centerra GOLD

KUMTOR
КУМТОР

ENVIRONMENTAL AND SUSTAINABILITY REPORT **2012**

About Kumtor Mine

The Kumtor Mine is the largest western-operated gold mine in Central Asia and has been operating since 1997, having produced approximately 8.7 million ounces of gold by December 31, 2012. Kumtor Gold Company (KGC) is the license holder for the Kumtor deposit. The Kumtor open pit mine is located approximately 350 kilometers southeast of the capital Bishkek and 60 kilometers north of the border with the People's Republic of China, at an altitude of 4,000 meters above sea level in a partially glaciated permafrost zone in the Central Tien Shan Mountains. The year 2012 marked the sixteenth year of the Kumtor Mine operation in the Kyrgyz Republic and the ninth year under the parent company,
Centerra Gold, Inc. (Centerra). The current end of the life of the mine is 2026.

About Centerra

Centerra is the parent company of and owns 100 percent of Kumtor Gold Company and Kumtor Operating Company. Centerra is a Canadian-based and publicly listed gold mining company engaged in operating, developing, acquiring and exploring gold properties primarily in Asia, the former Soviet Union and other emerging markets worldwide. The Company is the largest Western-based gold producer in Central Asia with one operating gold mine located in the Kyrgyz Republic and one in Mongolia.
The Kyrgyz Republic, through the state owned Kyrgyzaltyn Open-End Joint Stock Company, is Centerra's largest shareholder, owning 77,401,766 common shares, which represents 32.75 percent of the outstanding shares. Additional information on Centerra is available at SEDAR (www.sedar.com) and on the company website (www.centerragold.com).

About this Report

This is Kumtor's Annual Environment and Sustainability Report for the 2012 financial year (ending December 31, 2012). This report is focused on the Kumtor Mine in the Kyrgyz Republic. Kumtor's performance data includes only Kumtor's own operations, unless noted otherwise, although the policies of Centerra and Kumtor apply to both employees and contractors. Financial amounts are reported in American dollars (US$) unless otherwise stated.

For the first time, we have adopted Global Reporting Initiative's (GRI) third generation (G3) Sustainability Reporting Guidelines and GRI Mining and Metals Sector Supplement (see www.globalreporting.org).
This is in addition to addressing the key reporting requirements contained in Kumtor's Environmental Management Action Plan.

In determining the scope content and boundaries of this report, we considered a materiality assessment process described below. We self-declare this report at GRI G3 B-level. A GRI Standard Disclosure Index
is available on our website. Please see our Cautionary Note Regarding Forward-looking Statements on the inside back cover of this report. This report will also be made available in the Russian and Kyrgyz
languages.

As we continue to further improve our systems and approaches, we welcome your comments and suggestions on how we can further improve our annual environmental and social reporting and practices. You can find contact details on the back cover of this report.

Materiality Assessment

As part of our reporting process, we conducted a review to identify our most significant (or material) sustainability issues. These are issues that are considered important by several key stakeholders, have the ability to significantly impact our business performance, and can be influenced by our actions.

We used three complementary approaches to identify our material environmental and sustainability issues. First, we listened to our key stakeholders about issues and concerns they expressed about our operations. These are outlined in the Social Responsibility section of this report. Second, we reviewed the reporting requirements under our Environmental Management Action Plan and the content of our previous annual environmental report to streamline our reporting
and introduce GRI reporting framework.
Third, we benefited from Centerra's corporate membership in, and support of industry and multi-sectorial initiatives. These include the World Gold Council and the Extractive Industries Transparency Initiative. We also participate in a variety of local and international events and conferences. These activities inform our judgment and allow us to remain abreast of emerging trends and standards.

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MESSAGE FROM THE PRESIDENT

The year 2012 was a challenging one for Kumtor because of technical issues related to glacial ice and waste rock movements that resulted in a substantial reduction of gold production. We were also subject to an extraordinary level of scrutiny by a series of Kyrgyz government commissions and inspections, which continued well into 2013.

Maintaining safe operations and ensuring responsible mining practices remain our top priorities.
We responded to the technical challenges by remaining diligent, leveraging local and international expertise, and staying focused on our goals. We responded to the additional interest in our operation by providing open access to our operation, documents and staff.
We also supported this process by inviting independent international experts to review the commissions' reports and resolutions, and our overall environmental performance. The resulting reports, including those generated by international experts commissioned by the Kyrgyz government, are published on Kumtor's website.

We took note, and have highlighted in this report, the material environmental and sustainability issues of interest to our key stakeholders. I touch on our health and safety performance, project benefits, biodiversity opportunities, environmental claims, and expanded life of the mine below. Other topics, including water quality, waste management, geotechnical and natural hazards, and mine closure are detailed in the report.

We expect that these issues, along with the need to continue to engage constructively with our stakeholders, will remain key sustainability risks and opportunities for our operation over the short and medium-term future.
By the start of the fourth quarter in 2013 we expect to be mining in the high grade area of our deposit (the SB Zone) and expect stable operations in the coming years.

Health and Safety: In 2012, we allocated a budget of $1.6 million for occupational health and safety and invested over 12,000 staff-days in related training.
Our statistics, such as a reportable injury frequency rate of 0.19 in 2012 highlight the fact that we continue to prioritize the health and safety of our workers and continually strive to improve our performance.
These statistics also demonstrate that our health and safety performance is superior to comparable mining operations in many parts of the developed world.

"Our long term vision is to continue to adapt and evolve both our mining operation and our sustainability programs in an ethical and responsible way."

Project Benefits: Despite a 46 percent decrease in gold production in 2012 from 2011, we continued to provide substantial benefits to the Kyrgyz Republic. By the end of 2012, the operation had a workforce of 3,361.
Ninety-six percent of our full-time employees were Kyrgyz nationals. Payments made within the Kyrgyz Republic in 2012 were $302 million, bringing the total of such payments since 1994 to $2.15 billion. Payments in 2012 included over $100 million in taxes and mandatory payments, over $66 million in employees net wages, and over $74 million in local procurement. Our strategic community investment programs in 2012 included $21 million for a nation-wide micro financing program, and over $3.0 million for sustainable development projects and other community contributions. This is in addition to contractual contribution of 1 percent of Kumtor's gross revenues to the Issyk-Kul Regional Development Fund. We expect to increasingly structure and deliver our community investment programs in collaboration with other organizations ranging from non-governmental organizations (NGOs) to multilateral institutions.

Biodiversity: In 2012, we reconnected with our conservation-oriented stakeholders, and expanded our stewardship initiatives. These date from the mid-1990s with our support in establishing the Sarychat-Ertash Nature Reserve and other conservation initiatives involving grants from the International Finance Corporation and the European Bank for Reconstruction and Development. In 2012, we conducted a workshop with local and international experts to formalize our Biodiversity Management Strategy and Plan, the first such private sector initiative in the Kyrgyz Republic. This plan is available on Kumtor's website. We also signed a memorandum of understanding with Flora & Fauna International, a conservation NGO, to further support local and regional conservation and capacity-building initiatives.

Environmental Claims: In December 2012, Kumtor received a series of claims or directives from the State Inspectorate for Environmental and Technical Safety Agency and the State Agency for Environment Protection and Forestry totaling approximately $152 million. These claims focused on allegations relating to land use, water use, waste management, and waste rock disposal practices. At the time of writing this report, these claims are unresolved and an additional claim of $319 million has been received for environmental charges.
These claims are exaggerated or without merit, and ignore the high standard of performance at our operation. We remain committed to work diligently with the Kyrgyz government to fairly resolve them.

Expanded Life of Mine: Kumtor's proven and probable reserves (as of December 31, 2012) increased by 58 percent and total 9.5 million contained ounces of gold. This has resulted in an extension of the life of the mine by a further five years to 2026. In addition to the open pit reserves at Kumtor, there are still 1.9 million contained ounces of high-grade underground inferred resources below the expanded open pit limits.

Our long term vision is to continue to adapt and evolve both our mining operation and our environmental and sustainability programs in an ethical and responsible way. We expect to continue to generate substantial and sustainable project benefits for all of our stakeholders.

We welcome feedback on the new format adopted for this report and encourage comments on how we can further improve our environmental and social performance in the future.

Michael Fischer
President, Kumtor Gold Company

Environmental and Sustainability Snapshot

Pillars	Challenges & Achievements 2012	Targets 2013
Project Benefits	• 46 % decreased gold production • Workforce of 3,361 • $302 million payments within Kyrgyzstan, including $21 million for micro financing, over $3 million for sustainable development projects, and $4.6 million to Issyk-Kul Regional Development Fund.	• Return to normal operations and gold production by end of 2013
Health & Safety	• No fatalities, reportable injury frequency rate of 0.19	• No lost time injuries • Reportable injury frequency rate of 0.36
Environment	• Government commissions' inspections resulted in a series of claims for alleged environmental and operational violations totaling approximately $152 million in 2012, and an additional $319 million in early 2013. Kumtor believes these claims are exaggerated or without merit • Developed and published Kumtor's Biodiversity Management Strategy and Plan • No significant environmental incidents or spills	• Improve landfilling and waste management practices • Review water quality compliance standards for ammonia and sulfate • Update Conceptual Closure Plan • Implement Biodiversity Management Strategy and Plan • Develop and implement early warning and engineering solutions to minimize Petrov Lake outburst flood risk • Evaluate options to mitigate tailings dam dust emissions • Improve environmental data management and reporting systems
Community	• Implemented new Community Development Plan • Formed three regional committees for greater community oversight on activities and development	• Conduct socio-economic baseline study in Issyk-Kul region • Implement a web based system to support management of stakeholder engagement and community investment
Governance & Standards	• Cyanide code certification of Kumtor's transport of cyanide from Balykchy to mine site in the Kyrgyz Republic	• Develop standards to encourage development of local business through procurement

GOVERNANCE AND STANDARDS

We believe that the way we conduct our business and the way employees act in fulfilling their job responsibilities are fundamental to achieving our business objectives.

PHOTO | We expect that all directors, officers, employees, and contractors conduct themselves in accordance with the highest ethical standards

Our Approach

Kumtor operates under the governance and standards set by Centerra, whose board of directors and management believe that sound and effective corporate governance is essential to our performance. We have adopted practices and procedures to ensure that these governance practices are followed.
We expect all directors, officers, and employees to conduct themselves in accordance with the highest ethical standards. These are detailed in three policies – a) a Code of Ethics for officers and employees; b) a Code of Ethics for directors, and c) an International Business Conduct Policy for all directors, officers and employees. Kumtor also has a "whistle-blower" program, which provides directors, officers and employees a means to anonymously file complaints or submissions in good faith regarding potential ethical obligations by other directors, officers and employees. Directors, officers and employees are also encourage to speak to in-house legal counsel, human resources, or their managers if they have any concerns or questions. We provide on-going training on these policies for all of our directors, officers and employees.

The Code of Ethics for employees addresses, among other things, avoidance of conflicts of interest, protection of confidential information, compliance with applicable laws, rules and regulations, adherence to good disclosure practices, and procedures for employees and third parties to report concerns with respect to accounting and auditing matters. Employees with such concerns may report these directly or confidentially or anonymously. In late 2012, we also initiated additional training at Kumtor related to our Code of Conduct, and introduced a phone "hot line" to provide support to staff with related questions.

The Code of Ethics for directors require Centerra's directors to promptly report all actual, potential or perceived conflicts of interest to the corporate secretary, who is in turn required to bring such conflicts to the attention of the Nominating and Corporate Governance Committee. Directors may not participate in discussions, deliberations, or decision-making for matters in which they have a conflict of interest. Additional details relating to corporate social responsibility, the health and safety policy, and environmental policy are posted on Centerra's website.

The International Business Conduct Policy is our anti-corruption policy and is an important component of Centerra's and Kumtor's commitment to conduct business in an ethical and lawful manner, wherever we work. The International Business Conduct Policy prohibits directors, officers and employees from making, offering, or promising, "anything of value" to a "Government Official" for an improper purpose such as (without limitation) obtaining preferential treatment, obtaining business, or securing or amending mining

Kumtor's objective is to conduct a safe, responsible and profitable mining operation, consistent with the principles of sustainable development. In endeavoring to achieve our strategic objectives we will:

- Strive to be a leading performer among our peers with regard to shareholder value, business ethics, workplace safety, environmental protection, and community economic development
- Minimize the potential for adverse impacts that may arise from our operations to levels as low as reasonably achievable, taking into account social, legal, and economic factors
- Continually improve the management of our operations to respond to the economic, environmental, and social expectations of our stakeholders, including our employees, communities, shareholders, governments, and the public
- Respect the different needs and values of people and their cultures, and operate with a high level of transparency to ensure stakeholder confidence

We believe our strong commitment to these principles will continue to make Kumtor the employer and business partner of choice.

Summary of Kumtor's Health, Safety, and Environmental Policy

Kumtor recognizes the protection of the health and safety of its employees, contractors, and the public along with responsible environment management as being its highest corporate priorities. During all stages of our activities — exploration, operations and decommissioning — we are committed to the safety motto that **"no job is so important that we cannot take the time to do it safely."**

Key commitments in our policy include:

- Compliance with applicable laws and regulations of the jurisdictions in which we operate, and generally accepted international industry practices
- Providing employees and contractors with a working environment free of uncontrolled hazards
- Identifying and eliminating or controlling potential risks to health and safety of employees, contractors, and the public to levels as low as reasonably achievable, taking social and economic factors into account
- Preventing environmental impacts and minimizing possible negative exposures to the environment due to company operations
- Achieving continual awareness of and improvement to our overall Health, Safety, and Environment (HSE) performance

In support of these commitments, Kumtor will:

- Provide adequate resources and training, implement and maintain a formally approved HSE management system, set objectives and targets so as to improve continually, and conduct regular audits to assess and ensure conformance to this policy
- Identify significant health and safety hazards and risks, potential for accidents and emergency situations, and develop, maintain, and test emergency response plans
- Undertake constructive dialogue with the communities located near Kumtor's operations to help them understand the importance of Kumtor's activities related to the health and safety of local communities
- Place and recycle industrial waste of the company by using methods providing absence, reduction, or restriction of pollution
- Engage in constructive communication of this policy with all employees, relevant contractors, and suppliers so they are aware of, and able to comply with their HSE responsibilities in a manner appropriate to their role in the organization, and to encourage them to make contributions to Kumtor's HSE management

The complete Environmental Policy is posted on Kumtor's website.

permits, licenses and concessions. In our policy and the accompanying training, we highlight the broad definitions of "anything of value" which is not restricted to monetary payments, and of "Government Officials" which can include individuals which people do not consider to be Government workers, such as candidate for political parties, and directors on government-owned companies. We take the International Business Conduct Policy very seriously and as described above, in late 2012, we initiated additional training at Kumtor related to the International Business Conduct Policy, and introduced the phone "hot-line" to provide support to staff.

Environmental Management System and Standards

To understand, evaluate and manage our environmental footprint, we take a systematic "plan-act-monitor-improve" approach, which is aligned with the International Organization for Standardization's ISO 14001 and Occupational Health & Safety Advisory Services' OHSAS 18000 models. This approach began with an environmental impact assessment at the early planning stage of the Kumtor Project, continues with the implementation of our environmental management program, and also incorporates mine closure planning for the future.

We follow an Environmental Management Action Plan (Version 5 is currently in effect) that is designed to address the effects of operations on the environment and to monitor material compliance with permits and other requirements. The system provides for scheduled monitoring, engineering controls, performance requirements in line with good international mining practice and local regulations, and reporting. The system and its key elements are also subject to corporate and external audits and approval by relevant Kyrgyz authorities.

We also maintain a corrective preventive action ledger tracking system. This allows the safety and environmental departments to enter corrective action items and responsibilities. It also allows responsible departments to address and close out required activities.

The EMAP, which was originally developed as part of the multilateral project financing for the Kumtor Project, also defines reporting requirements to lenders such as the European Bank for Reconstruction and Development. These reporting requirements cover the following:

- Monitoring results as a monthly average on a station-by-station basis
- Material exceedences and non-compliance with an explanation of corrective action
- Details of reportable spills and corrective actions
- Changes to monitoring protocols or stations

The Aspects Covered by the Environmental Management Action Plan (EMAP) Include the Following:

- Handling of hazardous materials and emergency response
- Environment protection, including wildlife conservation
- Containment, control, and elimination of seepage and spills
- Policies, programs, training, regulating documents, and reporting procedures
- Mine closure requirements

- Status of the closure plan and costs
- Update on data related to acid-rock drainage, waste rock piles, and glaciers
- Yearly estimates of fresh-water usage, tailings storage, and discharges
- Studies related to the site's environmental affairs
- Outline of the activities, studies and surveys planned for the next reporting period
- Worker health protection and safety initiatives

In addition to our existing archaeological chance find procedure, a new process has been implemented which requires environmental department approval prior to new land disturbance on site. This helps us better manage and track new disturbances, supports our efforts to salvage top soil, and allows consideration of issues such as sediment control or concurrent reclamation activities.

Memberships and Awards

Kumtor, through Centerra, has been a supporting company of the Extractive Industries Transparency Initiative (EITI) since 2011. The EITI is a coalition of governments, companies, civil society, investors, and international organizations. The EITI contributes to improved governance in resource-rich countries through the verification and publication of all company payments to governments, as well as government-reported revenues from oil, gas, and mining operations. Kumtor was among the first operations in the Kyrgyz Republic to sign on, report, and help improve the EITI infrastructure.

At the corporate level, Centerra is a signatory to the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (Cyanide Code). The Cyanide Code was developed by a multi-stakeholder steering committee under the guidance of the United Nations Environmental Program (UNEP) and the predecessor of the International Council on Mining and Metals. The objectives of the Cyanide Code are to improve the management of cyanide used in gold mining, assist in the protection of human health, and reduce potential environmental impacts.

In April 2012, the International Cyanide Management's Institute (ICMI) recorded the certification of Kumtor's cyanide transportation operation from our Balykchy Marshalling Yard to the Kumtor mine site (both in the Kyrgyz Republic) as being in full compliance with ICMI's transportation protocol. Independent audits have deemed the remainder of the operations to be in "substantial compliance" with the Cyanide Code.

In 2012, Kumtor received the "Bona Fide Partner of the Year Award" from Super Info, the Kyrgyz Republic's largest-circulation newspaper. This is the second time that we have received this award in recognition of our significant contribution to the Kyrgyz economy, our transparent operation, and our active charitable work.

Centerra is also a member of The World Gold Council. The council's global advocacy for gold includes playing a key role in the development of a responsible gold mining industry. The council's members regard the management of the local environment and relationships with local communities as paramount considerations during the lifetime of any mine project.

The International Cyanide Management Institute

Hereby presents this certificate in recognition that

Centerra Gold Inc.
Kumtor Operating Company

Has undergone a detailed site inspection and review of its records and documentation by an independent third-party professional auditor meeting the Institute's requirements who has determined that its cyanide management systems, plans and procedures have been developed and are being implemented in compliance with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold. This certification is effective for three years from the date of this certificate.

President

April 9, 2012

ECONOMIC RESPONSIBILITY

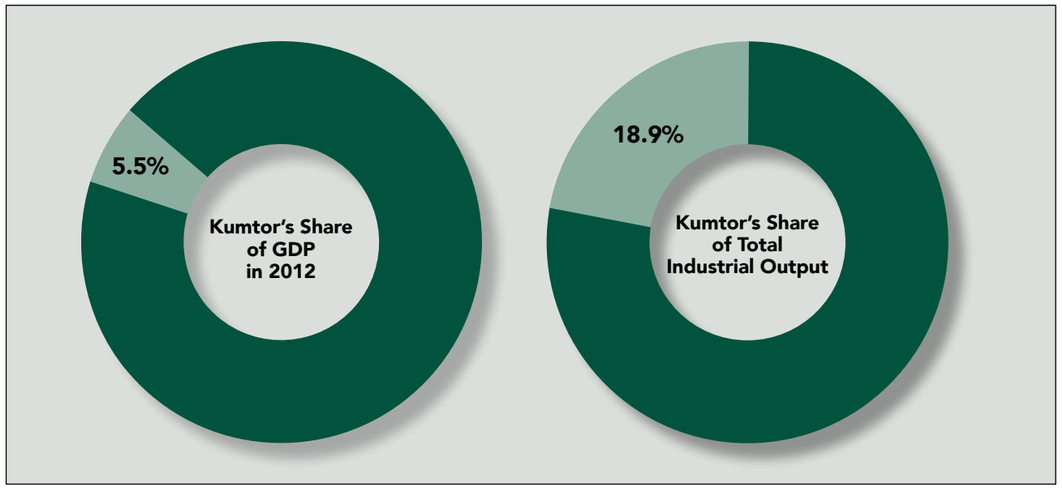
2012 was a challenging year as we experienced a significant decline in gold production. However, we continued to generate substantial economic value, including $302 million in payments within the Kyrgyz Republic for taxes, employment, local procurement, and community investments.

PHOTO | In 2012, Kumtor had a workforce of 3,361 and contributed 5.5 percent of the Kyrgyz GDP

With consolidated gold production of 315,238 ounces in 2012, our production was significantly lower than in 2011 (583,156 ounces). Nonetheless, we continued to provide substantial local economic benefits over the course of the year.

By the end of 2012, Kumtor had a workforce of 3,361, including contractors, with Kyrgyz nationals making up 96 percent of our full-time staff. Payments made within the Kyrgyz Republic in 2012 were $302 million, including over $100 million in taxes and mandatory payments, over $66 million in Kumtor employee net wages, and over $74 million in local procurement. Total payments within the Kyrgyz Republic since 1994 have now reached $2.15 billion. Our strategic community investment programs in 2012, which are described in the social responsibility section, included $21 million for a nation-wide micro financing program, and over $3.0 million for local sustainable development projects and other community contributions. We also provided a contractually required contribution of 1 percent of gross revenues to the Issyk-Kul Development Fund. In addition, the Kyrgyz government participates in Centerra's shareholding structure, with 32.75 percent of shares owned by Kyrgyzaltyn JSC, a state-owned enterprise.

Kumtor's Macroeconomic Impact in the Kyrgyz Republic



NOTE | According to the Kyrgyz Republic National Statistics Committee's preliminary reports

Kumtor continues to have a very significant impact on the economy of the Kyrgyz Republic, despite reduced gold production in 2012. In 2012 Kumtor's contribution to the country's gross domestic product was 5.5 percent (11.7 percent in 2011), and its share of the national industrial output was 18.9 percent (26.2 percent in 2011).

Procurement

To maximize direct and indirect local economic impact, Kumtor aims to purchase high quality and cost-effective goods and services from local suppliers. We have heard from internal and external stakeholders that we need to further reduce barriers and find new ways to improve our local procurement practices.

Barriers to our effort include the lack of production, or availability of, some of the specialized mining goods and services we need. These constitute the majority of our total procurement spending and include large mining trucks, Original Equipment Manufacturer (OEM) parts, and major consumables and reagents. We also need to ensure quality and consistency of goods and services, and competitive pricing. Challenges our local suppliers face in meeting our needs include limited access to working capital, and at times, limited business and management skills.

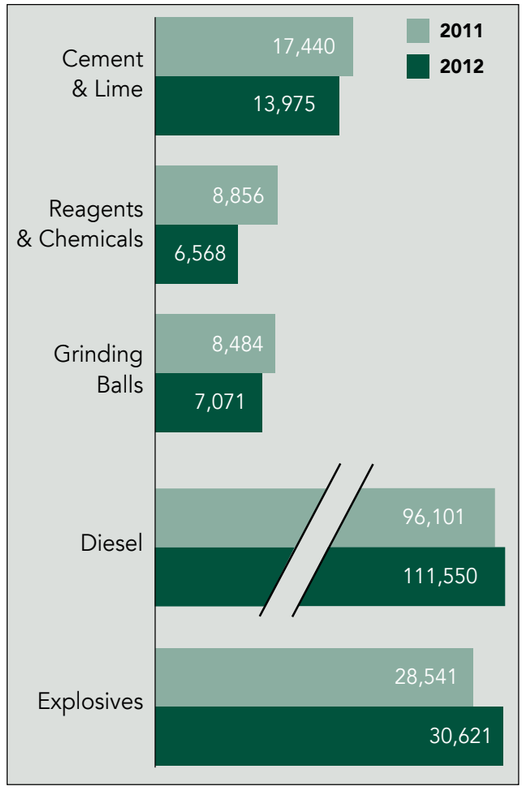
We recognize the importance of the positive economic ripple effect that is associated with our local procurement spending. To address some of the barriers faced by local suppliers, we consider advance payments for materials and equipment to reduce the suppliers' working capital requirement. In addition, we critically evaluate our international purchases, track them on a monthly basis, and review changes in local availability of suitable substitutes. In 2012, such a review of over 300 line items identified 15 consumables that had become available from Kyrgyz sources. We also hosted an Open Day for Suppliers Forum and welcomed 55 participants who were interested to learn more about our procurement practices and opportunities.

Our total expenditures on goods and services for 2012 was $265 million. This included approximately $74 million procurement within the Kyrgyz Republic. When adjusted by excluding original equipment manufacturer (OEM) capital equipment and parts, major consumables, and reagents that are not available for purchase in the Kyrgyz Republic, and fuel import from Russia, over 70 percent of our total procurement expenditures in 2012 qualified as purchases within the Kyrgyz Republic. In 2011, our total procurement was at $296 million of which $102 million qualified as local procurement (adjusted local procurement of 61 percent). Changes to our mine plan in response to ice and waste rock movement, the shutdown of our mill for approximately seven weeks and related reduction of local power purchase, a material reduction in gold production and related local refining charges, and other factors contributed to lower total and local procurement spending in 2012 when compared to 2011.

Other business development-related activities outside our supply chain included microfinance schemes (described further in the social responsibility section of this report) and our capacity-building partnership with the European Bank for Reconstruction and Development (EBRD). As part of a joint initiative, we commissioned a study to map the businesses of the Issyk-Kul Oblast (administrative region).

A number of related workshops were held in early 2013 to inform local businesses about the results of this study. Over 1,000 small businessmen and women took advantage of the complimentary seminars presenting results of the study. During these workshops, those who attended were also provided with information about the EBRD's business consulting services and training, ranging from business planning to marketing.

Major Consumables (tonnes/year, diesel in liters x 1,000)



Consumption of Materials

Mining, milling and metallurgical operations require large quantities of materials to maintain and operate equipment, and to process the minerals to produce unrefined gold/silver bars. We also need to maintain a mine camp which accommodates approximately 1,700 individuals at any one time.

Typically, 50 trucks are dispatched from the Balykchy marshaling yard to the Kumtor mine site each day to deliver consumables and materials required for our operations. We continue to review our consumption of materials to ensure efficiency and to control our costs.

The major raw materials we consume include cement and lime, reagents and chemicals (including cyanide) used in the milling or leaching processes, and grinding balls to crush the ore to enable gold extraction. We also consume substantial quantities of other non-renewable materials, such as fuel, lubricants, grease, and explosives. Gold mining operations do not provide many opportunities to use recycled materials, although we seek to maximize the recycling of some of our waste streams.

In 2012, we saw a decline in major mill consumption at Kumtor compared to 2011. This was due to changes in our mine plans necessitated by moving glacial ice and waste, which resulted in the shut-down of the mill once the stockpiled ores were exhausted.

Direct Economic Value Generated and Distributed (US$)

Indicator	2011	2012
Net revenues	$941,072,769	$533,553,407
Income from financial investments	$278,113	$129,044
Sales of assets	$0	$0
Goods, services, and materials purchased	$186,112,664	$98,070,364
Exploration - cash	$13,635,847	$11,772,443
Capital costs	$180,714,697	$397,031,394
Other operating costs	$2,236,149	$209,056,327
Employee wages and benefits	$96,902,394	$104,476,687
Payments to providers of capital	$125,000,000	$0
Taxes and royalties	$146,637,113	$74,697,477
Community donations and investments	$11,494,808	$23,954,691
Economic value retained	$178,617,210	($385,376,932)

COMMITMENT TO PEOPLE

We are committed to providing a safe and rewarding workplace, and remain an employer of choice. Of our full-time employees, 96 percent are Kyrgyz nationals.

PHOTO | We maintain a mine camp which accommodates approximately 1,700 individuals at any one time

We maintain a high level of expectation and responsibility for our workforce and contractors to perform with integrity and mutual respect. We train our workforce to operate in a safe and healthy workplace and to respect the unique environment where we operate.

Labor and Local Hiring

We have heard from some of our stakeholders that we need to further increase local hiring, especially among local youth. At times, this has been communicated to us in the form of temporary demonstrations which included blocking access to our facilities and, we believe, reflects the challenging economic conditions in the Kyrgyz Republic.

We remain one of the larger private sector employers and have taken steps in recent years to further improve the hiring process and its credibility. This includes involving community observers during the screening and interview process. However, minimum turnover means few opportunities for recruitment. We encourage our contractors to recruit locally as well.

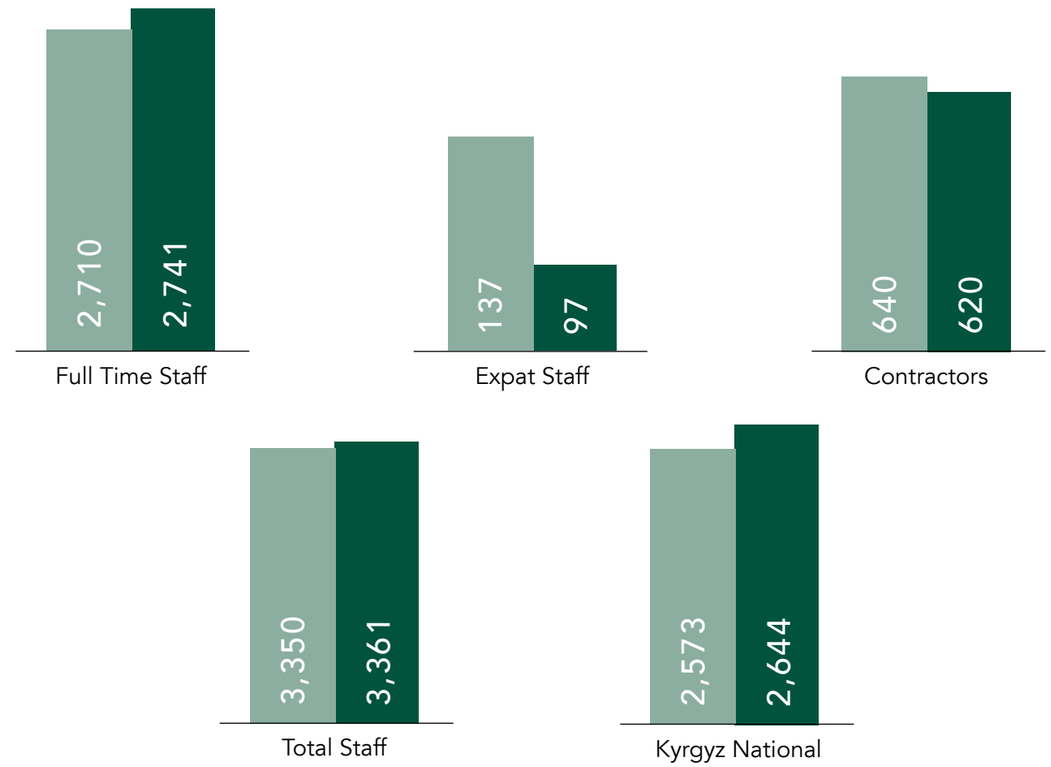
Worker Compensation

We believe that the biggest contribution we can make to the well-being of the communities in which we operate is through the creation of long-term, well-paid employment opportunities.

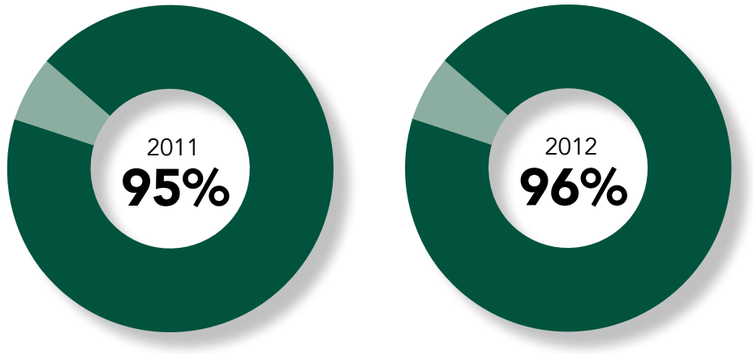
Standard National Entry Level Wages and Those Paid at Kumtor

	2011	2012
Kyrgyz minimum wage per hour (Kyrgyz soms)	4.13	4.55
Kumtor entry-level wage per hour (Kyrgyz soms)	57.76	60.36
Kumtor entry-level to Kyrgyz minimum wage (ratio)	14.0:1	13.3:1

Staffing at the Kumtor Mine



Proportion of Kyrgyz Nationals as Full Time Staff



Employee Benefits

A further indicator of Kumtor's investment in human resources, which exceed regulatory required contributions, can be seen in the amount and type of benefits we provide to our full time employees. These include:

- Cash awards on employee jubilees, marriages, retirement, and to female employees when they give birth or adopt a child
- Home improvement loans
- Vacation and rest allowances
- Allowance for temporary disability, as a result of injury at work or occupational disease, in the amount of 100 percent of average monthly salary over the previous three months until the employee has completely recovered

Kumtor also provides monthly transfers equivalent to 1.5 percent of the monthly national payroll to the bank account of the Kumtor trade union. These funds are to be directed towards the improvement of the health of the Kumtor workforce.

