

Red Dog Helps Rural Alaska Students “Get Game”

Coming from a small, rural village in Alaska and experiencing life and adventures in a big city out of state is something one might never get the chance to do. Annually, for selected high school students in our region, that opportunity comes knocking at their door.

In 2011, Teck began a student initiative that uses the NBA as a reward for outstanding performance in school and service to the community. Selected students participate in visiting local colleges, gain perspective on professional career opportunities, and experience a lifestyle outside their own. A second part of the program is attending a basketball camp, which was done for the second time this summer.

Twelve students that were selected attended Camp Patriot in Ocala, Florida. FCSAA (Florida College System Activities Association) Hall of Fame Coach, Tim Ryan, and members of his team at the College of Central Florida put on Camp Patriot. The camp provides opportunities for young players to develop the skills and knowledge necessary to play the game of basketball.



Along with the basketball camp, the group toured the University of Florida and visited the well-known Gator football and basketball team stadiums. The fact that professional athletes like Tim Tebow and Al Horford played for this school made it even more thrilling for the students.

The last day in Florida was what many of the students looked forward to all week—visiting Disney World. Everyone had a great time, and for many of the students, this is the highlight of their high school years.

Message from the General Manager

By Henri Letient



2015 is quickly coming to a close. It has been a busy year, as always. With winter coming on, some project work is coming to an end. Much progress has been made on dam construction,

site drainage improvements and various other projects. The new Lime Slaker Plant construction is progressing well and on target to be completed by year-end. The exploration team has been busy on many fronts this season (read more about it in this issue).

You all continue put in a tremendous effort to ensure that we all go home safe and

healthy every day. Unfortunately, a series of incidents over the past couple of months have set us back. Let's not allow that to deter us from the path we're on. All the safety programs we have put in place, such as housekeeping audits and Safety Team ideas, are well entrenched across the property and I believe these initiatives are truly effective in keeping safety on everyone's mind.

We will exceed our production plan for the year in terms of total metal production. The mill and maintenance crews have had their hands full lately, with multiple challenges thrown at them. I want to recognize all the good efforts they have made on multiple repair works that were not scheduled. They completed them safely and with timeliness—minimizing the impact on production. Well done! That shows true team spirit and dedication.

Shipping is going well. With the earliest start ever in the season, we've made good progress and are on target to ship our entire product before freeze-up! The last barge of supplies is arriving soon so that we have all we need till next shipping season.

All camps have been busy, with many additional contractors and temporary employees to assist with the workload. Thanks for your patience and putting up with multiple room reallocations to fit everybody in. I appreciate that this can be stressful at times, but we all realize that this extra help is much needed to allow operations to continue making major improvements.

Lottery Winners Visit Red Dog



2014 Red Dog visit lottery winners, Eugene and Bernice Monroe of Noatak, visited Red Dog for two days on August 13-15. They toured the mine operation areas and the port site.

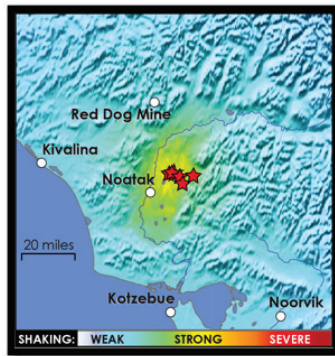
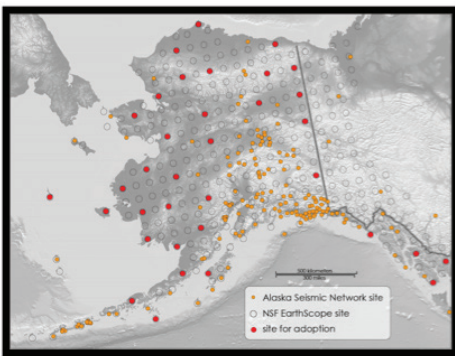
In the 1980's, Eugene held a maintenance position at Red Dog and Bernice was a housekeeper at the construction camp and port site. They thoroughly enjoyed their visit and were surprised to see all of the changes since their last time at Red Dog.

Did you know?

