

“Being in Big Places” —One Student’s Success

By Samantha Schaeffer, Student Summer Intern



A calm stillness sets over the vast tundra, an untouched wilderness very few people witness. Days get longer as spring approaches, animals migrate into the region in preparation for the summer, and the people of the Arctic prepare as well. The resident population in the Arctic is small. Though visitors come and go, very few residents get a chance to leave. For younger generations, some have never left Alaska, let alone the northwest region. Stepping into the outside world in an unfamiliar environment can be overwhelming, even for those who wish to experience it. However, opportunities sometimes arise in unexpected places.

In 2011, an 11th grade student in Kotzebue High School noticed a flyer hanging on the school bulletin board, its big National Basketball Association (NBA) title standing out. Teck’s Red Dog NBA program provides students excelling in school and their communities, an opportunity to experience something few ever get to experience—it offers a chance to visit outside of Alaska.

Colton Jessup was the student who noticed the flyer. It offered a trip to Portland, Oregon to watch an NBA basketball game between the Portland Trailblazers and San Antonio Spurs, along with a visit to several college and university campuses and WH Pacific—a NANA company—to see what jobs or internships might be available once Colton is in college.

The Red Dog NBA program trip to Portland inspired Colton tremendously. While visiting WH Pacific, Colton made the decision to attend college and pursue a degree in Geomatics Engineering.

Continued on page 2

Message from the General Manager

By Henri Letient



More than halfway through the year, we are once again demonstrating that perseverance and good teamwork is what makes Red Dog a special place. 2017 is turning out to be one of our most challenging years in recent history. The weather has been extreme, with severe storms early in the year and a very wet spring and summer. And yet, we are all dealing with it in good stride and we have not let it bring down our spirit. This year, we started mining the Qanaiyaq deposit, blending that ore with Aqqaluk ore. That too has been a challenge, but we’ve managed to find the right blend and deal with the metallurgical challenges of the new deposit. The shipping season has been going well and we’re well on target to get our production out before the end of the season.

Always looking for opportunities to do better, we’ve been experimenting with new technologies to be more selective of what material we bring from the mine to the mill. Ore storing technology could convert waste into ore—the old alchemist’s dream. That, and other improvement initiatives, keep Red Dog profitable and may even assist us in extending mine life.

We are continuing our Courageous Safety Leadership (CSL) journey and CSL4 is in full implementation stage right now, generating great conversations and enthusiasm across the property, and across all of Teck. We need to maintain our efforts on Workplace Hazard Recognition Inspections with a focus on improving our overall recognition of workplace hazards. We have seen some great Safety Team ideas brought forward and completed. This is a very effective way to identify opportunities and seek solutions to improve safety in the workplace. The work team risk assessments ensure that we identify our high potential/fatal risks, have proper controls in place to mitigate these risks, and have processes in place to ensure our controls are effective.

We have great talent at Red Dog and it is important to recognize it and celebrate our successes. Teck is continuing with the Excellence Awards and 704 nominations have been received across Teck, with 53 of those being Red Dog employees. The selection process is ongoing and the awards will be announced in October. Winners will receive a week-long trip to Pyeong Chang,

Continued on page 2

Continued from page 1

“Being in Big Places”—One Student’s Success

Colton joined the Red Dog NBA program with high expectations. He wanted exposure to a different environment. While visiting the WH Pacific office in Portland, he realized what he wanted to do in his career.

“One guy that presented showed a map he made; I took drafting classes in high school and realized that I wanted to do what that guy did.”

The Teck Red Dog NBA Program did more than meet Colton’s expectation; it inspired him to pursue higher education and a career.

Fast forward six years, and after receiving his degree, the very company that created this program hired Colton at Red Dog Operations.

“Right now, I’m working with mine engineers and assisting the surveyors here”, said Colton.

When asked how the program impacted him, he responded, “It helped me pick out a career and started making me think of time, being in big places. I might also go back to school for a Masters in GIS [Geographic Information Systems] or another Civil Engineering Degree.”

