The overall impact expected under the project is the development of an efficient transport network in Southern Kazakhstan section of CAREC 3; and the enhancement of closer regional cooperation and increased trade along the CAREC 3.

The scope of work is to rehabilitate a 37.5-km four-lane asphalt-paved section of the road connecting Tashkent, the capital of Uzbekistan, and Shymkent the administrative centre of the South-Kazakhstan Oblast - one of the major industrial cities in Kazakhstan.

The road will be rehabilitated to a Category I road with a 27cm thick cement concrete wearing / riding course placed over a 20cm thick cement treated base-course layer.

The Project road section starts at km 705+621 at the end point of the Shymkent city bypass and ends at km 742+361.

The Civil Construction Contract for the work has been awarded with the Notice to Commence, commencement date being the 18th February 2014. The project was to be completed within 510 days being the 13th July 2015, however the Contractor has been granted an Extension of Time until the 15th November 2015. According to ADBs website, the Loan implementation period will conclude on 30 June 2016.

The Contract for construction work has been awarded to the Joint Venture Company of Todini – Impreglio – Akkord. The contracts scope of works is summarized in Table 1. Note that the Scope of Works has varied since the last Environmental Monitoring (July to December 2014) Report, including a Variation No. 2 which was signed with the Contractor. The data in Table 1 also includes the additional works under variation Order Number 2, comprising of three additional underpasses, constructing a maintenance depot at Kazygurt Pass and some additional materials and excavation quantities.

Project Management (PMC) and Construction Supervision (CSC) are being implemented by the Joint Venture of SMEC International PTY Ltd / Zhol Sapa. The CSC commencement date was the 15th June 2014 and the Resident Engineer commenced duties on the 31st August 2014.

1.3 Objectives of this Report

This is the second Semi-annual Environmental Report that has been prepared to meet the requirements of the Contract Provisions of Construction Supervision Consulting Services provided to the Ministry of Investment and Development (MID), Committee for Roads of the Republic of Kazakhstan for the CAREC Corridor 3 (Shymkent to Tashkent Section) Road Improvement Project under the ADB Loan 2916 – KAZ. More specifically, its purpose is to fulfill the requirements of the Government of Kazakhstan and report to the Asian Development Bank (ADB) on the environment safeguards requirements and compliance as written into the Loan Agreement, Project Administration Manual and associated documents and as agreed between the ADB and the Government of the Republic of Kazakhstan.

Table 1: Summary of Scope of Works

Item	Quantity
Milling old (existing) asphalt (m3)	93,487
Excavation / cutting	1,609,090
Embankment construction (m3)	647,605
Sub-base granular (m3)	530,272
Cement treated Aggregate base course (m3)	191,645
Concrete Pavement (m3)	218,184
Culverts LHS	30
Culverts RHS	29
Highly Porous Asphalt (m3)	14,561
Asphalt Base course (m3)	11,325
Asphalt Wearing Course (m3)	3,123
Interchange (no.)	1
Underpasses (no.)	7
W – Beam fencing (km)	31.9
Roadside lighting (Km)	7.2

This report assesses the environmental performance of the construction contractor in relation to Environmental Management and Monitoring on work sites. It covers the period of January 2015 to June 2015, but also provides information about key salient safeguards issues which arose or were settled in July-August 2015. During the reporting period, January to March works were limited due to freezing conditions and snow / rain events, although work never completely ceased. However, March to June 2015 does represent a period of better weather and is, therefore, the commencement of the peak construction season for 2015. Investigations and assessment of compliance have been conducted using the Expanded EMP, or the updated EMP represented in the June-December 2014 Monitoring Report (Refer to Annex 1). The report is mostly based on review of Monthly Monitoring Reports from the Contractor submitted to the CSC and Environmental Agencies in Kazakhstan – these reports included monitoring data and laboratory analysis of the selected parameters recommended by the CEMP; and field inspections and works by the Specialist Consultant of the CSC working closely with the contractor to maintain compliance in environmental and social safeguards.

2 ENVIRONMENTAL MANAGEMENT STRUCTURE

The Executing Agency (EA) is the Ministry of Investment and Development (MID), Government of the Republic of Kazakhstan (RoK) and is responsible for ensuring all environmental and social safeguards are fully complied within the laws of Kazakhstan and per agreements made by ADB.

2.1 Contractor Environmental Management

There have been no significant changes to the Contractor Environmental Management Team during this reporting period.

The contractor has a Health, Safety and Environmental Department of 6 persons dedicated to environmental safeguards, social safeguards and health and safety issues. The Mr Bekbauov Nurasil Asanhanovich continues to head this Department.

The Contractor has been required to employ a qualified Environmental Specialist to develop and implement a Site Specific or Contractor's Environmental Management Plan (CEMP) for the Project Site. Mr Samanov Berik Myrzabekovich continues as the contractor' Environmental Specialist.

The Contractor's Environmental Management Chart is included as Annex 2.

2.2 Construction Supervision Consultant (CSC)

The CSC is monitoring the worksite for compliance with the EMP and general sound environmental and social safeguards practices on the worksite.

During this reporting period, the CSC's foreign Community Liaison and Environmental specialist was on site from the 22nd February until the 20th March and again from 23 June up to 21 July 2015. His focus during these visits has been, by priority and necessity, to work on closing off social safeguards compliance issues related to losses of business due to construction on the road. However, he has prepared and submitted an "Expanded EMP" (Annex 1), which combines and updates the CEMP and ADB approved 2012 EMP, defining safeguards compliances during and by end of Project; as well as social issues and PPMS documentation. However, the key focus was placed on resolving urgent social safeguards issues, which continues into July 2015. He will return at the end of the Project, towards construction completion to focus on the social and environmental safeguards compliance related issues, and reporting status of completion compliant with the Expanded EMP (combined EMP (2012) and Updated EMP) submitted as a Final Project Completion Environmental Monitoring Report.

There were some changes to CSC Project Organisation team during the reporting period. The Engineer was granted approval of the local Environmental Specialist in May 2015. The Social Specialist, a newly created position, has also joined the team, specifically working on community consultation, grievances, resettlement and health and safety specific issues – approved by ADB in May 2015 and subsequently approval to mobilise by the employer.

The Environmental Management Plan describes the actions that the Contractor will implement to minimize the impact of their work on the surrounding environment. To supplement the Management Plan and provide actual evidence about the impact of the construction work the Contractor is required to carry out environmental monitoring on a monthly basis for noise, air quality and water quality at key construction locations.

3 CONSTRUCTION ACTIVITIES AND PROGRESS FOR WORK (PERIOD: JANUARY TO JUNE 2015)

Construction activities and progress as of the end of the reporting period 30th June 2015, are summarised in Table 2 below and original Project Site Plan presented in Figure 2 – Current locations of borrow pits, materials plants and camps etc, where environmental management issues may exist, are discussed in section 9 below.

Table 2– Summary of Construction Activities and Progress

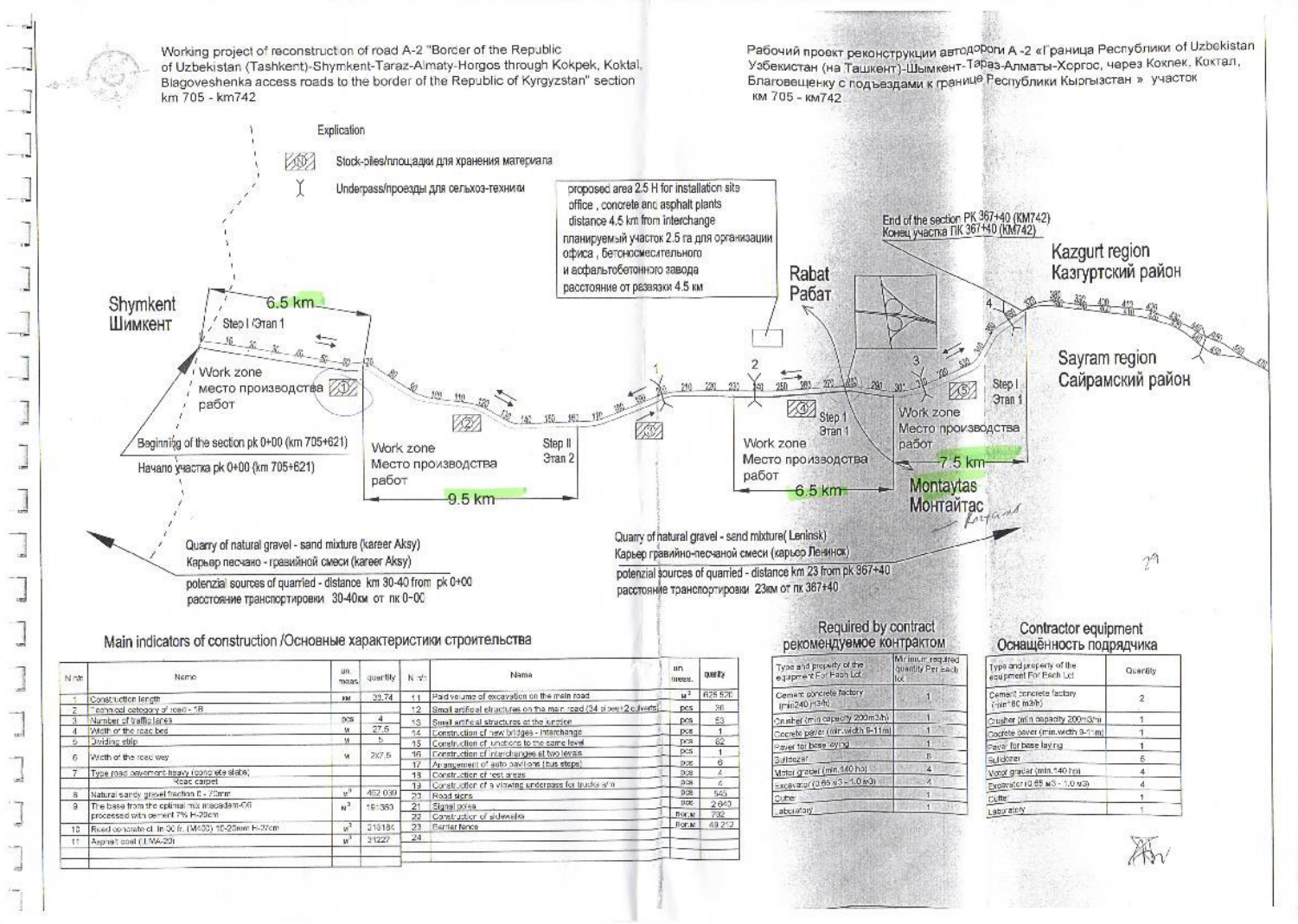
Item	Quantity	Completed to Date	% Completed
Milling old (existing) asphalt (m3)	93,487	96,491	103.2%
Excavation / cutting	1,609,090*	1,398,498	86.9%
Embankment construction (m3)	647,605*	259,825	40.1%
Sub-base granular (m3)	530,272*	237,894	44.86%
Cement treated Aggregate base course (m3)	191,645*	94,984	49.56%
Concrete Pavement (m3)	218,184	75,476	34.46%
Culverts LHS	30	14.2	49.0%
Culverts RHS	29	24.8	85.0%
Highly Porous Asphalt	14,561	0	0%
Asphalt Base course	11,325	0	0%
Asphalt Wearing Course	3,123	0	0%
Interchange	1	5 foundations / 5 sets columns and headstocks	50%
Underpasses (no)	7	3	42.8%
W – Beam fencing (km)	31.9	0	0%
Roadside lighting (Km)	7.2	0	0%

(* Based on Variation Order No. 2 Quantities)

The Contractor was been slow in mobilizing and implementing works in 2014. However, they have improved their performance in the January to June 2015 period, managing to catch up works to be almost on schedule. The only area lagging behind is the section of km 30 to 37.5, through Kazygurt Pass to the project' end for which construction by the sub-contractor appears to be approximately eight weeks behind schedule. The lead JV Contractor is looking into ways of reducing this lag time.

The concrete batching plant comprises of three separate mixes with rated capacity of 100m3 / hr. The first mixer was commissioned in September 2014 and suffered many commissioning problems with breakdowns and blockages and mix quality problems. The second mixer became operational in October. However it also suffered similar issues and it was not until November that both mixers were working "normally". The third mixer commenced operation in May 2015.

Figure 2 – Original Project site plan



Main indicators of construction /Основные характеристики строительства

N п/п	Name	un. meas.	quantity	N п/п	Name	un. meas.	quantity
1	Construction length	км	33,74	11	Paid volume of excavation on the main road	м³	625 500
2	Technical category of road - 1B			12	Small artifical structures on the main road (34 pipes/ 2 culverts)	pcs	36
3	Number of traffic lanes	pcs	4	13	Steel artifical structures at the junction	pcs	63
4	Width of the road bed	м	27,5	14	Construction of new bridges - interchange	pcs	1
5	Dividing strip	м	5	15	Construction of junctions to the same level	pcs	62
6	Width of the road way	м	2x7,5	16	Construction of interchanges at two levels	pcs	1
7	Type road pavement-heavy (concrete slabs) Крас carpet			17	Arrangement of auto pavilions (bus stops)	pcs	6
8	Natural sandy gravel fraction 0 - 70mm	м³	482 039	18	Construction of rest areas	pcs	4
9	The base from the optimal mix macadam-06 processed with cement 7% H-20cm	м³	191360	19	Construction of a viewing underpass for trucks and	pcs	4
10	Road concrete cl. In 30 fr. (M400) 10-25mm H-27cm	м³	210186	20	Road signs	pcs	560
11	Asphalt coat (LMA-20)	м³	21227	21	Signal poles	pcs	2 640
				22	Construction of sidewalks	пог.м	792
				23	Barrier fence	пог.м	49 212
				24			

Required by contract
рекомендуемое контрактом

Type and property of the equipment For Each Lot	Minimum required quantity Per each lot
Cement concrete factory (min240 m3/h)	1
Crusher (min capacity 200m3/h)	1
Concrete paver (min.width 9-11m)	1
Paver for base laying	1
Bulldozer	6
Motor grader (min.140 hp)	4
Excavator (0,65 м3 - 1,0 м3)	4
Cutter	1
Laboratory	1

Contractor equipment
Оснащённость подрядчика

Type and property of the equipment For Each Lot	Quantity
Cement concrete factory (min*80 m3/h)	2
Crusher (min capacity 200m3/h)	1
Concrete paver (min.width 9-11m)	1
Paver for base laying	1
Bulldozer	6
Motor grader (min.140 hp)	4
Excavator (0,65 м3 - 1,0 м3)	4
Cutter	1
Laboratory	1

In January to March 2015, however, work was slowed due to rain / snow events and some delays in cement supply, but in late March, construction activity picked up again. Earth works continued with excavations in Kazygurt Pass throughout the January to March winter period, but has appeared to have slowed a little in recent months, due to lack of equipment on site and a delay in the relocation of underground communications cables.