- Red Dog has paid approximately \$128 million dollars to the Northwest Arctic Borough (NWAB) since operations began in 1989. \$11.6 million was paid in 2014 alone.
- Over the past five years, revenues from Red Dog have accounted for between 70% and 80% of the Borough's annual budgeted General Fund revenue.
- Red Dog is the only private taxpayer (payment in lieu of taxes) in the Northwest Arctic Borough.
- Red Dog (Teck) employee 2013 wages (excluding benefits) to NWAB residents were \$8 million.

Improving Seismic Monitoring at Red Dog

By Shantanu "Tinu" Tiwari



Proposed NSF Earth Scope site map and Noatak earthquake intensity map

Mother Nature has been kind to us this year and we have had only few seismic events—all with magnitude 4.5 (Richter scale) or less.

After a swarm of earthquakes in 2014, Red Dog Mine began working with University of Alaska-Fairbanks (UAF) seismologists to better

understand our surroundings. UAF Seismologists recently traveled to Red Dog Mine where they performed long due maintenance on a seismograph located just south of the back dam.

UAF is also working on the NSF Earth Scope program, which aims to increase the number of seismographs in Alaska. At present, seismographs are sparsely located across our state and their maintenance and data collection is difficult due to rough terrain. More seismic data will be available to seismologists once this program gets completed in late 2018.

Red Dog Mine has also installed an in-house accelerograph in order to compute ground acceleration values.

These efforts will go a long way in better understanding when and why the ground shakes in Alaska and at Red Dog.

Suvisi (Sü-vĩ-see) in the Iñupiaq language means:

“What are the many people doing?”

Seeing Biodiversity Firsthand in the Elk Valley

By Matthew Line

Since Red Dog is so far removed from Teck's other mines, it's not surprising that we sometimes don't think much about them. To stay in touch with what is happening away from our own mines, the Mine and Mill Technical Groups present occasional Student of the Industry presentations, focused on a specific business aspect.

This year, the theme for the presentations is sustainability, and I chose to do a presentation on biodiversity. I had an ulterior motive, because I knew Teck recently bought land in the Flathead Valley, near my hometown in Canada, and I was looking for an excuse to go hiking there.

I arranged with Teck's manager for the area to meet up with a group of conservationists that were already planning a backpacking trip. It was actually a different area they were going to, called Aldridge-Weary. Teck has coal licenses below this area, and is working with conservation groups who would like the Aldridge-Weary to be designated as a protected wilderness area.

On my trip, I saw the natural beauty of the area, as well as learned about the importance of this habitat for wildlife. I personally saw mountain goats, a golden eagle, lots of elk and many signs of the area's bear population.

There are varying types of habitat in this area, resulting from the varying elevations and aspects that are important for maintaining biodiversity. It is also an important connection between other natural and protected areas, and part of a planned wildlife corridor that will connect Yellowstone National Park in Wyoming and Montana to the Yukon Territory in northern Canada.

The conservationists were pleased with the actions Teck had taken to support biodiversity and conservation.

If you'd like to learn more, you're welcome to attend my presentation, which will be held at Red Dog in late October.



Looking into the Weary Drainage



Matthew standing on the top of Mt. Bolton. Fording River operations are in the farthest peaks.

New Truck Wash Reduces Vehicle Issues

By Chuck Barger

I've heard or have been in conversations with experienced operators (especially during the muddy season) about a truck wash and the benefits it would have for us.

During the summer and fall, mud builds up on equipment, causing mechanical issues such as hose failures and electrical wiring problems.

Earlier this year, the conversation about a truck wash was brought back up and we were hoping to build one near the bottom of the gyro crusher near the new water truck fill station in order to tie in the water system from the water storage tank. The tank isn't hooked up yet, so we thought we should make one just to test how it works. The first truck wash we built failed, so we identified the issues and made improvements. The second system took two work shifts to build.

The truck wash is hooked up to a 6-inch diesel pump in the pit. It has two 4-inch spray bars on the skid and four 3-inch vertical spray bars that are 6-inches tall.