Collective Bargaining

Freedom of association is a human right as defined by international declarations and conventions, and binding collective bargaining is part of an overall framework that contributes to responsible management. Kumtor supports collective bargaining to reach collective agreements. The collective agreement signed between the Trade Union Committee and the administration of Kumtor (effective January 1, 2013 to December 31, 2014) covers approximately 97 percent of our employees, and was the first of its kind negotiated in the Kyrgyz Republic. This agreement covers a wide range of issues, including labor, compensation, schedule of work, health and safety, probation, benefits for employees and their families, and labor dispute resolution. The agreement also provides for a notice period (one month) for significant operational changes.

OCCUPATIONAL HEALTH & SAFETY

Kumtor has invested over 12,000 staff-days for health and safety training to ensure we remain true to our core values to operate safely, and to ensure that the overall health and well-being of our workforce is a top priority.

PHOTO I Kumtor's substantial investment in training contributes to our good health and safety performance

Our overall approach to occupational health and safety is embodied in our motto that "no job is so important that we cannot take the time to do it safely." We conduct regular medical and occupational health screening; support and provide health and safety training; have relevant goals and monitor key performance indicators; report and analyze incidents and near misses; and maintain and test emergency prevention and response capabilities. Our performance statistics highlighted in this section show that we have continued to improve our performance.

Focal Area for 2012

Although it is important to reduce all types of accidents, in 2012 we focused particularly on high-potential injury risks associated with vehicle incidents. As part of these efforts, we introduced a Vehicle Incident Reduction Program which helped us reduce overall accident and related injuries. We also continued to improve the skill level of Kumtor's light vehicle drivers through job assessments and training.

Medical Screening and Wellness

Kumtor maintains a medical department to provide emergency, primary health and occupational health care in Bishkek, the Balykchy Marshalling Yard, and the Kumtor mine site. Our employees are also subject to pre-employment and annual medical screenings. Given the high-altitude conditions of the Kumtor mine site, all consultants and other visitors are also subject to a pre-site visit medical check-up in Bishkek, and are typically retested upon arrival at the mine site to identify and manage early signs of altitude sickness.

We continued an intensive influenza immunization program and vaccinated approximately 850 individuals at the Kumtor mine site during October and November 2012. However, despite these immunization campaigns, upper respiratory tract infections and pharyngitis (inflammation of the back of the throat) still appears to be the main cause for absence from work.

Our research at the mine site shows that the lung functions of smokers as well as nonsmokers has significantly improved since we introduced a smoking cessation program. A nutrition team is planning a visit to the mine site in 2013 in order to follow up on and review the efficacy of our nutrition program and related counseling support.

Unusual events during the reporting period included an outbreak of acute intestinal infection at the mine site in July 2012. This outbreak was also investigated by a commission from the epidemiology and sanitary department of the local health authority. The result of the investigations showed that this infection did not originate at the mine, the mine camp (food), or kitchen staff. the most likely source was a bacteria-carrying worker returning to work. In response, we introduced relevant training and communication programs that target hygiene and prevention measures against acute intestinal infections.

Health & Safety Training

During 2012, our significant investments in occupational health and safety were supported by a budget of over $1.6 million and 12,157 person-days for

training of staff and contractors. This training covered safety orientation, first aid, firefighting, emergency response, the workplace hazards materials information system, transportation of dangerous goods, defensive driving, forklift operation, lock out/tag out procedures, compressed gas use, scaffolding use, overhead crane operation, work permits, nuclear radiation, vessels under pressure, confined spaces, handling of cyanide and other chemicals, hearing protection, ultra-violet radiation, frost bite, and hypothermia.

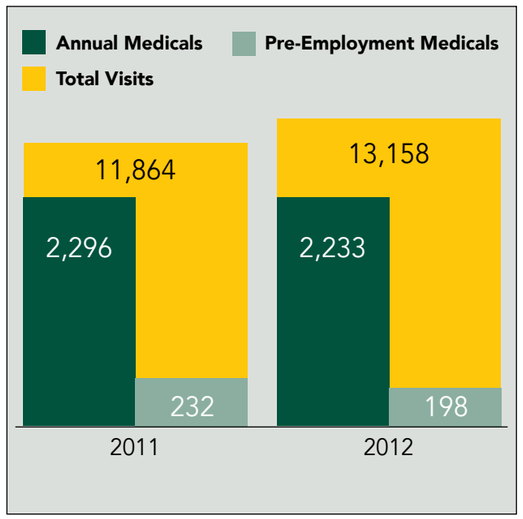
Accident Reporting

As part of the continuous improvement of our Health, Safety, and Environmental Management System, we have implemented a program on the identification, assessment, elimination, and control of industrial hazards. When any employee identifies a hazard at an operational area, the industrial hazards form is filled out and submitted to the coordinator of the Safety Department. The coordinator evaluates the risk level and, according to the risk classification, takes further measures to eliminate the hazard.

In 2012, despite measures taken to reduce severe accidents and to improve safety indicators, there were seven recordable accidents, including one lost-time injury and six cases where medical aid was provided. During the same period, we recorded one case of occupational disease and the total amount of compensation paid due to occupational injuries was nearly $47,000.

Although the statistical trend shows continual improvement, we must remain vigilant. We record and analyze incidents, such as near misses, to help understand and prevent incidents that might lead to injuries and property damage.

Medical Screening and Visits



Vehicle Incident Reduction Program

	2011	Goal	2012
Reduction in overall vehicle accidents	34	Reduce by 10%	30
Reduction in high-potential injury risk - light vehicle accidents	5	Reduce by 10%	4
In-pit heavy versus light vehicle collisions	0	0	3
Injuries due to vehicle accidents	0	0	0

Key Health and Safety Statistics (Kumtor Employees and Contractors)

Year	Hours Worked	Lost Time Injuries	Medical Aid	First Aid	Days Lost	LTI Frequency	LTI Severity	Incidents w/Property Damage
2011	6,446,936	2	8	19	134	0.31	4.57	73
2012	5,990,024	1	5	16	23	0.17	0.77	66

NOTE | LTI is Lost time Injury

Emergency Prevention and Response

Given Kumtor's remote location, we maintain a 24-hour emergency response team with a medical doctor, ambulance, and extensive emergency response equipment on-site. We maintain and typically update our emergency response plans annually. We also provide annual training on emergency prevention and response, and conduct random drills.

Mock training exercises and an annual competition involving Boroo Gold, Centerra's gold mine in Mongolia, and other participating teams (such as Ministerial Emergency Services, Kyrgyzaltyn) contribute to testing and improving our emergency response capabilities. In 2012, our emergency response team conducted four integrated emergency response exercises in different areas of our operations.

The use and management of cyanide plays an important part in our emergency response planning, and our stakeholders take a keen interest in this topic. This is the result of a cyanide spill we experienced in 1998 during shipment from our marshaling yard in Balykchy to the Kumtor mine.

The report by the International Scientific Commission, which is available on Centerra's website, highlighted that there was no damage to Lake Issyk-Kul either in the short or long term, and there were no reported deaths that could be attributed to cyanide exposure.

In April 2012, the International Cyanide Management's Institute (ICMI) recorded the certification of Kumtor's cyanide transportation operation from our Balykchy Marshalling Yard to the Kumtor mine site.

Mock Emergency Response Scenarios (2012)

- Vehicle fire and injuries at the contractors' repair yard
- Sodium cyanide spill and injuries at the bridge 6 km from the security checkpoint
- Truck engine fire near the cyanide warehouse at Balykchy marshaling yard
- Traffic accident with serious injuries on the road to the pump station at Petrov Lake.

TAILINGS MANAGEMENT

In 2012, Kumtor's tailings management facility and its associated dam had been subject of reviews by Kyrgyz government sponsored commissions, revisiting the issues which had been reviewed by various commissions since 1999.

PHOTO I Kumtor's tailings management facility is the largest such structure in the Kyrgyz Republic

Tailings refer to the water and solid materials that remain after recoverable metals or minerals of economic interest have been removed from the ore through milling and processing. Our tailings are transported in the form of slurry through a pipeline to our tailings management facility (TMF), where they are deposited for settling, treatment and eventual reclamation and closure activities. The Kumtor TMF includes a set of twin tailings pipelines, approximately 6 km in length, a tailings dam, an effluent treatment plant and two diversion ditches to direct surface water around the TMF.

Tailings Storage

Kumtor produces substantial volumes of tailings. The liquid component of the tailings contains residual cyanide and either remains in the tailings pore space or collects in the tailings pond, both contained by the dam. After partial decomposition by natural processes, including that from exposure to high altitude ultraviolet radiation from the sun, this effluent is pumped to the effluent treatment plant (ETP) where it is treated using the patented INCO process to reduce cyanide and metals prior to discharge to the Kumtor River.

During 2012, earthworks at the TMF dam continued from April through August and extension of the down-stream side of the dam reached an elevation of 3661.0 meters. Additional work to accommodate the next increase in dam height, addition of a new high voltage transmission line, and relocation of the effluent treatment plant commenced during 2012.

Key Characteristics of Kumtor's Tailings Management Facility

	2011	2012
Free Water (million m^3)	3.31	2.70
Tailings Added (million m^3)	4.43	2.56
Cumulative Tailings (million m^3)	57.10	59.66
Elevation of TMF Dam Crest (masl)	3,664.0	3,664.0
Peak Water Level (masl)	3,658.26	3,659.12
Distance below Crest of TMF Dam (m)	5.74	4.88

NOTE I masl is meters above sea level

Water Balance

We track the volume of tailings slurry discharged into the tailings management facility (TMF) and the volume of water removed from the TMF for treatment. In 2012, we also conducted a bathymetrical survey of the tailings pond, which is a survey of the depths of bodies of water, to refine our calculations. This allows us to undertake a detailed water balance of the TMF, ensure the safe and geotechnically stable operation of the facility, and assist with future planning and expansions.

Water Balance in TMF (m^3)	
Starting water Jan 1, 2012	3,307,023
Inputs 2012	
- Tailings water	4,959,799
- Precipitation/evapotranspiration	569,500
Discharges 2012 via effluent treatment plant	- 5,058,181
Water in tailings void	- 1,417,316
Net decrease in water*	- 611,198
Total free water Dec, 31, 2012*	2,695,825
Cumulative storage Jan 1, 2012	57,760,233
Cumulative storage Jan 1, 2013	59,655,268

NOTE | Following bathymetrical survey of the tailings pond in September 2012, the calculated figures were corrected by adding 335,000 m^3 to the free water volume.

The percent of solids in the tailings slurry discharged into the TMF is approximately 49 percent, with a water/ore ratio of 1.04. While tailings slurry is continuously added to the TMF from the mill, water removal via the Effluent Treatment Plant (ETP) only occurs during the warmer period, typically between May and November each year. This means that the tailings pond water volume generally peaks in May and reaches its lowest level at the end of the measurement season. In 2012, the TMF dam crest elevation was 3,664.00 meters, the maximum pond elevation peaked at 3,659.12 meters and the year-end pond level was approximately six meters lower at 3658.16.

Geotechnical Monitoring

Kumtor has implemented a proactive geotechnical monitoring strategy for the TMF including monitoring the movement first observed in 1999 and the effective mitigation measures implemented since that time. This monitoring involves an extensive network of instrumentation which allows Kumtor — and Kyrgyz regulators — to evaluate the performance of the dam. Also, the monitoring of four seepage points continues on the downstream side of the dam base.

In addition to geotechnical parameters related to the TMF, we also track the movement and stability of waste dumps, pit wall zones, dewatering of glacial till, glacier complex and rock of the central pit, snow and avalanche activity on the Kumtor Concession, and areas affecting the access road in the Barskoon valley. Much of this data is discussed in web-posted technical reports produced in line with Canadian National Instrument 43-101 for listed mining companies.

Instrumentation Used to Monitor Tailings Dam

No.	Type	Purpose
49	Inclinometers	Measures horizontal displacement
28	Settling plates	Identifies dam body base settlement
32	Piezometers	Water levels in dam body, seepage
45	Thermistors	Dam body temperature

Arresting Dam Movement

The Kumtor TMF dam is a compacted earthen fill dam structure which is approximately 3 km in length. During initial construction, a geomembrane liner was placed on the upstream face of the dam. Since becoming aware of movement of the dam in 1999, Kumtor has consulted with reputable local and international engineering firms, and the Kyrgyz regulators.

The engineering solution adopted to arrest dam movement, which was reviewed by Kyrgyz and international institutes and consultants, includes the construction of a shear-key and confining toe berm (buttress). Much like a conceptual door stop, this approach is designed to slow and arrest dam movement over time. The construction of the sheer-key and buttress continues as part of the periodic and planned raise of the dam.

Geotechnical data collected from Kumtor's TMF dam is provided regularly to the Kyrgyz Rock Mechanics and Reserves Development Institute (KIRM) of the Kyrgyz Academy of Sciences. Recent quarterly reports by KIRM concluded that "overall the dam condition is suitable for operation."

In addition to the detailed analysis by KIRM, Golder Associates, an international engineering firm, conducts annual visual inspections of the TMF dam and associated facilities. Golder's report following its October 2012 site visit concluded that "in general, the visual inspections of the dams and appurtenances at the Kumtor site indicated that the structures were in good condition and were functioning as required at the time of our site visit" and recommended some maintenance work and continued monitoring.

Conclusions of External Expert Reviews and Visual Inspections of Kumtor's TMF Dam:

1. The inclinometers have indicated consistent reduction of displacement rates from crest to shear key. Displacement rates have practically reduced to zero values at the very end of shear key.

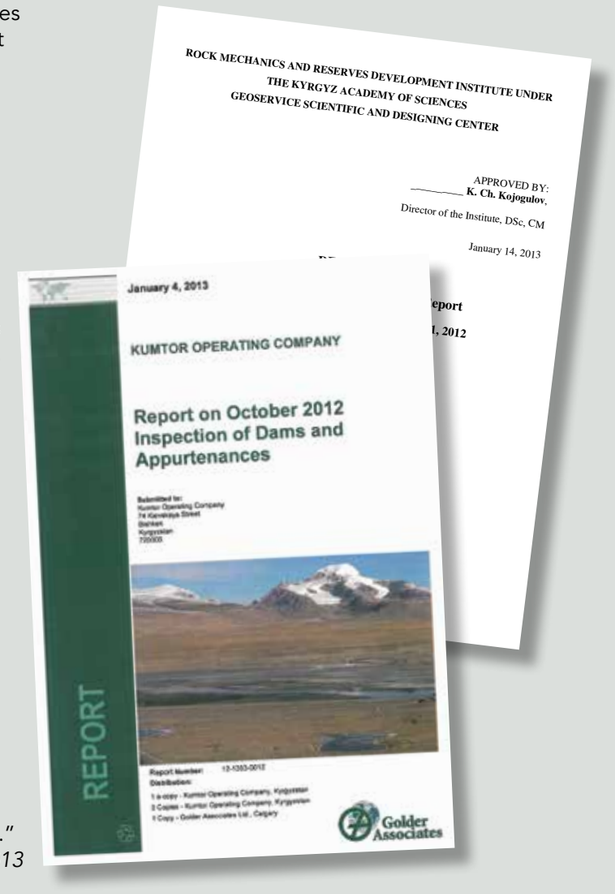
2. According to monitoring data over the analyzed period, no sliding planes or round-circular failure surfaces have been noticed. It is recommended to pay attention to sections 1-1, C-C.

3. Ground temperature at the level of utmost shear deformations has negative values.

4. Depression curve per all sections does not exceed the natural ground elevation.

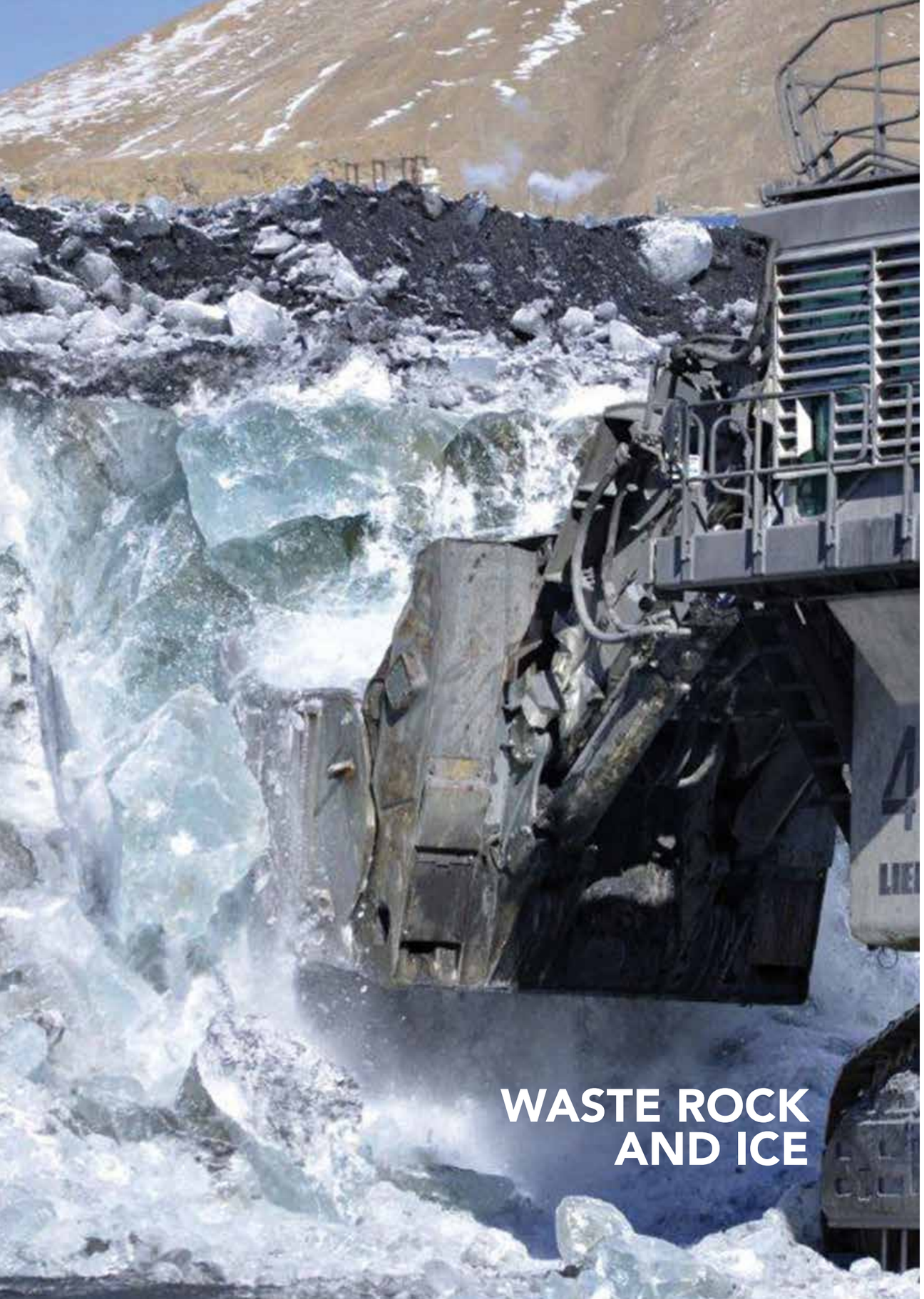
5. Overall tailings dam condition is assessed as suitable for operation. "

A. Chukin , Sci.C., Head of the Laboratory of Geotechnical Facilities Stability, Kyrgyz Rock Mechanics and Reserves Development Institute, January 14, 2013



"In general, the visual inspections of the dams and appurtenances at the Kumtor site indicated that the structures were in good condition and were functioning as required at the time of our site visit. Some maintenance work is recommended, as indicated, along with continued monitoring of these structures."

Golder Associates, January 4, 2013



WASTE ROCK AND ICE

Our operation was adversely affected by unexpected acceleration of ice and waste dump movement, which has prompted concerns on the part of our stakeholders. We have adjusted our activities and expect to attain our production goals by the end of 2013.

PHOTO I Unique features of Kumtor's operation include moving glaciers and dumps of waste rock

Kumtor's high altitude gold mining operation is located in proximity to, and is partially covered by, active glaciers. This means that, as part of our stripping operation dating back to the construction of the mine, we need to remove glacial ice and related materials regularly to be able to safely access Kumtor's ore. These activities have been approved by relevant Kyrgyz Republic regulators since the beginning of mine operations.

As detailed further in this section, the melting and movement of glaciers and waste dumps of waste rock at previously unanticipated and accelerated rate near the Kumtor mine required a revision of our mining plan and a material reduction of gold production in 2012. In late 2012, Kumtor received a significant claim for alleged damages in relation to the placement of waste dumps of waste rock, including on glaciers which surround the Kumtor open mine pit. We continue to liaise with the Kyrgyz government and seek to resolve this matter amicably.

Historic Disposal Practice

Historically, Kumtor deposited waste rock on glaciers, mainly the Davidov Glacier, located near the open mine pit. This deposition was carried out in designated areas and in accordance with Kyrgyz regulatory approved mine plans. This practice has changed and waste rock is no longer being deposited on the Davidov Glacier. In addition, our current stripping operation is designed to segregate ice from waste rock. This allows us to move and dispose of ice on ice, and rock is placed on existing dumps (valley fill).

Movement of Dumps

In June 2012, the Davidov valley dump, underlying permafrost soils and glacial deposits started to exhibit signs of deep-seated deformation. At the end of 2012, this waste rock dump was moving down-valley at a velocity of approximately 50 mm per hour. The analysis of our monitoring data indicates a shearing from as deep as 45 meters below the original surface. It appears the substratum itself is moving.

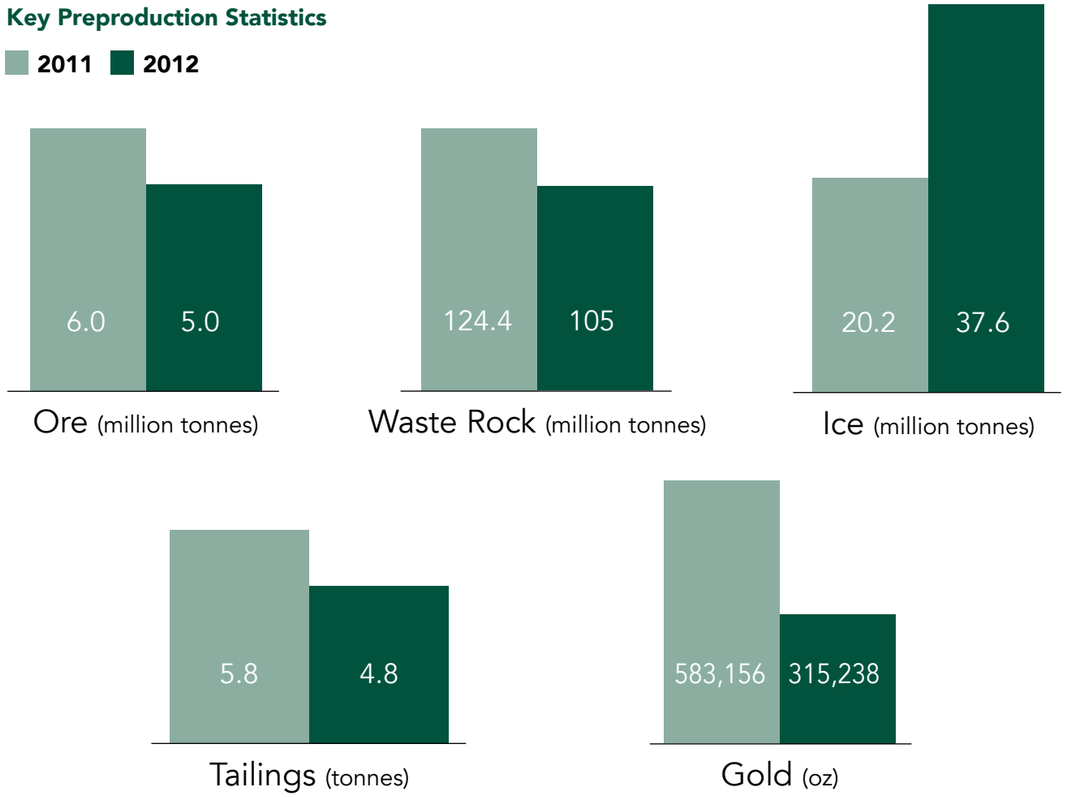
In early 2013, the rate of movement of the waste-rock dump increased even further. In response, Kumtor accelerated the planned relocation of certain mine infrastructure. We continue to monitor and evaluate the conditions to better understand this unique feature of our operation.

Routine ARD Testing

The term Acid Rock Drainage (ARD) is used to describe the outflow of mine waters that have been acidified by contact and exposure to sulfur bearing rocks, reducing the pH levels which, in turn, can release and mobilize metals into the environment.

Kumtor has routinely conducted tests to determine the ARD characteristics of its ore body, associated waste rock, and the open pit. We have also reviewed the ARD characteristics in tailings pore samples. This process of testing started at the environmental impact assessment stage, is part of Kumtor's routine monitoring program, and is also an element of the closure planning process. Concerns about ARD-related issues have been raised by some stakeholders during 2012.

Key Preproduction Statistics



Over the course of several independent evaluations carried out by international consultants, including during the current reporting period, it has been determined that the majority of our waste rock at Kumtor has a strong neutralizing potential. This is derived from a high proportion of carbonate materials present in the deposit. Continued evaluation of ARD is planned as part of environmental monitoring and closure planning, with an ongoing review of core logs, and review of recent drilling and porewater samples of the Davidov waste rock areas.

Glacier Monitoring

In 1995, a network of monitoring points was installed on the Davidov and Lysyi glaciers to monitor their movement. The monitoring points consisted of temporary survey rods positioned into the glacier. These rods were routinely surveyed, and replaced or expanded in number as required.

Comparison of the average monthly glacier movement rate and temperature indicates that the glacier movement is driven by fluctuations of temperature throughout an annual cycle. In 2012, the highest rate of movement was observed for the Davidov Glacier. Its movement peaked between August and October, when movement rates reached 0.130 to 0.144 m/day. The maximum displacement rate over the year was recorded at 0.144 m/day in August.

The rate of movement for the Lysyi and Sarytor Glaciers is relatively smaller. Lysyi Glacier movement progressed at a stable rate throughout 2012 and the maximum displacement rate was recorded as 0.013 m/day. Similarly, monitoring results of Sarytor Glacier show that the movement continued at a stable rate throughout 2012. The maximum displacement rate was recorded as 0.005 m/day. From August to December there were no monitoring points available on the Sarytor Glacier.

Removal of Glacial Ice

Five active glaciers are located in part within the Kumtor concession area. In addition to the glaciers, ice is also present within ice fields that cover extensive areas within the southern and eastern portions of the Concession. In total, ice is estimated to cover approximately 45 percent of the 260 km^2 Kumtor Concession area.

As part of mining operations completed during 1995 through 2012, an estimated 72 million tonnes of ice were removed from the Davidov and Lysyi Glaciers. These activities were in accordance with mine plans approved by Kyrgyz Republic authorities.

An estimated 64 million tonnes of ice will be removed from the Davidov Glacier during 2013-17 to accommodate expansion of the central pit and to prevent ice from entering the active pit. An estimated 9 million tonnes of ice will need to be removed from Lysyi Glacier in 2014-15 to prevent meltwater from seeping into the pit below. Also, an estimated 2 million tons of ice will need to be stripped from Sarytor Glacier beginning in approximately 2021-23 to facilitate construction of the southwest and Sarytor pits.

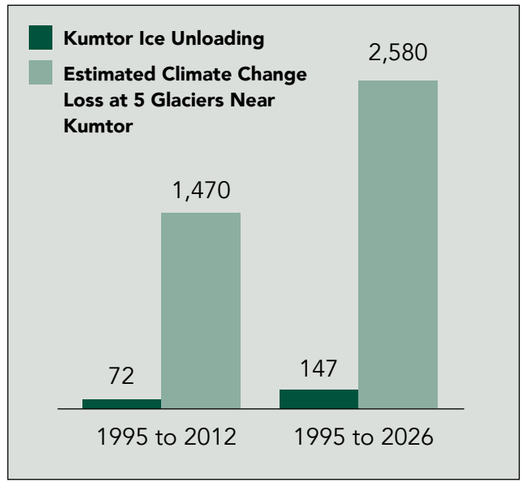
The estimated total of 147 million tonnes of ice removed between 1995 and 2026, the estimated end of Kumtor's life of mine, is equal to approximately 5 percent of the estimated ice losses for the 5 Kumtor area glaciers attributable to climate change during the same periods.

Estimated Areas of Glaciers within the Kumtor Concession

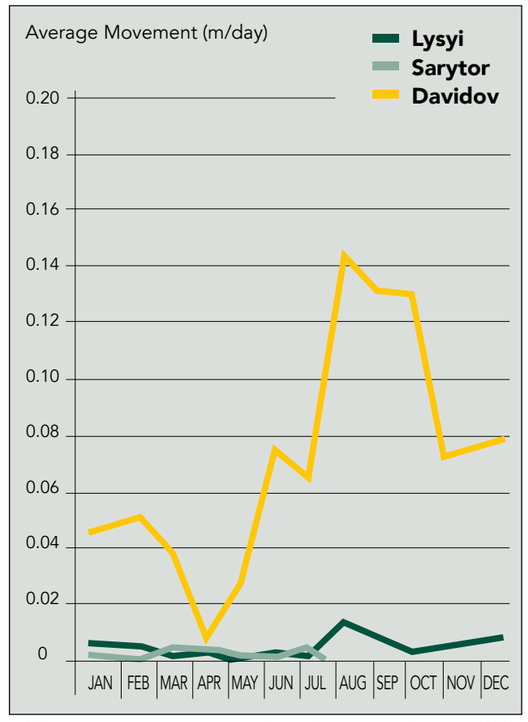
Glacier Name	Total Area (km^2) 1957-1959	Total Area (km^2) in 2012
Petrov	70.6	70.0
Davidov	12.1	11.6
Sarytor	3.0	3.3
Lysii	4.4	5.5
Bordu*	15.0*	13.8#
Total	105.1	104.2

*1957 -1959 data for combined area for north and south lobes, and 2012 combined area for 'east' and 'west' lobes. Estimates for 1957-1959 are as reported by L. G. Bondarev (1961). #Estimates for 2012 are as reported by Dr. Kaliia Moldogazieva of the Human Development Center (Kyrgyzstan)

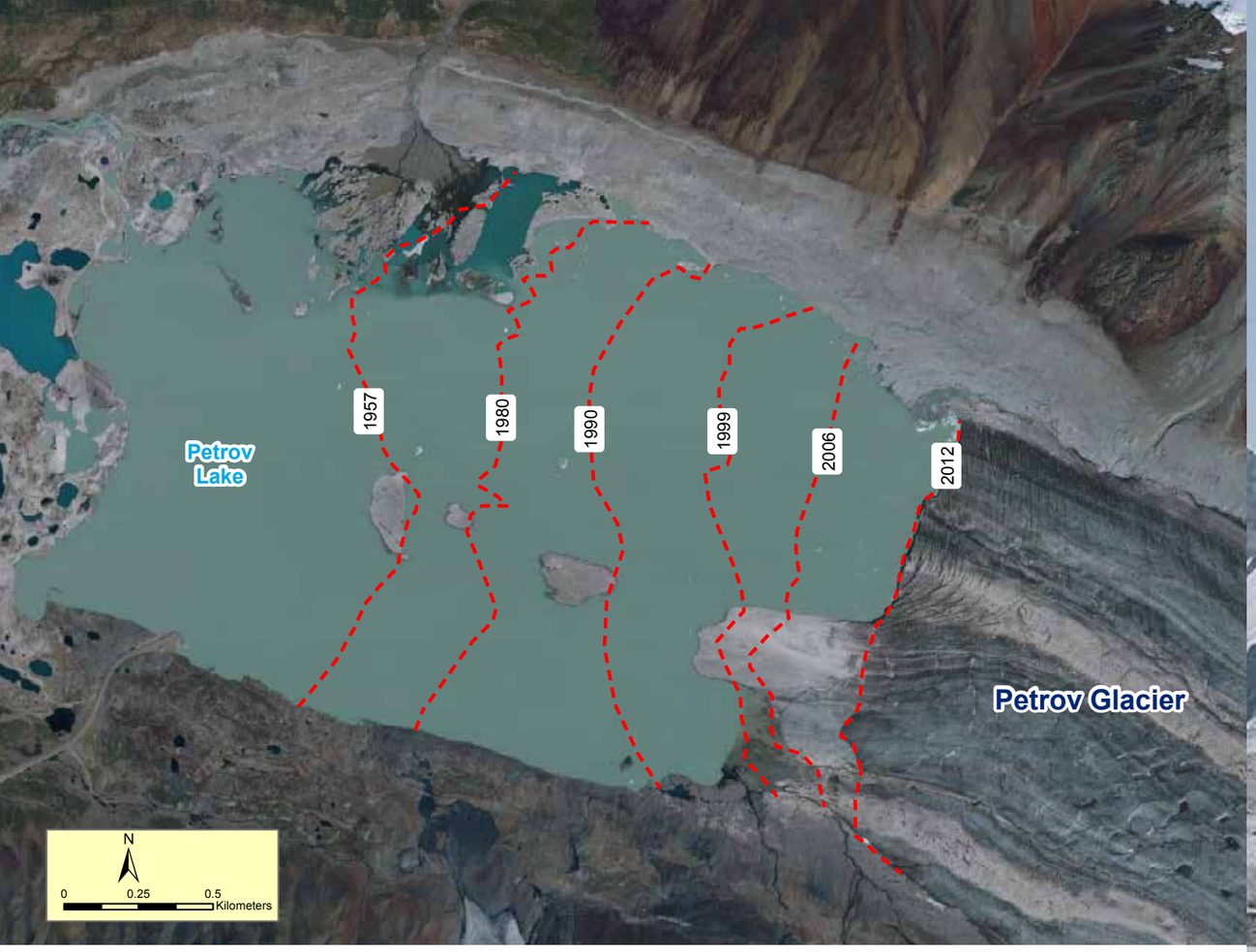
Comparison of Glacial Ice Loss Due to Mining and Climate Change
(Million tonnes)



Glacier Displacement Data for 2012



NOTE | No monitoring data available at Sarytor from August to December 2012



Petrov Lake and Climate Change

The effects of climate change across the Kyrgyz Republic have been described and forecasted in the Kyrgyz government's 2009 submission to the United Nation Framework Convention on Climate Change. This document notes that, by the end of this century, the Kyrgyz Republic expects to lose up to 94 percent of its glaciers.