4 GEOGRAPHY

The project is situated within the South Kazakhstan region. This region is one of the major regions of the country, its territory is 117.3 thousand square meters or 4.3% of the territory of the Republic of Kazakhstan with a population of approximately 2.5 million persons.

The region has 11 districts, 8 towns and 170 rural villages. Shymkent is the capital with a population of approximately 682,565 persons[1]. The Project road is located in three of these Districts (Sairam, Kazygurt and Tolbei) and within Shymkent City limits.

In the west, the area is bordered by Kyzyl-Orda, in the north-Karaganda, East - Zhambyl region and the Kyrgyz Republic and in the south - the Republic of Uzbekistan.

The Region is located within the eastern part of the Turan lowland and western spurs of the Tien Shan. Most of the area is flat, with the hilly-ridge sands Kyzyl Kum steppe Shardara (in the southwest, along the left bank of the Syr Darya) and Moinkum (in the north, along the left bank of Shu).

The northern part is occupied by desert Betpak Dala, in the extreme south - Hungry Steppe (Myrzashol). Central part of the region occupies Tau ridge (mountain Bessaz - 2176 m), the PA-Western southeastern outskirts Talas Alatau ridges Karzhaptau (height up to 2824 m) and Ugamskiy (highest point - Sairam peak - 4238 m.)

The project road extends east from the fringe of Shymkent City (Km 705) and crosses low undulating hills and dry small streams that are only active during snow melt or periods of heavy rainfall. From Km 731 – Km 734 the road climbs at a 7% gradient to cross Kazygurt Pass.

There is a large volume of earthworks (cutting) in this section to reduce the vertical gradient to 5.5% and to improve traffic safety. From Km 734 the road inclines downward exiting Kazygurt pass back onto low undulating terrain.

5 CLIMATIC CONDITIONS

The region is located in a zone of moderate continental climate. According to the zoning of the territory of the Republic of Kazakhstan determined by the Kazakh Research Hydro meteorological Institute, on the potential of atmospheric pollution (1I3A) the area belongs to the zone of high IIZA IV. The average annual temperature is +11.90C. Temperature minimum and maximum points are -34C in winter (January / February) and +44C in summer (July – August). During this reporting period, temperatures taken in Shymkent ranged from a lowest of -16C on January 10 up to highest of first recorded as +39C on June 13 and which occurred several times after this in June.

[1] Source: Statistics Agency of the Southern Kazakhstan Region – estimated population.

Maximum precipitation occurs in the autumn – winter - spring time, or January to March in this reporting period. The average annual rainfall is approximately 500 to 540 mm. The current reporting period experienced approximately 462mm precipitation, including 65 days when it rained and 21 days of snow[2].

At 44 degree latitude there are approximately 8 hours daylight in winter and 16 hours in summer.

Due to the climatic conditions the working season for road construction works, during this reporting period was limited to the period of March to June 2015 (generally April to December annually). Low temperatures and snow / rainy conditions between December and March made planned construction works impractical in most cases.

Project road kilometer 0-7.5 areas - spring (left) with rain (March) and summer (June) with high temperatures (right)

6 FLORA AND FAUNA

The undulating foothills-rolling plains are cover with short grasses of different types (Poa bulbosa, sedge); ephemera, Japanese brome, Aegilops and lentoostnik, and also meadow grasses (wheat grass, yarrow, licorice).

Sections along the road are cultivated with winter cereal crops (wheat, barley), alfalfa, safflower, corn, cotton and melons.

There are shelter belts of trees growing along each side of the existing carriageways. These are important as they provide a habit for birds and small animals. The land outside these “shelter Belts” is essentially barren of trees.

The most common weeds ox-tongue, bindweed, Cynodon.

Common rodents such as squirrels, jerboa and field mice are to be found. Other animals found include hedgehogs, shrews and reptiles – (lizards, snakes). Herds of cattle, sheep, horses and goats graze on the grasses found on the undulating terrain.

[2] Days of snow in cases are not all separate from days of rain – some days when snow was recorded rain was recorded on the same day.

Road rehabilitation – through undulating landform – near Kilometer 27

7 ENVIRONMENTAL RESOURCES MONITORING

In accordance with the Contract requirements:

- The Contractor has provided a monthly environmental monitoring report to the Supervision Consultant.
- The Contractor has appointed a qualified Environmental specialist to oversee the environmental management on the project.
- The contractor has subcontracted an independent laboratory to conduct monthly testing of specified natural environmental resources.

This section reports on the results of the laboratory testing of key environmental parameters, as specified in the site specific environmental management and monitoring plans, as reported monthly by the Construction Contractor in their monthly “Environmental Monitoring Reports”.

7.1 Site Measurement of Key Environmental Parameters

The measurement of environmental parameters is implemented on a monthly basis by the Kazakhstan licensed laboratory LLP “Eco-Test”. This is in accordance with Kazakhstan requirement that such monitoring must be implemented by a properly licensed, independent establishment (Table 3 and 4).

Measurements for air, soil and water indices plus radiation and noise measurement is conducted at key locations along the project road by staff of the laboratory.

Table 3: Laboratory License

Name of accredited testing laboratory	Passport number and expiration testing laboratory accreditation	The scope of accreditation of testing laboratory
Sanitary and industrial laboratory LLP "ECO-TEST"	By number KZ .I.16.0654 from 13.03.2015 valid until 13.03.2020	– Emissions of pollutants into the air from stationary sources – Atmospheric Air in the buffer zone – Water – Soil – Noise – Radiological tests

Table 4: List of Laboratory Staff:

Position	NAME
Head of laboratory - LLP "Eco-Test"	Abdiyeva A.P
Engineer-laboratory assistant - LLP "Eco-Test"	Shirikova I.P.
Engineer-laboratory assistant - LLP "Eco-Test"	Kotova L.N.
Engineer-laboratory assistant - LLP "Eco-Test"	Isabayeva G
Laboratory assistant - LLP "Eco-Test"	Adilbekov

On the basis of the agreement with the Contractor “Akkord” to conduct environmental monitoring, environmental specialists LLP "Eco-Test" have conducted laboratory analytical tests at the site of reconstruction of the A-2 "Khorgos-Almaty-Shymkent border of the Republic of Uzbekistan" (705-742 km.). Testing has been implemented on a monthly basis for the period January – June 2015.

Monitoring of environmental parameters for works implemented by enterprises, organizations and other business entities is in accordance with Article 132 of the Environmental Code of the RK of 9 January 2007 №212-111. According to Article 128 of the Environmental Code of the Republic of Kazakhstan, natural and legal persons engaged in civil works are obliged to monitor environmental impacts of the production.

7.2 Methodology

Sampling, storage, transport and preparation of samples for analysis is carried out in accordance with the approved regulations, as follows:

i) For atmospheric air:
- RD 52.04.186-89 "Guidelines for the Control of air pollution."

ii) Water resources:
- ST RK GOST R 51592-2003 "Water. General requirements for sampling. "

iii) Soil:
- GOST 17.4.402-84 "The Nature Conservancy. Soil. Methods of sampling and sample preparation for chemical, bacteriological and helminthological analysis "

iv) Radiation monitoring:
- Manual radiometer-dosimeter "RCC-01-Solo" (fac. № 19-12).

v) Sampling points were chosen basis:
- Key production points for precast concrete elements (Saule community) and concrete production plant (Km 708 RHS).
- From the start of the project at Km 705, and then at regularly spaced intervals along the project road at Km 710, Km 713 (Aktas creek) for water, Km 715 (near Aktas village), Km 720, Km 725, Km 730, Km 735 and Km 742.

Some measurements are again missing some months of data (particularly January and February 2015). The contractor was instructed in February-March 2015 to make appropriate monthly monitoring for the remainder of the Project, regardless of activity at the Concrete batching plant or construction activity taking place or not taking place at the time. The Contractor has introduced regular monitoring points along the project road for all the tests presented below.

7.3 Air Quality

Sampling of Air Quality was conducted at regular intervals along the project road (5km intervals) and the concrete batching plant. Air monitoring was conducted on the corresponding resolutions of the Government of the Republic of Kazakhstan dated 25.01.2012, № 168 - "Sanitary - epidemiological requirements for air quality in urban and rural settlements, soil and their security, content areas of urban and rural settlements, the conditions of work with sources of physical factors affecting the person."

The following parameters were determined Inorganic dust, nitrogen dioxide, sulfur dioxide, carbon monoxide, (Carbon black: soot), hydrocarbons & lead. Results are shown in Tables 5a to 5j.

All measurements are within the Maximum Permitted Concentration level required by Kazakhstan law.

	TABLE 5a - AIR QUALITY							
	MONTH 2015 (CONCENTRATE AS MEASURED) Km 705							
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / m3**	**Comment**
Inorganic Dust	None detected	None detected	0,1	0,12	0,24	0,12	0,3	below allowable maximum
Carbon Monoxide	None detected	None detected	2,0	2,5	3,0	2,5	5	below allowable maximum
Nitrogen Dioxide	0,082	0,085	0,09	0,086	0,098	0,086	0,2	below allowable maximum
Sulphur Dioxide	None detected	None detected	None detected	None detected	None detected	None detected		not specified
Carbon Black	None detected	None detected	None detected	None detected	1,0	1,5	5	below allowable maximum
Hydrocarbons	None detected	None detected	None detected	None detected	None detected	None detected	1	below allowable maximum
Lead	None detected	None detected	0,00022	None detected	0,00036	0,00038	0,001	below allowable maximum

	TABLE 5b - AIR QUALITY							
	MONTH 2015 (CONCENTRATE AS MEASURED) Km 710							
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / m3**	**Comment**
Inorganic Dust	None detected	None detected	0,092	0,15	0,22	0,16	0,3	below allowable maximum
Carbon Monoxide	None detected	None detected	2,5	2,0	3,0	3,0	5	below allowable maximum
Nitrogen Dioxide	0,08	0,082	0,08	0,082	0,095	0,092	0,2	below allowable maximum
Sulphur Dioxide	None detected	None detected	None detected	None detected	None detected	None detected		not specified
Carbon Black	None detected	None detected	None detected	None detected	1,5	1,5	5	below allowable maximum
Hydrocarbons	None detected	None detected	None detected	None detected	None detected	None detected	1	below allowable maximum
Lead	None detected	None detected	0,00024	None detected	0,00038	0,00036	0,001	below allowable maximum

	TABLE 5c - AIR QUALITY MONTH 2014 (CONCENTRATE AS MEASURED) Km 715							
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / m3**	**Comment**
Inorganic Dust	None detected	None detected	0,12	0,1	0,21	0,16	0,3	below allowable maximum
Carbon Monoxide	None detected	None detected	2,0	1,5	3,0	3,0	5	below allowable maximum
Nitrogen Dioxide	0,085	0,086	0,09	0,084	0,090	0,085	0,2	below allowable maximum
Sulphur Dioxide	None detected	None detected	None detected	0,0	None detected	None detected		not specified
Carbon Black	None detected	None detected	0,9	0,0	1,0	1,0	5	below allowable maximum
Hydrocarbons	None detected	None detected	None detected	0,0	None detected	None detected	1	below allowable maximum
Lead	None detected	None detected	0,00025	0,0	0,00038	0,00032	0,001	below allowable maximum

	TABLE 5d - AIR QUALITY							
	MONTH 2015 (CONCENTRATE AS MEASURED) Km 720							
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / m3**	**Comment**
Inorganic Dust	None detected	None detected	0,1	0,12	0,18	0,12	0,3	below allowable maximum
Carbon Monoxide	None detected	None detected	2,5	2,0	2,5	2,0	5	below allowable maximum
Nitrogen Dioxide	0,08	0,084	0,085	0,086	0,085	0,083	0,2	below allowable maximum
Sulphur Dioxide	None detected	None detected	None detected	0,0	None detected	None detected		not specified
Carbon Black	None detected	None detected	None detected	0,0	None detected	None detected	5	below allowable maximum
Hydrocarbons	None detected	None detected	None detected	0,0	None detected	None detected	1	below allowable maximum
Lead	None detected	None detected	None detected	0,0	0,00032	0,00034	0,001	below allowable maximum

	TABLE 5e - AIR QUALITY							
	MONTH 2015 (CONCENTRATE AS MEASURED) Km 725							
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / m3**	**Comment**
Inorganic Dust	None detected	None detected	0,13	0,15	0,15	0,09	0,3	below allowable maximum
Carbon Monoxide	None detected	None detected	3,5	2,5	2,0	2,0	5	below allowable maximum
Nitrogen Dioxide	0,083	0,080	0,088	0,08	0,0083	0,084	0,2	below allowable maximum
Sulphur Dioxide	None detected	None detected	None detected	0,0	None detected	None detected		not specified
Carbon Black	None detected	None detected	None detected	0,0	1,5	None detected	5	below allowable maximum
Hydrocarbons	None detected	None detected	None detected	0,0	None detected	None detected	1	below allowable maximum
Lead	None detected	None detected	None detected	0,0	0,00036	None detected	0,001	below allowable maximum