We hope to keep mud from building up on vehicles in order to prevent mechanical issues. Other benefits we found include better pre/post shift inspections on hoses, less overheating of oil systems, and shorter wash times for preventative maintenances (PM) and pre-PM's. Hopefully, we will gain higher equipment availabilities. This will improve our environmental compliance by reducing potential oil spills.

Teck's Exploration Team at Red Dog Mine

By Jamie Kraft



Over the last few years, Teck's Exploration Group has increased its activities in the Red Dog district. You've likely seen some of us on the charter or around the personnel accommodation center (PAC), or perhaps you've encountered us at your job site, but Exploration and the work we do might still be a bit of a mystery to many people at Red Dog. In this article, I want to share more about who we are, why we are at Red Dog and what we do here.

Mineral exploration is the search for mineral resources that can lead to new mines or the expansion of existing operations. Teck's Exploration Group is active in the USA, Canada, Chile, Peru, Ireland, Turkey, Namibia, Mongolia and Australia – that's nine countries, and Red Dog is one of our most exciting districts.

The Exploration team at Red Dog comprises employees of Teck Alaska Inc., Teck American Inc., and Teck Resources Limited, with a range of skills and experience including geoscientists, field and core technicians, community relations, and health and safety

professionals. We also include many contractors involved in drilling, helicopter operations and geophysical surveys. NANA has a long history of providing exploration drilling services at Red Dog through NANA Dynatec, NANA Major and now through Tuuq Drilling.

Mining of the Red Dog Main deposit finished in 2012 and—although production from the Aqqaluk deposit is still in its early stages—we know that it too will not last forever. How much more zinc is in the region? Can we mine other deposits in the district after Aqqaluk and Qanaiyaq are exhausted? Teck's Exploration Group is working hard to answer those questions.

It's not easy to find a mineral deposit and turn it into a mine. Small mineral deposits are numerous, but very large, high-quality ones that can be mined profitably are exceedingly rare, and many things can impede their development. In fact, for the overwhelming majority of mineral deposits around the world, it would cost more money to extract the product than it is worth, so they aren't developed. Many factors, including the size, depth, shape, location and metal concentration of the deposit, as well as global metal prices and social, legal and environmental factors all need to be favorable before a deposit can be mined.

When Red Dog was discovered in 1968, nature had done the hard work for us by eroding away the rocks that once covered two of the deposits (Red Dog Main and Qanaiyaq). Since then, discoveries have continued, but they became increasingly challenging. Aqqaluk and Paalaaq, located almost underneath Red Dog Main, were not discovered until 1995, and Anarraaq was discovered in 1999, 2,200 feet below surface northwest of the mine. Exploration needs to use every tool in our toolbox to explore for additional zinc that may be hidden beneath hundreds or thousands of feet of ordinary rock.

The Stages of Exploration

Mineral exploration is a multi-stage process that begins years before material is extracted in a mine. Red Dog is a great example of a site where all six stages of exploration process are taking place. The Exploration team 1) generates a list of targets (areas that could hold a mineral deposit), 2) develops the targets with field studies, 3) tests them with drilling and then 4) follows up with more drilling on the promising areas. For a rare few of these, 5) mineral inventories (a measure of the amount and grade of minerals present) are calculated and, if all goes well, 6) scoping studies, which assess economics and scale, are completed.

Working through these stages can take anywhere from 8-20 years or even longer, so we have to begin the process long before we want to start mining. And, because of challenges, there's no guarantee of a successful outcome.

Teck's Exploration Team at Red Dog Mine

Continued from Page 4

This is what the stages of exploration look like at Red Dog:

Field Studies: We make plans during the winter and then perform a variety of studies each summer to find clues about the location of mineral deposits that may be hidden beneath tundra and ordinary rock. Geologists make maps of the exposed rock and collect samples for chemical analysis. Field crews collect small samples of soil or stream sediment to look for evidence of nearby mineral deposits. Geophysicists use hi-tech equipment to measure the density, electrical and magnetic properties of the bedrock at depth. All of this information helps us to better understand what kinds of rock are underground and whether or not zinc might be present. This information helps us to come up with ideas or targets for drill testing.

