

STRATHCONA INDUSTRIAL ASSOCIATION ANNUAL REPORT TO THE COMMUNITY







MESSAGE FROM THE STRATHCO INDUSTRI ASSOCI BOARD PRESIDENT

While 2014 was a productive year for the Strathcona Industrial Association (SIA), it also marked a significant milestone for our not-for-profit cooperative. It's hard to believe but, forty years have passed since SIA was initially formed to coordinate air quality monitoring and work with other stakeholders on land use planning.

Our members are industry leaders who share a vision of environmental responsibility and stewardship and a drive for results. In addition to contributing knowledge and expertise on multiple steering committees, every year SIA members make a difference by giving generously to community organizations.

SIA's collaborative work to date is having a positive impact. Together, we are improving environmental performance, safety and community wellbeing while creating a proud legacy.

SIA members are finding creative ways to enhance individual processes and policies while simultaneously supporting robust environmental management systems, cultivating beneficial partnerships and contributing to numerous strategic planning and community engagement efforts.

In the last four decades, we have made remarkable progress advocating for prudent land use planning strategies and establishing one of Alberta's longest standing air quality monitoring networks.

This report summarizes our 2014 Annual Ambient Air Monitoring Report and highlights some of the innovative work done by a handful of our members.

As President, I am extremely impressed by SIA's collective successes this past year as well as the individual advances made by our members. I know that 2015 will also be a year of great progress and I look forward to working with our partners, regional organizations and neighbours to meet and exceed expectations.

John Prusakowski, SIA Board President

2014 SIA Board of Directors

AIR PRODUCTS

ALTASTEEL

CAPITAL POWER CORP

CELANESE EVA PERFORMANCE POLYMERS

EDMONTON WASTE MANAGEMENT CENTRE

ENBRIDGE

EPCOR GOLD BAR WASTEWATER TREATMENT PLANT

IMPERIAL OIL STRATHCONA REFINERY

KEYERA ALBERTA ENVIROFUELS

KINDER MORGAN

OWENS CORNING

RIO TINTO ALCAN

SUNCOR ENERGY EDMONTON REFINERY



Yves Rochon

David Knights

Michael Taylor

David Gets

Grace Licardo

David Verveda

Simon Thomas

Fabio Garagiola

John Hunszinger

Dan Carter

Micki Vanderpool

Frederic Picard

John Prusakowski





SIA is an organization representing heavy industrial operators in east Edmonton and Strathcona County. Our members share a commitment to safe and environmentally responsible operations and are proud to provide a common voice for industry.

Collectively, SIA members employ more than 2,500 people in the region. These industry leaders manufacture every day products like plastic grocery bags, home insulation, engine oil, gasoline additives, recycled steel and provide essential power generation and wastewater treatment services to communities.

Air Products supplies a unique portfolio of atmospheric gases, process and specialty gases, performance materials, equipment and services. With over 18,000 employees and operations in more than 40 countries, the company is integral to a wide range of industries from food and beverage, health and personal care to energy, transportation and semiconductors. airproducts.ca

AltaSteel is a scrap-based melting and casting mini-mill operation and has a production capability of over 350,000 tonnes of steel billets annually. altasteel.com

Capital Power develops, acquires, operates and optimizes power generation from a variety of energy sources, such as natural gas, wind, solar, coal and biomass. Capital Power owns more than 3,600 megawatts of power generation capacity at 15 facilities across North America. capitalpower.com

Celanese is a leading North American manufacturer of a full range of EVA copolymers. celanese.com

Edmonton Waste Management Centre (EWMC) is North America's largest collection of modern, sustainable waste processing and research facilities. edmonton.ca/ewmc

Enbridge is a transporter of energy, they operates the world's longest crude oil and liquids transportation system and are proud to be recognized as one of the Global 100 Most Sustainable Corporations in the World. Enbridge employs more than 10,000 people in Canada and the U.S., and is ranked one of Canada's Greenest Employers and one of Canada's Top 100 Employers for 2013. enbridge.com

Epcor's Gold Bar Wastewater Treatment Plant opened in 1956, and through continual upgrades, it remains at the forefront of wastewater treatment technology, and is considered one of the most innovative wastewater treatment operations in North America. epcor.com

Imperial Oil's Strathcona refinery produces a wide range of petroleum products, including gasoline, aviation fuel, diesel, lubricating oils, petroleum waxes, heavy fuel oil and asphalts and is the only producer of lubricating base oil and waxes in Western Canada. imperialoil.ca