	TABLE 5f- AIR QUALITY							
	MONTH 2014 (CONCENTRATE AS MEASURED) Km 730							
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / m3**	**Comment**
Inorganic Dust	None detected	None detected	0,1	0,18	0,16	0,18	0,3	below allowable maximum
Carbon Monoxide	None detected	1,0	2,5	3,0	2,5	3,0	5	below allowable maximum
Nitrogen Dioxide	0,090	0,092	0,082	0,082	0,086	0,087	0,2	below allowable maximum
Sulphur Dioxide	None detected	None detected	None detected	0,0	None detected	None detected		not specified
Carbon Black (soot)	None detected	0,9	None detected	0,0	1,0	1,5	5	below allowable maximum
Hydrocarbons	None detected	None detected	None detected	0,0	None detected	None detected	1	below allowable maximum
Lead	None detected	0,00028	0,00028	0,0	0,00038	0,00036	0,001	below allowable maximum

	TABLE 5g - AIR QUALITY							
	MONTH 2014 (CONCENTRATE AS MEASURED) Km 735							
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / m3**	**Comment**
Inorganic Dust	None detected	0,08	0,11	0,1	0,14	0,18	0,3	below allowable maximum
Carbon Monoxide	None detected	1,0	1,5	2,0	2,5	3,0	5	below allowable maximum
Nitrogen Dioxide	0,088	0,09	0,082	0,08	0,085	0,088	0,2	below allowable maximum
Sulphur Dioxide	None detected	None detected	None detected	0,0	None detected			not specified
Carbon Black	None detected	1,2	1,0	0,0	None detected	None detected	5	below allowable maximum
Hydrocarbons	None detected	None detected	None detected	0,0	None detected	None detected	1	below allowable maximum
Lead	None detected	0,0003	0,0003	0,0	0,00033	0,00036	0,001	below allowable maximum

TABLE 5h - AIR QUALITY MONTH 2015 (CONCENTRATE AS MEASURED) Km 742 -at end project								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / m3**	**Comment**
Inorganic Dust	None detected	None detected	0,1	None detected	0,19	0,2	0,3	below allowable maximum
Carbon Monoxide	None detected	None detected	2,5		3,5	3,5	5	below allowable maximum
Nitrogen Dioxide	0,082	0,085	0,085		0,090	0,092	0,2	below allowable maximum
Sulphur Dioxide	None detected	None detected	None detected	None detected	None detected	None detected		not specified
Carbon Black	None detected	None detected	None detected	None detected	None detected	None detected	5	below allowable maximum
Hydrocarbons	None detected	None detected	None detected	None detected	None detected	None detected	1	below allowable maximum
Lead	None detected	None detected	None detected	0,00032	0,00032	0,00036	0,001	below allowable maximum

TABLE 5i- AIR QUALITY MONTHS 2014 (CONCENTRATE AS MEASURED) Concrete batching Plant Km 708 RHS								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / m3**	**Comment**
Inorganic Dust	None detected	None detected	0,18	0,18	0,24	0,18	0,3	below allowable maximum
Carbon Monoxide	None detected	None detected	2,0	2,0	3,5	3,0	5	below allowable maximum
Nitrogen Dioxide	None detected	None detected	0,086	0,085	0,092	0,086	0,2	below allowable maximum
Sulphur Dioxide	None detected	None detected	None detected	None detected	None detected	None detected		not specified
Carbon Black	None detected	None detected	0,8	0,5	1,8	1,5	5	below allowable maximum
Hydrocarbons	None detected	None detected	None detected	None detected	None detected	None detected	1	below allowable maximum
Lead	None detected	None detected	None detected	None detected	0,00040	0,00038	0,001	below allowable maximum

Air sampling at concrete plant

7.4 Water Quality

Water monitoring was conducted in accordance with the environmental monitoring program.

Measurements were carried out according to the requirements - Sanitary Rules "Sanitary requirements for water sources, water intake sites for drinking purposes, drinking water supply and places of cultural and household water security and water bodies." Decree № 104 of the Government of the Republic of Kazakhstan dated 18.01.2012.

There are no permanent flowing streams or water sources on the project road. There is a dry / intermittent stream at Km 709 called Aktas River at Km 709 that has a low intermittent flow after snow melts or heavy rainfall events. There are small pools of water.

Drinking water for the site is obtained from the town / main supply.

Water Sampling Km 9

The Contractor is monitoring water quality at Km 709, at the Aktas River location. Test results are given in Table 6.

Water from the reservoir at Akzhar and Badam river is not used on the project site.

All measurements are within the Maximum Permitted Concentration level required by Kazakhstan law.

TABLE 6 - WATER QUALITY

MONTH 2014 (CONCENTRATE AS MEASURED) Km 709 (Aktas dry stream)								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / m3**	**Comment**
pH		7,8	8,10	8,21	8,27	8,41	6 to 9	within tolerances
Sodium mg/dm3		121,0	115,0	121,0	118,0	113,0	200	below allowable maximum
Potassium mg/dm3		1,16	1,31	1,17	1,12	1,02		not specified
Calcium mg/dm3		21,0	15,0	13,0	11,7	13,5		not specified
Magnesium mg/dm3		9,0	9,2	10,1	9,5	8,3		not specified
Copper mg/dm3		0	0	0	0	0	1	below allowable maximum
Zinc mg/dm3		0	0	0	0	0	0,001	below allowable maximum
Lead mg/dm3		0	0	0	0	0		not specified
Manganese mg/dm3		0	0	0	0	0		not specified
Arsenic mg/dm3		0	0	0	0	0	0,05	below allowable maximum
Phosphates mg/dm3		0,03	0,03	0,004	0,038	0,041	3,5	below allowable maximum
Chromium mg/dm3		0	0	0	0	0	0,5	below allowable maximum
Iron mg/dm3		0,096	0,08	0,28	0,27	0,23	0,3	below allowable maximum
Chlorides mg/dm3		192,0	163,0	123,53	192,0	193,56	350	below allowable maximum
Sulphates mg/dm3		396,0	298,0	311,5	416,4	418,35	500	below allowable maximum
Ammonia mg/dm3		0,09	0,1	0,12	0,155	0,22	2	below allowable maximum
Nitrates mg/dm3		10,6	9,76	40,3	36,6	37,2	45	below allowable maximum
Fluoride mg/dm3		0,5	0	0,3	0,4	0,31	1,2	below allowable maximum

7.5 Soil Quality

Soil monitoring conducted on relevant regulations, "Standards of - the permissible concentration of harmful substances, harmful microorganisms and other biological pollutants in the soil." Approved by Order of the Minister of Health from number 99 from 27.01. 2004 and the Order of the Minister of Environmental Protection, № 21-p of 30.01. 2004. Results are give in the following Tables 7a – 7j.

Soil Sampling

The Contractor has introduced regular monitoring points along the project road plus at the Concrete batching plant.

According to the laboratory, all soils tested were within the Maximum Permitted Concentration level required by Kazakhstan law. However, it is noted that the pH and soil residue (background) measurements changed from month to month. An explanation was sought from the sampling / measurement laboratory and contractor, with a requirement for remediation, if investigations found this pH change is due to road construction activities.

The laboratory informed that the background pH is accepted as a “permissible norm”, with the monthly changes in the background measurements being due to atmospheric precipitation and by groundwater and/or irrigation water (seasonal changes) which can change soil quality.

TABLE 7a - SOIL QUALITY

MONTH 2014 (CONCENTRATE AS MEASURED) BATCHING PLANT 1 Km 708								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal PDK mg / kg**	**Comment**
pH			7,82	8,11	8,22	7,98	N/A	exceedance not detected
pH (Background)			7,91	8,79	8,8	8,91	N/A	
solid residue			0,1	0,26	0,24	0,23	N/A	
solid residue (Background)			0,12	0,45	0,34	0,4	N/A	
Petroleum Products			0	0	0	0	0	
lead			16,2	15,5	16,2	14,3	32,0	

TABLE 7b - SOIL QUALITY

MONTH 2014 (CONCENTRATE AS MEASURED) BATCHING PLANT 2 Km 708								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / m3**	**Comment**
pH			7,87	8,24	8,09	8,01	N/A	exceedance not detected
pH (Background)			7,91	8,79	8,8	8,91	N/A	
solid residue			0,11	0,21	0,26	0,19	N/A	
solid residue (Background)			0,12	0,45	0,34	0,4	N/A	
Petroleum Products			0	0	0	0	0	
lead			17,6	17,1	16,8	14,5	32,0	

TABLE 7c - SOIL QUALITY								
MONTH 2014 (CONCENTRATE AS MEASURED) KM 705								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / Kg**	**Comment**
pH		7,46	7,51	8,67	8,37	8,21	N/A	exceedance not detected
pH (Background)		7,93	7,91	8,79	8,91	8,91	N/A	
solid residue		0,081	0,09	0,072	0,068	0,068	N/A	
solid residue (Background)		0,12	0,12	0,45	0,34	0,4	N/A	
Petroleum Products		0	0	0	0	0	0	
Lead		22,9	22,6	21,3	20,08	20,16	32,0	

TABLE 7d - SOIL QUALITY								
MONTH 2014 (CONCENTRATE AS MEASURED) Km 710								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / Kg**	**Comment**
pH		7,76	7,83	8,38	8,14	8,62	N/A	exceedance not detected
pH (Background)		7,93	7,91	8,79	8,8	8,91	N/A	
solid residue		0,12	0,095	0,13	0,17	0,12	N/A	
solid residue (Background)		0,083	0,12	0,45	0,34	0,4	N/A	
Petroleum Products		0	0	0	0	0	0	
Lead		16,7	16,3	15,8	16,4	14,5	32,0	

TABLE 7e- SOIL QUALITY MONTH 2014 (CONCENTRATE AS MEASURED) Km 715								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / Kg**	**Comment**
pH		7,53	7,68	8,25	8,03	8,53	N/A	exceedance not detected
pH (Background)		7,93	7,91	8,79	8,8	8,91	N/A	
solid residue		0,088	0,08	0,16	0,11	0,18	N/A	
solid residue (Background)		0,12	0,12	0,45	0,34	0,4	N/A	
Petroleum Products		0	0	0	0	0	0	
Lead		21,1	20,7	18,4	17,5	14,5	32,0	

TABLE 7f- SOIL QUALITY MONTH 2014 (CONCENTRATE AS MEASURED) Km 720								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / Kg**	**Comment**
pH		7,91	7,89	8,28	8,29	8,13	N/A	exceedance not detected
pH (Background)		7,93	7,91	8,79	8,8	8,91	N/A	
solid residue		0,099	0,1	0,37	0,33	0,43	N/A	
solid residue (Background)		0,12	0,12	0,45	0,34	0,4	N/A	
Petroleum Products		0	0	0	0	0	0	
Lead		17,8	18,1	17,6	16,1	32,0	32,0	

TABLE 7g - SOIL QUALITY								
MONTH 2014 (CONCENTRATE AS MEASURED) KM 725								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / Kg**	**Comment**
pH		7,64	7,67	8,62	8,78	8,21	N/A	exceedance not detected
pH (Background)		7,93	7,91	8,79	8,8	8,91	N/A	
solid residue		0,082	0,08	0,073	0,076	0,079	N/A	
solid residue (Background)		0,12	0,12	0,45	0,34	0,079	N/A	
Petroleum Products		0	0	0	0	0	0	
Lead		16,8	17,2	16,8	14,3	13,6	32,0	

TABLE 7h - SOIL QUALITY								
MONTH 2014 (CONCENTRATE AS MEASURED) Km 730								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / Kg**	**Comment**
pH		7,62	7,81	8,23	8,30	8,03	N/A	exceedance not detected
pH (Background)		7,93	7,91	8,79	8,8	8,91	N/A	
solid residue		0,053	0,064	0,091	0,086	0,083	N/A	
solid residue (Background)		0,12	0,12	0,45	0,34	0,4	N/A	
Petroleum Products		0	0	0	0	0	0	
Lead		15,4	16,1	15,6	14,8	12,4	32,0	

	TABLE 7i- SOIL QUALITY							
	MONTH 2014 (CONCENTRATE AS MEASURED) Km 735							
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / Kg**	**Comment**
pH		7,71	7,76	8,38	8,48	8,43	N/A	exceedance not detected
pH (Background)		7,93	7,91	8,8	8,8	8,91	N/A	
solid residue		0,087	0,092	0,12	0, 16	0,19	N/A	
solid residue (Background)		0,12	0,12	0,45	0,34	0,4	N/A	
Petroleum Products		0	0	0	0	0	0	
Lead		143	12,4	11,7	12,1	11,5	32,0	

	TABLE 7j- SOIL QUALITY							
	MONTH 2014 (CONCENTRATE AS MEASURED) Km 742							
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / Kg**	**Comment**
pH		7,79	7,78	8,20	7,93	8,11	N/A	exceedance not detected
pH (Background)		7,93	7,91	8,79	8,8	8,91	N/A	
solid residue		0,090	0,091	0,43	0,32	0,48	N/A	
solid residue (Background)		0,12	0,12	0,45	0,34	0,4	N/A	
Petroleum Products		0	0	0	0	0	0	
Lead		13,7	14,7	13,9	13,4	12,0	32,0	

7.6 Radiation Monitoring

Radiological measurements conducted for compliance with hygiene standards, approved by the Decree of the Government of the Republic of Kazakhstan Number 201ot 03.02.2012, the “Sanitary requirements for radiation safety." The legal Maximum Permitted Concentration as decreed by the Government of Kazakhstan is a level of less than 0, 2 + (background) mk3 w/h.

Monitoring was conducted at 4 points (north, south, east and west) located around the concrete batching plant. Results are given below in Table 8.

All measurements are within the Maximum Permitted Concentration level required by Kazakhstan law "Sanitary requirements for radiation safety".

7.7 Noise Monitoring

Monitoring of the impact of construction machinery on the environment for noise “pollution” was conducted at the Concrete Batching Plant (at 2 locations), Engineer’s – Contractor’s materials Testing Laboratory, and at construction activity at Km 710, Km 715 and Km 742 (end of project).

Tests were conducted in compliance with GOST 12.1.003-83 and GOST 12.1012-2004. Results are shown in the following Tables 9a – 9e. However, it is noted that Noise (sound intensity) monitoring was not conducted in January in some locations, for which the contractor reasoned no construction work. The Contractor has since been advised that they should monitor in all areas throughout the duration of the Project period to enable understanding as to what environmental impacts are caused by construction, what during operation. All measurements are within the Maximum Permitted Db level required by Kazakhstan law.