Related concerns include the melting of ice within natural moraine dams of high altitude glacial lakes. This process reduces the stability of moraine dams and may generate a natural hazard known as a glacial lake outburst flood, a sudden release of large volumes of water. The Petrov Lake, located near the Kumtor mine and supplying our operation with water, is one such high altitude lakes which appears to be impacted by climate change.

We have supported or commissioned independent studies by scientists and engineers over the past few years to better understand the characteristics of the moraine dam of Petrov Lake and the potential risks that may be associated with a related glacial lake outburst flood event.

In response to the findings of these studies, we have begun to monitor movements of the moraine dam, commissioned a study on how best to reduce the volume of Petrov Lake to lessen the risks and severity of a glacial lake outburst flood, and are planning to install an early warning system.
We expect to provide additional safeguards for potentially affected mine infrastructure, and continue to liaise with Kyrgyz agencies and communicate progress made on these efforts.

PHOTO I Scientists have documented the retreat of the Petrov Glacier for decades before Kumtor started operating in 1997

ENVIRONMENTAL RESPONSIBILITY

We are committed to listening to stakeholder concerns and responding to the unique environmental challenges that come with operating a high-altitude gold mine.

PHOTO I Scientists have documented the retreat of the Petrov Glacier for decades before Kumtor started operating in 1997

In this section, we highlight our overall environmental performance. We also discuss concerns that have been voiced by some of our stakeholders. Their key concerns relate to biodiversity, geotechnical and natural hazards, waste management, glaciers and water resources, and mine closure. These key concerns are discussed in this section. To address other material issues, provide context, and respond to frequently asked questions, we have also reported on our hydrological setting, our water treatment processes, and our energy use and greenhouse gas emissions.

Environmental Expenditures

Our environmental expenditures (see bar chart) include support for staff in the environmental department, costs for monitoring, laboratory analysis, external environmental consultants, and audits. Treatment for emissions and wastes — including the effluent treatment plant and sewage treatment plant — are also recognized as environmental expenses.

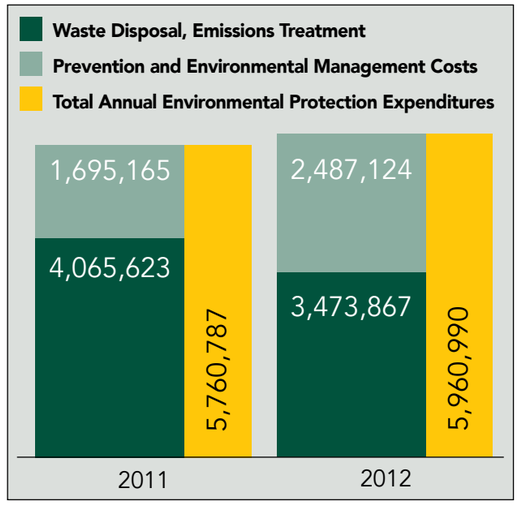
Focused Environmental Studies

Each year we conduct focused studies to expand our understanding of the environmental baseline, trends and impacts in our project area. These activities and studies are often accomplished by engaging noted national scientists and experts.

In 2012, three major research activities were completed as described below. These studies involved over 30 scientists and researchers from the Kyrgyz National Agrarian Academy, the Kyrgyz National Academy of Sciences, Kyrgyz Republic Biology and Soil Institute and other National Academy of Sciences scientists, postgraduates and researchers, and staff from the Kumtor environmental department. The research studies included:

- Study of Vegetative Ground Cover and Soils for Reclamation Activities at the Kumtor Mine Site: This study involved a detailed analysis of soils, identification of plant species at various habitat types, collection of seeds and herbarium, condition of vegetative cover, and test plots and recommendations for reclamation activities.
- Hydrobiological Investigations of Water Bodies originating at the Kumtor Mine and Adjacent Areas: This study collected and identified the aquatic fauna, including fish, zooplankton and zoobenthos at major habitat types on the Kumtor Concession and surrounding water bodies.
- Technical Report on the Study of Fauna on the Kumtor Concession: This study involved a detailed study of birds and mammals on the Kumtor Concession and adjoining areas and also reported observations of the snow leopard, Marco Polo Sheep, mountain goats, wolves, foxes and numerous species of birds.

Kumtor Environmental Protection Expenditures and Investments (US$)



ENVIRONMENTAL MONITORING

We collect over 9,000 environmental samples and perform approximately 50,000 analyses each year.
Our environmental monitoring strategy considers both Kyrgyz and international standards.

PHOTO | In addition to our extensive monitoring program, our operations are subject to audits and inspections to identify opportunities for improvement

Our environmental monitoring strategy considers both Kyrgyz and international standards. The latter include the guidelines provided by the International Finance Corporation and relevant Canadian standards.

Our monitoring program includes the following components:

- Water quality and flows
- Effluent water quality and flow
- Biodiversity
- Soils
- Air quality
- Radiation
- Waste disposal
- Acid rock drainage
- Workplace inspection

Our environment department consists of approximately 25 individuals. The location of key environmental monitoring and sampling points, including key water quality compliance points, are depicted further below. Our performance status is detailed in the water quality and compliance section of this report.

Meteorological Monitoring

The first and second dedicated and automated meteorological stations at the Kumtor mine were installed in 1996 and 2012 respectively. They collect and report data using Canadian Atmospheric Environment Services' protocols and the station located next to the mine camp forms part of the Kyrgyz national weather network. The Saskatchewan Research Council in Canada has been contracted as required to calibrate the sensors and ensure the instruments function as designed.

In 2012, a contract was also concluded with the relevant Kyrgyz Republic agency to provide weather forecast for the project area.

Hydrological Monitoring

We track hydrological flows of the major water resources within the Kumtor Concession area. These include the Kumtor River, Petrov Lake, and the Upper and Lower Diversion Ditches (that now divert the Arabel River around the TMF), and the major tributaries that flow into the Kumtor River (including Chon-Sarytor, Kichi Sarytor and Lysyi Creek.

The Kumtor River flow generally peaks between June and September each year. On August 21, 2012, a peak flow of 23.95 m^3/s was recorded for the Kumtor River. This was 0.07 m^3/s greater than the 2011 peak flow. In 2012, the total annual flow in the Kumtor River measured at the flume within the Kumtor Concession was approximately 110.4 million m^3. With the addition of measured flows from the Upper Diversion Ditch, Lower Diversion Ditch, Chon-Sarytor, Kichi Sarytor and Lysyi Creek, the flow at the End of Mixing Zone (also called W1.5.1), Kumtor's main water quality compliance point, was estimated to be 138.2 million m^3.

We also monitor the annual water fluctuations of nearly two meters between the highest and lowest levels in Petrov Lake. On August 20, 2012, the lake's maximum water level was recorded at an elevation of 3734.18 meters. The lowest water elevation was recorded at 3732.38 meters on December 1st. By the end of 2012, the water level of Petrov Lake was recorded at an elevation of 3732.53 meters.

As the Kumtor River flows downstream, tributary streams and rivers provide additional flow. At the nearest town of Naryn, approximately 230 km downriver from Kumtor, the flow increases to an average 2,340 million m^3 per year. The volume of water extracted from Petrov Lake for our mining operations is equivalent to approximately 2 parts in 1,000 (or 0.2 percent) of average river flow at Naryn.

Quality Assurance/ Quality Control (QA/QC)

Our main contract laboratory is Stewart Assay and Environmental Laboratories LLC (SAEL - part of the ALS international group of laboratories), located in Kara-Balta, Kyrgyz Republic. We also maintain more limited on-site laboratory capacity to support operational control. In 2012, we reviewed and further updated our water sampling processes and on-site laboratory.

Our monitoring program includes a formal Quality Assurance/Quality Control (QA/QC) program for collection and handling samples to ensure a consistent approach and accurate results. To ensure accuracy of monitoring results, our QA/QC Program consists of duplicates, blind samples, blank samples, and calibration and documentation of instruments and procedures.

To ensure quality data, our samples are sent to qualified local and international laboratories. These include SAEL (Kara-Balta, the Kyrgyz Republic), the Saskatchewan Research Council (Saskatchewan, Canada) and Lakefield Research Laboratories (Ontario, Canada). Lakefield Research specializes in cyanide chemistry and analysis.

Audits, Inspections and Claims

Our operations are subject to regular audits by Kyrgyz and international companies and experts, in addition to inspections by relevant Kyrgyz agencies, and audits commissioned by Centerra and the European Bank for Reconstruction and Development.

In 2012, the number and scope of Kyrgyz environmental inspections increased significantly as part of various Kyrgyz commission reviews with approximately 28 inspections, involving approximately 300 individuals and 560 person-days spent at the mine site, and collection of a variety of documents and records. The Kyrgyz parliamentary commission, for example, noted in its report that it had reviewed 15,000 pages processed in 50 files.

In response to the publication of the Kyrgyz government-sponsored commissions, a series of additional independent reviews were conducted in 2012. These included independent assessments conducted by Prizma, commissioned by Kumtor to analyze the commissions' reports, and by ERM, commissioned by Centerra's board to conduct an environmental audit of our operation. Both reports are published on Kumtor's website.

Following the publication of Kyrgyz government-sponsored commissions' reports, Kumtor received a series of major claims from the Kyrgyz Republic State Inspectorate Office for Environmental and Technical Safety, along with a directive requiring that actions be taken to correct various alleged environmental and technical violations. These claims, which totaled approximately $152 million in 2012, focused on allegations associated with land damage, water use, waste management, and with waste rock disposal practices. At the time of writing this report, these claims are unresolved and an additional claim of $319 million has been received for environmental pollution charges.

We have discussed the underlying concerns associated with the claims and directive in this report. We believe that all of the claims are exaggerated or without merit. Our formal responses are also provided on Kumtor's website. We remain committed to work diligently with the Kyrgyz government to fairly resolve the claims.

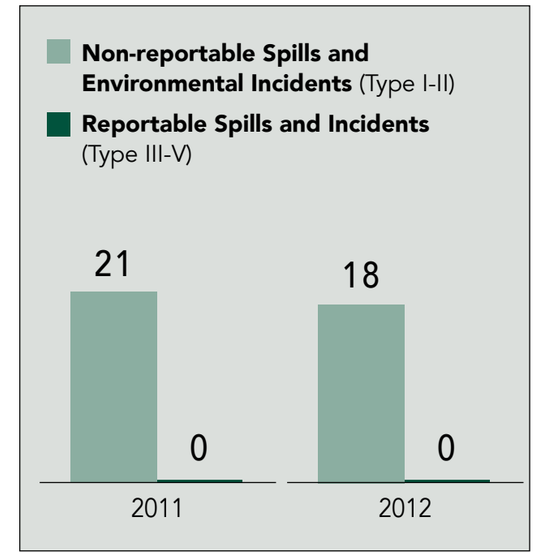
Environmental Incidents

Kumtor maintains a system for reporting environmental and safety related incidents. This is based on a five point reporting system which allows us to classify reportable and non-reportable environmental incidents and spills. The classification system considers level of environmental impact, national and other regulatory compliance, and concern of local communities.

Senior environmental staff are immediately informed of all incidents and allocate the appropriate classification level. For Type I and Type II incidents, which are considered insignificant in terms of the scale and severity of impacts, there are no external reporting requirements. Such incidents are also not immediately reported to Kumtor's president and Centerra's board of directors. Incidents classified as III to V are reported to the board of directors and, in many cases, trigger external reporting requirements to relevant local regulatory agencies.

No reportable environmental incidents occurred at Kumtor during the reporting period, although we recorded 18 non-reportable incidents. These were typically minor spills of fuels that were immediately contained, and cleaned up, and did not result in significant environmental impacts.

Environmental Incidents and Spills



Description of Key Surface Water Sampling Locations

Station	Location (Comments)
W1.1	Petrov Lake outflow – Kumtor River Head Waters (alpine glacier fed lake – elevated Al, Fe)
W3.1	Lysyi Glacier Toe (head water of Lysyi Creek)
W3.2	Close to waste dump area in Lysyi basin
W1.3	Kumtor River after confluence of Lysyi Creek
T8.1	Tailings pond (feed to effluent treatment plant)
T8.4	Treated effluent discharge pipe at ETP (MAC limits apply)
NP1	Water from the north sump of the pit (water with elevated sulfate level is pumped to mill)
SP1	Water from the south sump of the pit (diverted to Chon Sarytor River basin)
WR11	Combined channel (diverted from the pit to Chon Sarytor River basin)
WR2,WR15, WR16,DW1, DW2, DW3, DW4	Water from the Pit (diverted to Chon Sarytor River basin)
W1.4	Between Kumtor bridge and flume 1km downstream from ETP Discharge
W4.1	Head water of Arabel Suu diversion ditch (background level)
W4.2	Low Diversion Ditch (LDD)
W4.3	Discharge of Upper Diversion Ditch (UDD) to sediment pond
W4.3.1	Discharge of UDD sediment pond to Kumtor River
W2.2	Head waters of Chon Sary-Tor River (waste rock dump drainage area)
W2.4	Chon Sary-Tor River below camp area
SWS.1	Natural overflow at glacier toe – South West Zone (includes stations SSS1, SSS2)
SWS.2	Exploration camp center in South West
W1.5.1	Kumtor River, 8km from ETP discharge (main compliance point)
W6.1	Arabel-Suu River, 7km from security check point (background level)
W1.6	Kumtor River, 17km from mine site (before confluence with Taragai River)
W1.7	Kumtor River, 40km from mine site (Taragai + Kashka Suu + Maitor Rivers)
W1.8	Naryn River in Naryn city, ca. 230km downstream from mine
P5.2, P5.3, P5.4	Camp, mill and administrative building (potable water)
SDP	North-east side of former landing pad (treated waste water flow)
S1.2	Kumtor River, 1000 meters below treated sewages confluence with Kumtor River

BIODIVERSITY

We are redoubling our support for conservation efforts which has contributed to a population increase of threatened Marco Polo sheep and snow leopards

PHOTO I Operating adjacent to a nature reserve has created valuable stewardship opportunities and outcomes

Our Commitment

Kumtor is committed to the protection and conservation of biodiversity, including the application of integrated approaches to land-use planning throughout the mining life cycle. We seek to reduce or eliminate significant impacts on biodiversity and ecosystem services, and recognize the value of dialogue with stakeholders on such matters.
In addition, we strive to create opportunities to work with our stakeholders to promote positive gains in biodiversity conservation in our region. These activities are scaled to the risks, opportunities, and stakeholder interest attached to biodiversity.

Regional Context

The Tien Shan Mountain Range is one of the longest mountain ranges in Central Asia, stretching approximately 2,800 kilometers in the Kyrgyz Republic, China and Pakistan. The region features globally important biodiversity and is home to a number of endangered species including the snow leopard and the Marco Polo sheep (argali) as detailed further the following below. Other species of concern include one aquatic plant in the Ranunculus family (Hedysarum kirgizorum), which is also included in the Red Data Book, and possibly endemic species of dandelion (Taraxacum syrtorum) and a tulip (Tulipe tetraphylla).

Ecosystem Services

Ecosystem services are the benefits that people and businesses derive from ecosystems. Kumtor mine is located in a remote region and the nearest village - Ak-Shirak with population of approximately 120 - is located in a different valley some 80 km away in a 6-8 hour drive from the mine. Agricultural activities, such as crop growing, are very limited due to the harsh climate, thus the livelihood of the community is reliant on flocks of sheep and goats, and other livestock that is pastured in surrounding meadows, together with government-funded incomes. As only 35% of homes are heated with electricity, wood and dung are important sources of fuel. Direct use of biodiversity or products from the natural environment including the collection of medicinal plants, berries, mushrooms, together with hunting and fishing. There is also seasonal sheep grazing in the valleys leading to Kumtor.

Glacier fed rivers, including the Kumtor River which originates from the Petrov Lake, form part of an important ecosystem service for a broader range of communities in Kyrgyzstan as well as for Kumtor. The Tian Shan region also contains significant grasslands, which provide carbon storage and sequestration services. The Sarychat Ertash Nature Reserve (SCER) describes a number of "sacred sites" that occur in the region, including cultural and natural sites, none of which is located within the immediate vicinity of the Kumtor mine or related infrastructure. The snow leopard is an important cultural symbol in Central and South Asia and features widely in folklore and beliefs. Snow leopards, wild sheep and goats, and high mountains could provide attracting tourism and related economic opportunities, although such activities
are currently not permitted in the SCER.

Regional Fauna Species of Conservation Status Found Within the Study Area

Common Name	Latin Name	Kyrgyz Red Book (2006)	IUCN Red Book	Kumtor Concession	SCER
Mammals					
Snow Leopard	Uncia Uncial	Critically Endangered	Endangered	x	x
Brown Bear	Ursus Arctos	Locally Rare	Least Concern	x	x
Argali	Ovis Ammon	Vulnerable	Near Threatened	x	x
Manul	Otocolobus Manul	Near Threatened	Near Threatened		x
Birds					
Golden Eagle	Aquila Chrysaetos	Near Threatened	Least Concern	x	x
Lammergeyer	Gypaetus Barbatus	Near Threatened	Least Concern	x	x
Egyptian Vulture	Neophron Percnopterus	Vulnerable	Endangered	x	
Saker Falcon	Falco Cherrug	Endangered	Endangered		x

NOTE | SCER is Sarychat Ertash Nature Reserve; IUCN is the International Union for Conservation of Nature

Reengaging with Stakeholders

The concerns about adverse biodiversity impacts associated with Kumtor's activities highlighted the need for Kumtor to re-engage with conservation-oriented local and international stakeholders, some of whom have worked with us since we started our operations in the Kyrgyz Republic. These early activities resulted in the formal establishment of the Sarychat Ertash Nature Reserve (Zapovednik) adjacent to the Kumtor Concession. These activities also generated opportunities to develop and implement collaborative and grant-funded conservation initiatives, which were delivered by a coalition of local and international NGOs and the Sarychat Ertash Nature Reserve.

The outcome of one such initiative was the publication of the draft management plan for the Sarychat Ertash Nature Reserve in 2008, which was co-financed through the European Bank for Reconstruction and Development (EBRD) and International Finance Corporation (IFC), multilateral lenders to Kumtor. This plan, however, has seen little progress in recent years, a period during which the Kyrgyz Republic witnessed two revolutions and many other government changes.

In addition to considering the outcomes of several Kyrgyz government-sponsored commissions, we hosted a cross-sectoral biodiversity workshop in late 2012. This was the first such workshop in the Kyrgyz Republic involving a mining company. The discussions during the workshop helped us to develop Kumtor's biodiversity management strategy and plan, which has also been published on Kumtor's website.

Biodiversity: Problem or Opportunity?

In response to concerns raised by NGOs about adverse biodiversity impacts — an argument used by the Kyrgyz government to rescind exploration permits which had been previously granted to Kumtor — we convened a multi-sectoral biodiversity workshop in Bishkek in October 2012. Leading Kyrgyz conservation experts contributed to this workshop, including Professor Emil Shukurov, the editor of the Red Data Book of the Kyrgyz Republic on threatened species. Several leading international conservation NGOs and academicians and representatives from relevant state agencies and nature reserves also participated.

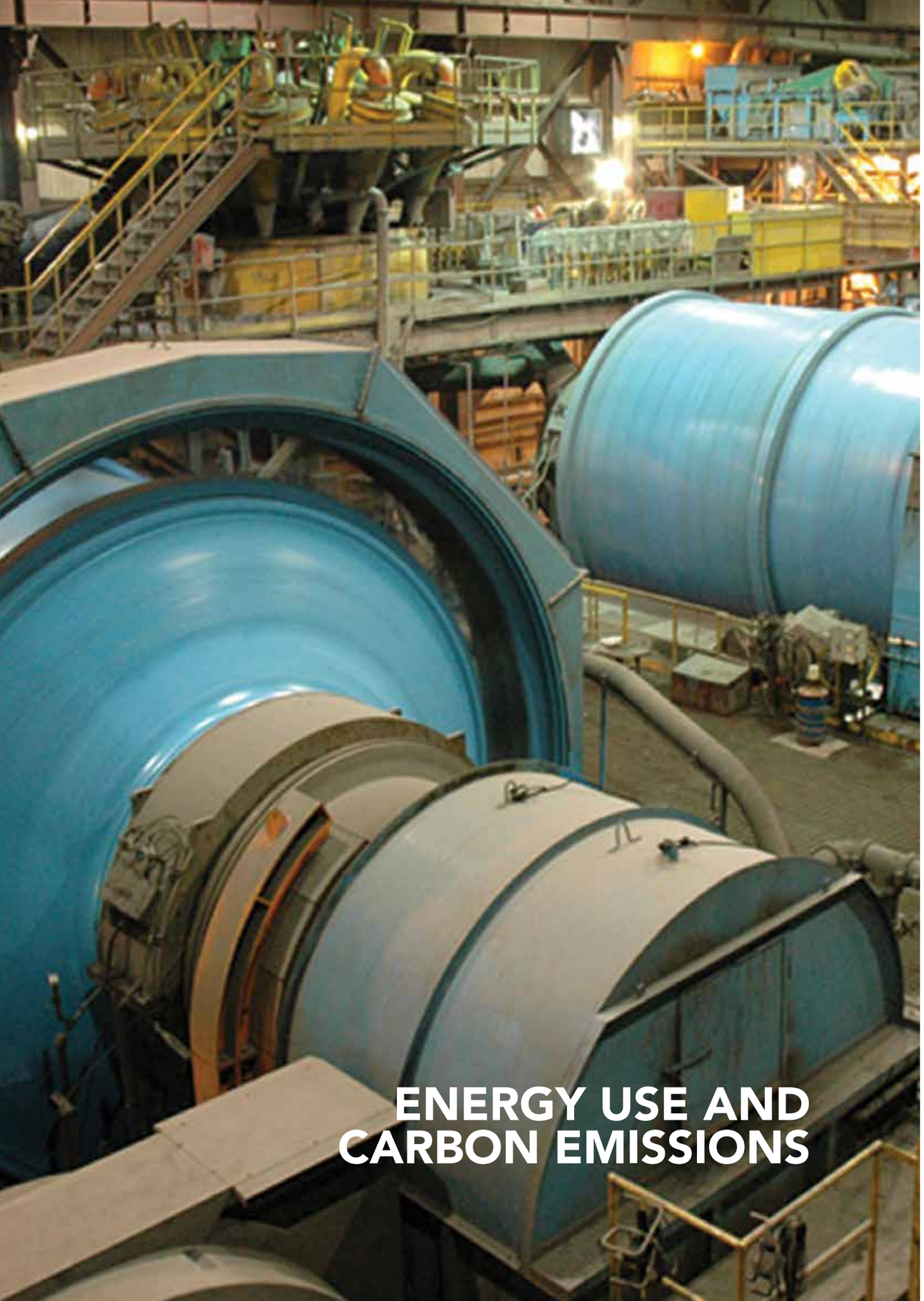
This workshop was instrumental in achieving three important outcomes:

First, it helped to identify and develop a common understanding of concerns, data gaps and facts. This included a shared understanding of a significant increase in the numbers of wildlife that has taken place since Kumtor started mining operations in 1995.

Periodic wildlife surveys show that, since the mid-1990s, when Kumtor's operations began, the number of argali near Kumtor has increased from 750 to 2,500. Also, snow leopards, which had been decimated through poaching, have reappeared. DNA-supported research shows the presence of 18 individual snow leopards in the neighboring Sarychat Ertash Nature Reserve.

Second, the workshop highlighted ambiguities fueling stakeholder discontent, such as unclear boundaries of the neighboring Sarychat Ertash Nature Reserve and associated buffer zones, and the fact that Kumtor's exploration licenses were overlapping in these areas. It also identified a number of conservation activities being undertaken or proposed by various stakeholders. Several of these were adopted by Kumtor as part of its effort to develop a portfolio of collaborative biodiversity enhancement projects and partnerships.

Third, these discussions informed Kumtor and contributed to the formulation of our first biodiversity management strategy and plan in 2012. This was done in parallel with signing a memorandum of understanding for joint activities with Fauna & Flora International, the world's longest-established international conservation body, which operates in more than 40 countries worldwide. Kumtor also expects to participate in, and occasionally host, future biodiversity meetings and provide updates about relevant biodiversity initiatives. A summary brochure and the full biodiversity management plan are available on Kumtor's website.



ENERGY USE AND CARBON EMISSIONS

Mining and milling are energy-intensive activities. Energy costs, particularly those associated with fuel, are significant expenditures at our operation.

PHOTO | Kumtor's mill is connected to the electrical grid which is mainly supplied by hydropower

Carbon Footprint

Fuel represents over 20 percent of our commodity and services-related purchases. The increase in fuel price at Kumtor from 2011 to 2012 increased our diesel expenditures by an additional $13 million in 2012.

We have taken steps to better understand and manage our carbon footprint. Following up on an energy audit of Kumtor completed in 2008, we developed an energy use and carbon emission inventory for the 2012 reporting period. This included a review of greenhouse gas (GHG) contributions from the use of explosives, which were found to be significant, and contributions from landfilling and waste water treatment, which were found to be insignificant.

GHG Intensity

Overall, a 46 percent reduction in gold production in 2012 and, at the same time, a doubling of an already high stripping ratio to address accelerated ice and waste rock movements, significantly increased our carbon intensity at Kumtor in 2012, compared to 2011. Our GHG intensity, normalized for materials moved, compared favorably against a peer group comprising other high altitude mining operations.

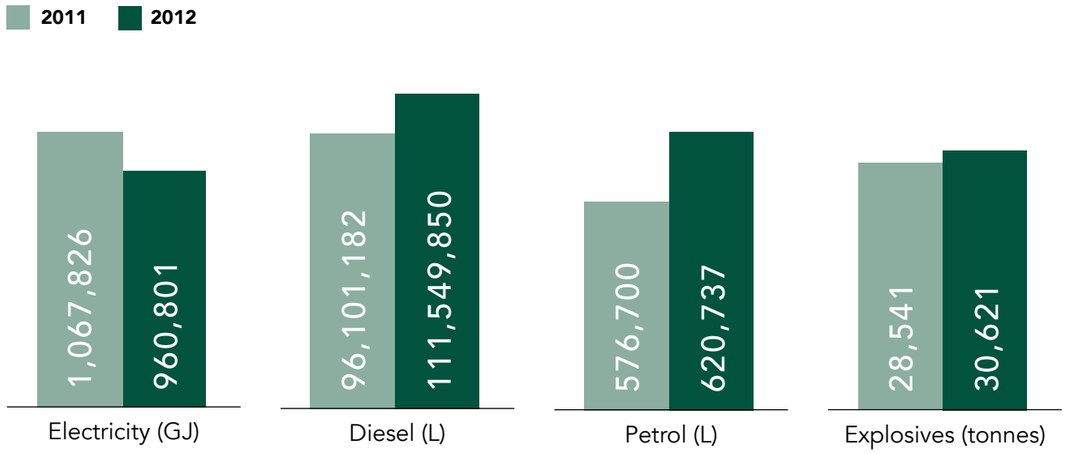
Access to Hydropower

The Kyrgyz Republic generates the majority of its electricity through hydropower (over 70 percent). The major source of grid-energy-supplied power to Kumtor is from the Toktogul Reservoir located on the Naryn River. This means that efforts that reduce or replace our fuel consumption with grid power could generate the greatest value in terms of a reduction of our carbon footprint.

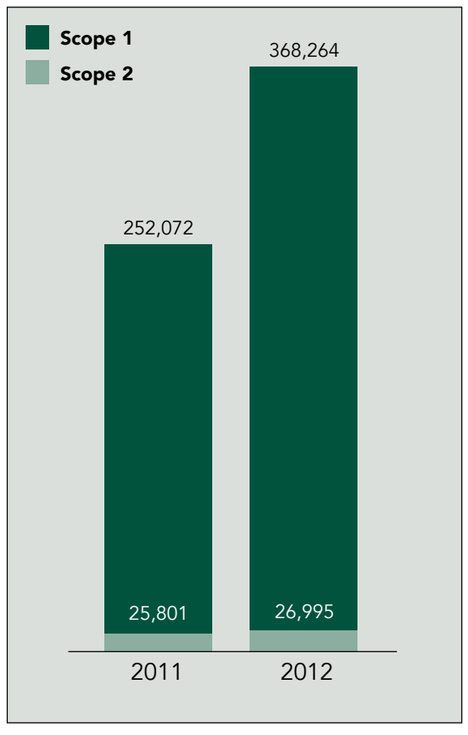
Energy Conservation Measures

We aim to reduce our GHG intensity by reducing our specific energy consumption and by increasing energy efficiency.
As part of this effort, we have begun to phase out diesel generators used for dewatering pumps and connecting these to the electricity grid instead. Additional conservation measures accomplished during the reporting period included replacing lighting with more energy-efficient bulbs, voltage-regulated lighting, and the use of timers to automatically control electricity usage in infrastructure and buildings at the mine.

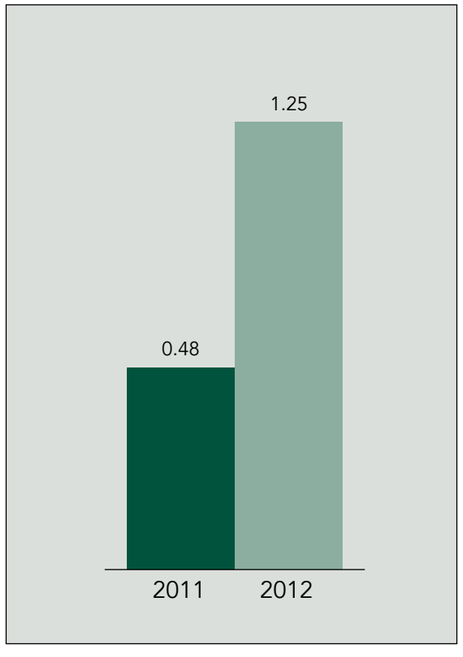
Electricity, Fuel and Explosive Consumption (Kumtor Mine)



Estimated Greenhouse Gas Emissions (tonnes CO_2e)



GHG Intensity Ratio



NOTE | GHG = Greenhouse Gas; Intensity Ratio calculated as Total GHG emission (tonnes of CO_2e)/Total Gold (ounces)

Conversion to efficient lighting and controls, though cost-effective over time, did not produce a measurable change in the GHG footprint at Kumtor, given the very low proportion of GHG footprint derived from electricity and the small proportion of electricity consumption for lighting as compared to other operational activities such as crushing and grinding.

Exploring Opportunities

We continue to explore approaches that may help reduce our carbon and GHG intensity at Kumtor. If deemed necessary, the most cost-effective GHG savings may need to be considered using an offset concept which could be developed off-site.

External Reporting

As in previous years, Kumtor's carbon footprint has been reported through Centerra's participation in the Carbon Disclosure Project. This is an independent international not-for-profit organization that tracks and reports corporate information pertaining to climate change.

AIR EMISSIONS

Our operation does not feature significant point-source emitters for nitrogen dioxide or sulfur dioxide because we use electricity supplied by the national grid.