Modelling: Exploration geologists like me use all of this information to make 3-dimensional computer models that estimate the distribution, size, and shape of the different rock types below the surface. These models are used to plan additional exploratory work and, if we've found mineralization, to estimate how much zinc might be there. If the deposit is exceptional, we pass the model to resource geologists and engineers who assess economics and mining feasibility.

Drilling: Targets must be drilled in order to obtain the rock samples that allow us to assess whether (and how much) zinc occurs in the rocks below surface. Because drilling is costly, we can't test all of our ideas and instead drill only the best targets. Drilling produces a cylindrical core of rock that is placed in boxes and taken to our core logging facility (the "core shack") at the construction camp. At the core shack, a team of geologists carefully examines and documents the features of the rock in a process called core logging. Technicians then collect samples that we send to a laboratory for chemical analysis and assay.

Mine Planning: In recent years, the Exploration Group has also been working more closely with the Red Dog Mine by operating drill programs in the Aqqaluk pit and at Qainaiyaq to collect geological and geotechnical information. We are also helping to construct a digital model of the deposits. That new information is used by Red Dog's engineers and geologists for mine planning and is critical in helping the operation run efficiently and safely.



If you'd like to know more about Exploration at Red Dog, please ask one of our team members, or email exploration.feedback@teck.com.

Thanks for reading!

Creating a Visibly Safer Mine

By Allison D. Conwell



Red Dog Operations always seeks opportunities to improve safety and health. Red Dog Operations 2015 objectives and goals were to identify high potential risk controls and key areas to focus on to improve our standards, training, and operations.

Areas that were identified included:

- Lock out/Tag out/Try out
- Confined Space Entry
- Working at Heights

Equipment & Workplace Inspection

The Equipment and Workplace Inspection Committee, which consisted of Todd Smith–Mine Superintendent, Thomas Farr–Mine Maintenance, General Foremen, Eric Harrison – Materials Management Buyer, and Allison Conwell–Mine Mobile Equipment Trainer, decided to improve light vehicle visibility and mobile equipment inspections.

In any situation, either at Red Dog or home, there are four key principles of survival to remember when operating equipment.

1. Stay out of the line of fire
2. Stay in the line of sight
3. Ensure equipment is secure
4. Consider surrounding equipment

With some of the largest mobile equipment in northwest Alaska, Red Dog Operations' focus is on improving visibility for the safety and health of our employees. Improvements and modifications to light vehicles include lighted buggy whips, flagging, reflective tape, and new vehicle inspection forms to be implemented by the end of 2015.

As we improve our operations to create a visibly safer mine, we encourage everyone to improve their workplaces and bring that knowledge home as we develop a culture that envisions "Everyone Going Home Safe and Healthy Every Day."

Q2 Article Correction

In Q2, an article titled "Red Dog Teaches Teachers about Alaska's Natural Resources" was inaccurately portrayed. The title should have given credit to Alaska Resource Education for their work teaching. Red Dog is proud to host Alaska Resource Center and to collaborate with them to impact educators and their students.

“This was Home for Him and it was Outer Space for Me..”

By Nathan Vandomelen



Red Dog team members visit Noatak for annual operations update and community engagement and cultural activities. L to R: Brianna Kirk, Wayne Hall, Matt Line, Nathan Vandomelen, Verna Westlake, D'Anne Hamilton, Alison Kelly, Ahpa Porter, Virgil Adams, Percy Wesley, and Sonya Adams.

I am fortunate enough to say that even at my young age, I have traveled to many places in my life within the United States and beyond. Even so, this summer has been a series of firsts for me.

Before this past May, I had never worked at a mine, never seen a caribou, never hiked an unmarked trail, never seen a midnight sun, and had never even set foot in Alaska, let alone miles above the Arctic Circle. My expectations were high and my eyes wide open, and I can say without a doubt that I was not disappointed.

Interestingly, the most significant “first” for me this summer was very unexpected. It was an opportunity I did not know existed, and certainly one that I never thought I would have. Yet, here I was, nearing the end of my final work rotation for the summer with seemingly no page left unturned, when I was granted the opportunity to spend a day in Noatak, one of the local Inupiat villages.