Keyera Alberta Envirofuels is the largest iso-octane manufacturing facility in the world. The facility produces enough product to fuel approximately 45,000 vehicles per day. keyera.com

Kinder Morgan is the largest midstream and America. It owns an interest in or operates petroleum products, crude oil, carbon dioxide (CO_{2}) and more.

the third largest energy company in North approximately 73,000 miles of pipelines and 180 terminals transporting an array of materials including natural gas, refined kindermorgan.com

Owens Corning is global leader in residential, commercial and industrial building materials ranging from insulation to roofing. It invented fiberglass and fiberglass insulation over 70 years ago, and is best known for its PINK[™] insulation products.

owenscorning.ca

riotintoalcan.com

Suncor Energy's refining and marketing operations provide a vital link between our large Canadian resource base and the growing North American energy market. Suncor Edmonton's 140,000-barrel-per-day refinery runs entirely on oil sands-based feedstocks and produces a high yield of light oils. suncor.com

Rio Tinto Alcan is a global supplier of high quality bauxite, alumina and aluminum.























RioTintoAlcan



CREATING BRICHTER FUTURE

SIA is committed to environmental performance, safety and community wellbeing. Together, our members are ensuring they lead with responsible and sustainable policies and practices and act as environmental stewards at every step. Here are a few ways some of our members are making a difference.

🔎 🖉 Owens Corning Cuts Emissions with Recycled Glass

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At Owens Corning, pink really is green. The company, who transformed residential and commercial building markets 75 years ago with fiberglass and fiberglass insulation, is now focused on ways to improve products and processes while shrinking their environmental footprint.

"In 2010, we altered our production, switching from formaldehyde and ammonia based binders to more organic materials," says Environmental Health and Safety Leader, Robert Sharpe. "Our EcoTouch line offers superior insulating properties and is better for the environment."

As the company honors its commitment to incorporate sustainability into everything it The innovative pink product is made with 99 percent does, it continues to find time to give back to local natural materials and includes local recycled bottles communities. "We are huge supporters of the and jars from the Edmonton Waste Management Habitat for Humanity program and other initiatives Centre. "Recycled glass makes up 85 percent for those in need," says Sharpe. "Charitable of our insulation," says Sharpe. "Last year we contributions, donation of building materials and purchased nearly 29,000 tonnes of crushed volunteering our time, we are happy to help."

glass for our operations."

The crushed glass is melted and spun into fiberglass before an organic binder is added. After some time baking in a large oven, the distinctly coloured product is ready to be cut to size.

The decision to make use of local recycled materials is good for the environment and for business. "EcoTouch is a more environmentally sustainable product," explains Sharpe. "And since recycled glass requires less energy to melt, our production efficiency has improved significantly."

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The switch to the superior insulation line has had an impact on the company's toxic air emissions intensity, decreasing 44 per cent since 2010. Operations related greenhouse gas intensity has also dropped by 12 per cent.

Owens Corning is delivering on its pledge to continually reduce environmental emissions and to ensure responsible resource use. "At our Edmonton plant, we reuse all our waste water," says Sharpe. "The only thing that leaves this site is sewer from the toilets and showers."

The company also collects rainwater from a portion of its roof for use in the manufacturing process. And inside the facility, timers have been installed and all the lighting has been replaced with low-energy bulbs. "We are one of the leanest running Owens Corning plants in the world," says Sharpe.



CREATING Environmental SÔLUTIÔNS Suncor Taps Into Waste Water

Suncor has a long history of innovation. The company first gained attention in 1967, after it pioneered commercial development of one of the largest petroleum resource basins in the world.

Almost twenty years later, Suncor's Edmonton facility marked another significant milestone when it became the first in Canada to refine upgraded synthetic crude from Alberta's signature oil sands.

"Our refinery operations have continued to evolve over time," says John Prusakowksi, Vice President of the Edmonton Refinery. "This forward thinking helps us to identify growing North American energy market needs and to respond in a way that delivers a healthy environment for today and tomorrow."

Suncor has demonstrated this commitment through its significant infrastructure investments in the capital region. In 2005, the Strathcona County refinery collaborated with EPCOR on an innovative waterrecycling project aimed at reducing fresh water consumption.