PHOTO | We maintain the technical road in Barskoon valley and mitigate dust emissions

Fugitive road dust produced from light and heavy vehicle traffic is the principle source of air emissions. Stakeholder concern associated with dust levels is primarily centered on perceived impacts within the Barskoon valley, although concerns have also been raised about mine dust deposition on glaciers. We conduct regular monitoring of our ambient air quality for particulate matter.

Dust in Barskoon Valley

Access to site for personnel and shipment of consumables and other materials is via a gravel road, which is maintained by Kumtor and passes through the Barskoon valley. This road serves as an access road to several small communities, summer pastures and "hunting farms" in the high altitude valleys, Ak Shirak village and the Sarychat Ertash Nature Reserve. This road brings not only the supplies needed for our operations, but also local and international trophy hunters and tourists.

Following stakeholder concerns about dust levels in the Barskoon valley, we expanded dust mitigation — such as planting of trees and watering the road — and continued monitoring of dust levels. As in previous years, three high-volume air samplers were installed in June and September 2012 to measure the total suspended particulate (TSP) concentrations in the air. Results of our sampling in 2012 depict an increase of average dust levels in June, when compared to the previous year, but shows them to be still below the applicable maximum allowable emission standard of 100 microgram per cubmic meter (μg/ m^3), defined for non-industrial zones. The average dust levels in September 2012 were similar to those measured in August 2011 and remained also below the relevant standard.

Concerns have been raised that dust adversely impacts some flora immediately adjacent to the road, is a driver of landslides originating from steep slopes (which often follow significant rain events), and is endangering a certain tulip.

Some stakeholders from certain villages near the Issyk-Kul Lake, where burning of rubbish and other

Dust Monitoring in the Barskoon Valley (Summer 2012)

Sampling Stations Average Dust Level (μg/m^3)	June 2011	June 2012	August 2011	Sept 2012
A1.1	19	28	47	31
A1.2	11	63	15	22
A1.3	12	92	18	25
MAE Standard	100	100	100	100

NOTE | A1.1 sampler was located 50 meters south of the road from the upper Kamaz truck monument; A1.2 sampler was located 100 meters to the north from the road, towards the Barskoon River; A1.3 sampler was located 50 meters to the north of road, opposite to Kamaz truck monument, towards Barskoon River.

uncontrolled air emissions are common place, believe that they are being adversely affected by dust and other air emissions emanating from the mine. However, the mine is separated from these villages by a mountain range and a radial distance exceeding several tens of kilometers. This distance rules out the Kumtor mine as a source that could compete with locally-based air emissions at those villages.

We will continue to work with concerned stakeholders to identify suitable solutions to their concerns about dust levels and other emissions. Responding to such concerns, we expanded the fleet of our road watering trucks and made additional changes to further increase the frequency of road watering to mitigate traffic-related dust from Kumtor and other vehicle movements in the Barskoon valley.

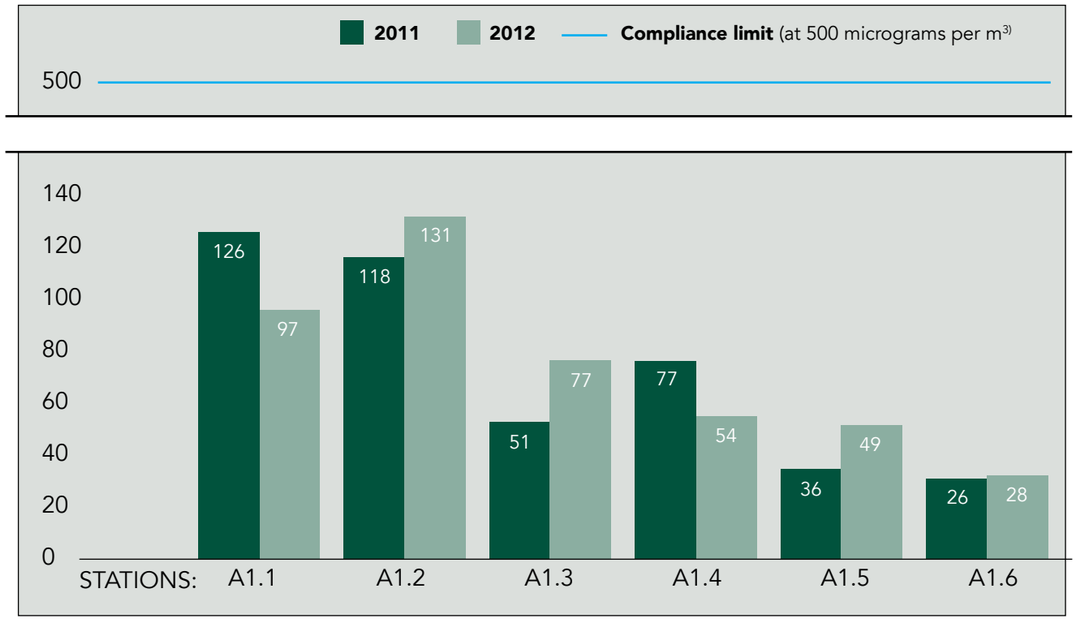
Air Quality at the Mine

We routinely monitor and report the air quality at our mine site. This effort is supported by six high-volume samplers located strategically around the mine site to measure total suspended particulates (TSP) levels. At all stations, the annual average TSP concentration has been below the Kyrgyz 24 hour TSP limit of 500 micrograms/m^3 for industrial zones. However, in 2012, this Kyrgyz limit was briefly exceeded on five occasions: at station A1.2 on March 22, at A1.1 on April 21, at A1.3 on November 23, at A1.3 on December 17, and at A1.2 on December 29.

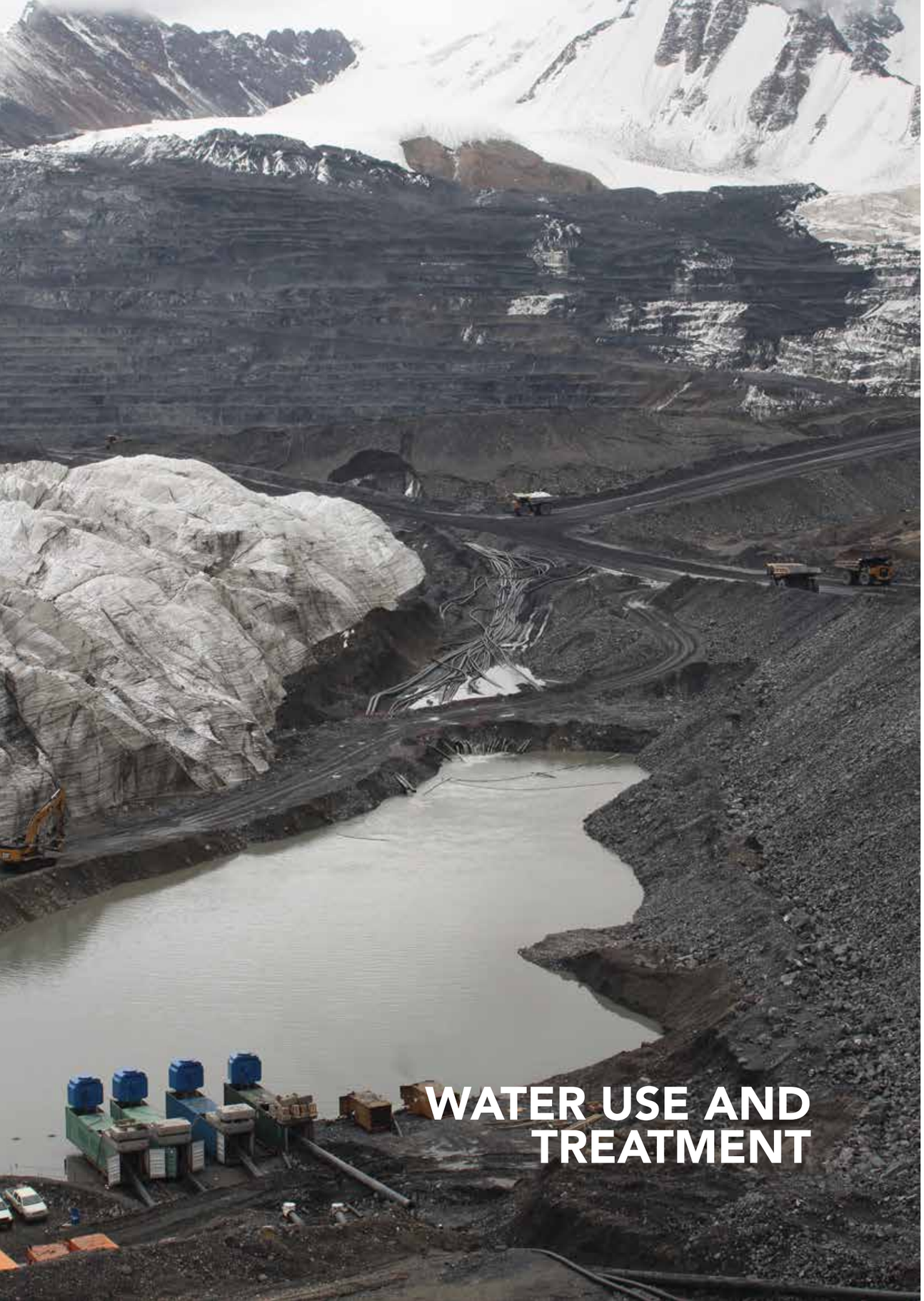
Our analysis suggests that, during spring, point exceedances are related to commencement of tailing dam extension activities and associated construction work. In winter, point exceedances are related to exposure of dried tailings to occasional strong winds. After detecting point exceedances, additional dust suppression actions were taken in all cases. We are currently exploring options to further reduce dust uptake from the dried tailings beaches within the tailings management facility and ways to reduce the "freeze dry" effect from the discharge of tailings slurry during the coldest days of the year, as this can also contribute to dust emissions.

The TSP samples are also analyzed for cyanide, sulfur, arsenic, nickel, selenium, zinc, uranium, radium 226 and strontium 90. Consistent with previous results, the 2012 monitoring data, which are presented in the appendix, demonstrate that the results are orders of magnitude below their relevant threshold limit values.

Annual Average Dust Concentrations at Mine (TSP, microgram per m^3)



NOTE | TSP is total suspended solids, Kyrgyz 24 hour TSP compliance limit for industrial zones is 500 micrograms per m^3.



WATER USE AND TREATMENT

Water management is an integral and significant part of our operation. As our project evolves, we continually review and improve our water management practices to ensure alignment with good international practice and regulatory requirements.

PHOTO | We divert, collect, and distarge large quantities of glacial melt water to ensure safe mining conditions

Some stakeholders, including Kyrgyz government-sponsored commissions, raised a series of concerns relating to our water use and water quality. In this section, we discuss the key components of our water management program. We have also addressed associated stakeholder concerns.

The Key Components of Our Water Management Strategy Include:

- Providing safe drinking and domestic water for our employees
- Removing water and ice from the open pit area to ensure safe access to ore
- Recycling water within the mill to reduce make-up water needs
- Wastewater management and treatment to appropriate national and international standards
- Monitoring water quality using accredited national and international laboratories
- Transparently reporting our compliance status

Water Usage

In 2012, we extracted approximately 5.2 million m^3 of water from Petrov Lake. This means that our water intake was nearly 1 million m^3 lower when compared to 2011. This reduction was largely due to a shut-down of our milling operation which was necessitated by the change in mine plans to address ice and waste movements. Our monitoring shows that the volume of Petrov Lake continues to grow at an estimated annual rate of approximately 2 percent due to the melting and enlargement of the Lake bottom and shores.

Approximately 97 percent of the water pumped from Petrov Lake is used for the processing of ore in the mill. The balance is used to provide water for domestic, sanitary and other purposes. We estimate that approximately 5 million m^3 of process water is recycled annually within the mill, which reduces our make-up water requirements.

Metallurgical challenges limit our ability to drive down our water use intensity by recycling effluents from our tailings pond. Studies have shown that even low levels of cyanide present in the tailings pond would adversely affect our gold recovery

process. However, in July 2012, we began to use water from pit dewatering in the mill.

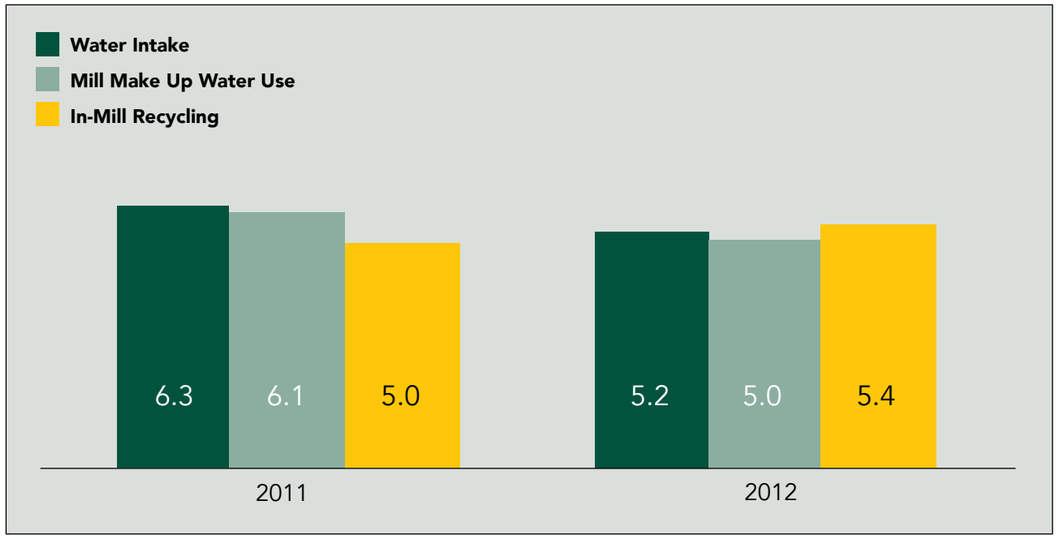
Pit Dewatering

We collect and discharge large quantities of water as part of our pit dewatering program. This activity occurs mainly during the summer period when glacial melt water collects in the open pit. Dewatering is required to ensure safe mining conditions. In 2012, we discharged approximately 11 million m^3 into the Kumtor River. Approximately 294,263 m^3 of pit water from the north pit was pumped directly to the mill and reduced the volume of fresh make up water required from Petrov Lake.

Water Treatment

We have three main water treatment processes at the Kumtor mine. The first involves treatment of water pumped from Petrov Lake to generate potable water. The second process is designed to treat our mill effluent which contains residual concentrations of cyanide. The third process treats our domestic and sanitary waste water from the mine camp. As the Kumtor River is largely frozen during the winter period, our treated effluents are only discharged to the Kumtor River between May and November each year. The performance of our treatment plants in achieving defined water quality standards are discussed in the water quality and compliance section in this report.

Water Intake and Use in Kumtor's Mill (million m^3)



Water Use Intensity (Ratio)

2011	2012
1,083	1,102

NOTE I Calculated as make-up water in mill (liters)/mill feed (tonnes)

Domestic Water Use and Pit Dewatering (million m^3)

	2011	2012
Domestic consumption (m^3)	189,000	215,134
Pit dewatering to Kumtor River (million m^3)	11.051	11.059
Pit dewatering to mill (m^3)	0	294,263
Mill feed (tonnes)	5,814,861	4,756,094

Potable Water

Both our industrial and potable water is sourced from Petrov Lake, which is largely derived from glacial melt water. This means that it exhibits naturally high concentration of sediments. This gives the lake a characteristic milky appearance, along with elevated concentration of parameters such as iron and aluminium. The water quality of Petrov Lake does not meet hygienic drinking water standards without prior treatment. In 2012, we used approximately 0.2 million m^3 for our potable water needs to safely support a mine camp housing approximately 1,700 workers. We apply treatment methods that are standard for many public supplies around the world. These include flocculation, filtration, chlorination, and ultraviolet-light treatment. In combination, these processes remove large and fine particles and disinfect the water to levels that exceed drinking water quality standards of the Kyrgyz Republic.

Sewage Treatment

For sanitary wastewater or sewage, the main concern is the removal of organic matter, which would otherwise use up oxygen in the natural water courses if discharged untreated. We use biological treatment in a digester to ensure organic matter uses its oxygen demand prior to discharge. The water is also chlorinated to eliminate potentially harmful bacteria. Although challenging to operate at high altitude with low atmospheric oxygen and harsh weather conditions, treatment is achieved successfully through careful design and management. During the winter, treated effluent is stored in a large holding pond before being gradually discharged during the summer.

Industrial Wastewater

The main concern of the public related to the effluents which originate from the mill is typically associated with cyanide. As in the case of Kumtor, this chemical is commonly used in the processing and recovery of gold from the crushed ore. Cyanide can be toxic at elevated concentrations.

Our mill generates annually about 5 to 6 million m^3 of effluents which contain residual levels of cyanide and other constituents at concentrations which could be harmful to the environment if discharged untreated. This is why we use an effluent treatment plant, which is based on the patented INCO process, to reduce and remove cyanide and metals from our effluents. It is one of the largest such plants outside North America.

In 2012, the planned expansion of our tailings management facility necessitated a re-siting of the effluent treatment plant system. This work was completed in time for our 2013 treatment and discharge season. As part of our continuous improvement program, efforts were also directed to improve the efficiency of the ETP and to reduce the treatment costs.

In 2012, the effluent treatment plant treated 5.058 million m^3 of effluent. A total of 5.071 million m^3 of treated water was discharged into the Kumtor River, which included the runoff and snowmelt waters that had accumulated in effluent treatment pond #3 during spring melting. The performance of our effluent treatment is described in the water quality section in this report.

WATER QUALITY AND COMPLIANCE

We routinely monitor the quality of our water intake, as well as our treated and untreated effluents. We use Kyrgyz and Canadian standards to evaluate our performance, and to identify exceedances and opportunities for improvements.

PHOTO | Kumtor's water quality treatment processes are designed to be effective in cold and high altitude environmental conditions

Potable Water

We frequently monitor the quality of our potable water system. The analytical results show that our potable water is epidemiologically safe, chemically harmless, meets Kyrgyz and Canadian drinking water standards, and has favorable organoleptic properties.

Kumtor River Compliance Point

Our key surface water quality compliance point is designated W1.5.1 (also referred to as the End of Mixing Zone) and is located downstream of our operation in the Kumtor River. The results for 2012 are presented in the
following bar chart (note the logarithmic scale of the graph) and benchmarked against the Kyrgyz maximum allowable concentration (MAC) standards.

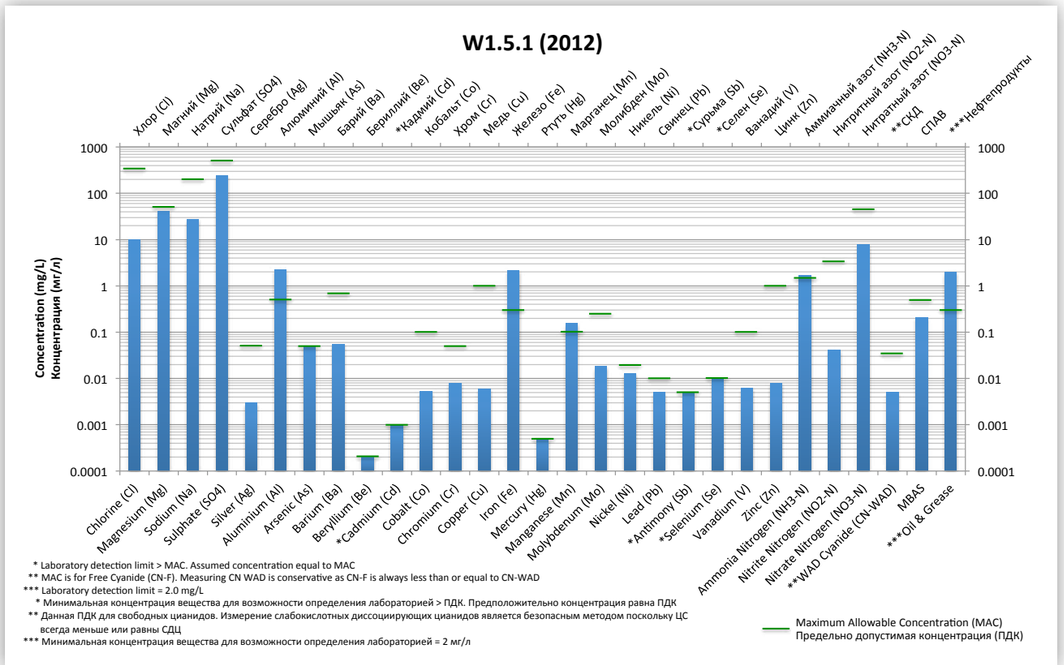
Our data show that the majority of water quality parameters in 2012 are below their respective MAC standards. This means that we have been in material compliance with our key water quality standards. However, in this section we have also identified areas where we are seen to be falling short, and explain why and any planned next steps.

Overall, the glacial origin of the water sources in the Kumtor project area results in their elevated sediment loading. As a result, they exhibit a characteristically milky appearance. This sediment loading influences the total metal concentrations for a variety of parameters, such as aluminum, copper, iron and zinc. This naturally elevated background condition was documented in the baseline data collected before the commencement of Kumtor's mining operations. Elevated background levels are also reflected in the current water quality of Petrov Lake, which is the source of the Kumtor River and located upstream of the Kumtor mine.

The presence of sediments – and the associated metals – in local streams is not indicative of poor environmental performance of the Kumtor mine. In addition, standards used in the Kyrgyz Republic refer to total metal concentrations whereas international environmental water quality standards are more commonly based on dissolved metal because this is more indicative of environmental impact and risk. We take these aspects into consideration when evaluating Kumtor's water quality.

A review of results from 2012 show that our average total aluminium and iron concentrations exceeded the MAC standards. However, they remained consistent with the naturally high background concentrations in the region. Also, the average total manganese concentration marginally exceeded its

Average Annual Water Quality Results for 2012 at Kumtor's Compliance Point W1.5.1



* Laboratory detection limit > MAC. Assumed concentration equal to MAC
** MAC is for Free Cyanide (CN-F). Measuring CN WAD is conservative as CN-F is always less than or equal to CN-WAD
*** Laboratory detection limit = 2.0 mg/L
* Минимальная концентрация вещества для возможности определения лабораторией > ПДК. Предположительно концентрация равна ПДК
** Данная ПДК для свободных цианидов. Измерение слабокислотных диссоциирующих цианидов является безопасным методом поскольку ЦС всегда меньше или равны СДЦ
*** Минимальная концентрация вещества для возможности определения лабораторией = 2 мг/л

MAC standard. However, this does not represent a significant risk to human health or the environment as manganese effects are mainly aesthetic and concentrations of manganese from natural processes can range up to an order of magnitude higher.

The result of our annual average oil and grease concentration for 2012 is presented as being equal to the laboratory detection limit as it is not possible to reliably measure lower concentrations using routine laboratory procedures. However, the Kyrgyz MAC standard for oil and grease is approximately 7 times lower than routine laboratory detection limit, which results in the appearance of an exceedance at our compliance point even though there is no significant presence of oil and grease.

The results for ammonia also show a marginal exceedance for 2012. The main operational sources of ammonia are related to the cyanide destruction process in the effluent treatment plan and the use of explosives. Analogous to the use of total metal concentrations in Kyrgyz MAC standards described above, the use of total ammonia tends to generate an overstated environmental risk if not corrected for different speciation of ammonia (ionized and un-ionized) and corrections for pH and temperature. In addition to reviewing our water management approach, we have proposed to work with the Kyrgyz authorities and adopt an ecological risk based approach in line with good international industry practice and develop a more meaningful compliance standard for ammonia for Kumtor's operation.

Although our average annual sulfate level continues to be below its MAC standard, this parameter has been a source of concern to some of our stakeholders who associate this with acid rock drainage. This is a process which can generate acid leachate and release metals into the environment. This topic is discussed in greater detail in the section on waste rock and ice in this report.

Effluent Treatment Plant Discharge

Given the extreme climatic conditions at the mine site, Kumtor's effluent treatment plant (ETP), which treats the effluents contained in the tailings management facility, generally operates between May and November each year. The ETP does not operate or discharge during the remainder of the year.

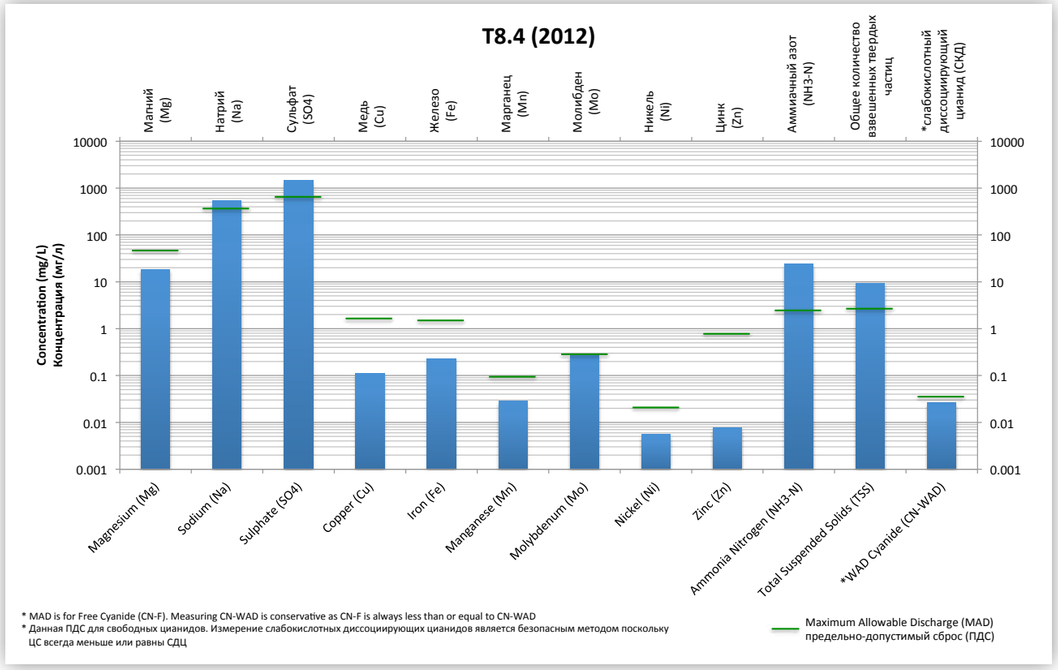
During the treatment season, the Kumtor River, which is the receiving water body of the treated discharge, is not frozen and exhibits significant flow volumes. Minimum flow volumes can range from 0.65 m^3/s in June or October to 5.2 m^3/s in July and September. In 2012, the peak flow of the Kumtor River was recorded at 23.95 m^3/s in August.

The 2012 results of the treated effluent discharge quality from the ETP is presented in the following bar chart (please note log scale). The results are benchmarked against maximum allowable discharge (MAD) standards and discussed below. The results show that effluent discharge concentration of cyanide and certain other key parameters met their respective MAD standards. However, the concentration of sodium, sulfate, ammonia and total suspended solids exceeded their respective MAD standards.

The total suspended solids level in the treated discharge is below that of the receiving Kumtor River and its naturally elevated sediment loading and, therefore, is not expected to pose any significant ecological risk. Also, the MAD standard for total suspended solids in 2012 was significantly lower than previous years, and, in 2013, was reset to typical level prior to 2012. Drivers of the elevated concentration of sodium, ammonia and sulfates include the use of some water from the pit through the mill (which ultimately passes through to the ETP), as well as the reagents and their chemical reactions, such as sodium metabisulfate and sulfuric acid, which are required for the cyanide treatment process.

Overall, the Kyrgyz Republic's approach to developing the maximum allowable discharge concentration, which apply to the ETP, is based on the minimum flow of the Kumtor River over the requested period of discharge. This means that considerably higher MAD standards would apply if we adjusted our treated effluent discharge to coincide with the higher flow periods of the Kumtor River, one of the options which we will be exploring in the future.
As described further below, we have also proposed to work with the Kyrgyz regulators to apply commonly used ecological risk-based approaches

Average Annual Discharge Water Quality from Kumtor's Effluent Treatment Plant 2012



* MAD is for Free Cyanide (CN-F). Measuring CN-WAD is conservative as CN-F is always less than or equal to CN-WAD
* Данная ПДС для свободных цианидов. Измерение слабокислотных диссоциирующих цианидов является безопасным методом поскольку ЦС всегда меньше или равны СДЦ

and develop more site specific standards for parameters such as ammonia sulfate.

Sewage Treatment Plant Discharge

In 2012, the average generation of waste water and sewage was 449 m^3/day. The annual average STP discharge water quality met all required MAD standards with the exception of ammonia which is exceeded marginally. To address this issue and ensure future compliance with MAD standards, we increased the capacity of the treatment plant with the commissioning of an additional bioreactor unit. The annual average five-day biochemical oxygen demand (a commonly used indicator for sewage treatment plants) of 282.4 mg/L in the raw sewage was reduced by over 93 percent to an annual average of 17.3 mg/L in the treated discharge.

External Water Quality Testing

Our operations are routinely subject to inspections by local government agencies. Following a series of doubtful results presented by Kyrgyz government commissions in early 2012, the Kyrgyz government commissioned reputable international experts associated with the Hygiene-Institut des Ruhrgebiets, Gelsenkirchen, Germany, and the Jožef Stefon Institute, Slovenia to provide an independent assessment of Kumtor's water quality impacts.

Their sampling and analyses were carried out in accordance with European and German standard procedures. Key conclusions contained in their reports, which have also been posted on Kumtor's website and are consistent with Kumtor's own findings, noted that there was no evidence of "undue high concentrations of cyanide and toxic elements in surface water." We will continue to engage with the Kyrgyz government to resolve any remaining or ongoing issues pertaining to water quality and other environmental concerns.

Exploring Risk-based Approaches

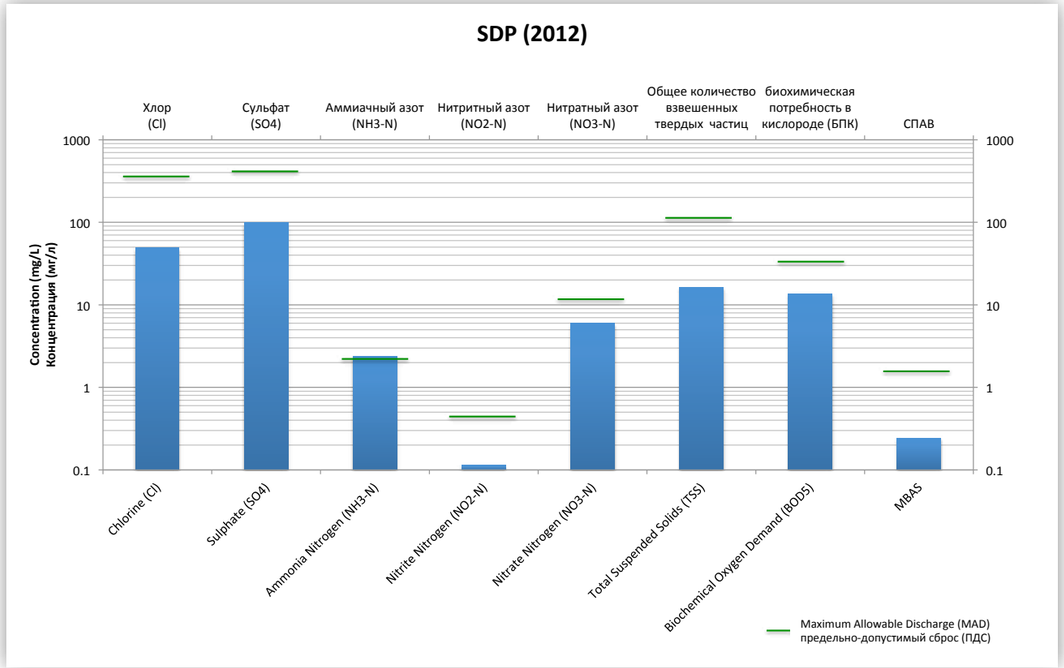
In response to stakeholder concerns about sulfate levels, we have raised the profile of this aspect in our closure planning process. We commissioned international consultants to undertake a sulfate loading study. It considered all key sources of sulfate addition to the Kumtor River, including the treated discharge from the effluent treatment plant, and modeled the sulfate concentration in the Kumtor River under a variety of operational scenarios. The results obtained in 2013 show that the model was successfully calibrated against historical measured values at W1.5.1, our surface water quality compliance point, and provide a high degree of confidence in the predictions. A key conclusion was that it was possible to maintain compliance with the maximum allowable concentrations of sulfate during the life of mine, provided Kumtor implements good practice water management controls (eg minimizing water contact with waste rock dumps).