At first, my reaction was an odd mixture of excitement and anxiety—one for having such a marvelous new door to open, and the other for not having a clue what might lie beyond it. I was walking in to unfamiliar territory, and the feeling was excitingly uncomfortable.

I was briefed on the culture, lifestyle, and interactions of the people, as well as the plan for the day. I was given the small responsibility of introducing myself, briefly educating the people about the mill technical department, the area where I work, and helping in any other way I could throughout the day. As one who is initially shy in front of people, I knew this would be a challenge, but one I was determined to rise above.

If there is anything I have learned, it is not to let my silly inhibitions hold me back.

A plane the size of a large SUV came to take us, with 10 seats including the pilot. By far the smallest plane I had ever set foot in, the journey was only beginning and I was already covering new ground.

The plane flew low in the sky, and with an unfamiliar bob, not so much that it was uncontrolled, but simply a different kind of flying. A plane this small lets the wind push it around unlike its older brothers, gliding rather precariously through the sky, but remaining true to its trajectory. One could certainly fear its meandering tendency, but I found it oddly peaceful, as if to serve as a subtle reminder that we are simply human, and that compared to nature, we really are like a fly in a windstorm.

In the blink of an eye, we had landed, and surprisingly with comfort abound. Despite the oversized tin can of a plane and a gravel runway, the landing was shockingly smooth. A small gang of four-wheelers, followed closely by warm welcomes and friendly smiles, soon met us. The Noatak people, many of who work at Red Dog, or have relatives that do, were happy to take us to the school where we would begin setup for the afternoon’s activities.

Before long, we were heading toward the river, ready to begin the day’s outing of seining for salmon. Before that day I hadn’t even heard of such a fishing technique, and even after a quick Google search was not sure what I was in for. As I would soon find out, it was no small effort and required the combined efforts of many men, women and children, in a semi-coordinated and team-like effort. If nothing else, it truly exemplified the strong sense of community and partnership that I came to know of the Noatak people.

“This was Home for Him and it was Outer Space for Me...”

Continued from Page 7

Once we arrived at the beach and I helped bring in the boat, I stood on the shore as if in a trance, watching the men and women around me, hearing everything, feeling everything, but unsure of what to do with myself. I was eager to help, but didn't know where to begin. I wanted to immerse myself in this rare benevolence, but for some reason, I lacked the confidence. But then, an unlikely hero came to save me, a boy about ten years old with a big toothy grin and a soft voice.

He looked up at me and asked, “What's your name?” I replied and asked him the same.

“Paul,” he said.

“Nice to meet you Paul,” and I held out my hand to shake (I made sure he gave me a good squeeze). Such a simple gesture was this little greeting, but its effect on me was astounding. Here I was, nearly twenty-three years under my belt; with plenty of situations to practice meeting and greeting people, and a ten-year-old kid was the first to initiate a conversation. But I didn't have time to consider my embarrassment or self-ridicule, because I was feeling something bigger instead.

Paul's greeting was more than that—it was an invitation. He welcomed me into his element, and suddenly I felt at ease. This was home for him and it was outer space for me, but in an instant he brought me back to the beach as more than just a visitor, I now had a friend.

As the seining began, I was thrust into the mix instantly with no instruction, following the crowd of people on the shoreline, waiting for the boat to come back around with the massive net they had driven across the water. I made it to the incoming boat and did the only thing I could think to do, which is to follow the guy in front of me, grab the rope and pull! Soon enough, white and red flashes of salmon appeared in the water and began to slap across the shore as we pulled the net across the sand.