7.8 Summary

The Contractor via licensed laboratory LLP "Eco-Test" is implementing a monthly environmental monitoring program of the work-site.

The test results for air, soil, water, radiation and noise intensity are all within allowable tolerances under Kazakhstan law.

TABLE 8 - RADIATION MONITORING								
MONTH 2014 (CONCENTRATE AS MEASURED) Km 708 BATCHING PLANT (4 points)								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Normal MPC mg / m3**	**Comment**
Flux Gamma Rays	0,10 – 0,11	0,09 – 0,11	0,09 - 0,11	0,10 – 0,12	0,10 - 0,12	0,09 – 0,11	0,2 + background	below allowable maximum

TABLE 9a - SOUND INTENSITY								
MONTH 2014 (CONCENTRATE AS MEASURED) BATCHING PLANT								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Allowable Max Db**	**Comment**
Batching Plant 1 - noise level Db	51	49	55	55	56	51	80	below allowable maximum
Batching Plant 2 - noise level Db	-	-	47	47	43	41	80	below allowable maximum

TABLE 9b - SOUND INTENSITY								
MONTH 2014 (CONCENTRATE AS MEASURED) - LABORATORY								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Allowable Max Db**	**Comment**
noise level Db	-	43	56	56	53	51	60	below allowable maximum

TABLE 9C - SOUND INTENSITY								
MONTH 2014 (CONCENTRATE AS MEASURED) Km 710								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Allowable Max Db**	**Comment**
noise level Db	-	57	55	56	57	62	75	below allowable maximum

TABLE 9d - SOUND INTENSITY								
MONTH 2014 (CONCENTRATE AS MEASURED) - 715								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Allowable Max Db**	**Comment**
noise level Db	-	52	57	57	54	65	75	below allowable maximum

TABLE 9e - SOUND INTENSITY								
MONTH 2014 (CONCENTRATE AS MEASURED) Km 742								
Item Measured	**January**	**February**	**March**	**April**	**May**	**June**	**Allowable Max Db**	**Comment**
noise level Db	-	68	63	63	68	69	75	below allowable maximum

8 ENVIRONMENTAL MANAGMENT

8.1 Introduction

This section has been designed to address monitoring of compliance issues with the "Expanded EMP" (Annex 1 and Section 12 below), which was presented in the July-December 2014 Biannual Report as an "update" to the 2012 EMP combined with the site specific EMP prepared by the contractor. Not all parts of the Expanded EMP are discussed in this section. It only focuses key Expanded EMP and environmental safeguards issues that have that have been identified by the CSC during the reporting period. Social safeguards and other issues, some of which are not covered by the Expanded EMP, but are covered in safeguards agreements and required under ADB SPS 2009, are Presented in another report[3].

8.2 Site Inspections and Audits

Various members of the Consultant team, including with the employer representative, conduct daily site inspections, with the International Environmental and Community Liaison Specialist, National Social and National Environmental Specialists also conducting regular inspections and audits on site.

8.3 Non-compliances Notices

Notices of non-compliance are in the form of letters from the engineer, labelled with the environmental or social issue in the subject title. They are provided to the contractor, who distribute as appropriate to their sub-contractors, when observations are made during inspections; data received appears to not be in compliance with normal environmental conditions, the EMP, Kazakhstan laws and standards, FIDIC-based contract requirements; and/or reported and investigated grievances.

Table 10 includes a list of these correspondences along with corrective action plan letters where appropriate. The Consultant also believes that where compliance has been duly corrected or a good practice is well maintained, the contractor should be informed also that they have acted positively. Letters are also prepared for this purpose.

[3] Social Safeguards are also reported in the Project Perfmornace Monitoring report (submitted in march 2015) and other specific, separate reports submitted to employer and ADB.

8.4 Corrective Action Plans

Requirements for corrective action, are similar to non-compliance notices, in that they identify safeguards non-compliance to the contractor. However, these notices, also in the form of letters, either indicate how, or will request the contractor to investigate and advise to the CSC of the method, to correct the non-compliance.

Table 10 also provides a list of these correspondences along with non-compliance notice letters. The Consultant also believes that where compliance has been duly corrected, or a good practice is well maintained, the contractor should be informed also that they have acted positively. Letters are also prepared for this purpose and are included in Table 10 (in the comments column).

8.5 Borrow Pits and Stockpile Areas

8.5.1 Borrow Pits

What appeared to be two borrow pits have been opened up by the contractor, or subcontractor within the reporting period:

i) Kilometre 28 – Material from side-road construction

This site, originally thought to be a borrow pit, is actually a small road being constructed by the contractor on a request from the Akimat and community members. This became of concern to the project when excavated material was being used in a nearby culvert as fill, because the material excavated from the culvert area was not of quality to backfill the culvert and thus replacement had to be used.

The Contractor has complied with all environmental and engineering requirements on this site by (Table 10 – No. 12):

- Request and approvals by the stakeholders (land users) on site – the “Ak-Bura” Cooperative to the CoR, MID.
- Entering into a contract with the local cooperative (also with Akimat approval), which requires the cooperative to obtain all environmental approvals.
- The contract includes attachments of land use entitlements for the land plot
- Materials testing on-site allowed for excavated materials to use to backfill culverts, being constructed nearby on the Project road.

Table 10 – Letters from the CSC – informing of environmental non-compliance and/or for corrective action

SN	Date and Environmental and Social Issues Identified	Corrective Actions to be Taken	Deadlines Set (if any)	Comment
1.	5/2/2015 – Environmental permits and documentation	Request for Waste Passports, contracts with waste disposal companies, tree felling documentation, payments for emissions and requirement for lead soil tests	None set	Lead tested in soils is presented in Monthly environment reports (complied). Only limited documents in tree felling but no documentation responding to other issues mentioned
2.	6/3/2015 – Documentation for Environmental Compliance under Kazakhstan laws and EMP compliance	Follow-up to 5/2/2015 letter for documentation an permits such as sketch map, permits and approvals, tree cut inventory, certification and tree-replanting program; for materials sources and borrow pits etc, the request for locations, maps, management plan, permits under Kazakhstan laws, rehabilitation plans, environmental authorities approvals and land acquisition agreements	18/3/15	10/3/2015 letter with tree cut permits and assurance of no borrow pits. Borrow pit at Kazygurt subsequently opened, without approval or permits provided to engineer refer below).

SN	Date and Environmental and Social Issues Identified	Corrective Actions to be Taken	Deadlines Set (if any)	Comment
3.	18/3/2015 - Dust Control	Reminder to use water carts and other methods to suppress/control dust on construction sites, particularly in Kazygurt	With immediate effect	June/July, dust suppression were being implemented in first 30 km, but needed second request for Kazygurt, after which were improvements
4.	18/3/2015 – Concrete batching Plant	Drainage of cement contaminated water into adjacent property – repair damage and redesign site drainage with spill/silt containment.	With immediate effect	In July, site inspection saw same issue and site drainage remains unchanged. This was pointed out to contractors environmental officer on-site
5.	3/4/2015 – Soil excavation at Km 117+10	Soil excavation/borrow pit identified by site inspection on 2/4/2015 and request for proposals/documentation from contractor	None set	--
6.	16/5/2015 – Borrow Pit Kazygurt Pass	Request for environmental documentation and approvals from engineer and environmental authorities (accordance with environmental laws) and for material extraction.	25 May 2015	Contractor has instructed subcontractor to cease use of borrow pit and comply with engineer request. As at July 2015, and after several requests, documentation was not forthcoming, and a “non-compliance” letter was sent. Latter letter has to date not been acted upon, but site rehabilitation has

SN	Date and Environmental and Social Issues Identified	Corrective Actions to be Taken	Deadlines Set (if any)	Comment
				commenced in August 2015.
7.	15/6/2015 – Environmental issues – Kazygurt borrow pit, embankment km 25 removal of material, safety of diesel storage and PPE	For Borrow Pitt at km 32+400, still not environmental management plans / approvals / permits are submitted; fuel tanks installed at batching plant has leaking fuel and there is no appropriate spillage containment for this area as required under EMP; no fuel containment mechanisms at site where vehicles fuel up at batching plant; and workers need to wear PPE at all times	Require attention, but no deadlines given	July 2015, inspections showed no substantial changes batching plant site, despite letter on 16/6/2015 from contractor promising actions on concrete plant to be fixed – in July requests on-site direct to Contractor Environmental specialist were made. Contractor has instructed subcontractor (16/6/2015) to cease use of borrow pit and comply with engineer request. Apart from a rental agreement with land owner, the Kazygurt borrow pit environmental management documents were never submitted. After several requests, documentation was not forthcoming, and a “non-compliance” letter was sent. Latter letter has to date not been acted upon, but site rehabilitation has commenced in August 2015.

SN	Date and Environmental and Social Issues Identified	Corrective Actions to be Taken	Deadlines Set (if any)	Comment
8.	25/06/2015 – health and safety ad-hoc inspection – Kazygurt subcontractor	Removal of site supervisor at Kazygurt pass due to negative attitude towards health and safety; and reported health and safety issues be corrected and reported.	30th June 2015	Compliance to some of the recommendations observed in July 2015, but also subcontractor objected to receiving such notices. But no official responses to engineer on these matters.
9.	30/062015 - Warning of necessary dust suppression	Contractor to commence using water carts spraying water to reduce dust impacts and potential complaints from nearby resident.	Immediate effect	2 water carts were observed used on-site soon after this letter was sent by the contractor to subcontractor. The workers at the emergency management centre did point out the area does have significant dust quantities, but dust can never be completely eliminated from such a road project site.
10.	1/07/2015 – Labor data – safeguards compliance	Data on numbers, salary, ages of workers and HIV/AIDS awareness training evidence to be submitted ensure social safeguards compliance	20 July 2015	Information submitted 20th July – indicates compliance with labour numbers/age/salary, and have performed at least 2 HIV/AIDS awareness sessions for workers.
11.	7/7/2015 – Environmental Monitoring Reporting and	Laboratory accreditation out of date Soil quality data incorrect results	Immediate Immediate	10 July response from contractor acknowledging the errors in monitoring

SN	Date and Environmental and Social Issues Identified	Corrective Actions to be Taken	Deadlines Set (if any)	Comment
	Monthly data reporting	(repeated) Reminder to conduct all listed tests every month Reminder to provide compliances to Site Specific EMP and not just cut/paste lab reports Contractor has been provided with July-December 2014 Biannual report, with "Expanded EMO" showing expected items indicating compliance by contractor – to be followed.	Immediate Immediate From March 2015 to end of Project	reports and providing fix to English version (Russian versions have). Also promised more detail in future reports, but was not followed in July report. Soil Quality data explained (August 2015) in that soil conditions change with precipitation, ground water etc.
12.	8/7/2015 – Removal of Asphalt for recycling	Km 34-36 at Kazygurt Pass area (RHS) was ripped and stockpiled along with old road base, near emergency centre. The material is contaminated and cannot be reused by the employer. Milling and cement	No deadline	17 July 2015 – Contractor sent communication to subcontractor requesting response to Engineers letter (no further responses known).

SN	Date and Environmental and Social Issues Identified	Corrective Actions to be Taken	Deadlines Set (if any)	Comment
		road base removal will not be paid and will be treated under payment s as "excavation of unsuitable material". Also, contractor requested to advise how stock piled material will be managed.		
13.	10/7/2015 – excavation/borrow pit near km 27	Request for environmental permits and land acquisition documentation for area being excavated near Km 27.	16 July 2015	Documents provided with cover letter from contractor on 16 July 2015. Documents indicate that contractor is in full compliance. Letter indicating compliance sent to contractor on 18 July 2015, with warning to remain vigilant for environmental/land acquisition issues for contractor' own protection.
14.	10/7/2015 – Environmental Safeguards Documentation Requirements – Kazygurt Pass	Requested environmental documentation and environmental authorities approvals, rehabilitation plans, land rental agreements and other documentation to indicate	18 July 2015	Contractor informed subcontractor of request and prior issues yet not compliant in letter on 13 July 2015

SN	Date and Environmental and Social Issues Identified	Corrective Actions to be Taken	Deadlines Set (if any)	Comment
		compliance with Kazakhstan environmental laws and ADB safeguards agreements at: Kazygurt Pass borrow pit; Café RHS and petrol Station LHS which is owned by subcontractor, but will be lowered to road levels; second café on RHS; and dump site near Turan.		
15.	17/7/2015 – Cleaning of Concrete Trucks on sites	Observed concrete truck cleaning in natural drain area, near trees close to construction of underpass no. 2. Require concrete trucks to clean within boundary of construction sites, as required by EMP	Immediate	Monitoring to continue
16.	18/7/2015 – Non-compliance Certification – Kazygurt Pass	Information requested on 10 July not provided. Explanation and plan for corrective Action is required within 1 week	25 July 2015	Contractor informed subcontractor to explain situation. Nothing received as of mid-August. Apart from a rental agreement with land owner, the Kazygurt borrow pit environmental management documents

SN	Date and Environmental and Social Issues Identified	Corrective Actions to be Taken	Deadlines Set (if any)	Comment
				were never submitted. After several requests, documentation was not forthcoming, and a "non-compliance" letter was sent. Latter letter has to date not been acted upon, but site rehabilitation has commenced in August 2015.
17.	20/7/2015 – Kazygurt Campsite damage to buildings	Privately owned structures near campsite of subcontractor, one shows to have been damaged during construction and another being used without written agreements. Request for investigation and corrective action to the damage to building and documents showing approvals to use other structure (same owner)	No dates given	Contractor requested subcontractor to explain and provide details to engineer by 27 July 2015. No documents provided as at mid-August 2015.

ii) Kazygurt Borrow-pit

On the Shymkent end of Kazygurt pass near, and observable, to the road, the subcontractor opened a borrow-pit, without seeking formal permission. As per table 10 (6, 7, 14 and 16), several letters of environmental non-compliance and requirements for corrective action were sent to the Contractor and past on. Although the environmental documentation was not forthcoming, but agreements with the holder of the land-use title were provided, it is understood that in late July 2015, the contractor/subcontractor commenced filling the borrow pit site with clean, excavated materials, which was unsuitable for reuse in the road construction. Therefore, rehabilitation of this borrow-pit site is on-going and will be monitored. It is expected that full rehabilitation of site back to its original form, or to the land title holder' satisfaction, is completed prior to the final environmental inspections by the CSC when project is completed.