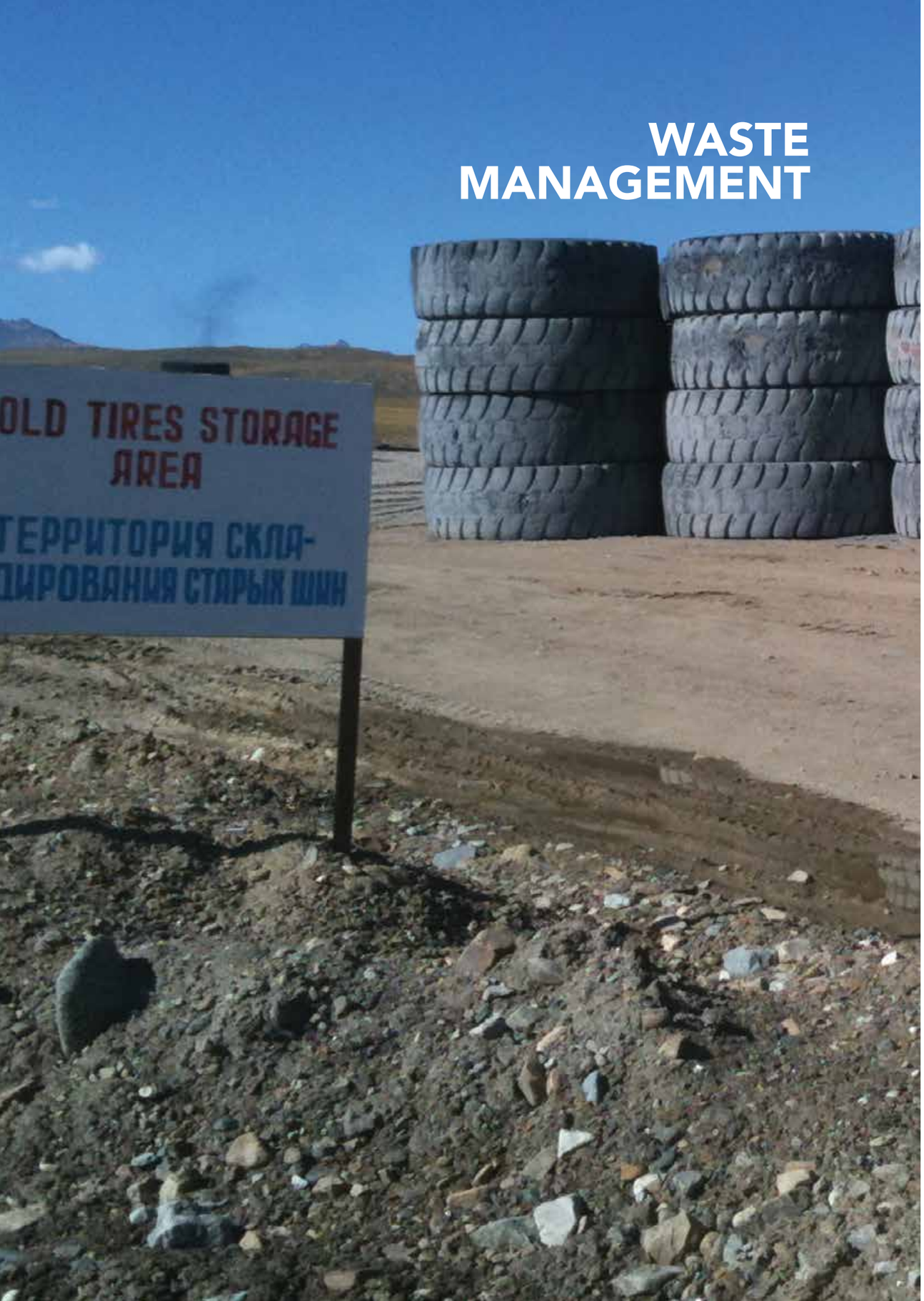
Similarly, we plan to further evaluate the exceedance of ammonia against our maximum allowable concentration standard, which is very low compared to other international standards or ecological risk-based limits. Also, we have proposed to work with the Kyrgyz regulators to apply commonly used ecological risk-based approaches and develop a more site specific standard for parameters like ammonia.

Monthly and Historic Results

Average monthly monitoring results are presented in the appendix. Monitoring results from previous years are presented in past annual environmental reports which are also available on Kumtor's website.

Annual Discharge Water Quality from Sewage Treatment Plant 2012





WASTE MANAGEMENT

In 2012, the Kyrgyz government-sponsored commissions were critical of our waste management practices. Also, independent auditors recommended that we further improve our waste management practices.

PHOTO | In 2012, we achieved 100 percent recycling of scrap metal, batteries, waste oil and scrap timber, and continue to explore opportunities to recycle waste tires

Major Waste Streams

Our operations produce several key waste streams. These include domestic, industrial, and hazardous wastes. Domestic wastes typically include food scraps and paper materials from camp facilities and offices. Industrial wastes typically include plastic containers, wood, scrap metal, waste oil, and tires. Our main hazardous wastes include cyanide packaging, batteries, medical waste, and expired reagents.

Waste Handling

At Kumtor, our waste collection and disposal areas are located within the final footprint of our tailings management facility. This means that these areas will eventually be covered by tailings and also subject to our mine closure activities. Our waste management facilities include a sanitary landfill for domestic wastes which are primarily generated by the offices and a camp with a capacity of approximately 1,700 people. The per capita domestic waste generation at Kumtor is approximately 1.4 kg/person/day which compares to 1.9 kg/person/day in the United States in 2011 as reported by the US Environmental Protection Agency, and 5.6 kg/person/day for a comparable copper mining camp in Mongolia. We also maintain separate lined landfill cells for oily rags and cyanide packaging.

Waste Recycling

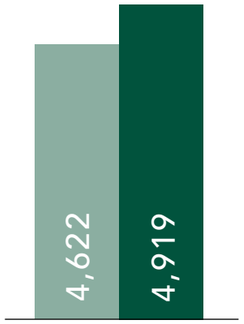
Where feasible, wastes such as scrap metal, timber, and waste oil are sold or recycled. Waste materials that may have the potential to be recycled or reused but for which no appropriate local recycling market is readily available, are temporarily stored on site. During 2012, Kumtor achieved 100 percent recycling of its scrap metal, batteries, waste oil and scrap timber through local vendors.

Waste Produced (weight in tonnes)

2011 2012

Industrial Waste Total (tonnes)

Industrial Waste Recycled (tonnes)



Waste Tires (tonnes)

Hazardous Waste Total (tonnes)

Hazardous Waste Recycled (tonnes)

Domestic Waste Total (tonnes)

Improving Practices

In response to recommendations provided by Kyrgyz government-sponsored commissions and other internal and independent external reviews, Kumtor further upgraded its waste management practices in 2012. This included increasing our scrap metal recycling, improving the storage of waste tires and sea containers, overhauling the waste oil collection system, and renewing our efforts to find reuse or disposal options for waste tires. We also phased out the use of burn pits in 2011.

In 2012, we retained international consultants to assist us with the development of an integrated waste management strategy. This initiated a review of Kumtor's non-hazardous waste management practices.
The outcome expected is the preparation of a strategy leading to the implementation of appropriate processes and systems to minimize the amount of wastes generated, and more effectively manage the remaining waste stream components in accordance with good international industry practice.

Waste Management Improvements in 2012

In response to stakeholder concerns, significant improvements have been made to Kumtor's waste management system. These include the following:

- Clean-up of the Lysyi Creek historic waste dump area. This dump was operational for approximately 12 years and was decommissioned in 2011. Recovered waste from this area was either stored in sea containers for future disposal or removed from site for recycling
- Construction of a new waste oil handling facility, which is used to store waste oil in a central location prior to removal from site for recycling by licensed contractors
- Improved segregation of industrial waste streams, including separated storage areas for timber/wood, tires, plastics, scrap steel, batteries, and rubber
- Improved waste characterization practices including tracking and documentation of various waste streams transported within the site and removed from site
- Commencement of development of an integrated waste management strategy designed to utilize and maximize the value of all waste streams

SOCIAL RESPONSIBILITY

Maintaining fruitful partnerships with communities remains a key component of Kumtor's operation.

PHOTO I Kumtor's social investments are shifting to a partnership delivery model to leverage sustainability outcomes

Guided by the principles of social responsibility, we continue to implement community development projects in those regions where we operate and most of our employees reside.

Stakeholder Engagement

Structured stakeholder engagement forms a key component of our community development activities. It allows us to listen and respond to concerns and grievances raised by local communities and other stakeholders. It also provides an opportunity to discuss economic, environmental and social challenges and opportunities that are important to them, and discover how we can contribute to positive developments. An example of structured stakeholder meetings focused on a specific theme is described in the biodiversity section. Other forums used for our structured engagement activities include regional committees and regional information centers, which are described below.

As part of our efforts to further strengthen our stakeholder engagement, we supported a research project designed to improve our understanding of stakeholder perception of Kumtor. We also retained Accountability, with its leading approach to stakeholder engagement, to conduct a stakeholder mapping exercise. This process identified a number of areas for improvement which we expect to pursue over the next two years. A high level summary of key issues of concern identified by our stakeholders is shown in this section.

Regional Committees

In 2012, two regional committees were established in the Ton, and Jety-Oguz regions, and a third committee was established for the city of Balykchy, were Kumtor's marshaling yard is located. The committees typically meet on a monthly basis, and membership of the committees comprises the akym (head of the region) or mayor (for Balykchy) as well as local deputies, heads of villages youth representatives and NGOs. Regional committees provide us with an opportunity for formal and structured stakeholder dialog on a regular basis. They also enable communities to prioritize funding requests which are consistent with local community needs, and to pursue issues of interest or concern in the context of our cooperation and operations.

Regional Information Centers

In 2012, we operated regional information centers in Barskoon, Jety-Oguz, Bokonbaev, Ton and Balykchy. Four community relations officers (CROs) work in these centers, attend local community events, monitor development projects, and act as a point of first contact for members of local communities.

We held a training workshop for CROs in December 2012. The objective of this three-day event was to further develop the capacity of our CROs and ensure a more consistent approach to stakeholder engagement, conflict management, communication and development across our region. This training event was also attended by the directors and staff from Kumtor's environmental and media relations departments, as well as CROs from Centerra's other operations in Mongolia and Turkey.

Summary of Stakeholder Concerns Identified in 2012

Stakeholders	Topic	Discussed in Sections
Kyrgyz Republic Government and Parliament	• Changing legal agreements relating to Kumtor • Project benefits	• President's Letter • Economic Responsibility • Social Responsibility
Various Commissions, Government Agencies and Local Communities	• Economic benefits • Environmental impacts • Biodiversity impacts • Waste management • Waste rock deposits • Tailings dam movement • Impacts on glaciers • Glacial lake outburst flood • Mine closure and funding • Dust in Barskoon valley • Claims	• President's Letter • Economic Responsibility • Social Responsibility • Environmental Responsibility • Case Studies • Petrov Lake and Climate Change • Tailings Management • Mine Closure
Local Communities, Youth	• Employment and procurement opportunities • Environmental impacts • Water resources	• President's Letter • Social Responsibility • Issyk-Kul Development Fund • Labor and Local Hiring • Procurement • Our Water Use • Water Treatment
Local Business	• Procurement • Jobs	• President's Letter • Economic Responsibility • Commitment to People • Procurement • Social Responsibility
Employees and Contractors	• Jobs • Benefits • Health and safety	• President's Letter • Health and Safety • Commitment to People • Worker Compensation • Collective Bargaining
Conservation NGOs	• Biodiversity impacts • Environmental impacts	• President's Letter • Biodiversity • Environmental Responsibility
Vulnerable Groups	• Donations and contributions	• President's Letter • Social Responsibility • Community Donations

Issyk-Kul Region Development Fund

Kumtor's payment obligations under the 2009 New Terms Agreement include a contribution of 1 percent of its gross revenue, paid on a monthly basis, to the Issyk-Kul Region Development Fund. These resources support key projects designed to develop the region's economic potential and social infrastructure.

The fund, independent from Kumtor, is controlled by an oversight committee appointed by the governor of the Issyk-Kul Oblast (administrative region). The 46 percent decrease in Kumtor's gold production in 2012 from 2011 resulted also in a decline of our contribution to the fund in 2012.

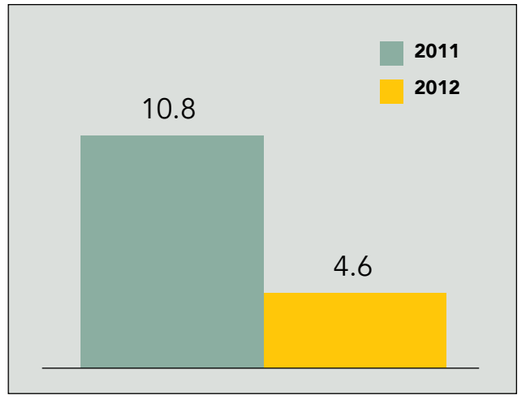
Community Investments

We aim to make investments in the communities that can generate sustainable local benefits. Selected activities and programs are highlighted below and additional details are available on Kumtor's website. The overall budget of Kumtor's community development programs in 2012 was $5 million (and excludes contributions to the Issyk-Kul Region Development Fund).

Sustainable Community Development

In 2012, Kumtor undertook a strategic review of its approach to community development. With the extension of the life of mine to 2026, the intent of the review was to ensure that the socio-economic impacts

Annual Contribution to Issyk-Kul Region Development Fund (Million US$)



from mine closure would be reduced through strategic community investments. Based on the review, we selected four focus areas for our community investment program.

We also developed the following two draft policies:

- Policy on Community Grants and Investments within Social Responsibility of the Company;
- Policy on Corporate Donations and Sponsorship.

Although these draft policies already provide guidance and a shift in direction, such as implementing projects through delivery partners, they will remain in draft form until they have been aligned with Centerra's corporate-level policies. We expect to finalize these polices in 2013.

Project Selection

The process of project selection can take from 3 to 6 months and considers stakeholder input, needs of the community, Kumtor's community investment focus areas and the availability of delivery partners to implement the projects. Selection criteria have been developed to objectively assess projects and ensure they meet both the needs of the community and are aligned with our strategic development goals.

Focus for Value

1. Support small and medium-size enterprise growth and diversity
2. Support the development of the agricultural sector
3. Youth and education
4. Environment

One of the key criteria for project selection is the principle of sustainability. This principle refers to the lasting effects of the project beyond the end of Kumtor's funding. If a project cannot be deemed to be sustainable and able to continue - or continue to generate benefits – beyond our funding period then it will not be selected.

Targeting Outcomes

Each community investment project is selected by Kumtor to address a certain need, such as youth unemployment, low diversity of small and medium-size enterprises, or gaps in the value chain of a certain agricultural products. During project development, key performance indicators are identified which will allow us to monitor if the desired outcomes of a project are being achieved. Examples are percentage decrease in local youth unemployment, average increase in monthly income of project participants, and increase in sales of agricultural products. Outcomes must be carefully selected to be measurable and realistic, and to minimize the effect of external factors. As we progress through our community investment project implementation we will be reporting annually on project outcomes.

Examples of Kumtor's Partnership-Based Projects Supported in 2012

Microfinance Program: Three independent microfinance lending agencies in Jety-Oguz, Ton and Balykchy, which provide low interest loans in the local community, were supported with a total of $1 million to help grow small and medium size enterprises, as well as agricultural development.

Karagat+: This three-year project will be implemented by the AVEP public foundation and will be supported with $900,000 over the life of the project. The project is developing and supporting the whole value chain of the black currant berry from nurseries to the end user. During 2012 a feasibility study was undertaken to evaluate the value chain of the berry, and resulted in the identification of issues – such as limited ability to comply with product, related hygiene standards - affecting the ability of small scale farmers (including a large percentage of youth and women) to earn an income from this berry.

One Village One Product: This one-year project was supported with $175,000 and implemented by the Japan International Cooperation Agency (JICA). The project aims to form small business associations at the local level producing a variety of hand made goods such as jams, felt products, honey and soap. Goods are sold through stores in major cities, such as Bishkek and Karakol.

Business Map of Issyk-Kul: This survey was undertaken in partnership with the European Bank for Reconstruction and Development and supported with $35,000. The results of the survey enabled a detailed mapping of the business opportunities by region in the Issyk-Kul oblast (administrative region). Over 1,000 entrepreneurs were identified during the study, which included a business forum in Karakol, as well as a comprehensive listing of businesses seeking investment.

Community Donations

Community development projects generally last 1 to 3 years and, as a result, the impacts are not always immediately visible to the community. This means that, in addition to our sustainable community investment program, there still remains a need for Kumtor to support the local community with one-off donations.

The Kumtor steering committee is tasked with conducting monthly meetings to review applications for donations. In its review, the committee considers the theme, location and special events, such as Veteran's Day, Handicapped Day, and Defense of Children Day. Community donation requests are also screened against an exclusion list (see box).

Examples of local community support through donations include furniture for kindergartens, sports equipment for schools and recreational centers, audio books for the blind, and newspaper subscriptions for small rural libraries. In addition, small repairs to social infrastructure such as windows for schools and new floors in centers for disabled people are also undertaken. We publish funded projects through our communication channels, including "In Touch" monthly, multi-lingual printed and web-posted newsletters, the publication of which commenced in December 2012.

Grievances and Road Blocks

As the major company operating in the Kyrgyz Republic, Kumtor receives complaints and requests ranging from dust from truck traffic to requests for jobs and building hospitals or roads. Kumtor has also experienced temporary road blocks by local communities in May 2012. The list of demands included building a brick plant, an environmental laboratory, a veterinary laboratory, and use of more local companies in Kumtor's supply chain. The road block lasted several days and was settled successfully. We expect to further improve the recording and monitoring of grievances, and covered related topics, as part of a training program which was delivered to our community relations officers in late 2012.

Community Donation Exclusion Criteria

- No travel costs
- No medical expenses
- No funding private business
- No funding for religious purposes
- No funding of political parties
- No funding of government related costs

MINE CLOSURE

Kumtor's commitment to safe and responsible mining also means that we plan for the full life cycle of our operation.

PHOTO | Kumtor's life of mine has been extended to 2026 and we continue to plan for closure

As part of our closure planning process, we seek to reduce and limit our long term environmental and social impacts. We believe that practical, progressive and on-going reclamation is the best way to ensure we minimize impacts to the areas that we disturb. Nevertheless, the majority of rehabilitation can only be performed following the completion of mining operations.

Regular Updates

We regularly update our conceptual closure plan (last update was in 2011) and submit it to the relevant Kyrgyz agencies and regulators. In 2012 we conducted research and studies focused on vegetation and soil types in support of our closure planning process. In addition, the scope for the next iteration of the conceptual closure plan was updated to include recent developments at the mine site and to begin adding components ranging from biodiversity conservation to socio-economic considerations.

We expect to generate the next update of Kumtor's conceptual closure plan in 2013. Updates are expected to include: a re-definition of reclamation objectives, decommissioning of mill complex and associated mine infrastructure, closure of certain open pits, closure of waste rock areas and other geotechnical stability issues, closure of the tailings management facility, modeling of post-closure water management and treatment requirements, plan for post-closure monitoring, and evaluation and update of closure cost estimates.

Funding Closure Liabilities

In 1995, Kumtor established a reclamation trust fund to accrue cash funds for mine closure liabilities. This trust fund is funded by sales revenue, annually in arrears. Future decommissioning and reclamation costs for the Kumtor mine are currently estimated to be $37.0 million. On December 31, 2012 the balance in the fund was $11.3 million (2011 – $9.1 million), with the remaining $25.8 million to be funded over the life of the mine.

Glossary and Abbreviations

ARD – Acid rock drainage is a term used to describe the outflow of mine waters that have been acidified by contact and exposure to rocks, reducing the pH levels which, in turn, can release and mobilize metals into the environment

Biodiversity – Short for "biological diversity," the variability among living organisms and the ecosystems of which they are part. This includes diversity within species, between species, and within ecosystems

Boroo Gold Company – The name of Centerra's operating entity in Mongolia

Capacity Building – Activities and initiatives that strengthen the knowledge and skills of individuals and improve structure and processes such that communities can grow and develop in a sustainable way

Carbon-in-Leach (CIL) – A recovery process in which a slurry of gold ore, carbon granules, and cyanide are mixed together. The cyanide dissolves the gold, which is then absorbed by the carbon. The carbon is subsequently separated from the slurry and the gold removed from the carbon

CCP – Conceptual Closure Plan (see also Closure Plan)

Closure Plan – A plan designed to ensure public safety and restore the physical, chemical and biological quality of the area disturbed by mining to an acceptable level. It must aim at leaving the area in such a way that the rehabilitated property does not become a burden to society after the mining operation is over

Code of Ethics – A policy that sets out Centerra's dedication to upholding high moral and ethical standards and specifies basic business conduct and behavior

Collective Bargaining Agreement – An agreement between a company and one or more workers' organizations or, in absence of such organizations, the representatives of the workers duly elected and authorized by them in accordance with national laws and regulations

Corporate Responsibility – A form of corporate self-regulation integrated into a business model where companies embrace the responsibility for the impact of their activities on the environment, consumers, employees, communities, and stakeholders

CRO – Community Relations Officers dedicated to developing and managing fruitful relationship between Kumtor and local communities and stakeholders

Currencies – Kyrgyz som (KGS): 2012 exchange rate 1 USD = 47 KGS

Cyanidation – A method of extracting gold or silver by dissolving it in a weak solution of sodium cyanide

Cyanide – A chemical compound containing carbon and nitrogen used to dissolve gold from ore

Doré – Unrefined gold and silver bullion bars that will be further refined to almost pure metal

EBRD – European Bank for Reconstruction and Development

Economic Value Retained – Component of GRI Economic Indicator EC1 and calculated as economic value generated less economic value distributed (see also www.global reporting.org for further details)

Electrowinning – Recovery of a metal from ore by means of electro-chemical processes

masl – Meters above sea level

EMAP – Environmental Management Action Plan

EMS – Environmental Management System

EITI – Extractive Industries Transparency Initiative

Engagement – A process of contact, dialogue and interaction that ensures all parties of interest are informed and participate in decisions that affect their future

Environmental Assessment – The process of identifying, predicting, evaluating, and mitigating the biophysical, social, and other relevant effects of development proposals prior to making major decisions and commitments

Environmental Incident – An event that has caused or could cause environmental harm. Ranges in scale and severity from Type I (Insignificant) to Type V (Catastrophic)

Environmental Management System (EMS) – A framework developed by an organization to help improve its environmental performance by taking environmental considerations into account when making decisions and managing risks

ETP – Effluent treatment plant

GHG – Greenhouse gas emissions

GJ – Gigajoules is equal to one billion (10^9) joules

Global Reporting Initiative (GRI) – A global network-based organization that has developed a widely used sustainability reporting framework consisting of principles and indicators to measure and report on an organization's economic, environmental and social performance. See also www.globalreporting.org for further details and definitions of the GRI framework and indicators

Governance – A set of processes, customs, policies, laws, and institutions affecting the way a company is directed, administered or controlled

Hazard – A source of potential damage, harm or adverse effects on something or someone under certain conditions at work

HSE – Health, safety, and environment

HSMS – Health and Safety Management System

High Potential Incident (HPI) – An incident that could have resulted in a serious injury

ICMI – International Cyanide Management Institute

IFC – International Finance Corporation, a member of the World Bank Group

ISO – International Organization for Standardization, the world's largest developer of voluntary International Standards

JSC - Joint Stock Company

km – Kilometers

KOC – Kumtor Operating Company

Kumtor Operating Company – The name of Centerra's operating entity in the Kyrgyz Republic

Kyrgyz Som – Kyrgyz som (KGS): 2012 exchange rate 1 USD = 47 KGS

L – Liter

Local Suppliers – Suppliers based in the same country as the operation that they supply

LTI – Loss time injury

MAC – Maximum allowable concentration standards apply at Kumtor's surface water quality compliance point (referred to as W.1.5.1) downstream of the Kumtor mine

MAD – Maximum allowable discharge standards apply to treated effluent discharges from the effluent treatment plant and the sewage treatment plant

MAE – Maximum allowable emission

Materiality – The threshold at which an economic, environmental or social issue or indicator becomes sufficiently important that it warrants disclosure in the corporate responsibility report

m – Meters

mm - Millimeters

Near Miss – An identified hazard that could lead to an HPI or injury

NGO – Non-Governmental Organization, a not-for-profit group largely funded by private contributions and operating outside of institutionalized government or political structures. NGOs focus on environmental, social and economic issues at local, regional, national and international levels

OHSAS – Occupational Health and Safety Advisory Services which provides guidelines for managements systems related to occupational health and safety

Open Pit – A mine where the minerals are mined entirely from the surface

Ore – A metal or mineral, or a combination of these, of sufficient quality and quantity to enable it to be mined at a profit

QA/QC – Quality assurance and quality control program for collection, handling and analysis of samples to ensure a consistent approach and accurate results

Reclamation – The restoration of a site after the completion of mining or exploration activity. Reclamation initiatives are used to create biologically diverse environments that are similar to the pre-mining landscape and will be attractive to a variety of wildlife species

Recordable Injury Frequency (RIF) – A measurement of the percentage of people seriously hurt in a given year, including fatal, lost-time and medical aid injuries. RIF = [(lost-time injuries + medical aid injuries) X 200,000] / hours worked

Responsible Mining – A comprehensive and transparent minerals activity that respects the rights of all stakeholders, especially those of local people, operates safely, protects the environment, minimizes the impact on human health, embraces the best international practices and upholds the rule of law while generating benefits for host countries. See also Corporate Responsibility

RIF – See Reportable Incidents Frequency

SAEL – Stewart Assay and Environmental Laboratories LLC (part of the ALS international group of laboratories), located in Kara-Balta, Kyrgyz Republic

SCER – Sary Chat Ertash Reserve, a strictly protected Zapovednik neighboring Kumtor Concession

Significant Spill – Any spill that is Level III or higher, as defined by Centerra's incident reporting system Level III spills are significant enough that they must be reported to Centerra's Board of Directors

Stakeholder – Any person or group of people who may be affected in a good or bad way by the financial, safety, environmental and social aspects of our operations and those who have an interest in or an influence on our activities

STP – Sewage Treatment Plant

Supervised Worker – Contractors or non-Centerra, Kumtor or Boroo employees who perform work for the Company

Sustainable Development – As used in the report Our Common Future (also known as the Brundtland Report): "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." See also Corporate Responsibility. Kumtor develops mineral deposits in a manner that does not restrict communities' efforts to sustain themselves and strives to catalyze economic activity that promotes long-term sustainability among our communities and their surroundings

Sustainability – An approach to decision-making that integrates economic, environmental and social considerations. See also Corporate Responsibility

Tailings – The material that remains after recoverable metals or minerals of economic interest have been removed from ore through milling

Threshold Limit Values – Maximum allowable concentration or discharge standards

TMF – Tailings management facility which comprises a set of twin tailings pipelines, approximately 6 km in length, a tailings dam, an effluent treatment plant and two diversion ditches to direct surface water around the TMF

Total Water Consumed/Extracted – The sum of all fresh water extracted by Kumtor from all sources (including surface water, groundwater, rainwater and municipal water supply) for any use over the course of the reporting period

TSP – Total suspended particulates

UNEP – United Nations Environment Program

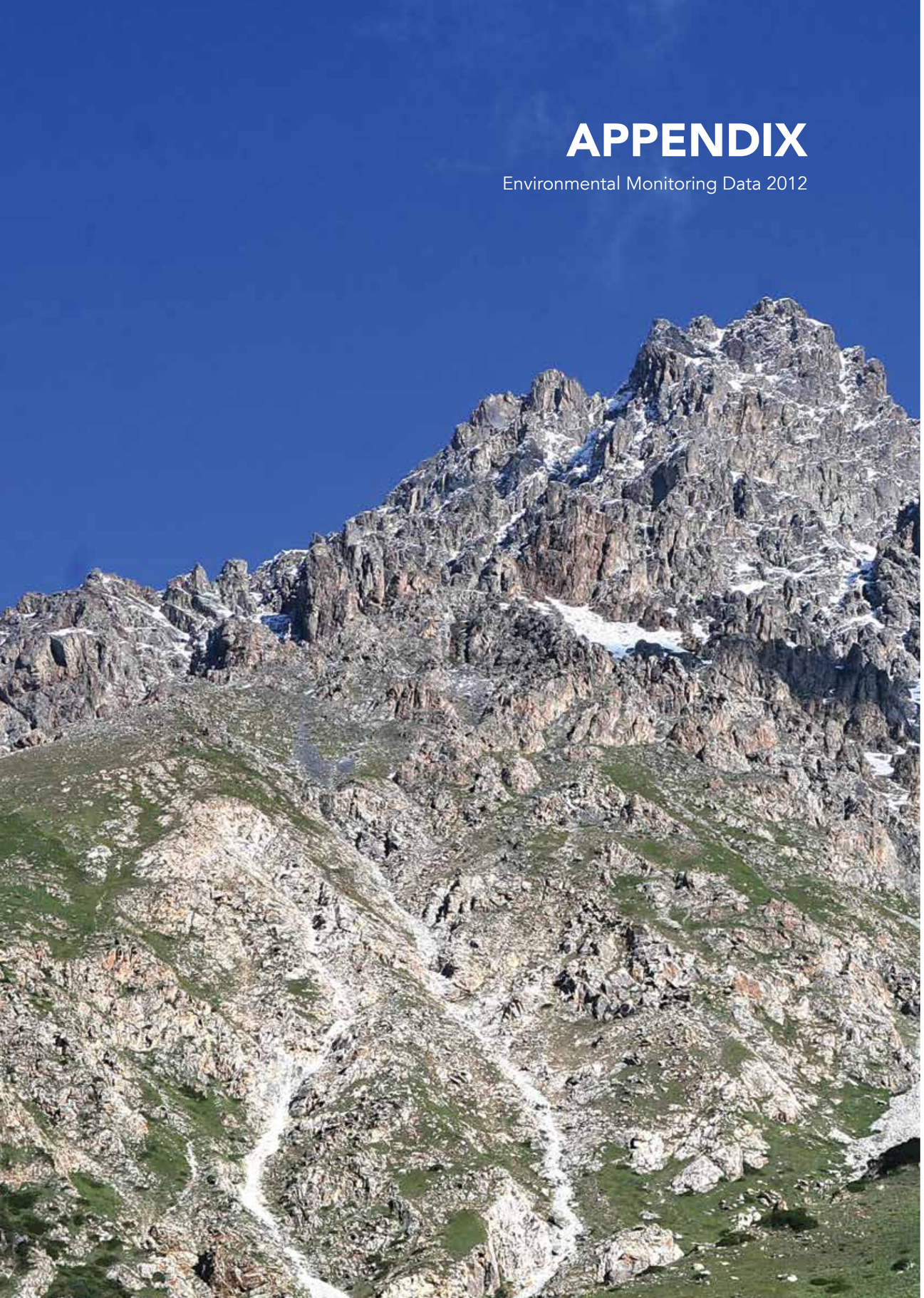
WTP – Water Treatment Plant

µm — Micro-meters

µSv/hr – Micro-Sieverts per hour

APPENDIX

Environmental Monitoring Data 2012



Appendix Contents

Monthly Average Dust (TSP) **Concentrations 2012** (micrograms/m^3)

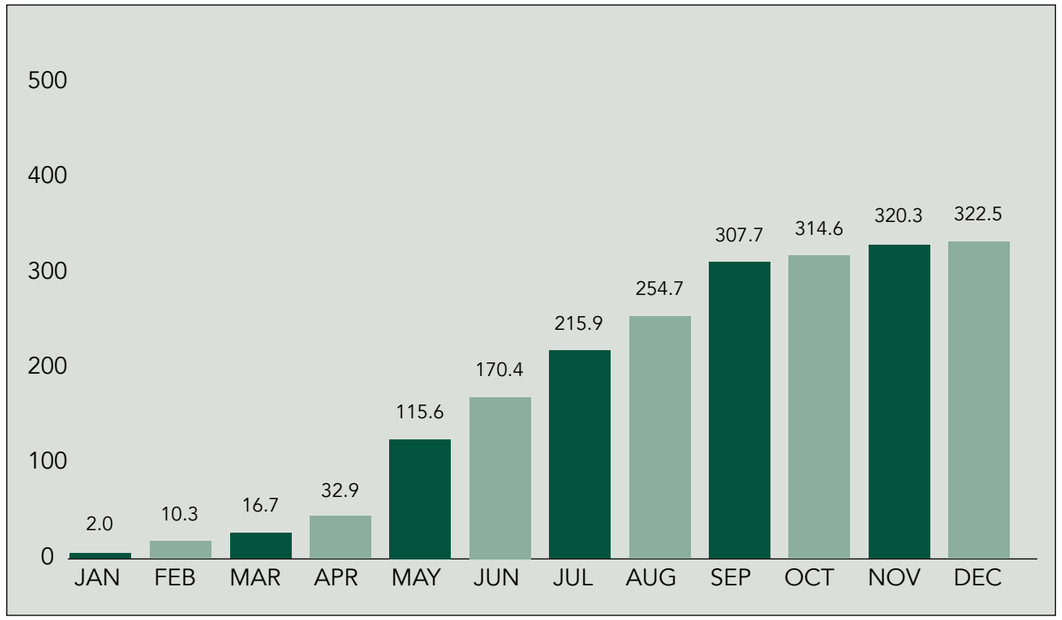
Station	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A1.1	107	36	174	187	105	41	108	80	30	63	128	103
A1.2	112	45	283	165	56	68	128	86	48	236	90	250
A1.3	57	18	132	45	17	19	80	38	29	100	235	156
A1.4	68	37	137	49	25	17	22	42	41	69	60	76
A1.5	30	14	93	115	56	42	72	46	28	25	22	44
A1.6	22	33	68	13	15	22	28	8	30	23		49

Metals and Radio-nuclide in Dust (TSP) **at Kumtor Mine 2012**

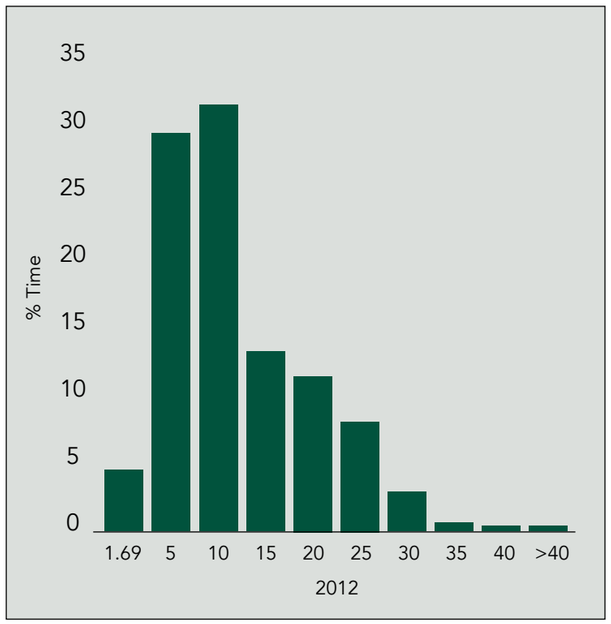
Station	CN (ng/m^3)	As (ng/m^3)	Ni (ng/m^3)	Se (ng/m^3)	S[1] (ng/m^3)	U (ng/m^3)	Zn (ng/m^3)	Pb-210 (mBq/m^3)	Ra-226 (mBq/m^3)	Sr-90 (mBq/m^3)
A1.1	11	4.8	9.3	0.24	440	1.4	500	0.44	0.021	0.14
A1.2	0.56	8.5	25	0.4	1200	2.4	450	0.44	0.024	0.21
A1.3	13	7.3	16	0.29	170	1.8	3800	0.43	0.022	0.29
A1.4	3.5	4.7	11	0.17	320	1.6	1500	0.43	0.036	0.14
A1.5	0.57	4.1	11	0.16	2.1	1.6	3600	0.55	0.045	0.14
A1.6	0.58	2.2	4.8	0.08	130	0.72	2100	0.2	0.014	0.14

NOTE | [1] No TLV for elemental S, therefore the TLV for SO^2 is used and adjusted by molar ratio. [2] ACGIH Threshold Limit values for non-radioactive elements in ng/m^3. KBB ICRP Derived air concentrations for radionuclides in mBq/m^3 except for U in ng/m^3. n.s.- no standard.