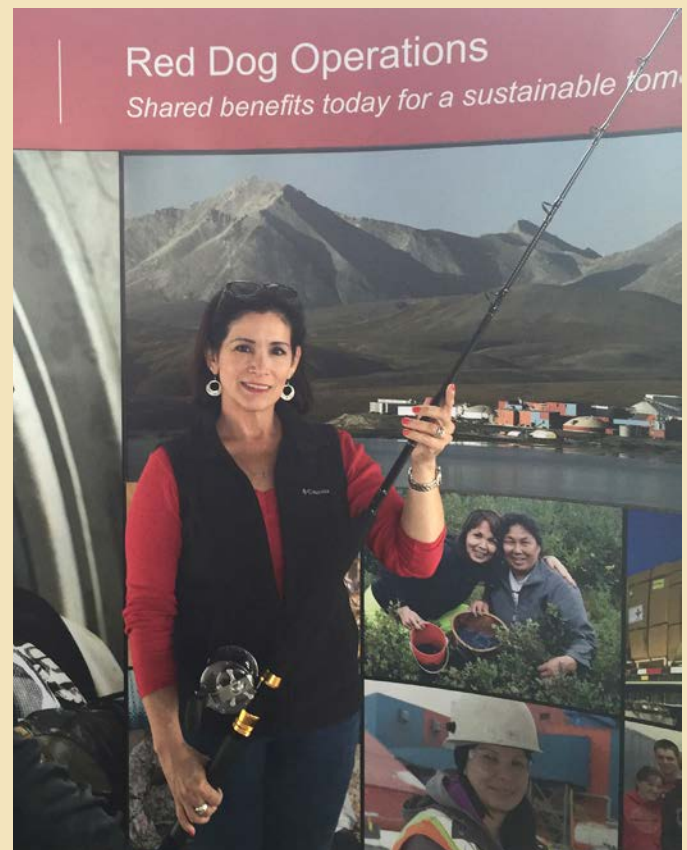
Once the net was all the way in, the crowd gathered around the swarm of struggling fish, an impressive forty of them captured in only one swipe. I was told to help bleed the fish out by taking my finger, inserting it into the gill, and tearing one of the blood-filled flaps that resided there. Hopefully, I didn't look as naive as I felt (no one seemed to notice).

I am a city boy with almost no fishing experience and an animal lover at heart. You can imagine my hesitation at being asked to rip the gills out of a helpless, squirming fish. However, a certain calm had set over me, because I realized that this is the Inupiat way of life. This is their source of food and this is just how it is done. To truly help and experience the Noatak culture, I had to forget about how all of these things would be so irregular in my life, so I could fully embrace theirs.

Before I knew it, the fishing was done, the presentations were given, and the food had disappeared. The plane had already arrived and we were late to get back to Red Dog. We said our goodbyes and thanked them for their acceptance of us into their lives, if only for a day.

It was a perfect day from start to end, with many good memories to cherish. I can now leave Red Dog and Alaska with a wealth of knowledge, experience, and an idea of what it's truly like to know and appreciate this land like it was meant to be. Above all, I will remember Paul, who with his courage and warming smile instilled in me a sense of Noatak's communal unity, that allowed me to fully appreciate the Iñupiat people and their way of life.

Red Dog Makes Halibut Fisher Happy at the Alaska State Fair



Norma Christesson was our rod and reel drawing winner at the Alaska State Fair in Palmer. Norma recently moved to Alaska from Texas and loves halibut fishing.

Norma's halibut fishing would be more difficult without zinc as many fishing reels contain die-cast parts made from zinc and gears made from brass—a zinc and copper alloy.

Sharing Cultures at Annual Village Visits

Red Dog's annual operations update, community engagement and cultural activity visits for the 3rd quarter of 2015 included five villages; Selawik, Noatak, Ambler, Shungnak and Kobuk.

Each community welcomed us with such warm hospitality and invited us to participate in their current activities and/or events. Red Dog employees from various

departments participated in fishing, boating, berry picking, willow cutting, student classroom visits, and more importantly, we all learned from each other.

The Teck John Baker Youth Leader students were exemplary in their welcome and support of our teams from meeting us at the airport with vehicles to offloading and help in transporting material, equipment and the

community dinner food, to setting up and take down for the operations update meeting, and being tour guides and more. The Youth Leaders are so very polite, kind and willing to help. Thank you to all who make these annual visits a success!

See Nathan Vandomelen's related article on P.7 of this issue.