"We designed and built a 5.5 kilometre water pipeline that links us directly to EPCOR's Gold Bar Wastewater Treatment Plant," explains Prusakowski. "In doing so, we've set a precedent for our facilities and the industry at large."

The underground pipeline, that measures 18 inches across, represents the first large scale industrial water reuse project in Canada and is of just a handful in North America.

The project evolved years ago during the planning stages of Suncor's \$2B Refinery Conversion Project which sought to up the capacity of the refinery's coker, expand hydrogen production, increase sulphur handling capability and enable oil sands feedstock processing.

"As we contemplated the refinery's expanded operations, we quickly realized our water use would need to increase to meet the facility's new says Prusakowski. "Our existing pumping station on the North Saskatchewan River would have had to undergo significant upgrades to satisfy this increased demand."

Suncor recognized that a partnership with EPCOR would ensure more consistent, high quality water for the facility. It was a sound long-term investment. The direct connection to the city's wastewater treatment plant means that the refinery now has access to 15 million litres of water each day.

"For us it's been a great solution," says Prusakowski. "We've been able to balance our operational needs with a more environmentally friendly strategy. It's good news for everyone."

CREATING PRODUCT Celanese's Tiny Beads Have a Big Impact



Celanese EVA (Ethylene Vinyl Acetate) Performance Polymers is making a difference, one bead at a time.

The Edmonton based polymers manufacturing plant is an integral component of Celanese, a global technology and specialty materials company that engineers and manufactures a wide variety of materials found in everyday products.

"We are the only company in Canada who manufacture and support a full range of specialty ethylene vinyl acetate copolymers," says David Gets, Director of Business Analysis.

Using state of the art technology, Celanese combines ethylene and vinyl acetate to form a unique copolymer

that is shaped into tiny translucent plastic beads, each one measuring less than 5mm in diameter.

The company's versatile products are robust vet extremely elastic and widely used in adhesive, foam, automotive, packaging, and healthcare industries around the globe.

"Many of the flexible plastics people come into contact with at the hospital have originated at our site," explains Gets.

"IV bags and tubing as well as other highly specialized and sophisticated pharmaceutical devices like transdermal patches and implants are developed using our EVA copolymers."

From medical necessities to everyday items like running shoes, life jackets and stroller wheels, Celanese's specialty polymers are now prominent in many Asian, European, South and North American markets.

The company is an industry leader and proud to be a provider of products that influence consumer wellbeing and contribute to environmental sustainability.

"Our EVA film is used by a number of solar panel manufacturers as an encapsulate for photovoltaic cells," says Gets. "We are actively involved in initiatives that support renewable energy and continue to look for ways to increase our own efficiency."



SIA participates in a number of important regional and provincial initiatives to ensure effective two-way engagement between industry and our stakeholders.

Alberta Capital Airshed (ACA)

Alberta

framework.

Environment and Sustainable ACA is a not-for-profit, multi-stakeholder Resource organization that **Development's Capital Region** monitors air quality, facilitates collaborative **Air Quality** approaches to Management addressing issues and Framework supports air quality Implementation **Oversight Advisory** education within the greater Edmonton **Committee** area including SIA's As a committee air quality monitoring member, SIA provides input and feedback network. to this important

Our Region Our Future (OROF)

SIA is a partner of OROF, an initiative that brings together industry, municipalities, environmental non-government organizations and government to collaborate on capital regional solutions for the environmental management of air, water and land.

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Strathcona District Mutual Assistance Program (SDMAP)

SDMAP is a partnership of more than 30 industrial companies – several of which are SIA members – and community agencies dedicated to emergency response planning in east Edmonton and Strathcona County. In 2015, SDMAP will be a program within SIA.

Water Management Framework for the Industrial Heartland and Capital Region

SIA is an active member of the multistakeholder Water Steering Committee established to guide framework implementation. This framework presents a collaborative, cumulative effects management approach to protect the reach of the North Saskatchewan River, from Devon to Pakan, which is directly impacted by municipal and industrial effluent discharge.

CREATING OPPORTUNITIES IN THE COMMUNITY



We are committed to making positive contributions to the communities where we live and work. SIA recognizes the value of engagement and is making a difference by promoting dialogue between industry, stakeholders and residents. Whether it is a charitable donation, a gift of time or a new awareness of our actions, we all have the ability to make a profound impact.

Here are a few ways SIA and some of our members gave back in 2014:

Get Prepared, Strathcona!