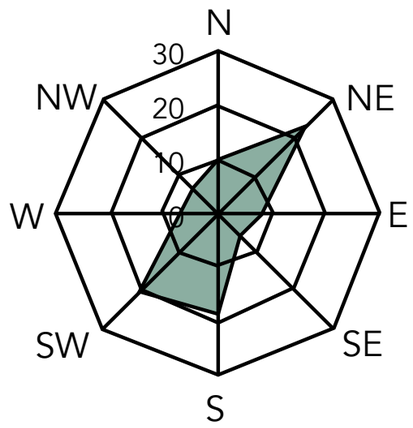
Cumulative Monthly Precipitation 2012 (mm water equivalent)



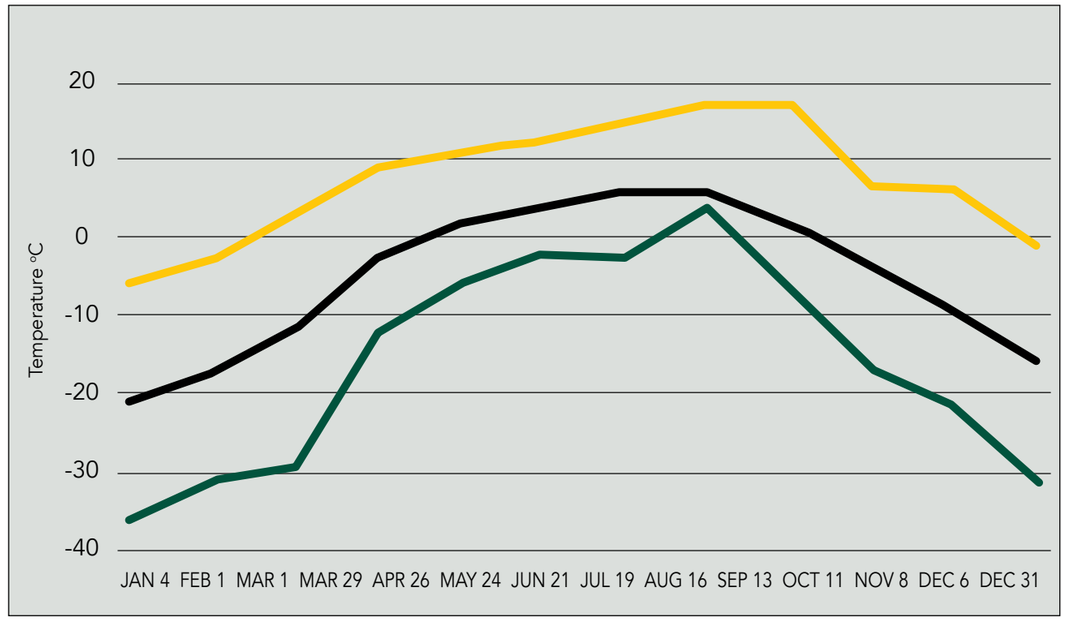
Wind Speed and Direction 2012 (km/hour)



Distribution of Wind Direction 2012 (%)



Average Weekly Temperatures 2012



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MINIMUM	-37.7	-32.5	-29.6	-13	-6.5	-3.76	-2.38	3.53	-6.5	-17.7	-22.5	-32.2
MAXIMUM	-7	-3.5	1.9	8.4	9.7	11.59	14.26	15.9	15.8	6.4	5	-1.9
AVERAGE	-21.5	-18.3	-12.7	-3.3	0.8	2.88	5.25	5.3	0.8	-5.1	-10.8	-16.9

Kumtor Weather Station 2012 Summary

2012		HOURLY AVERAGE READINGS FOR 2012									hr./rdg. Total precip, mm	AVERAGE 5 SECOND READINGS			
		W. Spd. 10 m, km/h	W. dir. deg. true N	W. Spd. 0.5 m, km/h	TEMPERATURE, °C			Re. hum., %	Dew.point, °C	Solar rad., KW/m^3		Temp °C	Rel. hum., %	Rel. hum., %	Barom. press., mbar
					Avg./h	Max., 5 s.	Min., 5 s.								
JAN	max	32.1	359.1	16.1	-9.5	-7.0	-9.8	86.6	-16.9	0.55		-9.5	85.5	-17.2	657.9
	min	0.5	0.2	0.0	-36.4	-35.1	-37.7	22.8	-47.6	0.002		-35.7	24.1	-47.7	640.3
	avg	6.1	136.0	1.1	-21.5	-20.5	-22.6	65.0	-29.1	0.10		-21.5	65.0	-29.1	647.7
	tot										2.0				
FEB	max	37.0	359.0	20.1	-5.2	-3.5	-5.9	91.1	-11.7	0.72		-5.2	90.9	-11.8	652.5
	min	0.5	1.42	0.0	-30.0	-28.3	-32.5	28.8	-41.2	0.002		-30.1	30.9	-41.2	641.6
	avg	8.0	145.4	2.0	-18.3	-17.1	-19.4	67.5	-24.8	0.15		-18.3	67.4	-24.9	646.8
	tot										8.3				
MAR	max	36.8	360.0	16.0	1.3	1.9	0.9	94.8	-6.7	0.91		1.1	94.0	-6.4	662.3
	min	0.9	0.4	0.0	-27.4	-26.5	-29.6	20.1	-37.2	0.002		-28.4	20.9	-38.6	642.5
	avg	10.2	156.9	1.8	-12.7	-11.6	-13.7	64.0	-19.3	0.20		-12.7	64.0	-19.3	650.9
	tot										6.4				
APR	max	30.2	359.9	18.8	7.4	8.4	6.7	99.5	-1.3	0.92		7.3	99.4	-1.4	662.9
	min	0.33	0.4	0.0	-12.5	-12.1	-13.0	18.9	-15.7	0.002		-12.6	19.3	-15.6	652.6
	avg	8.9	196.4	4.5	-3.3	-2.5	-4.0	66.8	-8.9	0.23		-3.3	66.9	-8.9	657.1
	tot										16.2				
MAY	max	33.3	359.0	20.7	9.0	9.7	8.7	100	2.7	1.03		9.0	100.1	1.6	663.6
	min	0.0	0.0	0.00	-7.0	-6.5	-7.6	24.7	-11.9	0.000		-7.0	24.8	-11.9	654.5
	avg	10.2	177.8	6.8	0.1	0.8	-0.6	72.3	-4.4	0.25		0.1	72.3	-4.4	658.1
	tot										82.7				
JUN	max	34.6	359.8	23.4	11.6	12.3	10.9	100	3.4	1.15		11.8	100.1	3.3	661.5
	min	0.0	0.0	0.00	-3.8	-3.3	-4.6	32.4	-5.1	0.000		-3.6	34.8	-5.2	654.3
	avg	10.0	182.0	6.9	2.9	3.7	2.1	75.3	-1.0	0.19		2.9	75.5	-1.0	658.1
	tot										54.8				
JUL	max	36.7	358.6	23.3	14.3	15.2	13.8	99.0	4.9	1.11		87.5	99.1	5.1	663.7
	min	0.0	0.0	0.00	-2.4	-1.4	-2.9	18.6	-8.1	0.000		-2.0	18.4	-8.1	654.5
	avg	11.1	174.8	7.0	5.3	6.1	4.4	66.5	-0.5	0.26		5.4	66.6	-0.5	658.7
	tot										44.7				
AUG	max	50.0	359.6	32.8	16.4	16.9	15.9	99.1	4.9	1.14		16.4	99.0	4.9	664.1
	min	0.1	0.7	0.00	-2.8	-2.3	-3.5	11.6	-14.9	0.002		-2.9	11.4	-14.0	656.5
	avg	10.5	175.0	6.8	6.1	7.0	5.3	60.7	-1.1	0.27		6.1	60.7	-1.1	660.7
	tot										38.8				
SEP	max	37.6	360.0	23.6	15.1	15.8	14.7	99.9	2.9	0.91		14.9	99.9	3.1	664.5
	min	0.1	0.3	0.00	-9.1	-8.1	-9.9	19.3	-15.5	0.002		-8.8	19.8	-15.7	655.3
	avg	10.0	161.7	6.1	1.2	2.0	0.5	71.7	-3.5	0.19		1.2	71.8	-3.5	660.3
	tot										52.9				
OCT	max	35.5	360.0	22.6	5.7	6.4	5.2	96.7	-4.3	0.81		5.8	96.5	-4.2	664.5
	min	0.0	0.0	0.00	-18.2	-17.7	-19.0	13.5	-23.3	0.000		-18.0	13.4	-24.0	653.3
	avg	9.7	172.5	6.2	-5.9	-5.1	-6.7	61.4	-13.0	0.17		-5.9	61.4	-13.0	659.3
	tot										6.9				
NOV	max	40.6	359.2	25.7	4.5	5.0	4.1	92.4	-3.8	0.61		4.5	91.9	-3.3	662.0
	min	0.1	0.1	0.00	-26.2	-25.2	-27.8	11.0	-40.3	0.000		-26.0	10.7	-39.0	645.5
	avg	11.2	151.4	7.0	-11.7	-10.8	-12.5	57.2	-19.8	0.11		-11.6	57.1	-19.8	654.7
	tot										5.7				
DEC	max	42.0	356.9	25.8	-4.1	-1.9	-5.1	88.6	-11.1	0.61		-4.1	88.7	-11.3	660.9
	min	0.0	0.0	0.00	-30.8	-29.4	-32.2	22.3	-43.9	0.000		-30.4	21.7	-43.8	640.6
	avg	10.5	133.4	6.8	-16.9	-15.9	-18.0	61.6	-24.5	0.10		-16.9	61.7	-24.5	651.6
	tot										2.2				
YEAR	max	50.0	360.0	32.8	16.4	16.9	15.9	100	4.9	1.15		87.5	100.1	5.1	664.5
	min	0.0	0.00	0.0	-36.4	-35.1	-37.7	11.0	-47.6	0.0		-35.7	10.7	-47.7	640.3
	avg	15.7	174.4	9.2	-6.0	-5.0	-6.8	60.6	-13.7	0.35		-3.9	60.7	-13.7	655.4
	tot										321.5				

Water Quality Data 2012

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W1.1**													
-----Field data------													
TEMP	deg C	1	3.8	3.75	3.4	5	5.1	8.7	8.2	5.95	8.4	7.2	6.1
COND-F	ms/cm	0.23	0.1	0.39	0.06	0.08	0.08	0.44	0.08	0.42	0.65	0.6	0.66
PH-F	pH unit	7.9	8.4	7.7	8.5	7.3	7.7	7.9	8.01	7.8	8.1	8.1	8.1
-----Major Constituents------													
CA	mg/L			18.8				18.6	17.2				
CL	mg/L			0.6				0.6	0.5				
CO3	mg/L	1	1	1	1	1	1	1		1	1	1	1
HCO3	mg/L	46	46	48.5	44	40	35.5	47		38	40	41	49
K	mg/L			1.69				2.05	3.77				
MG	mg/L			3.56				3.75	4.44				
NA	mg/L							1.81	2.85				
SO4	mg/L	18	18	18.5	19	17	23.5	19		13	14	16	21
T-HARD	mg/L	55	55	55	55	50	42.5	50		41	42	50	55
T.ALK	mg/L	37.6	37.4	39.6	35.8	33	29.5	38.2		31.4	32.4	33.6	40
-----Metals------													
AG	mg/L			0.003								0.003	
AL	mg/L	0.65	0.555	2.465	2.16	0.15	0.31	1.22		1.9	3.05	0.625	1.93
AS	mg/L		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
B	mg/L												
BA	mg/L			0.032				0.0425	0.117			0.015	
BE	mg/L			0.0002				0.0002	0.0002			0.0002	
BI	mg/L												
CD	mg/L			0.002				0.002	0.002	0.002		0.002	
CO	mg/L			0.004				0.004	0.004			0.004	
CR	mg/L			0.008				0.008	0.008	0.008		0.008	
CU	mg/L	0.005	0.005	0.006	0.005	0.005	0.005	0.005		0.005	0.005	0.005	0.005
F	mg/L							0.361	0.176				
FE	mg/L	0.593	0.553	0.482	0.295	0.17	0.316	1.4855		1.73	3.23	0.499	0.299
HG	mg/L							0.0005	0.0005	0.0005			
MN	mg/L			0.015				0.04	0.099			0.01	
MO	mg/L			0.004				0.004	0.004	0.004		0.004	
NI	mg/L	0.011	0.007	0.005	0.005	0.009	0.005	0.005		0.005	0.005	0.005	0.005
PB	mg/L			0.005				0.005	0.005	0.005		0.005	
SB	mg/L			0.02				0.02	0.02			0.02	
SE	mg/L			0.02				0.02	0.02			0.02	
SI	mg/L												
V	mg/L			0.006				0.006	0.007			0.006	
ZN	mg/L	0.005	0.0045	0.0405	0.002	0.003	0.0025	0.0065		0.0065	0.016	0.002	0.005
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	0.04	0.08	0.04	0.04	0.28	0.13	0.04		0.04	0.04	98	0.04
NO2-N	mg/L	0.002	0.001	0.001	0.001	0.001	0.001	0.002		0.005	0.001	0.001	0.002
NO3-N	mg/L	0.4	0.4	0.3	0.4	0.3	0.5	0.3		0.3	0.3	0.3	0.6
T.PO4	mg/L			0.01				0.04	0.05				
TKN	mg/L												
-----Solids------													
TURB-L	NTU							107	190				
TDS	mg/L	76	77	77	78	62	69	104	103	68	59	64	69
TSS	mg/L	28	23	22	21	18	19	20.5	47	238	184	71	
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L			0.005				0.005	0.005				
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W1.3**													
-----Field data------													
TEMP	deg C				2	5.3	4.1	8.8	7.7	6.7			
COND-F	ms/cm				0.243	0.918	0.67	0.789	0.83	0.871			
PH-F	pH unit				6.59	7.37	8.19	7.98	7.99	8			
-----Major Constituents------													
CA	mg/L						17.1	20.4					
CL	mg/L						0.5	0.7					
CO3	mg/L						1	1					
HCO3	mg/L						45	49					
K	mg/L						1.45	1.78					
MG	mg/L						3.36	4.08					
NA	mg/L						1.57	1.68					
SO4	mg/L				66	44.5		21	18	31			
T-HARD	mg/L						55	60					
T.ALK	mg/L						36.6	40.4					
-----Metals------													
AG	mg/L						0.003						
AL	mg/L				2.04	0.625		2.88	1.64	3.23			
AS	mg/L									0.005			
B	mg/L												
BA	mg/L						0.031	0.086					
BE	mg/L												
BI	mg/L												
CD	mg/L						0.002	0.002		0.002			
CO	mg/L						0.004	0.004					
CR	mg/L						0.008	0.008		0.008			
CU	mg/L				0.005	0.005		0.005	0.005	0.005			
F	mg/L												
FE	mg/L				0.176	0.7795		4.31	2.58	3.46			
HG	mg/L						0.0005	0.0005		0.0005			
MN	mg/L						0.022	0.104					
MO	mg/L						0.004	0.004		0.004			
NI	mg/L				0.005	0.005		0.005	0.005	0.005			
PB	mg/L						0.005	0.005		0.005			
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L						0.006	0.006					
ZN	mg/L				0.006	0.0045		0.013	0.01	0.0085			
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L				0.28	0.04		0.04	0.04	0.04			
NO2-N	mg/L				0.001	0.001		0.002	0.013	0.001			
NO3-N	mg/L				0.5	0.35		0.3	0.3	0.3			
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU				240	177		138					
TDS	mg/L				22	70	85	94					
TSS	mg/L						17	131					
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L				0.005	0.005		0.005	0.005	0.005			
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W1.4**													
-----Field data------													
TEMP	deg C				1.9	5.1		6.6	8.5	7	0.7		
COND-F	ms/cm				0.1176	1.559		0.2	0.185	0.238	0.15		
PH-F	pH unit				7.24	7.34		7.9	7.9	8	7.9		
-----Major Constituents------													
CA	mg/L							36.3	22.6		54.85		
CL	mg/L							1.7	1.1		5.3		
CO3	mg/L							1	1		1		
HCO3	mg/L							56	46		75		
K	mg/L							5.6	4.59		14.45		
MG	mg/L							6.96	4.65		17.35		
NA	mg/L							24.4	13.7		68.05		
SO4	mg/L				97	66.5		98.5		108	203		
T-HARD	mg/L							100	70		200		
T.ALK	mg/L							46	37.8		61		
-----Metals------													
AG	mg/L							0.003			0.003		
AL	mg/L				2.42	0.605		2.88		0.87	1.4533		
AS	mg/L										0.005		
B	mg/L												
BA	mg/L							0.174	0.082		0.0565		
BE	mg/L										0.0002		
BI	mg/L												
CD	mg/L							0.002			0.002		
CO	mg/L							0.01			0.009		
CR	mg/L							0.008			0.008		
CU	mg/L				0.005	0.005		0.015		0.009	0.0097		
F	mg/L												
FE	mg/L				0.75	0.8205		6.18		0.556	1.3637		
HG	mg/L							0.0005	0.0005		0.0005		
MN	mg/L							0.346	0.074		0.0615		
MO	mg/L							0.01	0.008		0.0385		
NI	mg/L				0.005	0.005		0.0095		0.005	0.005		
PB	mg/L							0.005	0.005		0.005		
SB	mg/L										0.02		
SE	mg/L										0.02		
SI	mg/L												
V	mg/L							0.007			0.006		
ZN	mg/L				0.006	0.005		0.014		0.005	0.008		
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L				0.26	0.06		0.51		1.26	2.0267		
NO2-N	mg/L				0.001	0.001		0.042		0.14	0.136		
NO3-N	mg/L				0.5	0.45		1.25		1.2	1.5333		
T.PO4	mg/L										0.165		
TKN	mg/L												
-----Solids------													
TURB-L	NTU							301	280		67.5		
TDS	mg/L				238	166		219	148		437.5		
TSS	mg/L				110	58		414	203		45		
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L				0.005	0.005		0.018		0.009	0.0137		
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W1.5.1**													
-----Field data------													
TEMP	deg C				1.2	5.5	5.7	6.05	6.6	2.7	0.6	0.8	
COND-F	ms/cm				0.5355	0.361	0.368	0.3782	0.2423	0.298	0.55	0.31	
PH-F	pH unit				7.89	8.2	7.5	7.51	8	7.8	8.3	8	
-----Major Constituents------													
CA	mg/L				162	62		40.6	35.8	51.4	107		
CL	mg/L				18	17.5		4.4	1.4	3	9.7667		
CO3	mg/L				1	1		1	1	1	2		
HCO3	mg/L				190	112.5		62	56	70	115		
K	mg/L				10.2	2.525		3.12	3.84	7.24	15.5333		
MG	mg/L				92.3	27.6		25.4	14.8	21.8	53.4333		
NA	mg/L				14.5	6		9.01	11.9	28.1	57.6667		
SO4	mg/L				280	146.5	203.5	160	101	188.75	425	415	
T-HARD	mg/L				750	250		190	140	210	475		
T.ALK	mg/L				155	91.75		51	46.2	58	97		
-----Metals------													
AG	mg/L					0.003		0.003	0.003	0.003	0.003		
AL	mg/L				0.96	0.399	1.1639	3.2292	6.4156	2.0215	1.8974	0.3453	
AS	mg/L					0.005	0.005	0.005	0.005	0.005	0.005		
B	mg/L												
BA	mg/L				0.038	0.0315	0.032	0.054	0.121	0.0845	0.0543		
BE	mg/L					0.0002	0.0002	0.0002	0.0002	0.0002	0.0002		
BI	mg/L												
CD	mg/L				0.002	0.002	0.002	0.002	0.002	0.002	0.002		
CO	mg/L				0.004	0.004	0.004	0.004	0.004	0.005	0.008		
CR	mg/L				0.008	0.008	0.008	0.008	0.008	0.008	0.008		
CU	mg/L				0.006	0.0053	0.0066	0.0063	0.007	0.007	0.006	0.005	
F	mg/L												
FE	mg/L				0.5085	0.5689	1.5242	3.3566	5.9305	1.7608	1.7972	0.288	
HG	mg/L				0.0005	0.0005		0.0005	0.0005	0.0005	0.0005		
MN	mg/L				0.167	0.0683	0.184	0.212	0.141	0.132	0.175	0.2	
MO	mg/L				0.016	0.0045	0.016	0.009	0.009	0.018	0.036		
NI	mg/L				0.0113	0.0065	0.0112	0.0105	0.0102	0.0095	0.0215	0.0267	
PB	mg/L				0.005	0.005	0.005	0.005	0.005	0.005	0.005		
SB	mg/L					0.02	0.02	0.02	0.02	0.02	0.02		
SE	mg/L					0.02	0.02	0.02	0.02	0.02	0.02		
SI	mg/L												
V	mg/L					0.0055	0.006	0.006	0.008	0.006	0.006		
ZN	mg/L				0.0047	0.003	0.0044	0.0103	0.0187	0.0093	0.0061	0.002	
-----Nutrients------													
NH3	mg/L				0.017	0.0103	0.0115	0.0065	0.1018	0.0235			
NH3-N	mg/L				0.9267	0.42	1.655	1.2	0.636	1.625	3.7833	2.36	
NO2-N	mg/L				0.0013	0.001	0.036	0.0333	0.0234	0.0693	0.1105	0.002	
NO3-N	mg/L				11.3667	4.9	4.925	3.125	1.98	4.45	14.1333	20.6667	
T.PO4	mg/L					0.015		0.02	0.06	0.13	0.1367		
TKN	mg/L												
-----Solids------													
TURB-L	NTU				7.6667	11.025	24.5	64.75	152	77	39.4333	8.9	
TDS	mg/L				635.6667	379.25	425	291.5	221.2	379.25	811	889	
TSS	mg/L				7.6667	8	27.25	45.25	111.2	51.25	36.6667	5	
----- Trace Constituents------													
CN-F	mg/L				0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
CN-T	mg/L				0.005	0.005	0.0396	0.035	0.0184	0.017	0.0175	0.0053	
CN-WAD	mg/L				0.005	0.005	0.007	0.005	0.005	0.0065	0.0073	0.005	