The Teck Red Dog NBA Program has occurred annually since 2011. Participating students have traveled to Oakland and San Francisco, California; Washington D.C.; Denver, Colorado; Orlando, Florida; San Antonio and Dallas, Texas; with the most recent trip being to New York City.

Next year will offer another adventure for high school students to encounter and experience something new, and be inspired to explore and entertain the idea of higher education.

Continued from page 1

Message from the General Manager

South Korea to experience the XXIII Olympic Winter Games in late February 2018.

All in all, we are on a good path to complete the year successfully. Let’s keep that momentum going and keep our focus on safety with everyone going home safe and healthy every day!



City of Kiana Youth Center

The City of Kiana invited Teck Alaska, Red Dog Operations to participate in the grand opening of its Youth Center on July 4 during its holiday festivities.

Red Dog’s Community Investment program partnered with the City of Kiana and other organizations to complete the project.

Seven years earlier, the old armory building was relocated from the outskirts of town to the central playground and activities location in the village. After years of seeking funding and renovation work on the building, the doors were finally opened at 2PM on July 4, 2017.

Mayor Nelson Walker commented that Red Dog’s contribution of the purchase of gaming equipment was the final piece of the puzzle necessary for the Center to open its doors for youth activities, games and movies. The center provides a place for youth to gather and spend time in a safe, constructive and fun setting in the village, where there are limited facilities and activities for youth.

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 Managing Editor, Verna Westlake at verna.westlake@teck.com or communityrelationsRDOG@teck.com

X-Rays in the Mine

By Simon Yu & Peter McNeil



Milling ore is expensive! The energy required to grind and pump material, reagent usage, freight costs—they all add up. By being more selective of what material we bring from the mine to the mill, Red Dog could increase profitability and extend the life of the mine. A company called MineSense thinks their new ShovelSense technology is a game-changer.

Currently, we decide what is valuable ore and what is not by using geological models, but sometimes they don't tell the whole story. ShovelSense uses X-Ray Fluorescence (XRF) sensors mounted to the bucket of a loader to let the operator know the mineral composition in each bucket. Material can be sorted on a bucket-by-bucket basis, allowing us to mine with much greater precision. XRF works by firing an x-ray beam at

material and analyzing the materials response, this response can be translated to mineral composition through algorithms developed by comparing sensor responses to verified mineral assays. Similar technologies are already in use at Red Dog in both the mill and the assay lab.

This summer, MineSense, Mill Technical, Mine Operations, Geology, Assay Laboratory, PAA River, Applied Research Technologies (ART), and CESL collaborated to complete a Pilot Trial of the ShovelSense sensor. The goal was to determine if the sensors can differentiate the wide range of ore types we see at Red Dog. Geology selected 15 ore types to be representative of Red Dog Mine and communicated their locations. Mine Operations prepared an area for the test work and moved approximately 3,000 tons of material to the testing area. PAA River provided the operator to run the 966 loader and excavator. CESL, ART, and Mill Technical employees tracked and prepared 233 25kg samples for assay, which were then completed in duplicate by the assay laboratory. Mill Technical oversaw the project and will collaborate with Mine Technical to evaluate the results. The pilot trial was completed on time and on budget with no safety incidents.

Preliminary results are positive; they suggest a strong correlation between the ShovelSense sensor response and mineral composition. We look forward to pursuing this technology further. Continual improvement through research and development of new technologies will ensure that Red Dog remains competitive for many years.

A big thanks to all the people involved, including our colleagues at Highland Valley Copper (HVC) in BC, who have previously completed this testing and provided great direction.



Carol Ticket's Arctic Blessings



Carol Ticket listens to her 92-year-old Aana (Grandmother) Minnie Gray of Ambler, AK.

Teck Community Investment provided a \$5,000 grant opportunity to a woman entrepreneur from the Red Dog Operations region to participate for the second consecutive year in the Forum for Women

Entrepreneurs (FWE) E-series workshop in Vancouver, BC, Canada.