SIA participates in Strathcona County's annual Get Prepared, Strathconal community event in April where it aims to educate residents on how to handle a disaster and how to be prepared for an emergency.

City of Edmonton's River Day

SIA hosted the pancake breakfast at the City of Edmonton's annual River Day event in June at the Rundle Park Family Centre. The event brought the community together and helped educate recreational water safety.

Greater Hardisty Community Day

In September, SIA sponsored the pancake which took place at the newly built Gold Bar Community League. Several SIA members were the days and sharing information and resources

Community Investment

of causes in Edmonton and Strathcona County. SIA is proud to support these invaluable organizations and to contribute to the continued success of our community.

United Way

Habitat for Humanity

Wetaskiwin Ashopro Friendship Society

STARS

New Year's Eve Event

Arbor Dav

RCMP Bike Rodeo BBO

Canada Day Celebration

Sherwood Park Leadership Series

Library Grade 1 kits

Strathcona EMS Department

Sherwood Park **Business Awards**

RCMP Memorial Golf Tourn.

Firefighters Burn Treatment Golf Tourn.

A Safe Place Donation

Strathcona County Food Bank

Hope Mission's Tegler Youth Centre on 118 Street in Beverly United Way

Edmonton Symphony

Edmonton Opera

Strathcona County Library

Gold Bar Community League

Strathcona County Recreation Parks and Culture Strathcona County

Canada Day Celebrations

RiverWatch

University of Alberta

Skill Canada Alberta

PetroChallenge

Greater Hardisty Community Family Day Celebrations

Greater Hardistv Community Fun Day

Ice On Whyte Festival

Capital City Clean Up

Linking Generations Society Strathcona County

Wildlife Rehabilitation Society of Edmonton

Beverly Centennial Celebrations

Belcourt Brosseau Metis Awards

Strathcona County Heritage Museum

Strathcona County Community Volunteer Fair

Edmonton Nature Club Snow Goose Chase

Festival Place Art Gallery of Alberta Communities in Bloom Sherwood Park Minor Hockey Sherwood Park Rams Football Strathcona Food Bank Association

Alberta Cancer Foundation

Robin Hood Association

Strathcona Youth J ustice Society

Sherwood Park Curling Club

Holyrood Community League

Fort Edmonton Foundation

Crestwood Curling Club

Good Samaritan Society

Scouts Canada

Girl Guides of Canada

Boys and Girls Club, Big Brothers, Big Sisters

Whitemud Minor Hockey

SWAT Hockey

Robin Hood Association -Fort Saskatchewan / Sherwood Park -14 passenger para-transit van

Everybody Gets to Play -Sherwood Park

55+ Games - Strathcona County

NAIT - Power Engineering Program: Four \$4000 scholarships awarded to students and Summer practicum offered to 4 first year students.

CREATING BENCHMARKS AND TRACKING OUR PROGRESS

2014 HIGHLIGHTS PROVINCIAL COMPARISONS

Air Quality Monitoring Network

SIA leads the way with one of the first ambient air quality monitoring networks in Alberta. By consistently monitoring and measuring our performance, we are better able to understand the effects of industry and gather scientifically valid data about current local air quality and long-term trends. We share this information via our on-going reporting to Alberta Environment and Sustainable Resource Development and our annual Ambient Air Monitoring Report.

PARAMETER	NUMBER OF STATIONS	TYPE
SO ₂	7	1-hour
		24-hour
		Annual
H ₂ S	5	1-hour
		24-hour
NO ₂	6	1-hour
		Annual
0 ₃	4	1-hour
со	З	1-hour
		8-hour
Continuous PM _{2.5}	4	24-hour
Intermittent PM _{2.5}	4	24-hour
Intermittent TSP	1	24-hour
Passive SO ₂	6	30-day

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172 ppb	0
48 ppb	0
8 ppb	0
10 ppb	5
З ррb	0
159 ppb	0
24 ppb	0
82 ppb	0
13 ppm	0
5 ppm	0
30 µg/m³	25
30 µg/m³	З
100 µg/m³	4
11 ppb	0

NUMBER OF EXCEEDANCES







Sulphur Dioxide (SO₂)

Sulphur Dioxide is a colourless, non-flammable gas with a pungent odour. Industrial sources include sulphur extraction plants, natural gas processing plants, oil sands operations, power plants, oil refineries, pulp and paper mills and fertilizer plants. SO₂ is measured at the Sherwood Park, Elmjay, Beverly and Gold Bar stations.