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W1.6**													
-----Field data------													
TEMP	deg C				0.9	7.6	4.3	8.05	6.1	2		0.6	
COND-F	ms/cm				0.485	0.388	0.351	0.2769	0.2	0.415		0.449	
PH-F	pH unit				8.2	8.08	7.8	7.685	7.3	8.1		8	
-----Major Constituents------													
CA	mg/L						61.3		38	64			
CL	mg/L						17		1.9	8.4			
CO3	mg/L						1		1	1			
HCO3	mg/L						105		66	105			
K	mg/L						6.34		3.67	10.1			
MG	mg/L						24.6		14.3	26.1			
NA	mg/L						38.8		12.1	43.1			
SO4	mg/L				280	166		138				305	
T-HARD	mg/L						240		140	300			
T.ALK	mg/L						86.5		54	85			
-----Metals------													
AG	mg/L												
AL	mg/L							3.37					
AS	mg/L							0.005		0.005			
B	mg/L												
BA	mg/L							0.092					
BE	mg/L							0.0002					
BI	mg/L												
CD	mg/L							0.002		0.002			
CO	mg/L							0.005					
CR	mg/L							0.008		0.008			
CU	mg/L						0.005	0.009	0.005	0.006			
F	mg/L												
FE	mg/L						0.171	5.57	3.78	1.15			
HG	mg/L							0.0005		0.0005			
MN	mg/L							0.21					
MO	mg/L							0.01		0.025			
NI	mg/L						0.005	0.011	0.006	0.009			
PB	mg/L							0.005		0.005			
SB	mg/L							0.02					
SE	mg/L							0.02					
SI	mg/L												
V	mg/L							0.006					
ZN	mg/L						0.002	0.016	0.015	0.003			
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L						2		0.1	2.6			
NO2-N	mg/L												
NO3-N	mg/L												
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU						8.8		130	50			
TDS	mg/L				570	382	422	478	219	519		515	
TSS	mg/L				53	20	5	54	96	19		19	
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L						0.016		0.01	0.028			
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W1.7**													
-----Field data------													
TEMP	deg C				2.3	7.4	5.2	8.05	5	3.1		0.7	
COND-F	ms/cm				0.372	0.31	0.238	0.1851	0.36	0.341		0.337	
PH-F	pH unit				8.1	8.1	7.6	7.7	7.2	8.14		7.8	
-----Major Constituents------													
CA	mg/L						48.7		33.4	54.8			
CL	mg/L						12		3.4	12			
CO3	mg/L						1		1	1			
HCO3	mg/L						100		72	125			
K	mg/L						2.49		2.26	4.75			
MG	mg/L						13.7		9.77	17.1			
NA	mg/L						14.5		7.87	20.9			
SO4	mg/L				140	102		78				166	
T-HARD	mg/L						170		110	230			
T.ALK	mg/L						83.5		58.5	101			
-----Metals------													
AG	mg/L												
AL	mg/L						0.22	0.43	3.11	0.44			
AS	mg/L							0.005					
B	mg/L												
BA	mg/L							0.021					
BE	mg/L							0.0002					
BI	mg/L												
CD	mg/L							0.002					
CO	mg/L							0.004					
CR	mg/L							0.008					
CU	mg/L							0.005					
F	mg/L												
FE	mg/L							0.678					
HG	mg/L						0.0005	0.0005		0.0005			
MN	mg/L							0.037					
MO	mg/L							0.006					
NI	mg/L						0.005	0.005	0.005	0.005			
PB	mg/L						0.005	0.005	0.005	0.005			
SB	mg/L							0.02					
SE	mg/L							0.02					
SI	mg/L												
V	mg/L							0.006					
ZN	mg/L							0.003					
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L						0.62		0.04	1			
NO2-N	mg/L						0.011		0.012	0.07			
NO3-N	mg/L						1.9		1.1	2.8			
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU						8.1	190	160	19			
TDS	mg/L				416	321	250	163	173	351		434	
TSS	mg/L				56	24	2	109	131	4		16	
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L						0.028		0.008	0.014			
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W1.8**													
-----Field data------													
TEMP	deg C	0.1	1	1.3	2.7	8.5	12	9.1	5.9	4.3	2.8	12	0.4
COND-F	ms/cm	0.186	1.8	0.278	0.195	0.217	0.216	0.86	1.05	1.14	1.24	0.204	0.85
PH-F	pH unit	7.5	7.6	8.2	7.9	8	7.8	8.2	7.85	7.7	7.5	8.3	8.15
-----Major Constituents------													
CA	mg/L	56.8	56.9	53.2	54.3	48.8	45.6	39.3	42.8	45.5	58.3	52.8	61.5
CL	mg/L	6.2	6	6.1	8.1	8	3.3	4.3	5.7	3.6	5.3	5.5	6
CO3	mg/L	1	4	1	1	1	1	1	1	1	6	1	1
HCO3	mg/L	150	19	155	140	135	120	134	145	125	140	140	145
K	mg/L	1.62	1.57	1.59	2.94	1.26	1.26	1.38	1.41	1.56	1.54	1.43	1.64
MG	mg/L	16.7	16.9	15.9	15	13.3	12.1	10.5	10.8	12.2	16.5	15.4	17.7
NA	mg/L	9.4	9.59	9.07	9.44	6.68	5.96	4.71	7.08	6.53	8.26	8.15	9.37
SO4	mg/L	60	62	58	57	51	52	52	55	56	63	60	63
T-HARD	mg/L	180	190	180	180	170	150	140	170	150	180	180	180
T.ALK	mg/L	123	22.6	127	113	113	100	103	117	102	124	117	120
-----Metals------													
AG	mg/L							0.003	0.003	0.003	0.003		
AL	mg/L	0.06	0.05	2.14	0.69	0.48	0.87	2.31	4.61	0.72	0.34	0.09	1.5
AS	mg/L					0.005	0.005	0.005	0.005	0.005	0.005		
B	mg/L												
BA	mg/L					0.055	0.058	0.095	0.135	0.056	0.054		
BE	mg/L					0.0002	0.0002	0.0002	0.0002	0.0002	0.0002		
BI	mg/L												
CD	mg/L					0.002	0.002	0.002	0.002	0.002	0.002		
CO	mg/L					0.004	0.004	0.004	0.005	0.004	0.004		
CR	mg/L					0.008	0.008	0.008	0.008	0.008	0.008		
CU	mg/L	0.005	0.005	0.005	0.005	0.005	0.005	0.007	0.012	0.005	0.005	0.005	0.005
F	mg/L												
FE	mg/L	0.054	0.043	0.196	0.956	0.853	1.27	3.99	7.19	0.902	0.25	0.049	0.035
HG	mg/L	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
MN	mg/L	0.008	0.005	0.016	0.058	0.049	0.069	0.21	0.308	0.038	0.019	0.008	0.006
MO	mg/L					0.004	0.004	0.004	0.004	0.004	0.004		
NI	mg/L	0.005	0.005	0.005	0.006	0.005	0.005	0.006	0.015	0.005	0.005	0.005	0.005
PB	mg/L					0.005	0.005	0.005	0.005	0.005	0.005		
SB	mg/L					0.02	0.02	0.02	0.02	0.02	0.02		
SE	mg/L					0.02	0.02	0.02	0.02	0.02	0.02		
SI	mg/L												
V	mg/L					0.006	0.006	0.006	0.008	0.006	0.006		
ZN	mg/L	0.589	0.256	0.438	0.521	0.003	0.163	0.72	0.604	0.344	0.709	0.42	0.217
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	0.04	0.04	0.04	0.14	0.06	0.04	0.06	0.04	0.14	0.04	0.04	0.04
NO2-N	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.004	0.002	0.072	0.017	0.002	0.001
NO3-N	mg/L	0.7	0.7	0.7	0.7	0.5	0.8	0.6	0.7	0.7	0.8	0.7	0.7
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU					39	95	307	500	55	3.2		
TDS	mg/L					218	191	163	217	185	186		
TSS	mg/L					85	112	281	452	43	5		
-----Trace Constituents------													
CN-F	mg/L	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
CN-T	mg/L	0.005	0.005	0.005	0.005	0.005	0.01	0.008	0.007	0.005	0.005	0.005	0.005
CN-WAD	mg/L	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W2.4**													
-----Field data------													
TEMP	deg C	0.5	1.325	3.225	0.925	4.4	4.7667	4.94	3.4	3.575	2.1333	0.9333	0.5
COND-F	ms/cm	1.2553	0.3588	1.0103	1.1033	0.966	0.8327	0.8368	0.63	0.613	1.272	0.9997	0.7227
PH-F	pH unit	8.1333	7.7175	7.9575	7.88	7.75	7.7367	7.81	7.775	7.55	8.1467	7.9667	7.5933
-----Major Constituents------													
CA	mg/L	625.3333	717	429.75	246.75	239.5	210.25	173.75	133.75	198.25	312.4286	365.3333	565.6667
CL	mg/L	23.8667	29	20.5	8.425	13.5	10.425	5.9	3.675	8.025	12.7143	13.3333	20.3333
CO3	mg/L							1			1		
HCO3	mg/L	446.6667	450	210	160.75	185	177.5	156.25	121.25	193.75	275.7143	310	470
K	mg/L	62.0333	71.8	50.275	13.8325	13.825	12.35	11.2375	8.055	13.9	25.0571	30.0667	50.3
MG	mg/L	429	516.5	380	115.375	129.5	120.025	104.45	79.175	123.55	214.2857	218.3333	362
NA	mg/L						68.65	8.96	7.1325	12.9125	21.8143	27.8	45.6667
SO4	mg/L	2320	2740	1690	733.75	762.5	710	601.25	425	692.5	1166.1429	1256.6667	2040
T-HARD	mg/L							800			1562.5		
T.ALK	mg/L							124			233		
-----Metals------													
AG	mg/L										0.0055		
AL	mg/L	0.1367	0.045	3.0425	0.7675	0.1925	0.7975	0.8425	0.8388	0.54	0.8629	0.2033	1
AS	mg/L		0.005				0.005	0.005	0.005	0.005	0.005	0.005	0.005
B	mg/L												
BA	mg/L							0.039			0.0355		
BE	mg/L										0.0002		
BI	mg/L												
CD	mg/L										0.002		
CO	mg/L										0.013		
CR	mg/L										0.008		
CU	mg/L	0.005	0.0063	0.0065	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
F	mg/L												
FE	mg/L	0.1717	0.0673	2.1673	0.632	0.358	1.4785	1.0277	1.0628	0.5558	1.1699	0.2613	0.0657
HG	mg/L										0.0005		0.774
MN	mg/L	1.2343	1.43	0.8003	0.3615	0.3228	0.569	0.309	0.5423	0.539	0.7041	0.7277	0.9433
MO	mg/L						0.033	0.0295	0.021	0.0328	0.0484	0.0603	0.1143
NI	mg/L						0.0495	0.0423	0.036	0.0565	0.0911	0.096	0.1895
PB	mg/L							0.005			0.005		
SB	mg/L							0.02			0.02		
SE	mg/L										0.02		
SI	mg/L												
V	mg/L										0.006		
ZN	mg/L	0.01	0.0125	0.0145	0.0083	0.016	0.0085	0.0035	0.0058	0.0045	0.0079	0.0063	0.0083
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	15.6667	14.5	8.3	2.285	3.875	4.725	3.73	1.825	4.05	10	11.8333	12.6667
NO2-N	mg/L	0.0017	0.001	0.0013	0.0485	0.01	0.0193	0.0548	0.0048	0.0028	0.0037	0.0017	0.0013
NO3-N	mg/L	171.3333	207.75	134.75	34.5	33	29	22.75	15.25	27.5	56.1429	73.6667	125
T.PO4	mg/L										0.25		
TKN	mg/L												
-----Solids------													
TURB-L	NTU							30			89		
TDS	mg/L	1983	1578	1862	1162	1150	1111	1070	972	1228	2170	1300	1941
TSS	mg/L	77	22	191	293	40	51	26	109	146	262.5	48	
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L							0.005			0.005		
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W3.1**													
-----Field data------													
TEMP	deg C	0.9	1.4	0.6	3.8	0.4	3.2	6.3	3.9	6.3	1.2	0.4	
COND-F	ms/cm	1.201	0.311	0.593	0.497	0.815	0.181	0.246	0.22	0.797	0.951	1.34	
PH-F	pH unit	8.1	8.1	7.63	8.32	7.94	7.7	7.96	7.8	8.27	7.6	8.2	
-----Major Constituents------													
CA	mg/L						37.7	39.7	41.8	141	176.3333	150	
CL	mg/L						1	2.2	0.9	4.3	4.7667	4.8	
CO3	mg/L						1	1	1	1	4	1	
HCO3	mg/L						50	220	52	195	213.3333	280	
K	mg/L						1.94	4.57	2.09	4.04	5.1467	2	
MG	mg/L						13.6	16.7	21.5	90.5	124	50.4	
NA	mg/L						0.88	15.9	1.21	4.23	5.4233	8.28	
SO4	mg/L	3760	3860	7100	330	820	79		112	580	656.6667	290	
T-HARD	mg/L						120	575	180	775	866.6667	550	
T.ALK	mg/L						41.2	180	42.2	160	180.6667	230	
-----Metals------													
AG	mg/L										0.003		
AL	mg/L	0.03	0.07	1.86	0.43	0.03	5.73		0.49	0.11	0.1333	0.09	
AS	mg/L			0.005	0.005	0.005	0.005		0.005		0.005	0.005	
B	mg/L												
BA	mg/L							0.051			0.0195		
BE	mg/L										0.0002		
BI	mg/L												
CD	mg/L										0.002		
CO	mg/L										0.004		
CR	mg/L										0.008		
CU	mg/L	0.005	0.005	0.005	0.005	0.005	0.017		0.005	0.005	0.005	0.005	
F	mg/L												
FE	mg/L	0.035	0.161	0.049	0.768	0.033	7.79		0.995	0.192	0.1857	0.197	
HG	mg/L							0.0005			0.0005		
MN	mg/L						0.235	0.296	0.056	0 05	0.0577	0.027	
MO	mg/L						0.004	0.005	0.004	0.004	0.005	0.004	
NI	mg/L						0.014	0.018	0.005	0.014	0.011	0.005	
PB	mg/L							0.005			0.005		
SB	mg/L										0.02		
SE	mg/L										0.02		
SI	mg/L												
V	mg/L										0.006		
ZN	mg/L							0.004			0.003		
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	0.2	0.18	0.78	0.06	0.04	0.04		0.04	0.12	0.08	0.04	
NO2-N	mg/L	0.001	0.001	0.001	0.001	0.001	0.001		0.004	0.001	0.001	0.002	
NO3-N	mg/L	4.7	5.3	9.5	0.5	1.2	0.5		0.8	2.9	3.1333	1.4	
T.PO4	mg/L										0.05		
TKN	mg/L												
-----Solids------													
TURB-L	NTU							110			9.55		
TDS	mg/L	1463	1841		431	994	153	771	163	785	1010.5	917	
TSS	mg/L	16	15		160	15	631	132	213	17	10	19	
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L							0.005			0.005		
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W3.2**													
-----Field data------													
TEMP	deg C				3.6	1.4	8.2	6.4	3.7	6.8	3.5		
COND-F	ms/cm												
PH-F	pH unit				1.683	0.139	0.288	0.306	0.2	0.24	0.35		
-----Major Constituents------					8.33	8.48	7.8	8.02	7.88	8.4	8.3		
CA	mg/L												
CL	mg/L						60.5	93.6	44.7	78.5	95.2		
CO3	mg/L						2.8	2.1	0.9	11	12		
HCO3	mg/L						1	1	1	1	6		
K	mg/L						100	360	58	240	240		
MG	mg/L						1.95	2.35	1.97	1.3	1.45		
NA	mg/L						25	59.9	23.5	37	38.7		
SO4	mg/L						2.96	2.4	1.37	7.78	10.2		
T-HARD	mg/L				51	28	128		122	122	90		
T.ALK	mg/L						220	575	190	325	325		
-----Metals------							83	300	48	198	209		
AG	mg/L												
AL	mg/L												
AS	mg/L				0.48	0.03	2.26		0.13	0.03	0.194		
B	mg/L						0.005			0.005			
BA	mg/L												
BE	mg/L							0.051					
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L												
F	mg/L				0.005	0.005	0.005		0.005	0.005	0.005		
FE	mg/L												
HG	mg/L				0.656	0.039	1.26		0.239	0.012	0.142		
MN	mg/L							0.0005					
MO	mg/L						0.042	0.064	0.05	0.011	0.022		
NI	mg/L						0.004	0.005	0.004	0.004	0.004		
PB	mg/L						0.005	0.01	0.005	0.005	0.005		
SB	mg/L							0.005					
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L												
-----Nutrients------								0.004					
NH3	mg/L												
NH3-N	mg/L												
NO2-N	mg/L				0.1	0.08	0.04		0.04	0.04	0.04		
NO3-N	mg/L				0.001	0.001	0.002		0.003	0.001	0.001		
T.PO4	mg/L				0.7	0.7	2.6		0.9	3	2.7		
TKN	mg/L												
-----Solids------													
TURB-L	NTU												
TDS	mg/L							55					
TSS	mg/L							736					
-----Trace Constituents------								59					
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L							0.005					

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W4.1**													
-----Field data------													
TEMP	deg C				4.8	7.4	3.5	8.9	9.35	9.8	6		
COND-F	ms/cm				0.14	0.13	0.198	0.09	0.075	0.062	0.065		
PH-F	pH unit				8.25	8.27	6.9	7.84	8.02	8.2	8.25		
-----Major Constituents------													
CA	mg/L						28.7		17.9	21	23.1		
CL	mg/L						8.7		1.5	5.2	5.1		
CO3	mg/L						1		6	1	1		
HCO3	mg/L						74		40	56	54		
K	mg/L						0.66		0.76	0.62	0.72		
MG	mg/L						3.57		2.08	2.62	2.97		
NA	mg/L						2.32		1.43	1.66	1.84		
SO4	mg/L						1		5	7	6		
T-HARD	mg/L						80		44	55	55		
T.ALK	mg/L						61		43.6	45.4	44.8		
-----Metals------													
AG	mg/L										0.003		
AL	mg/L						0.07		0.09	0.32	0.18		
AS	mg/L										0.005		
B	mg/L												
BA	mg/L						0.051		0.005	0.011	0.008		
BE	mg/L						0.0002		0.0002	0.0002	0.0002		
BI	mg/L												
CD	mg/L						0.002		0.002	0.002	0.002		
CO	mg/L										0.004		
CR	mg/L										0.008		
CU	mg/L						0.005		0.005	0.005	0.005		
F	mg/L												
FE	mg/L						0.171		0.154	0.532	0.297		
HG	mg/L						0.0005		0.0005	0.0005	0.0005		
MN	mg/L										0.02		
MO	mg/L										0.005		
NI	mg/L						0.005		0.005	0.005	0.005		
PB	mg/L						0.005		0.005	0.005	0.02		
SB	mg/L										0.02		
SE	mg/L										0.02		
SI	mg/L												
V	mg/L										0.006		
ZN	mg/L						0.002		0.001	0.003	0.003		
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L						0.04		0.04	0.14	0.04		
NO2-N	mg/L						0.001		0.001	0.001	0.001		
NO3-N	mg/L						0.1		0.1	0.2	0.1		
T.PO4	mg/L										1.1		
TKN	mg/L												
-----Solids------													
TURB-L	NTU						2.9		2.4	11	6.4		
TDS	mg/L				199	130	97	98	54	86	64		
TSS	mg/L				52	12	2	12	1	7	6		
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L										0.005		
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W4.2**													
-----Field data------													
TEMP	deg C				6.8	5.8	2	8.5	7	9	4		
COND-F	ms/cm				0.14	0.18	0.17	0.18	0.16	0.15	0.16		
PH-F	pH unit				8.05	8.04	7.1	7.9	7.6	8.1	8.2		
-----Major Constituents------													
CA	mg/L						50.8		40.1	32.1			
CL	mg/L						20		7.1	7.2			
CO3	mg/L						1		1	1			
HCO3	mg/L						135		110	96			
K	mg/L						1.99		2.39	1.71			
MG	mg/L						11.3		9.06	6.57			
NA	mg/L						5.75		4.53	3.63			
SO4	mg/L						25		27	19			
T-HARD	mg/L						170		120	95			
T.ALK	mg/L						112		92	79			
-----Metals------													
AG	mg/L												
AL	mg/L						2.48		1.17	0.2			
AS	mg/L												
B	mg/L												
BA	mg/L						0.05		0.039	0.026			
BE	mg/L						0.0002		0.0002	0.0002			
BI	mg/L												
CD	mg/L						0.002		0.002	0.002			
CO	mg/L												
CR	mg/L												
CU	mg/L						0.006		0.005	0.005			
F	mg/L												
FE	mg/L						3.62		1.69	0.224			
HG	mg/L						0.0005		0.0005	0.0005			
MN	mg/L												
MO	mg/L												
NI	mg/L						0.005		0.005	0.005			
PB	mg/L						0.005		0.005	0.005			
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L						0.014		0.007	0.002			
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L						0.04		0.04	0.06			
NO2-N	mg/L						0.001		0.004	0.002			
NO3-N	mg/L						0.3		0.1	0.2			
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU						95		40	5.5			
TDS	mg/L				138	209	213	148	144	100	231		
TSS	mg/L				204	110	103	19	92	1	62		
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W4.3**													
-----Field data------													
TEMP	deg C				4.3	6.1	6.9	9.6					
COND-F	ms/cm				0.09	0.13	0.11	0.08					
PH-F	pH unit				8.25	8.3	7.7	7.93					
-----Major Constituents------													
CA	mg/L						24.3	18.2			31.3		
CL	mg/L						5.5	1.8			12		
CO3	mg/L						1	1			1		
HCO3	mg/L						64	60			74		
K	mg/L						0.7	0.45			0.68		
MG	mg/L						2.9	2.11			4.2		
NA	mg/L						1.71	1.24			2.51		
SO4	mg/L						73	6			11		
T-HARD	mg/L						65	50			80		
T.ALK	mg/L						52.5	48.6			60		
-----Metals------													
AG	mg/L												
AL	mg/L						0.1	0.12			0.06		
AS	mg/L												
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L						0.005	0.005			0.005		
F	mg/L												
FE	mg/L						0.163	0.198			0.03		
HG	mg/L												
MN	mg/L												
MO	mg/L												
NI	mg/L						0.005	0.005			0.005		
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L						0.003	0.001			0.004		
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L						0.1	0.04			0.14		
NO2-N	mg/L						0.001	0.001			0.002		
NO3-N	mg/L						0.1	0.1			0.2		
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU						2	2.8			0.4		
TDS	mg/L				129	139	73	54	197	186	101		
TSS	mg/L				244	12	1	1	21	34	1		
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W4.3.1**													
-----Field data------													
TEMP	deg C				1.95	4.8	8.3	8.3					
COND-F	ms/cm				0.0958	0.1599	0.1158	0.1437					
PH-F	pH unit				8.1	8.25	7.8	7.67					
-----Major Constituents------													
CA	mg/L						30		17.9		32.1		
CL	mg/L						12		1.4		11		
CO3	mg/L						1		1		1		
HCO3	mg/L						82		58		78		
K	mg/L						0.66		0.7		1.01		
MG	mg/L						3.99		2.24		4.77		
NA	mg/L						2.33		1.45		2.95		
SO4	mg/L						15		5		11		
T-HARD	mg/L						90		50		85		
T.ALK	mg/L						66.5		47		64		
-----Metals------													
AG	mg/L												
AL	mg/L						0.03		0.1		0.35		
AS	mg/L												
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L						0.005		0.005		0.005		
F	mg/L												
FE	mg/L						0.174		0.143		0.419		
HG	mg/L						0.0005		0.0005				
MN	mg/L												
MO	mg/L												
NI	mg/L						0.005		0.005		0.005		
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L						0.002		0.001		0.001		
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L						0.08		0.04		0.06		
NO2-N	mg/L						0.001		0.001		0.003		
NO3-N	mg/L						0.2		0.1		0.2		
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU						1.5		2.7		14		
TDS	mg/L				148.5	174.5	119	109	54	91	108	188	
TSS	mg/L				19.5	15	1	12	1	17	4	10	
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **W6.1**													
-----Field data------													
TEMP	deg C				0.5	6.5	9.5	12.4	8.4	4.4	2.1		
COND-F	ms/cm				0.42	0.26	0.19	0.11	0.1	0.09	0.19		
PH-F	pH unit				7.28	7.8	8.1	8.3	7.7	7.1	8.01		
-----Major Constituents------													
CA	mg/L						38.2		24.9	29.7			
CL	mg/L						5.2		1	1.7			
CO3	mg/L						1		1	1			
HCO3	mg/L						96		62	74			
K	mg/L						0.71		1.85	1.26			
MG	mg/L						4.7		3.42	3.84			
NA	mg/L						2.51		1.48	1.65			
SO4	mg/L						18		15	17			
T-HARD	mg/L						110		70	75			
T.ALK	mg/L						79		51.5	61.5			
-----Metals------													
AG	mg/L												
AL	mg/L						0.13		2.38	1.11			
AS	mg/L												
B	mg/L												
BA	mg/L						0.013		0.082	0.019			
BE	mg/L						0.0002		0.0002	0.0002			
BI	mg/L												
CD	mg/L						0.002		0.002	0.002			
CO	mg/L												
CR	mg/L												
CU	mg/L						0.005		0.005	0.005			
F	mg/L												
FE	mg/L						0.191		3.11	1.88			
HG	mg/L						0.0005		0.0005	0.0005			
MN	mg/L												
MO	mg/L												
NI	mg/L						0.005		0.007	0.005			
PB	mg/L						0.005		0.005	0.005			
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L						0.002		0.014	0.007			
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L						0.04		0.56	0.04			
NO2-N	mg/L						0.001		0.024	0.006			
NO3-N	mg/L						0.2		0.2	0.2			
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU						3.8		70	45			
TDS	mg/L				623	180	136	89	94	103	148		
TSS	mg/L				13	22	2	33	31	14	13		
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L						0.005		0.01	0.006			
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **SDP**													
-----Field data------													
TEMP	deg C							7.7	7.6	2.8	1.1		
COND-F	ms/cm									0.8	0.6		
PH-F	pH unit							0.5013	0.479	0.3845	0.34		
-----Major Constituents------								7.40	7.81	7.79	8.01		
CA	mg/L												
CL	mg/L												
CO3	mg/L							40	42	50	64		
HCO3	mg/L												
K	mg/L												
MG	mg/L												
NA	mg/L												
SO4	mg/L												
T-HARD	mg/L							89	104	96	106		
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L												
AS	mg/L							0.03		0.03	0.08		
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L												
F	mg/L							0.005		0.005	0.005		
FE	mg/L												
HG	mg/L							0.017		0.154	0.195		
MN	mg/L												
MO	mg/L												
NI	mg/L												
PB	mg/L							0.005		0.005	0.005		
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L												
-----Nutrients------								0.005		0.003	0.019		
NH3	mg/L												
NH3-N	mg/L												
NO2-N	mg/L							5.13	1.20	1.91	1.43		
NO3-N	mg/L							0.25	0.20	0.003	0.050		
T.PO4	mg/L							4.53	12.40	2.85	5.17		
TKN	mg/L							2.20	2.61	0.81	2.29		
-----Solids------													
TURB-L	NTU												
TDS	mg/L												
TSS	mg/L												
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **KU200-3**													
-----Field data------													
TEMP	deg C	18.8	16	20	20.3	22	21.3	19.7	22	21.3	20	21.3	19
COND-F	ms/cm												
PH-F	pH unit	7.38	7.13	7.43	7.3	7.3	7.3	7.3	7.4	7.03	7.15	7.25	7.47
-----Major Constituents------													
CA	mg/L	35	31.5	30.2	35.8	36.3	39.6	38.5	36.8	30.2	33	34.3	30.5
CL	mg/L												
CO3	mg/L												
HCO3	mg/L												
K	mg/L												
MG	mg/L												
NA	mg/L												
SO4	mg/L	78	73.3	76.4	85	82.3	88.4	90.5	89	77.2	88.5	86.8	82.3
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L												
AS	mg/L												
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L												
F	mg/L												
FE	mg/L												
HG	mg/L												
MN	mg/L												
MO	mg/L												
NI	mg/L												
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L												
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	4.6	10.0	3.7	4.4	8.6	5.8	1.3	4.4	1.4	1.6	0.6	2.6
NO2-N	mg/L	2.2	1.3	3.2	4.5	2.8	0.6	0.8	0.2	0.1	0.2	0.4	0.3
NO3-N	mg/L	10.4	6.0	3.3	10.4	7.6	26.5	26.8	27.0	20.6	23.5	25.0	21.8
T.PO4	mg/L	5.1	5.9	3.2	3.7	4.3	4.8	4.3	5.2	3.2	2.5	3.7	3.7
TKN	mg/L												
-----Solids------													
TURB-L	NTU												
TDS	mg/L												
TSS	mg/L												
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **KU200**													
-----Field data------													
TEMP	deg C	19	15	20	20.5	22	21.3	19.7	22	21.3	20	21.8	19.8
COND-F	ms/cm												
PH-F	pH unit	7.5	7.2	7.5	7.5	7.4	7.4	7.5	7.5	7.1	7.3	7.4	7.5
-----Major Constituents------													
CA	mg/L												
CL	mg/L	33.8	30.5	28.8	32.8	31.7	35.2	36.8	32.5	29.4	33.3	33.8	28.8
CO3	mg/L												
HCO3	mg/L												
K	mg/L												
MG	mg/L												
NA	mg/L												
SO4	mg/L	78.5	74	75.8	82.5	79.3	87.8	89	79.8	75.4	82.5	87.5	81
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L												
AS	mg/L												
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L												
F	mg/L												
FE	mg/L												
HG	mg/L												
MN	mg/L												
MO	mg/L												
NI	mg/L												
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L												
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	3.9	8.7	6.7	9.5	11.9	9.8	3.1	5.8	1.2	13.3	5.1	1.8
NO2-N	mg/L	1.0	0.8	1.1	0.4	1.1	0.6	0.9	1.0	0.1	0.1	0.2	1.1
NO3-N	mg/L	7.2	5.6	2.5	6.5	0.5	5.5	12.1	7.6	16.6	3.6	8.5	13.8
T.PO4	mg/L	4.4	4.4	3.8	3.7	3.1	3.6	3.8	4.0	3.1	3.0	3.0	3.3
TKN	mg/L												
-----Solids------													
TURB-L	NTU												
TDS	mg/L												
TSS	mg/L												
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **KU200-2**													
-----Field data------													
TEMP	deg C	18.5	16.0	19.7	20.0	22.0	21.3	19.7	22	21.3	20.5	21.5	23
COND-F	ms/cm												
PH-F	pH unit	7.4	7.2	7.5	7.4	7.4	7.4	7.5	7.5	7.17	7.2	7.3	7.5
-----Major Constituents------													
CA	mg/L												
CL	mg/L	31.8	30	28.2	32	32	38	35	32.8	30.2	33	32.8	28.3
CO3	mg/L												
HCO3	mg/L												
K	mg/L												
MG	mg/L												
NA	mg/L												
SO4	mg/L	73.8	72.3	73	81	80.3	86.8	84	82	74	84.3	85	79.8
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L												
AS	mg/L												
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L												
F	mg/L												
FE	mg/L												
HG	mg/L												
MN	mg/L												
MO	mg/L												
NI	mg/L												
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L												
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	7.3	10.6	12.3	10.2	8.6	8.9	4.3	2.9	5.0	3.4	2.7	2.8
NO2-N	mg/L	1.4	1.4	0.2	1.6	1.7	1.1	1.4	0.7	0.3	0.3	0.6	1.5
NO3-N	mg/L	6.6	0.2	1.1	0.2	6.0	8.5	6.9	15.0	5.3	10.4	7.3	4.0
T.PO4	mg/L	4.5	3.7	3.0	3.1	3.6	3.4	3.1	4.2	2.7	2.9	2.5	2.9
TKN	mg/L												
-----Solids------													
TURB-L	NTU												
TDS	mg/L												
TSS	mg/L												
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **S1.1**													
-----Field data------													
TEMP	deg C	16	14	17.5	18	19.5	20					18	16
COND-F	ms/cm												
PH-F	pH unit	7.1	7	7.2	7.5	7.3	7.3					7.1	7.2
-----Major Constituents------													
CA	mg/L												
CL	mg/L	30	27	29.4	33	28	36.2					36	30.5
CO3	mg/L												
HCO3	mg/L												
K	mg/L												
MG	mg/L												
NA	mg/L												
SO4	mg/L	69.3	68.8	77	82.5	71.7	91.3					89.3	80.8
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L												
AS	mg/L												
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L												
F	mg/L												
FE	mg/L												
HG	mg/L												
MN	mg/L												
MO	mg/L												
NI	mg/L												
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L												
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	5.0	11.5	6.8	8.2	8.8	12.3					3.6	2.1
NO2-N	mg/L	1.8	0.9	0.7	2.5	1.8	0.7					0.3	0.9
NO3-N	mg/L	6.5	1.2	3.1	4.5	0.5	5.2					14.8	12.4
T.PO4	mg/L	4.2	3.4	2.9	3.6	2.9	3.9					2.9	3.2
TKN	mg/L												
-----Solids------													
TURB-L	NTU												
TDS	mg/L												
TSS	mg/L												
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **S1.2**													
-----Field data------													
TEMP	deg C					5.3		5.5		4.1	0.2		
COND-F	ms/cm					0.336		0.4371		0.24	0.17		
PH-F	pH unit					8.03		7.85		8.3	7.7		
-----Major Constituents------													
CA	mg/L												
CL	mg/L					4.7		2.8		2.15	4.7		
CO3	mg/L												
HCO3	mg/L												
K	mg/L												
MG	mg/L												
NA	mg/L												
SO4	mg/L					77		81.5		93	76		
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L					0.33		1.41		3.11	0.7		
AS	mg/L												
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L					0.005		0.006		0.01	0.005		
F	mg/L												
FE	mg/L					0.589		1.9415		3.73	0.699		
HG	mg/L												
MN	mg/L												
MO	mg/L												
NI	mg/L					0.005		0.005		0.005	0.005		
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L					0.004		0.009		0.0155	0.005		
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L					0.36		1.03		1.11	0.34		
NO2-N	mg/L					0.001		0.03		0.021	0.019		
NO3-N	mg/L					0.5		1.15		1.05	0.7		
T.PO4	mg/L					0.01		0.08		0.13	0.04		
TKN	mg/L												
-----Solids------													
TURB-L	NTU												
TDS	mg/L												
TSS	mg/L												
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **P5.2**													
-----Field data------													
TEMP	deg C	9.85	9.35	9.5	10.8	11.75	11.38	11.35	9.3	12	9.6	10.42	8.5
COND-F	ms/cm	0.1180	0.1183	0.0819	0.1074	0.0872	0.0786	0.0900	0.0810	0.5467	0.4300	0.0938	0.3633
PH-F	pH unit	7.8	8.0	8.0	7.7	7.9	7.5	7.2	7.9	7.4	7.9	7.7	7.4
-----Major Constituents------													
CA	mg/L	18.6		18.8	20.6		18.2	18.6					
CL	mg/L	0.8		0.9	1		1.4	0.9					
CO3	mg/L	1		1	1		1	1					
HCO3	mg/L	37		36	33		30	28					
K	mg/L	1.4		1.52	1.48		1.29	1.4					
MG	mg/L	3.41		3.45	3.71		3.52	3.5					
NA	mg/L	1.78			1.92		1.67	1.69					
SO4	mg/L	26		28	27		43	34					
T-HARD	mg/L	55		60	55		55	55					
T.ALK	mg/L	30.6		29.4	26.8		24.4	23					
-----Metals------													
AG	mg/L			0.003									
AL	mg/L	0.05	0.0375	1.8575	0.035	0.03	0.0433333	0.03	0.0675	0.055	0.04	0.085	0.9025
AS	mg/L		0.005	0.005	0.005	0.005	0.005	0.005		0.11			
B	mg/L												
BA	mg/L	0.019		0.018	0.015		0.0024	0.029					
BE	mg/L			0.0002									
BI	mg/L												
CD	mg/L	0.002		0.002	0.002		0.0002	0.002					
CO	mg/L	0.004		0.004	0.004		0.004	0.004					
CR	mg/L	0.008		0.008	0.008		0.008	0.008			0.117		
CU	mg/L	0.0285	0.02175	0.0204	0.01575	0.02	0.0308333	0.0153333	0.00575	0.087	0.0453333	0.0485	0.0446
F	mg/L	0.102			0.1		0.071	0.108			0.021		
FE	mg/L	0.04225	0.04125	0.0428	0.02675	0.0326667	0.0251667	0.0526667	0.05675	0.039	0.0303333	0.05175	0.03175
HG	mg/L	0.0005			0.0005		0.0005	0.0005					
MN	mg/L			0.003									
MO	mg/L			0.004									
NI	mg/L			0.005									
PB	mg/L	0.005		0.005	0.005		0.005	0.005					
SB	mg/L			0.02									
SE	mg/L			0.02									
SI	mg/L												
V	mg/L			0.006									
ZN	mg/L			0.014									
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	0.04		0.04	0.04		0.04	0.04					
NO2-N	mg/L	0.002		0.001	0.001		0.001	0.001					
NO3-N	mg/L	0.4		0.4	0.4		0.5	0.3					
T.PO4	mg/L	0.01		0.03	0.01		0.01	0.07					
TKN	mg/L												
-----Solids------													
TURB-L	NTU	0.45			0.35		0.4	0.9					
TDS	mg/L	81			75		84	78					
TSS	mg/L	1			1		1	1					
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L	0.005			0.005		0.005	0.005					
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **P5.3**													
-----Field data------													
TEMP	deg C	9.95	11.3	10.85	11.8	12.5	12.46	13.1	10.6	10.73	10.1	10.3	10
COND-F	ms/cm	0.117	0.110	0.276	0.095	0.085	0.256	0.090	0.080	0.126	0.457	0.092	0.427
PH-F	pH unit	7.75	8.11	7.90	7.72	7.85	7.23	7.30	7.83	7.28	7.75	7.24	7.45
-----Major Constituents------													
CA	mg/L			19		15.4		21.9					17.4
CL	mg/L			1.2		0.9		1.3					1.2
CO3	mg/L			1		1		1					1
HCO3	mg/L			41		12		29					22
K	mg/L			1.52		1.22		1.59					1.26
MG	mg/L			3.44		2.79		4.03					2.91
NA	mg/L			2.02		1.71		2.37					1.97
SO4	mg/L			27		35		33					30
T-HARD	mg/L			55		47		55					50
T.ALK	mg/L			34		10		24					
-----Metals------													
AG	mg/L												
AL	mg/L	0.0833333	0.03	1.8425	0.063	0.04	0.724	0.0466667	0.0525	0.0475	0.045	0.0466667	1.3066667
AS	mg/L		0.005	0.005		0.005	0.005	0.005		0.04			0.005
B	mg/L												
BA	mg/L			0.018		0.015		0.028					0.016
BE	mg/L												
BI	mg/L												
CD	mg/L			0.002		0.002		0.002					0.002
CO	mg/L			0.004		0.004		0.004					0.004
CR	mg/L			0.008		0.008		0.008			0.036		
CU	mg/L	0.0126667	0.019	0.01625	0.035	0.0425	0.0632	0.0133333	0.02575	0.037	0.016	0.0213333	0.00875
F	mg/L			0.106		0.039		0.055			0.045		0.032
FE	mg/L	0.031	0.029	0.0376	0.03475	0.04	0.0626	0.0503333	0.046	0.0388	0.0316667	0.0323333	0.0313333
HG	mg/L					0.0005		0.0005					0.0005
MN	mg/L												
MO	mg/L												
NI	mg/L												
PB	mg/L			0.005		0.005		0.005					0.005
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L												
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L			0.04		0.04		0.04					0.04
NO2-N	mg/L			0.001		0.001		0.001					0.002
NO3-N	mg/L			0.3		0.3		0.3					0.3
T.PO4	mg/L			0.01		0.01		0.01					0.01
TKN	mg/L												
-----Solids------													
TURB-L	NTU			0.25		0.3		0.6					0.35
TDS	mg/L			76		76		82					67
TSS	mg/L			1		1		1					1
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.0052	0.005	0.005	0.005
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **P5.4**													
-----Field data------													
TEMP	deg C	8.98	9.93	9.4	10.7	11	10.9	10.1	9.53	9.9	9	9.3	7.65
COND-F	ms/cm	0.1188	0.1164	0.0831	0.1035	0.0901	0.0842	0.0775	0.0800	0.1237	0.5400	0.1145	0.2633
PH-F	pH unit	7.91	7.91	7.88	7.80	7.84	7.47	7.38	7.76	7.17	7.46	7.65	7.36
-----Major Constituents------													
CA	mg/L			18.8			12.6	17.4				15	
CL	mg/L			0.8			0.5	0.8				1.8	
CO3	mg/L			1			1	1				1	
HCO3	mg/L			42			15	37				26	
K	mg/L			1.52			0.89	1.21				1.29	
MG	mg/L			3.52			2.28	3.23				2.77	
NA	mg/L			1.55			1.31	1.54				2.62	
SO4	mg/L			25			36	34				28	
T-HARD	mg/L			55			39	55				49	
T.ALK	mg/L			34.6			12.4	30				21.6	
-----Metals------													
AG	mg/L												
AL	mg/L	0.0425	0.04	1.94667	0.09525	0.03	0.0475	0.03	0.065	0.0625	0.04	0.1025	0.9575
AS	mg/L			0.005		0.005	0.005	0.005		0.1		0.005	
B	mg/L												
BA	mg/L			0.019			0.013	0.026				0.017	
BE	mg/L												
BI	mg/L												
CD	mg/L			0.002			0.002	0.002				0.002	
CO	mg/L			0.004			0.004	0.004				0.004	
CR	mg/L			0.008			0.008	0.008			0.007	0.008	
CU	mg/L	0.005	0.005	0.0065	0.0055	0.008	0.0145	0.0073333	0.01025	0.0064	0.007	0.0065	0.00575
F	mg/L			0.139			0.037	0.039			0.041	0.073	
FE	mg/L	0.065	0.05875	0.063	0.04825	0.059	0.091	0.0793333	0.0945	0.0682	0.0505	0.084	0.04675
HG	mg/L			0.0005			0.0005					0.0005	
MN	mg/L												
MO	mg/L												
NI	mg/L												
PB	mg/L			0.005			0.005	0.005				0.005	
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L												
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L			0.04			0.04	0.04				0.04	
NO2-N	mg/L			0.001			0.001	0.001				0.001	
NO3-N	mg/L			0.3			0.3	0.3				0.3	
T.PO4	mg/L			0.01			0.01	0.01				0.01	
TKN	mg/L												
-----Solids------													
TURB-L	NTU			1.9			0.35	0.35				0.35	
TDS	mg/L			78			67	77				72	
TSS	mg/L			1			1	1				1	
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L			0.005			0.005	0.005				0.005	
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **RS1**													
-----Field data------													
TEMP	deg C	19.5	17.5	21.5	22	24.5	24.7	23.7	24	17.5	23	23.5	22.5
COND-F	ms/cm												
PH-F	pH unit	8	7.975	8.35	8.8	8.45	8.27	8.3	8.2	8.2	8.3	8.675	8.53
-----Major Constituents------													
CA	mg/L												
CL	mg/L	28.5	33	24.6	31.5	32.7	32	47	27.75	24.6	17.25	23	23.5
CO3	mg/L												
HCO3	mg/L												
K	mg/L												
MG	mg/L												
NA	mg/L												
SO4	mg/L	81.5	77.75	56.6	73.25	91.7	57	30.5	5	51	19.5	52.25	79.75
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L							0.03	0.04				
AS	mg/L												
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L							0.005	0.005				
F	mg/L												
FE	mg/L							0.017	0.248				
HG	mg/L												
MN	mg/L												
MO	mg/L												
NI	mg/L								0.005				
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L								0.013				
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	9.3	22.1	11.2	15.0	15.2	17.7	24.6	18.4	18.3	11.1	10.7	7.4
NO2-N	mg/L	0.00975	0.017	0.0082	0.0075	0.0093333	0.0078333	0.007	0.00725	0.0078	0.012	0.0105	0.015
NO3-N	mg/L	0.15	0.1	0.12	0.1	0.1	1.4833333	0.1	0.1	0.14	0.1	0.15	0.2
T.PO4	mg/L	9.13	15.38	6.58	9.88	7.97	10.42	6.52	7.25	8.70	8.88	9.63	8.88
TKN	mg/L												
-----Solids------													
TURB-L	NTU												
TDS	mg/L												
TSS	mg/L												
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **T8.1**													
-----Field data------													
TEMP	deg C	1.2	1.1	2.1	3.73	6	8.42	11.5	9.15	9	2.27	4.6	
COND-F	ms/cm	1.7	0.9305	0.27	1.0	0.9056667	1.2656	1.1	0.5	0.6375	1.11	1.45	
PH-F	pH unit	9.5	9.8	10.2	10.8	10.886667	10.334	9.664	8.805	8.7825	8.47	9.5	
-----Major Constituents------													
CA	mg/L	184	198.5		277	244	226	281	283	264	286	380	
CL	mg/L	31	32		30	24	74	26	25	23	25	26	
CO3	mg/L	66	64		78	74	22	15	12	6	7	60	
HCO3	mg/L	44	48		28	13	43	70	110	125	96	1	
K	mg/L	134	138.5		146	114	101	117	115	104	103	120	
MG	mg/L	4.63	4.995		3.04	2.63	2.79	3.84	11.3	39	34	29.3	
NA	mg/L	569	563		582	448	398	439	427	376	384	443	
SO4	mg/L	1100	1155		1320	1160	1100	1200	1240	873	1138	1540	
T-HARD	mg/L	475	512.5		675	650	625	650	700	925	875	1000	
T.ALK	mg/L	146	146.5		153	134	72	83	108	111	90	98	
-----Metals------													
AG	mg/L												
AL	mg/L	0.16	0.154		0.17	0.091	0.212	0.173	0.158	0.0575	0.07	0.25	
AS	mg/L						0.005						
B	mg/L												
BA	mg/L	0.021	0.0235		0.025	0.015	0.0215	0.021	0.024	0.017	0.019	0.036	
BE	mg/L						0.0002						
BI	mg/L												
CD	mg/L						0.002						
CO	mg/L	0.068	0.07		0.073	0.043	0.05675	0.065	0.076	0.083	0.074	0.079	
CR	mg/L	0.008	0.008		0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	
CU	mg/L			36.9	19.8	23.3	19.9	19.6	18.4	16.4	16.2	17.4	
F	mg/L												
FE	mg/L			4.624	2.76	2.719	0.514375	0.36725	0.1931667	0.2156667	0.276	2.07	
HG	mg/L	0.0005	0.0005		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	
MN	mg/L	0.007	0.0055		0.004	0.002	0.0065	0.009	0.066	0.4395	0.1966	0.0685	
MO	mg/L	0.359	0.367		0.351	0.247	0.331	0.332	0.3515	0.319	0.347	0.379	
NI	mg/L			0.950	0.564	0.631	0.574	0.598	0.629	0.617	0.599	0.627	
PB	mg/L						0.005						
SB	mg/L						0.051						
SE	mg/L						0.02						
SI	mg/L												
V	mg/L						0.006						
ZN	mg/L			1.507	1.056	1.4569	1.3325	0.94975	0.2	0.0626667	0.023	0.038	
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	20.0	22.0	21.0	15.3	15.3	13.3	14.1	14.7	12.7	14.3	17.3	
NO2-N	mg/L	0.4	0.88	0.52	0.243	0.147	0.141	0.255	0.72	1.0466667	1.0275	0.97	
NO3-N	mg/L	33.0	33.0	44.0	26.7	26.0	22.7	22.3	21.0	19.0	18.5	18.5	
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU	0.3	4.125		2.7	5.3	16	3.2	3.1	4.9	3.5	8.8	
TDS	mg/L	2350	2530		2760	2330	2400	2040	2210	2280	2620	2630	
TSS	mg/L	1	1		4	6	23	1	2	1	11	8	
-----Trace Constituents------													
CN-F	mg/L	12	16	38	21.2	25	13.33	8.25	2.67	3.83	3.63	9.7	
CN-T	mg/L	62	68	90	60	58	34.50	25.88	15.33	13.33	17.38	27.5	
CN-WAD	mg/L	52	56	84	50.7	52.67	26.33	25.13	14.17	12.13	14.63	26	