FWE is "dedicated to providing visionary women with the education, empowerment, and energy they need to become wildly successful entrepreneurs."

Carol Ticket is of the Cleveland family of Shungnak, an Inupiat village of approximately 200 residents on the Kobuk River in the Red Dog region. Through an application and interview process, Carol was selected to participate in the workshop in April 2017.

Carol is the Founder and CEO of *Arctic Blessings*, a Native Alaskan company that features natural health and beauty products using botanicals born on the tundra of the Arctic. She formulates her products by combining traditional knowledge with modern techniques.

Carol's products stem from a need to find a natural remedy for her daughter's skin condition. She discovered her passion after experimenting with stinkweed—a plant that has been used for generations by the Inupiat of the arctic. Carol has made small batch stinkweed-based products in Wasilla, Alaska since 2011.

Carol's journey of providing effective health and beauty products started when she was a child.

"I've been very fortunate to be a part of a culture wrapped tight in tradition. We come from a very rich culture that is deeply rooted in the valuable knowledge of our Elders, whether it is survival skills that include fishing and hunting, or traditional

Continued on page 4

Continued from page 3
Carol Ticket's Arctic Blessings

medicine. I've also been fortunate that my grandparents and other cherished elders shared their knowledge and experiences through stories and practical use of our traditional medicine. With generations of stories, daily use, and trial and error, the use of our traditional plants has survived and continues to survive."

Carol speaks very fondly of her Aana (grandmother) Minnie Gray of Ambler, a village downriver from Shungnak. She attributes much of what she has learned to her Aana. When asked what she thought of her granddaughter Carol's work, Aana

Minnie said, "Arigaa (real good), she help[s] lots of people. I always use it (Carol's product). It works".

Carol shares, "My teaching comes from the wisdom and traditional knowledge that my grandparents passed down. Our Elders have a wealth of knowledge that they are willing to share, if only we would sit down and listen.

FWE E-series gave me valuable business advice and most of all confidence in my abilities as an entrepreneur. They were all welcoming, interested and very respectful of our culture.

FWE provided valuable education, inspiration, encouragement and empowerment. The invaluable resources, tools and networks are provided in a non-judgmental and supportive environment. It (participation) has been one

of the most enriching experiences as a business owner, and the inspiration I have drawn from the course has fueled me to push forward in growth plans for the company. I look forward to continuing to make connections in my community, seek elder advice, and sharing information. Taikuu, [Thank You] Teck for this wonderful opportunity!"

Carol Ticket can be reached at arcticblessings@yahoo.com or www.etsy.com/shop/arcticblessings

Forum for Women Entrepreneurs: www.fwe.ca/programs/e-series/

For information regarding the grant opportunity, please contact Verna Westlake at verna.westlake@teck.com or phone 907-754-5189.

Behind the Scenes, 4th of July

By Corinne Ward, NMS Manager

We often take photographs of the great food provided during the holidays but we don't always see the employees behind the scenes doing hard work for these special events.

I noticed that day how happy everyone was and the teamwork they displayed—I couldn't resist trying to capture it!



Eric Johnson and Michael Paul



Alfred Putu Foxglove SR and Effie Ramoth



Nicole Johnson



Brian Ramoth



Chef Michael Paul

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

"What are the many people doing?"

Red Dog Emergency Response



The Red Dog Fire Department (RDFD) had a busy second quarter. In April, RDFD Firefighters attended their annual Aircraft Rescue and Fire Fighting (ARFF) and confined space refresher in Kenai. Four firefighters attended the 40-hour basic ARFF class that was also held in Kenai. Twelve firefighters attended the CPR classes held in April.

The Fire Department completed a fire drill for the PAC as well as at the CC Camp, where occupants of both camps were 100% accounted for at the time of the alarms. Thanks to the occupants of both camps for properly responding to the muster areas.

The MERT and RDFD trained together for a combined Medical/Fire mass causality drill.

With the snow melting, we got back out to the training grounds and performed live fire training in our burn building.

The Fire Department deployed and operated spill equipment for both the mine and the port in preparation for the upcoming shipping season.