Cliff King, Materials Management, sheefishing on the Kobuk River, Shungnak visit



Kacie Wellington, Exploration and Josh Larson, Materials Management handing out door prizes following the Red Dog Operations update meeting in Shungnak



Verna Westlake, Community Relations and Stephanie Levy, Community Investment, Vancouver



Red Dog employees sharing and answering questions with Shungnak students



Cliff King interacting with Kobuk community



Red Dog Operations update presentation in Shungnak

More photos on following pages.

Sharing Cultures at Annual Village Visits



Setting the seine net into the river with Noatak community members and hauling in the catch of salmon and whitefish



Verna Westlake skinning and cutting sheefish in Ambler



Brianna Kirk, Community Relations (top) and Henri Letient, General Manager (below) cutting and cleaning brush at the Ambler School playground



Helena Jones and her young helper cleaning up the Ambler School playground

More photos on following pages.

Sharing Cultures at Annual Village Visits



Wayne Hall, Community Relations with Noorvik residents at the Operations update.

Red Dog Community Investment

Red Dog Community Investment receives and reviews donation request applications quarterly. Successful awards will be made in the last month of each quarter.

For all donation and sponsorship requests, please apply online at:

<https://communityinvestment.teck.com>

Quarter	Deadline
Q1	February 31
Q2	May 31
Q3	August 31
Q4	November 30

Welcome to Our New System Analyst, Robin Bailes



Please welcome Robin Bailes, our new ERP Systems Analyst, based in the Anchorage office. He is originally from South Africa and has been in Alaska for almost 20 years.

Most of Robin's experience in Alaska has been supporting Alyeska Pipeline's ERP systems. He has about ten years of open pit mining experience working at Rossing Uranium in Namibia. He is married with one son. In his free time, Robin enjoys shooting, fishing and motorcycling.

Welcome to Our New System Analyst, Wes Stephens



Please welcome Wes Stephens, our new Systems Analyst, ERP based in the Anchorage office. Wes is originally from New Mexico and moved to Anchorage five years ago from Texas.

His local experience includes development at the National Weather Service and the Cook Inlet Housing Authority. He is married with four children, has a passion for Mixed Martial Arts and is a Dodgers/Raiders fanatic. In his free time, he enjoys cooking, fishing and camping.

SmartDollar Financial Wellness for Free!

Red Dog Team,

We want to take a moment to announce an exciting new benefit available to you and your family this year.

If you've ever wanted to take control of your money and have a solid plan for your future, Dave Ramsey's SmartDollar Financial Wellness program is for you. Dave Ramsey is America's most trusted authority on personal finance. He knows how money works and has helped millions of people change their financial futures.

The average person who completes the program pays off \$5,300 of debt and saves \$2,700 in the first 90 days!

SmartDollar isn't a stuffy lecture on economics. Each online lesson is fun and informative, providing a step-by-step plan to make your money behave.

From now through August 2016, SmartDollar will be available to you and your family. This program is regularly \$179, but because we believe in this program and its ability to change your life, we are offering it to you for FREE!

You'll learn how to:

- Rapidly pay down debt
- Save for emergencies
- Invest for retirement and college with confidence
- Create a monthly spending plan that works
- Make smart decisions on houses, cars, insurance and more!

Watch for details coming soon!

During the sign-up process, you will be asked for your first name, last name, email address and a password. All of your information is 100% confidential. This program is strictly educational. No one will try to sell you investments, insurance or any other products.

We are excited to be able to provide this valuable program to you and your family. We encourage you to sign up ASAP and start telling your money where to go instead of wondering where it went.

Text-to-Join

Red Dog Newsletter

Text
REDDOGMINE
to **22828** to get started.

Message and data rates may apply.



Join our mailing list.

Online www.reddogalaska.com/subscribe

For Current Job Vacancies (or opportunities)

Please go to www.teck.com and/or www.nana.com and apply on-line. (Paper applications or letters of interest are no longer accepted.)

Quyaana

Thank you, to all who contributed to our newsletter.

To submit topic ideas or an article about your work, a coworker spotlight, a special project or life at Red Dog, contact verna.westlake@teck.com or communityrelationsRDOG@teck.com