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **T8.4**													
-----Field data------													
TEMP	deg C						10.8	12.6	13.2	9.43	6.63		
COND-F	ms/cm						1.4192	1.532	2.2	0.64			
PH-F	pH unit						8.15	7.96	7.94	8.03	7.83		
-----Major Constituents------													
CA	mg/L						141	202	209.5	181	182		
CL	mg/L						109.5	25	25	24	27		
CO3	mg/L						17.5	6	5	1	3		
HCO3	mg/L						105.5	94	69	52	84		
K	mg/L						84	106	112	104	101		
MG	mg/L						5.11	4.39	8.75	24.4	32		
NA	mg/L						565.5	570	556	514	497		
SO4	mg/L						1365	1440	1475	1427	1483		
T-HARD	mg/L						387.5	500	525	550	583		
T.ALK	mg/L						114.5	87	64.75	43	72		
-----Metals------													
AG	mg/L					0.003	0.005		0.003	0.003	0.0046667		
AL	mg/L					0.233	0.091	0.157	0.127	0.140	0.268		
AS	mg/L					0.0050	0.0050	0.0050	0.0050	0.0050	0.0053		
B	mg/L												
BA	mg/L					0.022	0.019	0.018	0.017	0.011	0.0186667		
BE	mg/L					0.0002	0.0002	0.0002	0.0002	0.0002	0.0002		
BI	mg/L												
CD	mg/L					0.002	0.002	0.002	0.002	0.002	0.002		
CO	mg/L					0.012	0.0163333	0.03	0.0395	0.051	0.056		
CR	mg/L					0.008	0.008	0.008	0.008	0.008	0.008		
CU	mg/L					0.0695	0.1041	0.1228	0.138	0.1235	0.0885		
F	mg/L												
FE	mg/L					0.3755	0.1992	0.1834	0.2288333	0.217	0.29525		
HG	mg/L						0.0005	0.0005	0.0005	0.0005	0.0005		
MN	mg/L					0.03	0.0103333	0.01	0.0115	0.0196667	0.061		
MO	mg/L					0.131	0.2541667	0.3035	0.32075	0.2871667	0.284375		
NI	mg/L					0.005	0.0052	0.005	0.005	0.00525	0.007		
PB	mg/L					0.005	0.005	0.005	0.005	0.005	0.0075		
SB	mg/L					0.0275	0.034	0.025	0.03	0.03	0.025		
SE	mg/L					0.02	0.0233333	0.02	0.02	0.03	0.0233333		
SI	mg/L												
V	mg/L					0.006	0.006	0.006	0.006	0.006	0.006		
ZN	mg/L					0.002	0.00275	0.0035	0.0026667	0.024125	0.00775		
-----Nutrients------													
NH3	mg/L						0.72275	0.6478	0.542	0.59225	0.26925		
NH3-N	mg/L						25	25.8	23.333333	22	22.75		
NO2-N	mg/L						0.49	0.49	0.7333333	1.075	0.6425		
NO3-N	mg/L						14.75	16.7	15.5	14.25	13		
T.PO4	mg/L										0.96		
TKN	mg/L												
-----Solids------													
TURB-L	NTU						4.75	5.46	4.1	4	6.7		
TDS	mg/L						2522.5	2340	2463.3	2405	2212.5		
TSS	mg/L						15.25	13.8	6.3	2.25	7.5		
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L						0.0448	0.0356	0.048	0.09625	0.068		
CN-WAD	mg/L						0.01975	0.0212	0.0213333	0.038	0.036		

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **SSS.1**													
-----Field data------													
TEMP	deg C	3.1	8	12.6	3.1								3.7
COND-F	ms/cm	0.77	0.0781	0.1636	0.026								0.152
PH-F	pH unit	8.71	8.7	8.34	8								7.6
-----Major Constituents------													
CA	mg/L	5.39	4.36	3.75	3.95							3.02	3.12
CL	mg/L	0.5	0.5	0.5	0.5							0.5	0.5
CO3	mg/L												
HCO3	mg/L	11	13	13	13							7	14
K	mg/L	0.27	0.38	0.18	0.31							0.15	0.23
MG	mg/L	5.87	0.64	0.57	0.61							0.64	0.79
NA	mg/L											0.15	
SO4	mg/L	23	2	11	2							7	3
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L												
AS	mg/L												
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L												
F	mg/L												
FE	mg/L	0.407	1.59	0.682	0.954							1.51	0.09
HG	mg/L												
MN	mg/L												
MO	mg/L												
NI	mg/L												
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L	0.52	1.01	0.56	1.31							1.14	0.09
V	mg/L												
ZN	mg/L												
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	0.22	0.26	0.18	0.04							0.14	0.18
NO2-N	mg/L	0.001	0.001	0.001	0.003							0.002	0.003
NO3-N	mg/L	0.4	0.2	0.2	0.1							0.1	0.1
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU												
TDS	mg/L												
TSS	mg/L	46	89	39	81							59	137
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **SSS.2**													
-----Field data------													
TEMP	deg C	2.9	2.6	12.6	3.5								1.8
COND-F	ms/cm	0.781	0.0531	0.1636	0.0291								0.983
PH-F	pH unit	8.63	8.5	8.34	8.2								8.31
-----Major Constituents------													
CA	mg/L	13.2	6.05	3.21	2.74							5.89	2.92
CL	mg/L	0.5	0.5	0.5	0.5							0.5	0.5
CO3	mg/L												
HCO3	mg/L	10	13	9	10							10	13
K	mg/L	0.46	0.19	0.09	0.26							0.26	0.23
MG	mg/L	29.1	3.99	2.21	0.64							1.08	0.39
NA	mg/L											0.17	
SO4	mg/L	17	15	9	2							18	1
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L												
AS	mg/L												
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L												
F	mg/L												
FE	mg/L	0.466	1	0.327	1.56							3.37	0.169
HG	mg/L												
MN	mg/L												
MO	mg/L												
NI	mg/L												
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L	0.73	1.22	0.44	0.77							2.05	0.08
V	mg/L												
ZN	mg/L												
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	0.28	0.2	0.3	2.2							0.04	0.06
NO2-N	mg/L	0.001	0.001	0.001	0.003							0.001	0.003
NO3-N	mg/L	0.3	0.2	0.2	0.1							0.1	0.1
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU												
TDS	mg/L												
TSS	mg/L	14	70	2	41							129	75
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
SAMPLE POINT : **SWS.1**													
-----Field data------													
TEMP	deg C	2	2.1	4.6	5.3	3.1	3.4						
COND-F	ms/cm	0.22	2.48	1.31	0.1369	0.3	1.75						
PH-F	pH unit	7	8.16	7.01	8.04	8.18	8.1						
-----Major Constituents------													
CA	mg/L										199		
CL	mg/L	17	10	2.85	3.5	0.7	6				6.27		
CO3	mg/L										3.5		
HCO3	mg/L										235		
K	mg/L										6.67		
MG	mg/L										426		
NA	mg/L										6.23		
SO4	mg/L	2580	3500	1100	1520	270	1560				1547		
T-HARD	mg/L										2200		
T.ALK	mg/L										200.5		
-----Metals------													
AG	mg/L										0.0035		
AL	mg/L	2.16	0.03	1.305	0.52	0.23	0.09				0.213		
AS	mg/L	0.005	0.005	0.005	0.005	0.005	0.005				0.005		
B	mg/L												
BA	mg/L										0.0155		
BE	mg/L										0.0002		
BI	mg/L												
CD	mg/L										0.002		
CO	mg/L										0.009		
CR	mg/L										0.008		
CU	mg/L	0.005	0.005	0.005	0.005	0.005	0.005				0.005		
F	mg/L												
FE	mg/L	2.11	0.114	2.185	0.884	0.435	0.819				0.743		
HG	mg/L										0.0005		
MN	mg/L										0.8025		
MO	mg/L										0.0065		
NI	mg/L	0.084	0.187	0.088	0.204	0.032	0.074				0.055		
PB	mg/L										0.005		
SB	mg/L										0.02		
SE	mg/L										0.02		
SI	mg/L												
V	mg/L										0.006		
ZN	mg/L										0.005		
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	4.9	0.52	0.05	0.04	0.04	0.16				0.16		
NO2-N	mg/L	0.001	0.001	0.001	0.001	0.001	0.001				0.001		
NO3-N	mg/L	0.1	5	0.85	0.9	0.3	2				2		
T.PO4	mg/L										0.155		
TKN	mg/L												
-----Solids------													
TURB-L	NTU	270	23	73	19	90	5.3				122		
TDS	mg/L	4590	5100	1765	2270	460	2460				2283		
TSS	mg/L		29	66.5	7	69	1				188		
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L										0.005		
CN-WAD	mg/L												

SAMPLE POINT : **SWS.2**		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
-----Field data------													
TEMP	deg C				8	2.9	8.2	6.7	1.6				
COND-F	ms/cm				0.213	1.91	0.816	0.1467	0.48	0.75			
PH-F	pH unit				8	8.27	7.205	8.15	8.19	8.15			
-----Major Constituents------													
CA	mg/L												
CL	mg/L				23	8.9	5.35	4.1	1.6	8.9	14		
CO3	mg/L												
HCO3	mg/L												
K	mg/L												
MG	mg/L												
NA	mg/L												
SO4	mg/L				2090	2300	1300	1550	610	1120	1210		
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L				4.99	0.03	0.835	0.41	0.92	0.06	0.263		
AS	mg/L				0.005	0.005	0.005	0.005	0.005	0.005	0.005		
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L				0.005	0.005	0.005	0.005	0.005	0.005	0.005		
F	mg/L												
FE	mg/L				2.72	0.066	1.614	0.676	1.85	0.208	0.532		
HG	mg/L												
MN	mg/L												
MO	mg/L												
NI	mg/L				0.07	0.092	0.1085	0.186	0.069	0.03	0.052		
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L												
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L				0.98	0.22	0.22	0.04	0.04	0.08	0.18		
NO2-N	mg/L				0.004	0.001	0.001	0.001	0.001	0.003	0.001		
NO3-N	mg/L				0.1	2.7	0.55	1	0.5	1.5	65		
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU				200	3.7	24	16	110	6.2	40		
TDS	mg/L				4410	3520	2120	2340	885	1810	2560		
TSS	mg/L					5	25.5	5	102	1	67		
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

SAMPLE POINT : **WR2**		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
-----Field data------													
TEMP	deg C				2.23	0.7	5.08	3.13	7.5	2		1.3	
COND-F	ms/cm				1.579	2.2025	1.4056	1.0435	2.08	1.792		0.263	
PH-F	pH unit				8.22	8.13	7.98	8.16	8.04	8.03		7.90	
-----Major Constituents------													
CA	mg/L				528.7	370.7	367.2	342.0	375.2	336.3	423.0	464.0	
CL	mg/L				94.3	74.0	60.4	44.3	43.8	33.3	47.0	54.0	
CO3	mg/L				1.0	1.0	2.4	5.8	1.0	1.0	6.0	1.0	
HCO3	mg/L				483.3	286.7	244.0	267.5	302.0	275.0	335.0	360.0	
K	mg/L				18.0	12.6	12.1	11.2	12.1	10.4	13.3	16.8	
MG	mg/L				1389.0	630.0	402.4	393.8	493.0	410.5	566.0	615.0	
NA	mg/L				28.3	16.9	13.7	13.6	15.7	12.7	19.0	22.4	
SO4	mg/L				5463.3	2706.7	2006.0	2077.5	2318.0	1885.0	2765.0	2880.0	
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L				0.03	0.03	0.032	0.035	0.038	0.5875	0.137	0.62	
AS	mg/L												
B	mg/L												
BA	mg/L				0.0146667	0.0133333	0.0176	0.01075	0.0118	0.02575	0.0115	0.021	
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L				0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
F	mg/L												
FE	mg/L				0.0126667	0.037	0.0356	0.011	0.0144	0.60675	0.245	1.2	
HG	mg/L												
MN	mg/L				0.597	0.269	0.2168	0.10325	0.1776	0.35975	0.8375	0.358	
MO	mg/L				0.015	0.01	0.0164	0.012	0.0102	0.04125	0.021	0.009	
NI	mg/L				0.0936667	0.0363333	0.0228	0.019	0.0192	0.021	0.051	0.026	
PB	mg/L				0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
SB	mg/L												
SE	mg/L				0.0433333	0.0266667	0.022	0.0275	0.026	0.025	0.02	0.02	
SI	mg/L												
V	mg/L												
ZN	mg/L				0.01	0.0053333	0.0058	0.0035	0.0034	0.00725	0.006	0.008	
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L				0.1333333	1.48	0.548	0.37	0.136	0.84	0.32	0.88	
NO2-N	mg/L				0.001	0.001	0.0488	0.001	0.0012	0.001	0.001	0.001	
NO3-N	mg/L				25.3	18.3	13.6	10.5	12.6	13.5	20.0	24.0	
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU												
TDS	mg/L				8590	4477	3400	3210	3846	2822.5	3905	4470	
TSS	mg/L				129.33333	91	60.2	8	22.6	61.5	32.5	97	
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

SAMPLE POINT : **WR11**		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
-----Field data------													
TEMP	deg C	1.2	1.4	3	2.28	2.85	4.58	3.35	4.6	2.57	3.55	1	
COND-F	ms/cm	0.728	0.598	0.553	0.568	0.8035	0.7616	0.7668	0.57	0.49	0.515	1.028	
PH-F	pH unit	8.3	8.2	8.0	8.2	8.1	7.9	8.0	7.7	8.2	8.0	8.0	
-----Major Constituents------													
CA	mg/L	208.5	197.0	138.0	153.0	174.3	172.6	136.3	90.7	122.0	186.5	184.3	
CL	mg/L	4.9	5.2	3.4	4.9	12.5	8.3	4.3	1.9	5.8	6.2	6.5	
CO3	mg/L	1.0	1.0	1.0	1.0	1.0	2.4	3.5	1.0	1.0	18.3	1.0	
HCO3	mg/L	176.3	175.0	145.0	138.8	146.7	145.0	117.0	92.6	138.8	148.8	205.0	
K	mg/L	8.7	8.5	5.6	6.5	8.2	8.5	8.1	4.9	5.8	10.2	12.9	
MG	mg/L	59.1	57.4	44.7	51.5	87.2	99.5	85.2	64.1	97.4	130.8	138.3	
NA	mg/L	18.7	20.5	11.8	12.5	14.3	9.1	5.7	3.9	6.3	11.3	14.3	
SO4	mg/L	466.3	465.0	330.0	366.3	530.0	632.0	512.5	327.0	497.5	700.0	676.7	
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L	0.03	0.03	1.93	0.03	0.03	0.038	0.03	0.054	0.42	0.058	0.4866667	
AS	mg/L												
B	mg/L												
BA	mg/L	0.01625	0.016	0.024	0.027	0.0306667	0.0324	0.02525	0.0212	0.03025	0.03525	0.0413333	
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
F	mg/L												
FE	mg/L	0.0155	0.014	0.004	0.0475	0.0196667	0.0108	0.016	0.027	0.6335	0.063	0.591	
HG	mg/L												
MN	mg/L	0.24	0.274	0.111	0.08525	0.1413333	0.5462	0.249	0.4964	0.51825	0.3795	0.3286667	
MO	mg/L	0.05275	0.047	0.024	0.02475	0.0276667	0.0292	0.02525	0.0156	0.0185	0.0365	0.0386667	
NI	mg/L	0.028	0.025	0.019	0.023	0.032	0.0572	0.035	0.037	0.0465	0.05	0.0483333	
PB	mg/L	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.004	
SB	mg/L												
SE	mg/L	0.0225	0.02	0.02	0.02	0.02	0.022	0.02	0.02	0.02	0.02	0.02	
SI	mg/L												
V	mg/L												
ZN	mg/L	0.005	0.005	0.007	0.0025	0.0033333	0.0046	0.00275	0.0032	0.005	0.00375	0.004	
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	7.4	8.2	2.9	2.9	4.5	5.6	4.6	1.7	1.8	14.6	25.3	
NO2-N	mg/L	0.0248	0.006	0.001	0.023	0.0296667	0.0192	0.0188	0.001	0.0153	0.0698	0.1567	
NO3-N	mg/L	27.0	36.0	15.0	17.3	22.7	21.4	16.0	7.4	8.3	34.5	54.7	
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU												
TDS	mg/L	982.25	986	851	767	1010.3333	1105.8	989.5	642.8	838.25	1242.5	1333.3333	
TSS	mg/L	11	1	24	3.5	19.333333	39.2	32.5	45	43.75	11.25	27.666667	
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

SAMPLE POINT : **UG1**		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
-----Field data------													
TEMP	deg C	8.55	4.3	4.7	7.9	10.2	12.1	11.3					
COND-F	ms/cm	0.614	0.763	0.8925	1.143	0.8395	0.741	0.661					
PH-F	pH unit	11.5	11.2	11.3	11.3	11.7	11.2	10.0					
-----Major Constituents------													
CA	mg/L	327	132	246.5	375	215.2	139.3	993.7					
CL	mg/L	26	8.5	15.5	14	11.5	6.8	9.4					
CO3	mg/L												
HCO3	mg/L	1	1	1	1	1	15	1					
K	mg/L	48.05	24.5	45.55	73.55	41.55	27.7	34.9					
MG	mg/L	0.09	2.35	0.185	0.065	0.23	9.7	0.1					
NA	mg/L						62.25	89					
SO4	mg/L	380	260	460	397.5	402.5	263.7	190					
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L	0.125	0.04	2.06	0.08	0.315	0.1033333	0.25					
AS	mg/L						0.005	0.005					
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L	0.0055	0.005	0.005	0.01	0.006	0.0056667	0.005					
F	mg/L												
FE	mg/L	0.1505	0.036	0.179	0.148	0.1	0.097	0.075					
HG	mg/L	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005					
MN	mg/L	0.0016667	0.001	0.0015	0.0015	0.001	0.007	0.337					
MO	mg/L						0.028	0.036					
NI	mg/L						0.005	0.025					
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L	0.0025	0.001	0.0045	0.006	0.0095	0.0023333	0.005					
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	22.5	12.5	26	5.85	27.3	26.76	3					
NO2-N	mg/L	1.19	0.68	1.23	0.62	0.6	0.7	0.46					
NO3-N	mg/L	34	16	33	9.05	45.5	43.2	3.2					
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU	4	380	23.65	65	37	51.3	55					
TDS	mg/L	1294.5	586	1195	1680	1120	746.3	622					
TSS	mg/L	12.5	75	62	144.5	95.5	71	100					
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

SAMPLE POINT : **UG1OUT**		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
-----Field data------													
TEMP	deg C	7.4		6.9	8.5	13.1	10.03	9.95					
COND-F	ms/cm	0.8		0.9	1.06	1.14	0.84	0.797					
PH-F	pH unit	10.3		11.3	10.65	8.8	9.39	8.51					
-----Major Constituents------													
CA	mg/L	152.6	118	183	84.63	207	146	152					
CL	mg/L	18.5	7.8	10	8.23	14	6.7	10.95					
CO3	mg/L												
HCO3	mg/L	12	1	12	57	17	43.7	63					
K	mg/L	19.85	18.9	23.2	21.43	18.8	16.9	13					
MG	mg/L	10.82	5.22	0.145	10.29	46.8	36.0	45.25					
NA	mg/L						46.65	52.75					
SO4	mg/L	355	240	317.5	289	770	525	575					
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L	0.035	0.14	0.035	0.133	0.03	0.03	0.175					
AS	mg/L						0.005	0.005					
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L	0.005	0.005	0.005	0.005	0.005	0.005	0.005					
F	mg/L												
FE	mg/L	0.222	0.049	0.077	0.151	0.175	0.118	0.304					
HG	mg/L	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005					
MN	mg/L	0.0105	0.006	0.001	0.0057	0.046	0.0317	0.043					
MO	mg/L						0.019	0.0155					
NI	mg/L						0.005						
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L	0.0015	0.002	0.004	0.002	0.004	0.002	0.003					
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	7.75	9.6	10.05	3.7	4.2	5.07	2.5					
NO2-N	mg/L	0.69	0.58	0.99	0.4	0.48	0.47	0.17					
NO3-N	mg/L	5.15	12	17.5	4.6	9	8.40	1.3					
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU	32.7	390	6.3	248	110	19	18.5					
TDS	mg/L	749	561	838.5	639	1320	895	861					
TSS	mg/L	113	76	19.5	224	119	24	37					
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

SAMPLE POINT : **UG2**		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
-----Field data------													
TEMP	deg C	10.3	5.6	5.8	7.3	10.3	11.9	10.4	9.6				
COND-F	ms/cm	1.356	1.418	0.897	0.747	1.116	1.247	1.57	0.66				
PH-F	pH unit	11.7	9.8	10.0	9.6	9.3	9.4	11.3	11.0				
-----Major Constituents------													
CA	mg/L	373.5	138	539	284.5	167.5	348	99.2	38				
CL	mg/L	8.6	9.7	8.35	12.5	10.4	14.3	9.3	9.2				
CO3	mg/L												
HCO3	mg/L	1	230	5.5	105.5	129.5	78	1	1				
K	mg/L	41.35	33.8	51	52.5	12.25	31.0	35	19.1				
MG	mg/L	10.695	138	32.45	65.525	193	207	0.05	4.94				
NA	mg/L						63.9	89.4	84.3				
SO4	mg/L	585	1120	440	647.5	1300	1377	188	255				
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L	1.25	2.01	2.04	0.035	0.09	0.03	0.58	0.5				
AS	mg/L						0.005	0.005	0.005				
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L	0.005	0.005	0.005	0.0105	0.005	0.005	0.009	0.005				
F	mg/L												
FE	mg/L	2.2115	2.73	0.4455	0.2065	0.242	0.042	0.076	0.69				
HG	mg/L	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005				
MN	mg/L	0.079	0.383	0.015	0.088	1.67	1.53	0.002	0.032				
MO	mg/L						0.043	0.036	0.029				
NI	mg/L						0.12	0.005	0.005				
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L	0.009	0.019	0.0055	0.0055	0.006	0.003	0.001	0.007				
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	64.5	13	157.5	6.95	4.55	32.066667	2.9	0.26				
NO2-N	mg/L	1.05	0.22	1.68	0.46	0.202	0.5703333	0.38	0.46				
NO3-N	mg/L	84	20	306.5	9	4.65	17.933333	3.2	1.2				
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU	11.75	2600	22.7	157.5	185	35	50	39				
TDS	mg/L	1505	2170	2495	1620	2020	2450	584	454				
TSS	mg/L	53.5	328	43.5	261	245.5	52.7	98	1040				
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

SAMPLE POINT : **UG2OUT**		Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
-----Field data------													
TEMP	deg C	7.75	9.3	6.2	11	7	9.6	9.6	8.9				
COND-F	ms/cm	1.31	0.205	0.96	1.4	1.47	1.76	0.7525	0.54				
PH-F	pH unit	9	9.2	8.72	8.56	8.55	9.08	8.03	9.86				
-----Major Constituents------													
CA	mg/L	129	154	218.5	186	160	259	206	159				
CL	mg/L	8.25	10	12	12.5	9.55	67.7	15.5	11				
CO3	mg/L												
HCO3	mg/L	74	230	190	215	200	137	115	200				
K	mg/L	11.37	15.3	15.65	19.1	10.83	15.8	11.27	5.96				
MG	mg/L	126.5	176	206.5	195.5	188.5	282.7	262.5	222				
NA	mg/L						45.4	75.7	52.3				
SO4	mg/L	800	1240	1270	1040	1170	1480	1580	1240				
T-HARD	mg/L												
T.ALK	mg/L												
-----Metals------													
AG	mg/L												
AL	mg/L	0.15	1.18	2	0.06	0.255	0.03	0.24	0.44				
AS	mg/L						0.005	0.005	0.005				
B	mg/L												
BA	mg/L												
BE	mg/L												
BI	mg/L												
CD	mg/L												
CO	mg/L												
CR	mg/L												
CU	mg/L	0.005	<0.005	0.005	0.005	0.005	0.005	0.0075	0.005				
F	mg/L												
FE	mg/L	0.28	1.87	0.235	0.2075	0.64	0.062	0.352	0.882				
HG	mg/L	0.0005	<0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005				
MN	mg/L	0.1395	0.544	0.449	0.326	1.231	3.53	5.79	3.05				
MO	mg/L						0.0185	0.02	0.012				
NI	mg/L						0.184	0.326	0.139				
PB	mg/L												
SB	mg/L												
SE	mg/L												
SI	mg/L												
V	mg/L												
ZN	mg/L	0.004	0.02	0.0105	0.007	0.0065	0.0026667	0.01	0.016				
-----Nutrients------													
NH3	mg/L												
NH3-N	mg/L	6.2	4.5	6	4.05	6.3	6.633	1.29	0.34				
NO2-N	mg/L	0.22	0.064	0.285	0.27	0.2195	0.173	0.0375	0.001				
NO3-N	mg/L	14	7.3	11.6	2.15	5.85	11.2	2.45	1.7				
T.PO4	mg/L												
TKN	mg/L												
-----Solids------													
TURB-L	NTU	36.85	1500	19.5	56.5	155	14.8	39	32				
TDS	mg/L	1585	2250	2175	1870	1885	2483	2400	2010				
TSS	mg/L	1	51	17	40	172	51.7	71	33				
-----Trace Constituents------													
CN-F	mg/L												
CN-T	mg/L												
CN-WAD	mg/L												

Cautionary Note Regarding Forward-Looking Statements

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