Travis Andersen was promoted to Assistant Chief, along with Cody Quinn and Travis Clark who were promoted to Lieutenant.

Red Dog's fire fighters are all volunteers—this training and work is done outside of their regular positions at Red Dog. We appreciate the time, effort, and commitment our employees provide to keep all of us safe here at Red Dog.

RDFD POSITION

DEPARTMENT

Bob Chandler, Chief _____	Safety & Health
Scott Leighton, Adm Chief _____	Safety & Health
Travis Andersen, Asst Chief _____	Maintenance Training
Darren Jones, Capt _____	Environmental
Glenn Davey, Capt _____	Mill Operations
Sonya Adams, Capt _____	Geology
Cody Quinn, Lt. _____	Safety & Health
Travis Clark, Lt. _____	Mill Maintenance
Bill Willis, Eng _____	Safety & Health
Eric Newlin, Eng _____	Mill Operations
Russell Brandon Eng _____	Maintenance Training
Gerald Cleveland _____	Mill Operations
Kevin McNeal _____	Materials Management
Xavier Garay _____	Mill Maintenance
Nathan Keene _____	Mine Operations
Josh Larson _____	Materials Management
Travis Wilson _____	Electrical & Instrumentation
Skye Karmun _____	Mill Maintenance
Carter Meng _____	Mine Maintenance
Jake Moe _____	Mine Maintenance
Shawn Rangitsch _____	Mine Maintenance
Chester Waller _____	Mine Maintenance
Travis Foxglove _____	Mill Maintenance
Evan Wlach _____	Mill Maintenance
Robert Green _____	Mill Maintenance
Thurston Mitchell _____	Mine Maintenance
Will Clark _____	PAC Maintenance
Curt Dorman _____	Mill Maintenance
Nicole Pidgeon _____	Geology

2017 Red Dog Business Improvement Initiatives

By Lee Frasl



Everyone's contribution matters at Red Dog. Have you asked yourself what are you doing to improve the processes you influence? Brian Hall and Lois Steele are two of many people that work here who have come up with answers to this very question.

Making sure that stock piles deliver ore to the mill at a consistent grade and the availability of our Flotation Cells are two critical components of keeping our recovery as high as possible.

Brian Hall, a Geological Engineer who has worked at Red Dog since 2010, recently came up with a way to not only minimize the variation in the Zn Feed grade fed to the mill, but also decreased the interaction between 'dozers and trucks. This made it safer to build each stockpile and made it easier for the mill to process.

"I really enjoy opportunities to look at current work practices and think of how we could do it differently to provide a better product. The ore stockpile mini dozer lift project has been a fun collaboration between Mine operations, Mine technical, and the BEAR team. A lot



of effort went into the design, planning, implementation and analysis for this change in ore stockpile construction. Stockpile 494 was our first test of this innovative design and was a success. We gained more knowledge of what we need to consider going from design to implementation and have utilized this information for the construction of stockpile 496. I have high hopes for this initiative and look forward to its continued success." —Brian Hall

Lois Steele, a Mill Maintenance Planner who has worked at Red Dog since 1997, developed a tool to help visually communicate the status of flotation cells. This allows people to make better decisions because they can see at-a-glance where each cell is in its maintenance life. Having our flotation cells available is key in maintaining our recovery.

"It really was a team effort all the way around, we had a planner, mechanical engineer, metallurgist and the maintenance GF, all I did was make the work needed visible and give them a little nudge now and again." — Lois Steele

Thank you for your efforts, Brian and Lois!

For Current Job Vacancies (or opportunities)

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The Next Move

By Roger Franklin and Andie Zink



Left to Right-Lloyd Woods, Brennon Sun, Justin Custer, Daniel Custer, Braiden Sun, Edward Douglas, Jeremy Woods, Jack Horner

Editor's Note:

Roger Franklin, Shungak School Principal submitted the story, "Boys of Winter" published in Red Dog Suvisi Q1/Q2, 2016. "The Next Move" is the sequel and final chapter in the book of the students highlighted in that story. Thus begins a new journey for these inspiring, young role models. We wish them all the best of life and opportunities!