8.6 Tree Cutting

In the areas along the cutting of trees has been required to enable adequate road construction to Kazakhstan (GOST) specified standards. In the area of kilometre 10 up to kilometre 29 there were quite a large number of trees lining either one or, in most cases, both sides of the read and in the centre median of the existing road. There importance is significant in that they act as shelterbelts, reducing impact of wind, and snow hazards for road users, as well as act as natural sound barriers reducing traffic noise for residents.

In line Kazakhstan legal requirements, the Contractor and KazAutoZhol, obtained the required permits to cut trees from the Ministry of Environment and Water Resources of Kazakhstan, Committee on Forestry and Hunting, Southern Kazakhstan Regional Territorial Inspection of Forestry and Hunting. The two permits granted, for 2 Akimat areas, allowed for the felling of trees amounting to 270 and 1007 cubic metres of wood.

According to KazAutoZhol, this translated to authorities approving the total number of 6488 trees that may be felled to make way for construction of the Project road. The ADB approved IEE of 2012, indicated this number of trees would need to be included in a replanting program. The numbers of trees permitted to cut, according to KazAutoZhol are as follows:

- Up to 16cm diameter – 1621 trees
- 16-24cm diameter - 2919 trees
- 24-32 cm diameter- 1300 trees
- Over 32 cm diameter – 648 trees

According to information received from the contractor and confirmed in Acts by the Akimats, 4128 trees by the end of 2014 were cut, mostly on the project road right hand side and median; and 2000 were cut in 2015, mostly on the project road left hand side and median area. Therefore, the total of 6,128 trees cut is lower than that which was permitted. In August of 2015, the local Committee on Forestry and Hunting officials have concluded an audit of cutting operation and records. They found that tree felling cubic metre levels and numbers matched the permit amounts.

The ADB approved EMP, prepared in 2012, calls for 6488 trees to be replanted. However, the BoQ of the contractor does not include scope for this work. Site Specific EMP, prepared by the Contractor, recognizes plans to rehabilitate / replace flora/fauna and habitats along the road, removed due to construction, but in line with BoQ does not include the replanting of trees. Therefore, the consultant has instructed the Contractor Environmental Specialist to prepare a tree replanting, vegetation rehabilitation program to cover replacing the trees that have been removed in accordance with the EMP. The Employer may wish to conduct tree replanting activities in coordination with Akimats after project completion[4].

8.7 Fuel Storage, Chemicals and Hazardous Waste

The “Expanded EMP” describes in several sections the treatment of wastes, hazardous wastes and spills protecting air, soil and water resources. Some issues have surfaced during the reporting period as follows below.

[4] In Zhambul (CAREC 1 road Projects), it was indicated that the employer would arrange tree replacement / rehabilitation themselves.

i) Spill containment and Hazardous waste storage

Key areas where hazardous materials are being stored for use in construction includes the main Camp, near Shymkent, the sub-contractor site at Kazygurt pass and the Concrete Plant at Km 708.

At the Km 708 Concrete Plant, there are three notable areas of non-compliance. Consideration must be given to the Plant area being earth and base course material, with almost no paved/concrete surfaces. Fuel storage tanks are located in a covered area, but spill containment devices were not evident on inspections. Specification requires a “Curing Agent” to be used with the concrete, when layed. The concrete plant stocks this agent in large plastic containers, some of which have metal guards to protect from damage, but some do not.

Curing Agent needs to be stored undercover, with spill containment of 110% capacity

The Consultant has provided recommendation to construct a covered, hard floored storage area for the curing agent to be stored, with full spill containment amounting to 110% of the proposed storage amount for both fuel and curing agent storage. By the end of this reporting period (in July), the batching plant were in process of preparing compliant structures, although not completed.

ii) Drainage and soil-cement contamination

On two occasions cement runoff from the Plant (when Plant equipment was not used), was collecting and draining into the neighbouring site. Although the neighbouring site is currently excavated for an industrial site complex, conditions of contract and EMP requires that Plants such as the Batching Plants sites be well drained and surfaces constructed so as not to contaminate surrounding environment.

Also, concrete trucks were viewed washing out the equipment (a required task after delivery or concrete) in natural drains close to the tree shelter belts. The level of cement wash left in the observed area showed this task was excessive Trucks should have washed out in an appropriate area of the construction site, where contaminants (ie. Cement remnants) may be taken away and not to contaminate the natural soil, air or water resources.

Since December 2014 at least three “Non-compliance” or “notice to correct” correspondences, two written report findings and several verbal notices have been given in relation to the batching Plant and one for the washing of concrete trucks on site. In July 2015, the CSC with Contractor Environmental Specialist discussed the matter on-site for immediate actions. This is being followed through.

Storage and disposal of hazardous wastes will continue to be monitored throughout the remainder of the Project.

8.8 Waste Production

8.8.1 Recycling Excavated Materials

There are several areas along the road where material is of sufficient quality to be milled and recycled rather than disposed of in landfill. This is seen as positive as it a recycling of the existing material. The environmental benefits are obviously positive, given that the material will not be disposed of and new material will not need extraction from quarry or borrow-pits in future. However, in monetary terms, there is a cost. Both excavated asphalt and cement treated base is proposed for recycling, as explained below:

i) Asphalt

The contractor is removing the old asphalt pavement and transporting to temporary stockpiles. This material will become the property of the Employer on project completion, however some material will be utilized for road shoulder construction and access roads sheeting to local villages.

ii) Cement Treated Pavement

The contractor is removing a 10 – 18cm thick layer of cement treated base material that is located under the old asphalt. They are placing this into stockpiles. They have submitted a proposal to recycle some of this material through a portable crusher unit and to mix with new materials (20% - 30%) to create the new sub-base pavement for the project road.

By the end of the reporting period, there had still been no agreement on the price for recycling the cement treated base material, due to differences in Russian and English versions of the contract. Discussion on this issue was on-going into July.

8.8.2 Waste disposal

The Expanded EMP indicates a risk of "Lack of good housekeeping practices [on]… worksites including solid and sanitary waste management". In most cases this is being followed through. However, at "Culvert Number 2" was a large pile of plastic water bottles, increasing for several weeks. Following a Letter requiring corrective action, solid and sanitary waste management has been maintained since.

Observed during the health and Safety inspection in March 2015, materials are mostly being stored appropriately, although drip trays for mechanical repair areas in both Shymkent and Kazygurt workshop areas were scarce. Corrective actions, refer to health and safety inspection reports.

8.9 Historical and architectural monuments

There are two key notable sites of historical, cultural or architectural significance viewed from the road and some memorial sites along the road.

i) Key sites

The two sites are:

- Noahs Ark Monument above Kazygurt Pass – the monument on the mountain top is in respect of Prophet Noah, whom is believed, by the Turkic people[5], to have anchored the ark (Noahs Ark) on the mountain at Kazygurt near where the monument sits. The contractor has continued to maintain access to this site. Due to changing of road levels including reduced incline and lower level, the existing road access to the site will not be useable. The design has incorporated a new road access running behind the planned Kazak-auto-zhol Depot at Kazygurt pass joining the project road near kilometre 32.
- Alpymys Batyr Monument - This was built during the construction period, privately, by the owner of the building supplies firm, on his own land. Through consultations, he has informed that this monument and surrounding lands will be donated to the Akimat and opened for public access. During the reporting period, the employer approved formal access driveways into this site to allow visitors, once construction on the left hand side of the road is completed. However, temporary access to this site and nearby business has been maintained by the contractor during construction.

ii) Other sites

[5] It should be noted that the Turan cultural centre for the Turkic people is located along the road at Kazygurt Pass. Although grievances have come from the Centre, the Contractor and the Consultant are making every attempt to ensure access is provided and impacts of construction are minimised.

Along the road, numerous memorial sites can be observed, placed by families of loved ones lost through road incidents. These appear to have been respectively left untouched by the contractor during contraction, allowing relatives to remain honouring there lost family members.

9 OTHER ISSUES

There are some issue which are not specifically related to environmental or social aspects of the EMP or monitoring compliance to ADB and Kazakhstan legal safeguards, but are still relevant for reporting.

9.1 Contractor Environmental Reporting

The Contractor has consistently provided Monthly Environmental Monitoring Reports on a timely basis. However, each of these reports only provide the report of the Laboratory tests of environmental resources. They do not provide any information that aligns contractors work practices being in compliance with the EMP, SSEMP or Expanded EMP.

The Consultant has, during the reporting period, sent a letter (Corrective Action) to vary the Monthly Reports in order to show (and not limited to):

- What environmental management and monitoring activities have been done by the contractor;
- Environmental issues identified;
- EMP Compliance actions for the month;
- Issues preventing/limiting environmental compliance (eg. Budget, no budget for tree replanting etc).

Although this was recognized and promised for the July Monthly report, it was not followed through. The CSC has informed by letter of this requirement.

9.2 Foreign Environmental Specialist

The Foreign Environmental specialist mobilized in December 2014, for 2-weeks; in February-March 2015 for 1-month; and June-July 2015 for 1-month. Most of his works was directed towards Social Safeguards compliance issues, as per ADB instructions.

However, during the input, he has met with the Contractor and discussed the environmental management and monitoring expectations; and in June/July 2015 went through the Expanded EMP with on-site instructions as the current environmental management gaps and good practices and compliance indications required at project completion. Some of the environmental

management concerns which will need special attention in July 2015 to Project Completion monitoring period on the Project include (but not limited to):

- Stockpile areas – minimal compliance observed will be full rehabilitation plans and procedures to the pre-project status, or as agreed in writing with the land use title holders. Therefore, environmental and land acquisition permits rehabilitation (post-project) and will be checked.
- Hazardous materials, fuels, liquids – appropriate storage and waste disposal, approved by environmental authorities and in accordance with Kazakhstan environmental laws will be need to be examined for compliance.
- Waste disposal – although there is significant recycling of materials, hazardous and non-hazardous materials. Those not being recycled will be further examined.
- Water Courses – The EMP's require that water courses remain open during construction and restrictive use of hazardous materials in these areas. Rehabilitation of watercourses, both affected by the road construction and those where culverts have been installed, will be further examined

The specialist will return at the end of the Project to monitor efforts toward environmental management and rehabilitation as per the "Expanded EMP", presented in Annex 1.

10 COMPLIANCE

10.1 EMP, CEMP and Expanded (Updated) EMP Compliance

Annex 1 sets out this Expanded EMP framework and level of compliance during as of June/July 2015. The CSC has distributed the "Expanded EMP" to the Construction Contractor and discussed with the Contractor Environmental Specialist approaches to ensure compliance on the Project, particular as the Project moves toward completion.

The Consulting firm was mobilized after construction had commenced on the Project, with the Foreign Specialist mobilized almost 9 months after the Contractor mobilization and seven months after construction commenced. Over 30 kilometres (half road width) had commenced construction, with 7.5 kilometres of this almost ready for opening by the time the Specialist was mobilized.

Given this time lapse, and construction activities already on-going, the more conventional updating of the EMP did not seem relevant. However, to ensure that environmental safeguards are being met, both in retrospect and for the remainder of the project, EMP updating has entailed combining the EMP (2012), formulated during the PPTA, and the Contactor's Site Specific EMP, into one and expanding this with an additional columns. The additional column that is most relevant, "Definition of indicator for compliance / How CSC will verify compliance/sources of information", provides more detail in recommending possible sources and types of information/documents/data that would lead to the CSC determining full/partial/non-compliance of environmental management during, and at completion of, the Project construction period.

Annex 1 last column, summarise by indication of level of compliance, whether the project works are in compliance with the "Expanded EMP", presented also in the June-December 2014 Environmental Monitoring Report from the CSC. Those areas identified as not fully complied, have been discussed with the contractor and employer to ensure compliance with ADB SPS 2009, Loan Agreement, IEE with EMP (2012) and the Project Administration Manual, through letters, reports, meetings and site visits.

