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## Predictive safety:

People and culture.  
For life.

Gainin**g**round  
*in the*  
sands



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Let's say you have formal responsibility for safety outcomes at your place of work. You'd want to know which factors affect outcomes the most, how best to invest your training budget, which shifts are the most dangerous and would benefit from more supervision. Wouldn't you?

With five fatalities in the first nine months of 2014, safety is top of mind for Alberta's mining and petroleum development companies.<sup>1</sup> It always is, of course – but, perhaps more than ever, balancing the safety equation today could be among the most impactful ways for oil sands companies to achieve multiple key benefits all at once:

- Keep workers healthier for longer, reducing the immediate pressure of labour demand.
- Confidently prepare new workers for long, safe and fulfilling careers, reducing long-term pressure of labour demand.
- Earn good will with communities and other stakeholders, strengthening the social license to operate.
- Reduce downtime and increase operational efficiency.

In other words, balancing the safety equation not only protects workers and their families but also promotes productivity and good corporate citizenship.

# Uncommon causes

But it's not that the men and women who go off to work in the sands are risking their lives every time they punch the clock.

Indeed, according to Worker's Compensation Board statistics, total injury claims in the oil sands have declined – from 322 in 2009 down to 276 in 2013. Lost time claims specifically are also down, from 45 in 2009 to 36 in 2013.

Total injury claims



2009



2013

Lost time claims



2009



2013

This is very good to see, but how can we do even better?

By supporting meaningful training and reporting programs with solid safety culture and analytical tools that are grounded in both leading and lagging indicators and that allow you to predict where the conditions will be right for severe injuries.

Safety, after all, is an element of focused and structured task execution. But, notwithstanding the sands' reasonably strong and improving safety record, current programs and systems could still be more effective – and more comprehensive. The use of analytics especially can enhance data quality and create both a new frontier in predictive modeling and the necessary context for continuous improvement.

# First principles

And yet, as simple as the benefits might be to articulate, getting there is admittedly more complicated. Indeed, specifically cultural impediments are arguably the most difficult to overcome. But we're certain it can be done.

Understanding that some individual companies are further along the curve than others, we recommend the following two-staged approach to enhancing the effectiveness and comprehensiveness of existing approaches to safety.

## 1. Build the culture

To begin with, training needs to be meaningful. Having your "ticket," for instance, is very important but may not be sufficient. Continuous improvement, continuous training and learning — not only from each other but also, perhaps more importantly, from ourselves (i.e., our own mistakes) — should be an ingrained organizational value, practiced and lived every day in an ongoing cycle.

While we recognize that engineering hazards out of the equation is the first line of defense in a preemptive safety management strategy, the human element remains critical. We know, for instance, that much of the talent finding its way to job sites in Fort McMurray brings relatively little prior experience with, thus little awareness of, the hazards of the job. We know there are sometimes significant language and other cultural barriers. We know there is often unwillingness in some workers to learn.

Managing and navigating through these complexities begins with training, carries through to formal programs featuring comprehensive safety communication and clear lines of responsibility, and "ends" with (i.e., "is constantly renewed by") a culture that balances the mental and physical health and well-being of workers with the need for them to be productive.



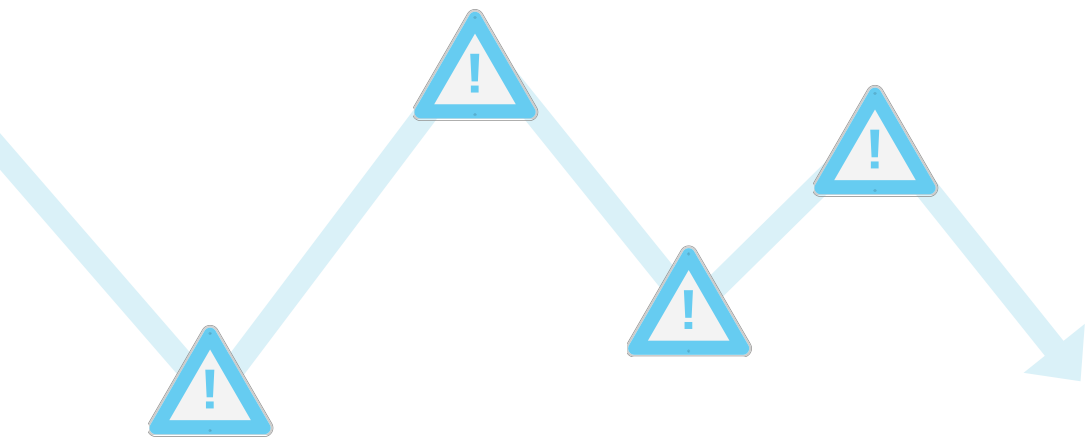
## 2. Live the culture

Once this is all in place, reporting and analysis can also become more meaningful, creating the conditions in which safety culture can thrive and grow. Enter safety analytics as an added element for driving continuous improvement.

Safety analytics is a way to use data that companies already collect through the normal course of business to drive better safety decisions at all levels and create more value. This includes capturing incident and injury data, internal operational data, and external data from distributed systems to create a single analytical view of safety performance. Various statistical and predictive modeling techniques are then used to identify contributing factors to workplace injury and risk, as well as opportunities for more effective injury management.

For instance, analytics can correlate the level of incident probability based on specific training courses – which courses, that is, have the greatest actual safety returns. They can identify contributing factors to an employee or supervisor with an excellent safety record at one site having a different experience at another site. Or they can pinpoint the overtime threshold past which an employee's probability of incident begins to increase. Curious about how rapid changes in production levels, or frequently changing the tasks that employees are performing, can contribute to injury risk? These and other questions can be answered by mining the data for insight.

And that's all just scratching the surface.



# All's well that doesn't end

Producer companies and their service-providers have gone to great lengths to make sure that everyone goes home at the end of the day. That matters to us, just as we know it matters to oil sands employees and employers alike. We've seen firsthand the devastation severe incidents can wreak on injured workers, their families and the community.

As it is, we want to see the oil sands continue to thrive as a key driver in the Canadian economy. But the economy also needs the industry to be clearly and unequivocally committed to health and well-being in all their forms – environmental, financial and personal. Any industry having to overcome serious hurdles just to find and attract workers in the first place should be doing everything possible to keep those workers – no matter how many or how few – productive and on the job for as long as possible.

Companies have been doing a good job, but there's no time like the present to think about the future.



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## Endnotes

- 1 Alberta Occupational Health and Safety. "Workplace Incident Fatalities Investigated in 2014." <http://work.alberta.ca/documents/2014-workplace-incident-fatalities.pdf>. Accessed Oct. 21, 2014. OH&S does not provide information exclusive to the oil sands apart from "mining and petroleum development."

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