Red Dog Community Investment works closely with the Northwest Arctic Borough School District and their employees to support student education. Roger continually reminds us, "It's a We!".

I can't help but write this sequel to the "Boys of Winter" because those boys have given us yet another amazing chapter to what will become their legacy.

This will be the very last story, as they take their place on the parquet hoop court to try for a magical run. Their parents will help pack their bags, give them money, speak their native language. Their siblings will weep with joy and excitement, their friends will say their good byes and wish them the best of luck, while the entire village will shout positive words of encouragement— some will even give them final coaching advice from their front porches.

We can already speculate that the VHF radio will be electrified with statements such as: "play hard", "work together as a team", "go get 'um", and "good luck", from just about every member of the community not attending the biggest 4-day show that will take place in the Northwest Arctic.

The boys never knew their potential outside of basketball. They only thought they were having fun passing the orange ball to one another and listening to their coaches shout out directions. It wasn't until they realized that the game of basketball was helping heal decades of social ills for an entire village. Meanwhile, many parents sat on the sidelines as arm-chair coaches during home games, shouting similar instructions similar to the coaches—"run this play and that play", "get back on defense", and "cover the three point line and hustle."

What really happened was the boys were being measured for the true game of life and the direction they would go. What will be their next move? Just like on the big chess board, how soon will they achieve checkmate? In 2 moves, in 3 or in 10 moves?

Last shades of light begin to dim on their school sports careers. The chess game is about to begin with their next move. When you look at the "Boys of Winter", you'll notice they aren't athletically built or naturally skilled at any specific sport. Nonetheless, when they decided to take on the task that no one else wanted to do in this chaotic community, they were committed to see it through.

With all the social ills their village faces daily, the boys brought joy and showed everyone what hope looks and feels like. They became a monument for all to rely on, by hauling water and cutting wood for Elders, carrying stove oil to relative's homes in minus 0-degree temperatures, ensuring loved ones made it to school safely, reading awareness messages about drugs and alcohol during the morning assemblies at school, reading positive messages over the VHF radio about bettering the community, calling out to help get their siblings to school, asking people to stop drinking and put their children first, rallying fathers together to help work on the fish trap and cultural events, and asking mothers to show them how to cook traditional foods after the catch.

This story is ironic because the "Boys of Winter" have already written their story of the past five years. No words were spoken as their lives metamorphosed into being responsible "adults" at a very early teenage age. They took on a journey of hope, regret, building positive mindsets, developing strategies when they failed to overcome their obstacles, never giving up and setting up a daily structure to ensure that the best resource had more value than one could ever imagine.

The "Boys of Winter" will not be duplicated for many years to come, if at all. Their lives will forever be intertwined in their village. Their memory will live on in the young children who imitate them at every opportunity—from practicing to be leaders in school and in their community, to mirroring their hoop moves on the gym floor. It is mesmerizing to see how the work of the "Boys of Winter" has taken on a passion of its own.

The boys set out with the purpose of giving life back to their tiny village, hoping to begin its healing and transformation into a safer and a better place—a place where they and all those that would come after them are able to receive a good education with a promise that higher education can be theirs as well—not just for the elite, the entitled or the academic achievers—but for the "run-of-the-mill" student as well.

Their determination to accomplish the unthinkable and give of themselves to make things better for everyone else, epitomizes their unselfish character. This came with obstacles and struggles, however. Their relentless attitudes and the support they received from their tiny village made them believers of the mantra Shungnak had adopted—"It's a 'We'". They knew the fight was not just theirs any longer. They wrestled with resistance from some and often wondered

Continued on page 8

The Next Move

if it was worth it. They constantly questioned themselves if what they were doing would even matter or change anything. The sneering they would often receive from their own families was unbearable at times and they would emotionally break down. Many times they were told they were no better than the worst individual in their village.