Hydrogen Sulphide (H,S)

Hydrogen Sulphide is a colourless, flammable gas that is extremely hazardous and toxic. It has a distinct rotten egg odour, and can be identified at relatively low concentrations by people. The gas commonly exists in places such as sewers, sewage treatment plants and manure stockpiles. Industrial sources include petroleum and natural gas extraction and refining, pulp and paper manufacturing, chemical manufacturing and waste disposal. H₂S is measured at the Sherwood Park, Elmjay, Beverly and Gold Bar stations.

Total Hydrocarbons (THC)

Total Hydrocarbons refer to a broad range of chemicals containing carbon and hydrogen atoms, including methane, propane, benzenes and many other compounds. Sources include motor vehicles, petroleum refineries, petrochemical plants, combustion as well as smaller sources like dry cleaning facilities, solvent handling and gas tanks. THC is measured at the Sherwood Park and Beverly stations.

Nitrogen Dioxide (NO₂)

Nitrogen Dioxide is a reddish orange-brown gas with a strong, irritating odour. It is corrosive, highly oxidizing and noncombustible. Man-made sources include motor vehicles, oil and gas industries and power generation plants as well as combustion from forest fires and home heating. NO₂ is measured at the The Sherwood Park and Gold Bar stations.

Nitrogen Monoxide (NO)

Also known as Nitric Oxide, NO is a common pollutant. It results from the combustion of substances in the air that are present due to fuel burning activities such as driving and power production. While this colorless, toxic gas, plays an important role in our bodies, it is of concern because it can react to form NO₂, which is a component of smog and may cause acid rain.

$Ozone(0_{2})$

Ozone occurs naturally in the upper atmosphere (stratosphere) and protects us from harmful ultraviolet radiation.

However, ozone in the lower atmosphere (troposphere) acts as a strong oxidant, and is a key component of smog.

Results from 30-day passive ozone monitoring showed measurements ranging between 13 and 39 ppb, with ozone concentration tending to be higher during the spring months.

Sherwood Park Gold Bar

Sherwood Park Gold Bar

Sherwood Park Gold Bar



Particulate Matter (PM₂₅)

PM_{2.5} includes particles with diameters less than or equal to 2.5 microns, which at this size can penetrate into lungs and are referred to as respirable. Sources include soil, road and agricultural dust, smoke, forest fires, traffic emissions and industrial activity. The Sherwood Park, Gold Bar and Beverly stations measure PM

24hr. Particulate Matter Sampling Results (Conc. unit µg/m³)



Annual Average Concentration Maximum 24hr. Concentration Minimum 24hr. Concentration Number of Exceedance Events: Sherwood Park: 2 Gold Bar: 0 Beverly: 1

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Passive Station Site's Average Concentrations (ppb)







Annual Average: 7.6 ppb



Annual Average: 26 ppb





CREATING IN THE CAPITAL REGION

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AIR MONITORING STATIONS



CREATING AWARENESS

Shelter-in-Place

Our members take the utmost care to ensure the safety of their employees and everyone in the community. Despite a very low chance of anything serious ever occurring, all industrial processes have some risks. It is important that communities understand the commonly used procedures for Shelter-in-Place.

In case of a major incident with airborne release of a hazardous substance:

- Go inside
- Close all doors, windows and openings
- Shut off ventilation systems that exhaust to the outside or draw outdoor air inside (fans, air conditioning units, clothes dryers, turn down furnace and close fireplace dampers)
- Listen to radio or TV for further instructions
- Keep phone lines free

Curious about non-routine industry activity?

SIA members use the UPDATEline to post information messages regarding non-routine activities on their sites that the public may be curious about, such as prolonged flaring, noise, odour, training exercises and incident details.

Learn more about air quality and monitoring in our region

- Alberta Environment and Sustainable Resource Development (ESRD) environment.alberta.ca
- Alberta Capital Airshed capitalairshed.ca
- Clean Air Strategic Alliance (CASA) www.casahome.org
- Environment Canada ec.gc.ca/rnspa-naps



- If odour is strong, seal an inside room with
- wet towels at the base of the door and breathe
- through a damp towel to filter air
- 911 should be called only in case of emergencies.







Strathcona Industrial Association P.O. Box 3374 Sherwood Park, AB T8H 2T3

> www.sia.ab.ca 780.990.4SIA (4742) info@sia.ab.ca @SIA_Alberta