ANNEX 1 – EXPANDED (UPDATED) EMP

No.	Monitoring Aspect	Mitigation Measure	EMP (2012)	CESMP	Monitoring indicator	Definition of indicator for compliance / How CSC will verify compliance/sources of information	compliance or remedial action s required
1.0	**Pre-Construction Phase**						
1.1	No provision for translation of IEE and related documents for use by Oblast Inspectors and in Bid documents	Confirm that Kazakh/Russian version of IEE and EMP are with Oblast Inspectors; Confirm that bid documents contain environmental clauses tailored to the project conditions as well as a copy of the precautionalry measures outlined in EMP.	X		availability of IEE/EMP in Russian, English and Kazakh languages	Document in hard copy (at minimum) and soft copy availabile and easily accessible in English and Russian in the CSC office. Is also viewed in Oblast Inspectors office and contractors office. Should be made available for public to view is they choose.	**Mostly Complied:** English and Russian language versions are confirmed available. Kazakh language document availability is unkown
1.2	Failure of deisgners to include design measrures which later prevent impacts such as: livestock crossing management, poor traffic management and excessive removal of trees	Confirm by reviewing design documents and discussions with design team that: 1. livestock crossings in Section 3 have been addressed; 2. a plan to protect trees is as much as possible has been prepared; 3. there is step-by-step protocol for traffic management during construction (as opposed to the ad-hoc, hap-hazard existing system); and 4. An environmental friendly bridge and culvert replacement guide has been prepared.	X		1. Change of the width of underpass, additional underpasses and culverts in the design; 2. skectchmap of number, location, spiecies of trees, tree vegetation replacement plan; 3.traffic management plan fr project prepared and effectively operating; 4. Environmental mitigatin measures required during culvet and bridge construction are identified and implemnted.	1. The results of informal meetings with local residents views on construction of new underpasses and rehabilitated. 2. The engineer will require the Contractor to develop a number of the skectchmap, location and species of trees, which he intends to remove and then according to this map will control the cutting and planting new plants. The contractor will develop a plan for the replacement of trees removed. Supervision and control of cutting down of trees. Cutting down only necessary trees. 3. Traffic Management Plan(s) are approved by the engineer and effectively running without impact on community or motorists. 4. Site Specific EMP and/or Monitoring reports of the contractor must provide information on environmental measures taken and to be undertaken during the culvert/bridge replacemnts activities each month; inspection to ensure construction uses good environmental management practices in construction such as silt/erosion control, maintaining drainage, hazardous materials not used withing the excavated area, particularly watercourses; design and implementation documentation of rehabilitation measures on embankments to ensure potential erosion and scouring in minimised/prevented.	**Mostly Complied:**Most documents for trees have been provided, and inspections by authorities show compliance of permits. Contractor has been requested to supply tree replanting/rehabilitation Program by final CSC environmental inspection, as no BoQ item for planting trees. Traffic Management Plans, and updates focussing on various areas of works at specific consturction time have been submitted.Additional underpasses and culverts have been added to design and one deleted from the design.
1.3	Lack of capacity to understand and implement environmental mitigation measures, in particular the compliance montroing proceedure	Collect and review written material and expertise indicating that MOTC has provided instructions for the contractors to better use the IEE output. Prepare environmental compliance forms together with Contractor and Subcntractors to secure acceptance.	X		Compliance with ADB Loan agreement, SPS 2009 and PAM with relation to Environmental Issues. Compliance with all required Kazakhstan environmental related laws.	Consultant and Contractor to work with employer representative in Shymkent, and as required the employer in Astana, to understand all environmental compliance/non-compliance issues.	**Partial Compliance:** The Consultant has been working with the employer to ensure Social safeguards are back to ADB required compliance; providing copies of all reports and Intruction letters addressed to contractor (environmental and social safeguards related) to the employer representative in
1.4	Exclusion of land from agricultural use	Shymkent - border of the Republic of Uzbekistan" Plot 705-742 km		X	Making land rights, Article 31,43,44 Land Code of RK. Act on the right of permanent use. Ensuring ADB SPS 2009 and LARF is complied	Due diligence studies by consultant and contractor with Akimat to identify areas along the roadsides that will need permanent acquisition for the road.	**Partial compliance:** Up to Km 28 there is no LAR impacts. Actions addressing potential LAR and economic displacement issues are ongoing at Km 28-37.5. Examination over need for LARP is ongoing and reports will be submitted after investigations are complete.

1.5	Temporary occupation of land	Objects temporary use: - construction site - Shift camp: CH335+35 left 2 km - Asphalt plant site, Batching plant CH 335+35 - Intake site - Borrow area was established Km 708 (RHS)		X	The Contractor shall ensure receipt of all necessary approvals and obtain all necessary permits, registration rights to temporary use of Article 32, 36, 43 of the Land Code of the Republic of Kazakhstan (the Act) and the Technical Specifications P 100, p104. Contract of lease camp Construction of access road to the site surface, Lease Agreement. In comliance also with LARF and ADB SPS 2009.	Copies of Lease agreements and environmental permits to be provided as part of monthly reporting from Contractor to CSC. Any additional documentation proving complainace with ADB safeguards under the Loan Agreement will be requested as necessary	**Partial Compliance:** some agreemnts for Kazygurt site have been provided to the CSC, but more docuemntation is requested/required to ensure full compliance, including environmental authorities approvals for opening borrow-pit at km 30.
2.0	**Construction Phase**						
2.1	Availability of ecological expertise to prepare the SS EMP and to implement all mitigation and monitoring measures with contractor'	Confirm ecological expertise is with contractor at start of construction period: check CV and license certificates. Discuss with contractors/subcontractors the management implications of all included in the EMP	X		Report on environmental monitoring. Results of analyses within MPC normative documents of the RK	Environmental impact assessment of the site was carried out prior to construction. Levels of pollution of soil, air, water, prior to construction were included and is a base for the analysis of contamination of the environment during construction. Contractor conducts monthly environmental monitoring of air, soil , radiation and vibration in pre-selected locations including "plants" sites and every 5 kilometres along the project road. Contractor monitoing report showing monitoing data submitted to the Engineer monthly. The engineer checks analyses for absence of MPC	**Mostly Complied**: A report submitted monthly by contractor documenting only the environmental monitoring results carried out by accredited laboratory. No exceedence of MPC. Contractor instructed to report monthly on other issues under CEMP.
2.2	Lack of good housekeeping practices at both camp sites and work sites, including solid and sanitary waste management - Pollution and littering in any of the construction site camps, work area	Using agreed monitoring checklists, confirm that the items listed in the SS EMP and in the Technical Specifications are fully implemented.	X	X	The presence of labeled containers and the absence of illegal dumps . The contract for waste disposal . Journal of waste formation and waste transportation Obtaining permits : Act on the right to use land , the subsoil use contract / Environmental Passport Enterprise Resolution ResolutionGostehnadzorasanepidnadzora ensure the development of the EIA , and MPE project emission permit Art. 69 of the Environmental Code of Kazakhstan. Resolution on the use of water reclamation project . Environmental monitoring of emissions. Toxic gases , dust levels , noise and vibration in the use of equipment , as well as soil contamination conducted in accordance with the environmental monitoring plan . Process control of the enterprise, systematic monitoring of the bitumen and storage of building materials. Debris and waste products stored in designated areas , followed by removal to a landfill. Water for drinking is stored in airtight containers in a strictly designated area no closer than 75 m from the working area, has a quality certificate; and pit latrines (to kazakhstan standards) are at leat 20m from living areas/work areas .	Installation of containers for collecting waste in working camp. Evidence of instructions to workers for promotion of an ecological behavior. Periodic check of timely cleaning of garbage containers. Check by the Engineer of a sanitary condition of camp. Copies of all permits obtained for actions on-site and at workshops/plants etc are obtained. Solid waste management plans/proposals and implementation to within Kazakhstan environmental standards. Environmental assessments prepared for materials processing Plants, stockpile and spoil dump sites and other solid waste management. Emmission levels along the road and at Plants are within standard safe levels per Kazakhstan environmental standards, as reported in monthly Environment reports from contractor. Weekly observations on site regarding disposal of waste, spoil, materials stockpile, use of hazardous materials, water courses and issigation channels remaining open, and waste management (adequate site selection, recycle, reuse where possible.	**Mostly Complied:** The contractor has continued to propmote good housekeeping and acted on most site specific instructions. The Concrete Plant still remains an area where waste is an issue. The contractor was given the task to develop and coordinate a waste passport, journal of waste transportation and to conclude an agreement on the export of industrial waste. The contract for SMW is available. On industrial waste has not yet been concluded.

					Contractor is responsible for sanitary living conditions in the workplace. Cement silo for concrete plant shall be equipped with necessary filters that must be cleaned regularly or updated . In the process of crushing rubble being permanent water irrigation.		
2.3	Tree removal program damaging the old trees and shelter belt plantings along roadsides - kept to absolute minimum	Inspection of cutting plan and confirmation of consultation with CFH, then review and record re-planting / revegetation efforts.	X		skectchmap of trees intended to cut; programme	Check by engineers of documents confirming the right for trees cutting along the road. Felling permit and permission from the FHC present. The engineer will require the Contractor to develop a number of the skectchmap, location and species of trees, which he intends to remove and then according to this map will control the cutting and planting new plants. Also, the Contractor will be instructed to develop a plan for the replacement of trees removed. Supervision and control of cutting down of trees. Cutting down only necessary trees. Removal of flora and habitats for fauna will be minimised, through obtaining necessary permits, identification and reporting of all fauna observed in the area to where construction is to occur, inclusive of impact mitigation and minimisation measures and rehabilitation plans for after construction	**Mostly Complied:** Permits obtained and tree cutting up to July 2015 was with the permit levels. A replanting program has been requested from the Contractor, although this may be conducted by the employer, given that trees are not in BoQ.
2.4	Flora and Fauna - Damage, destruction, pollution, trees and shrubs and animal habitats along the road.			X	Identified flora/fauna and habitats along the road that will be within the construction zone/footprint, including stockpile and borrow pit sites; sketchmap of destruction areas; program to minimise and plan to rehabilitate. Permit for felling of trees and shrubs in the bodies of the Customer State Forestry. Revegetation by biological remediation. To reduce the impact on the flora of the territory must be carried dedusting work areas. Moving road equipment must be made no closer than 5 meters from the trees.		**Non-Compliance:** No information provided regarding nests destroyed during tree-cutting along the road; damage to vegetation or animal habitat potential in stockpile sites; or other destruction due to culvert developments / emergency ramp development or roadside bays along length of road.Plans for flora/vegetation and rehabilitation of along the road and stockpile/ borrow pit sites have been requested, but not yet submitted by contractor
2.5	Side borrow operations leading to erosion, landslide and destruction of landscape	Undertake inspections to determine the type of borrow operations the contractor is applying and ensure that roadside borrowing is not taking place and is always out of the visual field from the road.	X		Management plan for the side borrow , The absence of borrow pits in the field of view on the road	Control of soil excavation only from the authorized borrow pits; permits or documents authorising use of borrow pits and rental of stockpile sites; environmental assessment (as required by Kazakhstan law) for use of sites; plans for management of sites; rehabilitation plan of borrow pits (as necessary) and of ALL stockpile sites. Ad-hoc plans for rehabilitation of ad-hoc or unauthorised stockpile/borrow pit sites.	**Non-Compliance:** Plan and information has been requested from contractor for unauthorized borrow pit in Kazygurt, but not yet submitted. Only agreement with landuse title holder was received

2.6	Earthworks - transport and storage; managing of dust and noise	Undertake, as part of the construction inspection, regular confirmation that earthworks are handled in an environmentally acceptable manner and dust control is taken at all time, including the use of tarpaulins by trucks carrying fine materials, as well as watering along the haul road sections passing near/thru villages that speed has to be decreased. Haulage through roadside villages and settlement is restricted.	X		Tarpaulins on trucks , watering cars on the road , topsoil covered from rain and wind.	Results of air-quality monitoring by the contractor, each month. Sufficient is dust suppression during excavation, using water carts and hoses; the presence of tarpaulins on trucks transporting dusty materials; monitor the reduction of the speed of trucks near settlements (30 km / h); evidence of community consultation/awareness in which residents are provided information on dust supression actions in the home; dust supression and impact prevention/reduction on materials processing (concrete/asphale/crushing plants).	**Mostly Complied:** During the construction of the road high levels of dust has been produced and a small number of complaints from public was recieved. Dust supression has been requested by the engineer and is being followed in most locations. The speed of the trucks is reduced near the settlements . Vehicles not covered by a tarpaulin.
2.7	Earth (Topsoil) - Destruction, damage and contamination of soil and food production work waste production.	The geological structure of the strip road trails lie alluvial deposits represented proluvial sandy loam , loam , gravel , rocky ground . Silty loam lightweight , conformable between the profile , light brown , macro , solid, semisolid konsistentsii.Mezhdu lower section loam - dark brown color , lumpy, semi-solid consistency to tugoplastichnoy inclusion of gravel and pebbles up to 25% . Sandy loam to silty gravel and pebbles lies at the end of the road in the form of individual layers and lenses ,color sandy brownish-gray . In flood plains and river valleys within and also the foothills of pebble and sandy soil with loam filler in an amount of up - to 40%. Detrital material well and sredneokatanny and consists mainly of sedimentary rocks. Grussy soil - eluvium occurs in a mountain valley bottom and composing its slopes , the soil serves as a placeholder grussy - loam . Rocky soils composing the massif consists of interbedded : silicified shale , silicified sandstones and conglomerates of calcareous cement. Rocky soils durable, slabovyvetrelye. Groundwater workings depth 1 -15m is not opened . Highways "Khorgos - Almaty - Shymkent		X	Removal of topsoil CAP (topsoil) storage and preservation in piles for later use in reclamation. r.100 , p.400 , 500 , " Technical Specifications ." Strengthening land slopes .web and existing gullies in order to prevent soil erosion. Exception flooding of areas adjacent to the highway , land degradation from traffic pollution . Monitoring the quality of soils under terms of environmental monitoring and the conclusion of the agreement to hold it with a specialized organization . Exception Strait oil and waste oils on soil . Park road construction equipment only in designated areas. Performing revegetation . Cleaning areas of debris and waste .	Plans, reports and observation of top-soil stockpiles, including care and management from time of removal to stockpile to re-instatement. Slope rehabilitation and stabilisation plans/documentation and satisfactory completion in identified areas, both on the road and where used as borrow pits. scietific testing of soil quality, air quality, water, noise, radiation. Weekly observation to ensure water courses are kept open, as per contract and constuctions sites are well-drained. On site parking areas for machines, workshops and materials processing plants, appropriate spill containment areas, PPE and other reasonable steps are planned and implemented to maintain prevention of hazardouse materials leaking into envirnment, impacting on workers or public and hazardous and non-hazardous wastemanagement planning is conducted and implemented. Rehabilitation plans ate material processing plants, workshops and along the project are prepared and implemented. Waste Management Plans are approved by Engineer, employer and environmental authorities and are appropriately imlemented.	**Partial Compliance:** Scientific test results in the Contractors Monthly report show soils, air, water, noise and radiation remain with acceptable limits. Top soil are stripped and stockpiled, to be reinstated in rehabilitation roadside vegetation areas and Plants used by the contractors. Part of contractor agreements has included the need to rehabilitate, although rehabilitation plans have not yet been made available. Spill containment and PPE are still partial compliance and cases on non-compliance in issue of leaking hazardous materials (spill containment and leaking cement contaminated water observed). waster Management Plans not fully submitted to Engineer for inspections.
2.8	Potential bitumen / asphalt and concrete production spills and pollution.	Confirm that sighting specifications for both asphalt and concrete plants are according to norms and codes but also that are at least as far away from settlement areas as defined in mitigation table. Bitumen storage and handling is done without spillage.	X		Lack of bituminous works in the winter and in rainy or windy weather , the lack of irruption of bitumen and asphalt	The engineer will check dust suppression during excavation , the presence of tarpaulins on trucks , as well as to monitor the reduction of the speed of trucks near settlements (30 km / h) Avoid contact of hot bitumen with water and dust. Spill containment must be installed . If spillage immediately remove the products of the leak. Check for special PPE at work (gloves and boots). Ban on bituminous works in rainy or windy weather and winter. Storage and protection of bitumen and emtpy bitumen drums. Inspection of Asphale Plants to ensure spill containment, PPE and other health and safety is maintained. Pollution emmission levels recorded in monthly reports.	**Partial Compliance:** cement contaminated spills on conccrete plant and on site not cleared immediately on identification, No asphalt works to date. Pollution emission recorded within allowable limits. PPE supplied, but not always worn apporpriate to the action at hand. Dust supression mostly occuring.