Nonetheless, the “Boys of Winter” began embracing the challenges in the classroom, rather than the orange ball they used to use as an escape from reality. They finally realized that no one was to blame for their failures but themselves—not the school staff, each other, or their parents. They learned to become accountable for their failures and began rewriting their own mistakes into successes.

I write this last piece of a five-year vision for the “Boys of Winter”. They had only one job. It was never about winning basketball games, or being the high scorer of the team, or even racking up assists or rebounds to pad their stat sheets. It wasn’t even about receiving a college basketball scholarship, or receiving the much-anticipated phone call from the NBA. They lived by a code when they put that school basketball uniform on Friday nights and Saturday mornings. It was to help heal their village from unrest and to motivate their wonderful community. It was to instill their leadership qualities so one day they can help improve their region. They have become the power to help neutralize daily social ills and bring attention to issues that need resolution for the community to advance.

Their leadership skills shone through every time they encouraged others, siblings and even their own parents in dark moments. They took time to speak about suicide with classmates and texted students from other communities in need of a friend when they felt depressed. They are a different generation, a different breed if you will. The “Boys of Winter” are part of the millennial generation, growing up in a world where technology influences everything in their daily life. However, they still hold on to one true purpose in life—their Inupiaq values. They hold tight to that foundation—the foundation that has helped mold them into young men that gives their community hope. This challenging work ethic came by way of a bitter harsh reality—the sorrow, darkness, despair, and every tear shed—the obstacles they and their families faced and would continue to face unless they sacrificed themselves for the village to build a better tomorrow. They worked hand in hand with their family and relatives who harvested caribou, moose, seal and other wildlife for homes and community engagement events.

Yet, reality hits them every time they walk through the hallways and peer at a chart that reminds them of how many days are left before the unknown becomes the known. The reality was witnessed by the village at a triumphal moment on May 5, 2017 at 6pm. The impact they had on bringing awareness of the social ills to the forefront, opened-up the community’s eyes over the past five years. It can be

said that because of the “Boys of Winter” the community has put a huge emphasis on education—acknowledging that education must come first and education is a daily job! They embraced their Inupiaq values, tying the values to their everyday lives.

The next step will be a dramatic move because it will change the boys’ existence forever. They will not return to high school next Fall. You won’t find them sitting behind a classroom desk, or following to the marching orders of the teachers. They won’t be reprimanded for being late to class and you won’t see them during transitions. You won’t hear their laughter in the hallways or listen to them share the daily stories of classroom or home experiences. Still, one thing is sure, they will not have the choice of laying on their parent’s couch being a freeloader and a burden on society.

I look on and witness the nervousness in their body language this entire school year and listen to their parents as they echo the same feelings. They have prepared all year for what’s to become the next move. What will it be? Where will it be to?

They have diligently worked on the requirements for their next move. They applied to post-secondary institutions and filled out applications for jobs and careers. Completing the paperwork has been a struggle. They shake their heads in frustration when they get overwhelmed—especially when they see the volume of paperwork there is to be done.

The culmination of their high school careers will be over and the “Boys of Winter” will have made their next move. They contemplate their move as if they were playing a game of chess and getting ready to advance their next piece. Which way will they move their Staunton chess piece? In the days remaining, life has begun to evolve into a weird mirage. One minute, they see themselves working, doing what they have always dreamt of, and the next minute, they see themselves struggling to complete the classwork their instructors require of them. However, they can always fall back on the mantra that has been woven into the fabric of their souls—it’s a “WE”! They know they have the support of their village and from those around the region to help them with that process.

For the last time, I will observe the “Boys of Winter” as they mature and separate from each other. Only a few will be part of a cohesive unit to start their manhood. They all are determined to ensure a better tomorrow for themselves, a respectable home for their own families, educate their own children, teach the traditional ways, become educated, and be a positive role-model in many areas for their community, region and state.

Even though the “Boys of Winter” were not victorious on the basketball court during the big dance, they were triumphant in changing the mindset of a whole community and brought them together. They made believers of the pessimists and above all brought back hope!