2.9	Management of petroleum products such as fuels, lubricants and bitumen, without spills and contamination being practiced by the contractor and all Subcontractors. Soil, air, fire probablility - Fuel storage and chemicals	Using a monitoring checklist the eight specifi spill mitigation table will be assessed and reported on. Unannounced (spot) inspections at worksites, work camps, deisel generators, technical workshops, maintenance yards and fuel storage facilities. Any non-compliance to be rectified immediately.	X	X	Lack of spots from fuels and lubricants on the ground and construction sites. Storage of all fuels and lubricants produced in sealed containers with fencing and fire-fighting equipment. Refilling road construction machinery made fueler "mobile gas station", which has a certificate of conformity and approval for transport of dangerous goods. Not allowed spilling fuel and lubricants. Regular monitoring on the use of fuel. In case of spillage of petroleum products strait place is filled with sand, collected in a special container and transported to the designated place. All-purpose machines shall be equipped with a container with sand, tray, shovel. Collected in a special container and transported to the designated place. All-purpose machines shall be equipped with a container with sand, tray, shovel.	Inspections of contractor-run sites to observe and ensure ppropriate storage conditions for the specific products, including spill containment areas, fire equipment, first aid kits and emergency management procedures. Appropriate hazardous waste containment structures and spill containment plans must be in place and effectively operating. Engineer will periodically inspect construction sites also to ensure appropriate management of spills of fuel , lubricants and bitumen on the jobsite. In case of spills and stains the Conultant will provide written notice recommending its removal. In case of spill, the engineer will be informed and will inspect for appropriate waste management method and that the spill is cleaned, in consultation with authorities, as required. Observations on-sites and materials processing plants for containers to control oil, fuel and bitumen spills and appropriate hazardous waste containment structures and spill containment plans in place and effectively operating	**Partial Compliance:** By reporting date, still observing hazardous materials without full spill containment protection. In some locations have first aid faciltieis and minimal fire fighting equipment, which has been identified and recommendations made in H&S inspections.
2.10	Earth, air, water, soil cover: Construction site, Batching plant, Asphalt plant. Dust, levels of air pollution, soil pollution, noise pollution impact water sources			X	Gaining permits : Act on the right to use land , the subsoil use contract / Environmental Passport Enterprise Resolution ResolutionGostehnadzorasanepidnadzora ensure the development of the EIA , and MPE project emission permit Art. 69 of the Environmental Code of Kazakhstan. Resolution on the use of water reclamation project . Environmental monitoring of emissions. Toxic gases , dust levels , noise and vibration in the use of equipment , as well as soil contamination conducted in accordance with the environmental monitoring plan . Process control of the enterprise, systematic monitoring of the bitumen and storage of building materials. Debris and waste products stored in designated areas , followed by removal to a landfill. Water for drinking is stored in airtight containers in a strictly designated area no closer than 75 m from the working area, has a quality certificate . Contractor is responsible for sanitary living conditions in the workplace. Cement silo for concrete plant shall be equipped with necessary filters that must be cleaned regularly or updated .	Copies of permits, agreements and environmental assessments (as required by law) for each specific site. Monthly environmental monitoring report showing environmental emmissionss test results along the road and at the materials processing sites. Management Plans of contractor reports on measures to mitigate through recycle and reuse of materials prior to landfill. Permits and minutes of discussions/approvals by authorities for landfill and waste disposal of various types of waste materials from the project processes, including prior approvals from engineer. Hrealth and safety monitoring/audit, conducted bi-annually and "ad-hoc check" by engineer regarding waste management, dirinking water supply, sanitation, office/dormitory/other workplace condition to Kazakhstan or better standards (and as per FIDIC - construction contract - requirement)	**Partial Compliance:** Permits not made available to CSC. Laboratory tests indicate air, water, noise, radiation, soil are within permissable limits. H&S monitoring and drinking water supply inspections have shown to be satisfactory. waste management and conditions of sanitation, on some sites are partly satisfactory, fitting a minimum standard (different to Kazakhstan acceptable leve), but not FIDIC standards, on some sites and above standard on other sites.

2.11	Potential deficiencies in surface water drainage at construction areas	The PMU will inspect and verify that adequate consideration and drainae works and protection have been provided	X		Site must be well-drained to enable rapid return to works after prcipitation, minimise water run-off contamination and ensure culverts/underpass construction do not blocak drainage - Contract requires that ALL watercourses remain open. They must be free of contaminants as much as possible, or mitigation measures imposed.	Field inspections by engineers and specialist of CSC, observing site left well-drained in case of weather. Ensuring all water courses and drainage remains open (as required by contract) in all areas along the road, including culverts and underpasses being constructed. Monthly Environmental reports will show plans on how construction areas will maintain drainage.	**Compliant:** to date, when rainfall, is satisfactory. However, Monthly Environmental reports to do not indicate plans on maintaining drainage along the project roject.
2.12	Construction related air pollution	The PMU will inspect and verify that adequate consideration and drainae works and protection have been provided	X		finding of level of air pollution within the standards established in RK	Monthly air quality monitoring results and within Kazakhstan standards. Supervision of regular dust supression on construction sites; existence of tents/covers on trucks, storage of top soil protected from rain and wind; trucks diving within speed limit	**Mostly Compliant:** Air quality tests have indicated within permissable limits under Kazakhstan Law**.** Dust supression does occur, although could be improved. Tarpaulins not necessary, due to materials in the trucks not craeting dust, as long as these are not overloaded.
2.13	Highways "Khorgos - Almaty - Shymkent - border of the Republic of Uzbekistan" Plot 705-742 km, construction sites, field camp. LocationCH24+55-335+35 rightside. Dust-laden air pollution and exhaust emissions: CO, NO2, SO2, hydrocarbons, soot.	Highways "Khorgos - Almaty - Shymkent - border of the Republic of Uzbekistan" Plot 705-742 km, construction sites, field camp. LocationCH24+55-335+35 rightside. Dust-laden air pollution and exhaust emissions: CO, NO2, SO2, hydrocarbons, soot		X	Conduct systematic dedusting water. Transport of the material to produce a closed canopy vehicles. Installation of signs , speed limits . Application of high-quality fuel. Conduct environmental monitoring under the Agreements with sanitary epidemiology surveillance authorities or by independent accredited laboratories , according to the environmental monitoring plan . Develop EIA , obtain the opinion of public examinations , to get permission to release emissions at all work areas in accordance with Article 69 Environmental Code RK. Whenlaying asphalt mixtures containing toxic hydrocarbons, should ensure that the work area uniform rhythm of technological tools and transport. Unloading asphalt mixtures produced only in receiving hoppers asphalt . Compliance with repair of machines . Traffic control . Strict observance of sanitary norms SanPin number 3076 from 18.09.2004g "Requirements to the atmospheric air of populated areas" SanPin "Content the exposure zone No. 841 dated 03.2004	Copies of emmission permits from environmental authorities. Monthly air quality measurements within acceptable levels, as per Kazakhstan standards and laws, along the road in Contractor environmental reports. Weekly (minimum) inspection of construction with working water carts and dust surpressing methods and trucks with covers. Speed limits of 30-50km per hour during construction, depending on location and according to police requirements. Workshop inspections, during health and safety audits and air quality measures reported in Contractor monthly reports at workshops. measurements to also be conducted at Asphalt Plant, even if Plant is sourced from Shymkent (and not set up by contractor).	**Partially Compliant:** Emissions permits not submitted to CSC. However, Montly reported air quality results in camps and along the road are within permissable limits. Water carts used to supress dust on site as much as possible, and is continually emphasised for improvement by CSC to Constractor/sub-contractor.

2.14	Noise, vibration and air pollution	Cities and towns along the reconstructed road:. Distance to property from 100 meters		X	Monitor the status of roads and perform " requirements to air localities" SanPin 3076 from 18.09.2004 "Content the exposure zone number from 841 03.2004g . " According to the Plan of environmental monitoring before construction to perform air monitoring to determine baseline air , noise and vibration according to P100 , P.106 " Specifications" in the areas where settlements at a distance of less than 200 m from the work area to carry out work only daytime (8-18 h). Accommodation units to produce sound absorbing sites or in tents (compressor) , use with the road-building machinery housings and hoods. The operating personnel must be provided with noise protection facilities in areas with a noise level of 85 dBA. Speed limits of freight transport in settlements. Control of the optimal mode of construction machinery. Controlling the level of noise (not to exceed health	Monthly noise and air quality measurements within acceptable levels, as per Kazakhstan standards and laws, along the road in Contractor environmental reports. Noise and emmissions permits. No nigth work in community areas, unless specifically approved by engineer after full consultation with affected community. Health and Safety Checks show ear/dust protection as appropriate to the activity taking place in a location. Minutes of meeting consulting with communities about noise and vibration potential impacts also indicating contractors methods to minimise impact and what community can additionally do if they choose. Traffic management plan, indicating control of speeds and traffic movement through a site during construction. Copies of thrid party insurance, which covers damage from vibration and/or funds to compensate for damage.	**Complied:** Noise and air quality scientific tests reported monthly indicated within permited levels, bases on Kazakhstan Environmental / GOST standards. H&S inspections indicate workers are sometimes not wearing the apropriate PPE for dust and noise hazards. Traffic Management Plans overall, and for specific sites scheduled for construction, and when traffic conditions are to change due to changes in construction, are regularly submitted to police, Akimat and CSC. It is assumed insurance certificates copies are submited to employer dierectly by the contractor.
2.15	Water Environment - Water pollution in the construction of roads, bridges, culverts, water intake for technical purposes	Water bodies in the vicinity, and crossing the road construction site: - Reservoir Akzhar. - Reservoir with. Rabat -p. Badam intake site: Shift camps and work areas for drinking water supply: Highway, Batching plant, Asphalt plant.		X	Water quality monitoring of surface sources to spend on contracts with agencies or sanitary epidemiology supervision by independent accredited laboratories according to the environmental monitoring plan . Quality of surface water sources must match " Sanitary requirements for water sources , drinking water supply , places of cultural and household water security and water bodies " from July 28, 2010 № 554 Making water use permit . The apparatus of water treatment facilities in the discharge of water from the roads and bridges. In the case of petroleum products in wastewater and rainwater to clean the oil wells. Water for technical needs only be equipped on the intake sites in locations agreed with the supervisory authorities for water sources. Accommodation building sites for construction of bridges , parking and road equipment vehicles within the coastal bands of water protection zones are not allowed. Doing work in floodplains allowed only with the permission of water protection , and sanitary authorities. Washing vehicles and road-building equipment must only be installed in areas equipped with wastewater treatment facilities. Pollution of watercourses and domestic productionwaste is not allowed. To prevent water erosion must be done to strengthen the bottom of the slopes and channels culverts.	Permits from Government authorities; Water quality testing results in Monthly environmental reports from Contractor. Full spill containment proceedures around fuels/oil/bitument/cement and other hazardous wastes. Machines parked 50-100m away from water courses when not used. Inspections to ensure siltation devices to catch siltation flow into water from construction in watercourses. test results of water supply in all locations where there is long-term staff such as materials processing plants, kazygurt contractors site and Constactors Shymkent site etc - in Monthly environmental reports. Permits for emission of wastewater and wastewater treatment facilities inpspected and approved as apporiate by engineer and environmental authorities. Soil stability and erosion control plans on all sites and culverts submitted to engineer for approvals.	**Partial Compliance:** Scientific Tests indicate water quality at Aktas river (flows part of the year) are within acceptable limits. Spill Containment, to date is not fully to standard (110% of stored material). Permits for waste water and waste management not yet supplied to CSC.

2.16	Social environment and public relations Gaseous pollution, dust, noise, vibration, violation of social conditions along the project road			X	Before construction, the contractor in conjunction with the employer and local government conducts public hearings on the construction project to assess the impact on the environment and socio-economic status of the population. Ensure the optimal operation of motor vehicles and road-building machinery. Regular dust removal in settlements to ensure the safety of residents of settlements of roadworks set traffic signs regulating the speed and direction of movement of vehicles. Installed fencing work area and settle pedestrian crossings. Set of visual-information boards, which	Minutes of consultations and pulic hearings. During construction, any misuderstandings of design of operations triggering additional consultations/public meetings and awareness - minutes of meetings, photographs, lists of attendees included in environmental monthly reports. Vehicle maintenance records inspected biannually for consultants reports; statistics on break-downs of major equipment preventing construction activities to remain on schedule.	**Complied:** Public meetings and individual consultations have been held at the beginning of project, and continue. Public safety is being complied, with barriers and traffic signs intalled and police monitoring traffic safety. Dust supression activities continue.
2.17	Natural, historical and architectural monuments Natural, historical and architectural monuments damage and/or destruction			X	The Contractor shall conduct a full research papers (R & D) on the monuments of archeology and historical and cultural heritage, located in the territory. Compiling a scientific report on the results of research. Coordination of research results into local authorities. Conducting historical and cultural examination Monuments investigated for their withdrawal from the State list of historical and cultural heritage.	Photographs and inventory database of all sites which have local, national and international significance, t be updated if new sites are discvered. Access to be maintained throughout the project and proved by appropriate traffic management plan updates, observations and numbers of complaints regarding accessibility.	**Complied:** Actively allowing accesses now, but documentation is minimal.
2.18	Reporting on the implementation of the Plan for the protection of the environment and environmental monitoring - Ensuring compliance with environmental legislation To minimize the impact of production processes on a nature environment and human health			X	The contractor should be fully reporting requirements IEE indicating areas and measures taken. The monthly report shall include the results of the IEE and environmental monitoring, as well as the results of the site visits. Promptly report appears in pollution of the environment and the planned mitigation measures. The Contractor shall establish and maintain procedures to identify the responsibility and authority with respect to identifying and exploring, taking measures to mitigate the impacts caused by the environment.	Full Monthly reporting of laboratory results and compliances with EMP/CESMP, permits, plans updates, incidents for the month etc. Evidence of capacity building by the CSC in preparing compliant monitoring and reporting	**Mostly Comliant:** Monthly reports being submitted, although only presents laboratory testing results. Other aspects, problem issues and activities complying with Environmental requirements and CEMP have not been reported. CSC has provided instructions and working with contractor on-site to further develop environmental management requirements.
3.0	**Operations Phase**						
3.1	Post construction operational audit, 1-year after road completeion	The owner of the road shall organise and undertake a complete environmental audit of the project. This audit is to be undertaken by Obleast-level DOEP. Findings must be reported within 15 days of completion of the field inspection and actions to repair any non-compliance conditions started within 5 days of noification by the Inpection Department. All Actions must be completed within 30 days	X		Lack of irreversible changes in environment. Pollution indicators within norm. All areas must be rehabilitated back to orignal pre-project state or to which has been agreed with owner of specific site.	Control of pollution by road after its entry into operation is engaged by the environmental department in SKR. Rehabilitation Plans and Final reports approvals from contractor and engineers.	**Not due yet:** Baseline scientific test results are available from the monthly reports by the contractor. Baseline PPMS submitted in March 2015, analysing indicator for road project benefits. Final report will be submitted at end of Project CSC Project Completion reportst not due yet.

3.2	Management of traffic generated air pollution	As traffic growh is projected o reach 7% per year, a site specific monitoring at roadside settlemetns will be required. Parametres to be monitored are in line with the norms and codes of the national envronmental legislation Monitroing Report	X		Pollution of the atmosphere within the MPE which will be established for operation of this road.	Control of air pollution after the introduction of the road in operation will lead the Department of Ecology in SKR. Traffic police will control the stream of cars, reducing the cycles of decrease and increase of speed and the engine at idle. These measures have to lead to the general decrease in level of emissions, despite the predicted increase in total amount of traffic.	**Not due yet:** Baseline air quality results are available from the monthly reports by the contractor.
3.3	Management of Traffic - genrated noise	Noise impacts are expected are expected to marginally affect human settlements due to the remoteness, Near or at settleemnts (bypasses) noise levels need to be tested to confirm or modify the measures taken. Parameters to be monitored are in line with the norms and codes of national environmental legislation. Monitoring Report.	X		Data of monitoring. Finding of noise level within admissible values.	Control of the environment after its commissioning will be provided by the Department of Ecology in SKR. Road committee, in collaboration with environmental authorities will determine the feasible and effective measures to enforce the speed limit. On the territory of the settlements will be reviewed establishment of the natural noise barriers (fences) on the basis of a special monitoring program.	**Not due yet:** Baseline air quality results are available from the monthly reports by the contractor.
3.4	Risk of Road accidents with pedestrians and domestic animals due to improved roads and faster speeds and greate traffic volumes	Report on the effectiveness of proposed measures for pedestrian and animal crossing structures, and make further recommendations to improve road safety with respect to these aspects. Modify as applicable, speed limit signage, pedestrian use zones, and provide more cross walk lighting. Reconsider, as necessary, strengthening and extension of animal fences along road. Accident monitoring repot.	X		Statistical data on the low accident rate on this section of road	For a data control, road committee, in cooperation with traffic police will put into operation restriction of speed by means of increase of radar supervision, better and more frequent signs and increased penalties for speeding. In villages the owner will improve designation and will include yellow fires where it is possible. measures include - traffic counts and accident statistics.	**Not due yet** Police continue to maintain speed restrictions in areas where construction is completed and open to traffic, design includes road safety measures and furniture.
3.5	Risk of Hazardous materials spills due to increased Traffic	Elaboration of a contingency plan in case of major emergencies, and plan responsibilities for different scenarios.	X		Plan of action in emergency situations	road committee, in cooperation with committee of emergency situations will prepare an emergency management plan, in line with national, regional and Oblast Emergency management plans and and facilities. Emeegency Management Plans include tyopes of potential emergencies, procedures and responsibilities for preparedness/response/recovery/mitigation of emergencies.	**Not due yet**

ANNEX 2 – ENVIRONMENTAL MANAGEMENT STAFF STRUCTURE OF CONTRACTOR

Структура экологического контроля
Environmental management structure

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Kalaubaev B.

Инженер-Эколог
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Utenov U.

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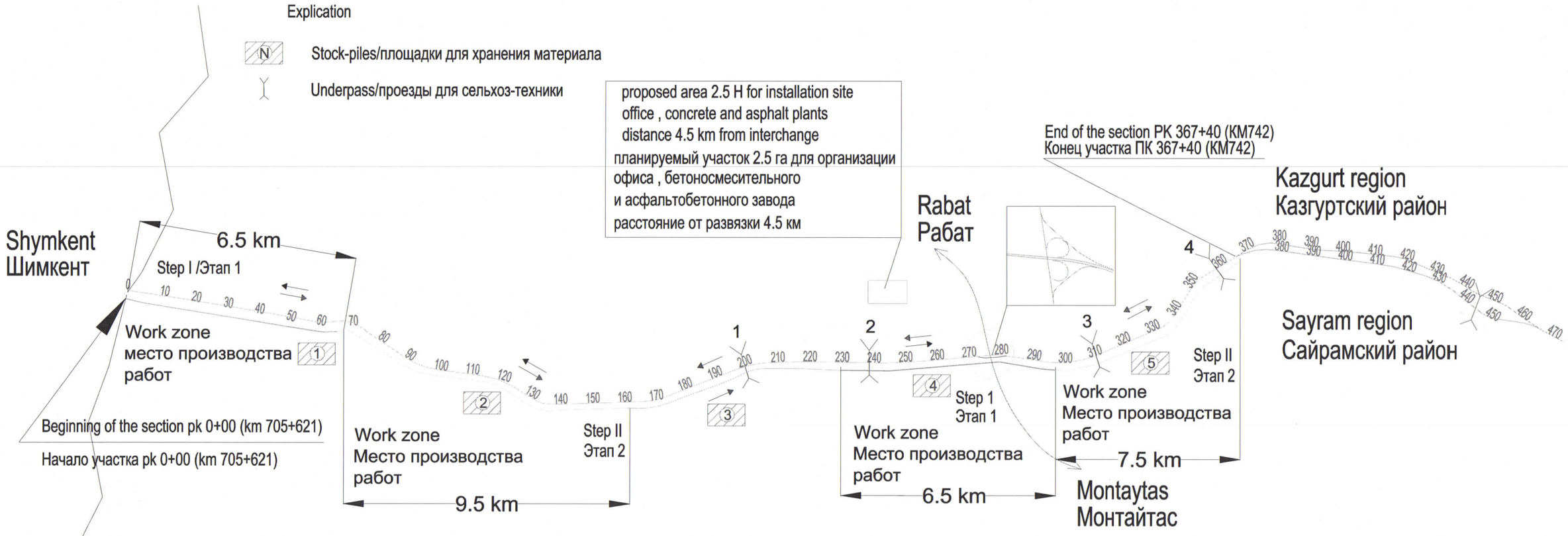
ANNEX 3 – ENVIRONMENTAL SAMPLING POINTS

Working project of reconstruction of road A-2 "Border of the Republic of Uzbekistan (Tashkent)-Shymkent-Taraz-Almaty-Horgos through Kokpek, Koktal, Blagoveshenka access roads to the border of the Republic of Kyrgyzstan" section km 705 - km742

Рабочий проект реконструкции автодороги А-2 «Граница Республики of Uzbekistan Узбекистан (на Ташкент)-Шымкент-Тараз-Алматы-Хоргос, через Кокпек, Коктал, Благовещенку с подъездами к границе Республики Кыргызстан» участок км 705 - км742



Main indicators of construction /Основные характеристики строительства

N п/п	Name	un. meas.	quantity
1	Construction length	км	36.74
2	Technical category of road - 1B		
3	Number of traffic lanes	pcs	4
4	Width of the road bed	м	27.5
5	Dividing strip	м	5
6	Width of the road way	м	2x7.5
7	Type road pavement-heavy (concrete slabs) Road carpet		
8	Natural sandy gravel fraction 0 - 70mm	$м^3$	462 039
9	The base from the optimal mix macadam-C6 processed with cement 7% H-20cm	$м^3$	191350
10	Road concrete cl. In-30 fr. (M400) 10-20mm H-27cm	$м^3$	218184
11	Asphalt coat (ШМА-20)	$м^3$	31227

N п/п	Name	un. meas.	quantity
11	Paid volume of excavation on the main road	$м^3$	625 520
12	Small artificial structures on the main road (34 pipes+2 culverts)	pcs	36
13	Small artificial structures at the junction	pcs	53
14	Construction of new bridges - interchange	pcs	1
15	Construction of junctions to the same level	pcs	82
16	Construction of interchanges at two levels	pcs	1
17	Arrangement of auto pavilions (bus stops)	pcs	6
18	Construction of rest areas	pcs	4
19	Construction of a viewing underpass for trucks a/m	pcs	4
20	Road signs	pcs	545
21	Signal poles	pcs	2 640
22	Construction of sidewalks	пог.м	792
23	Barrier fence	пог.м	49 212
24			

Required by contract рекомендуемое контрактом

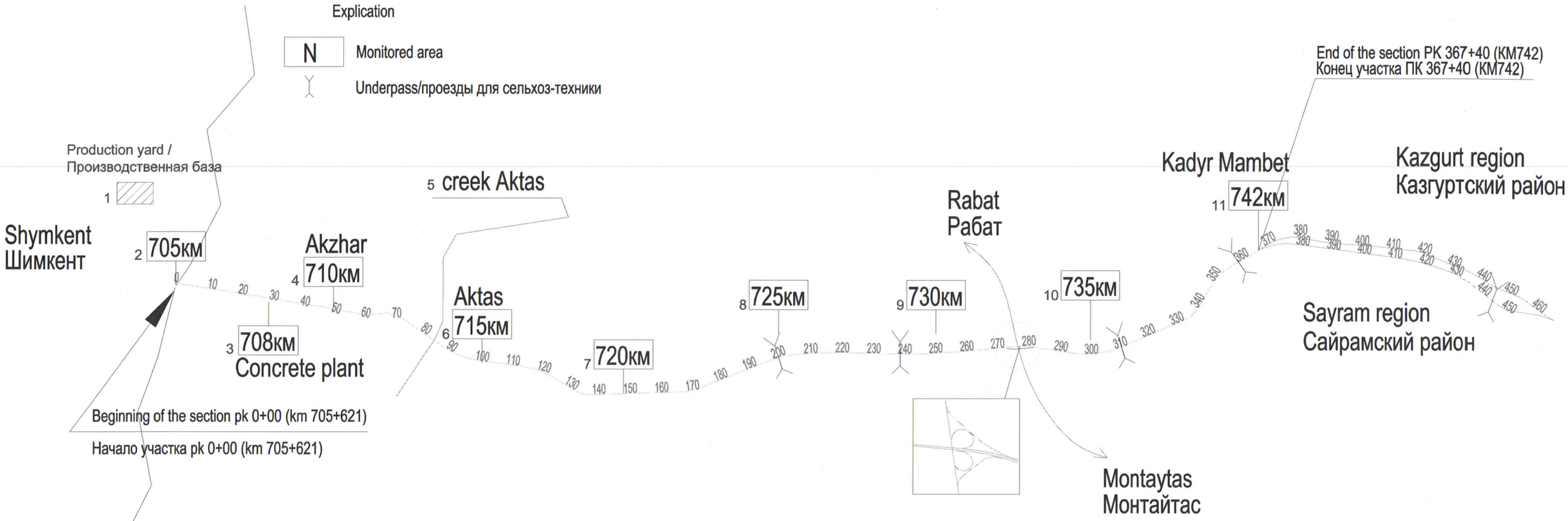
Type and property of the equipment For Each Lct	Minimum required quantity Per Each lot
Cement concrete factory (min240 m3/h)	1
Crusher (min.capacity 200m3/h)	1
Cocrete paver (min.width 9-11m)	1
Paver for base laying	1
Bulldozer	6
Motor grader (min.140 hp)	4
Excavator (0.65 м3 - 1.0 м3)	4
Cutter	1
Laboratory	1

Contractor equipment Оснащённость подрядчика

Type and property of the equipment For Each Lct	Quantity
Cement concrete factory (min180 m3/h)	2
Crusher (min.capacity 200m3/h)	1
Cocrete paver (min.width 9-11m)	1
Paver for base laying	1
Bulldozer	6
Motor grader (min.140 hp)	4
Excavator (0.65 м3 - 1.0 м3)	4
Cutter	1
Laboratory	1

Working project of reconstruction of road A-2 "Border of the Republic of Uzbekistan (Tashkent)-Shymkent-Taraz-Almaty-Horgos through Kokpek, Koktal, Blagoveshenka access roads to the border of the Republic of Kyrgyzstan" section km 705 - km742

Рабочий проект реконструкции автодороги А-2 «Граница Республики of Uzbekistan Узбекистан (на Ташкент)-Шымкент-Тараз-Алматы-Хоргос, через Кокпек, Коктал, Благовещенку с подъездами к границе Республики Кыргызстан» участок км 705 - км742



№	Sampling locations	Monitored parameters	Distance to facilities
1	Production yard	Air,physical parameters(noise,vibration)	Production yard in the Saule community
2	km 705	Air,soil,physical parameters(noise,vibration)	5-10 meters from the road
3	Concrete plant	Air,soil,radiation,physical parameters(noise,vibration)	Production yard 200 meters from the road
4	km 710	Air,soil,physical parameters(noise,vibration)	near the village Akzhar 10 m. from the road
5	km 713	water	Aktas creek , 300 m. from the road
6	km 715	Air,soil,physical parameters(noise,vibration)	near the village Aktas 10 m. from the road
7	km 720	Air,soil	10m. from the road
8	km 725	Air,soil	10m. from the road
9	km 730	Air,soil	10m. from the road
10	km 735	Air,soil	10m. from the road
11	km 742	Air,soil,physical parameters(noise,vibration)	10m. from the road, near Kudyr Mambet village