



Russell Redi-Mix Concrete
Langenburg Redi-Mix Ltd.

A DIVISION OF COCO GROUP

Russell Redi-Mix Concrete Portable Asphalt Plant Proposal

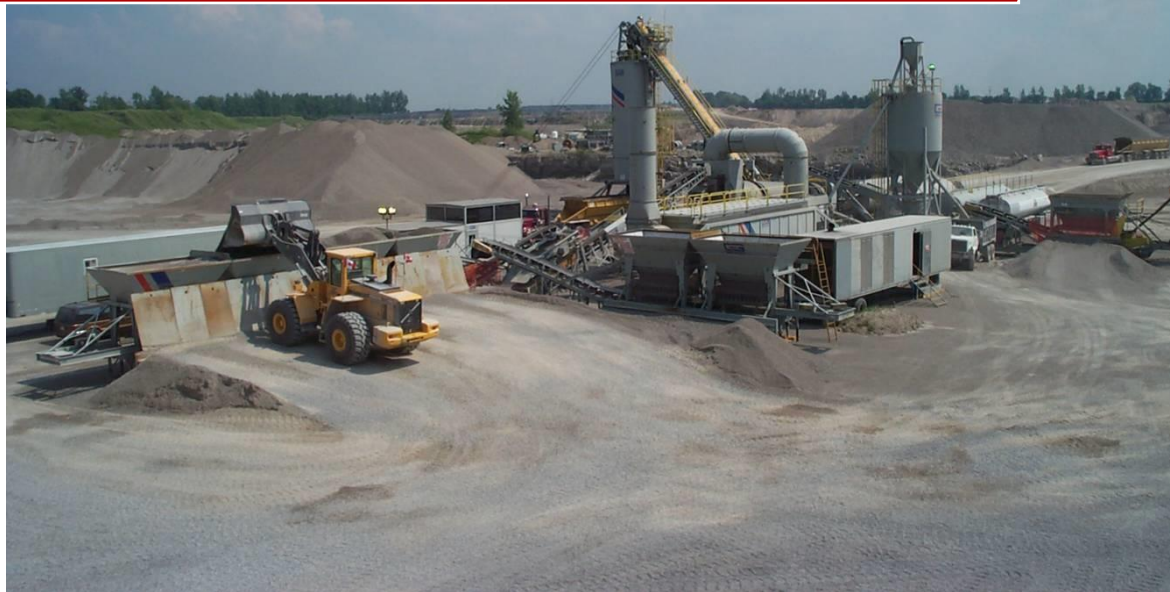


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Executive Summary

Russell Redi-Mix Concrete (RRMC) has been a name stay in western Manitoba for decades, with its small town humbleness and life size ambitions, has grown to become one of the largest rural contractors in the province of Manitoba. While focusing primarily on aggregate production RRMC has grown over the years to own a fleet of 5 mobile crushing spreads. Not only does RRMC produce aggregate but also owns two redi-mix plants (one in Russell, Manitoba and the other in Roblin, Manitoba) and has been a general contractor for Manitoba Infrastructure and Transportation (MIT) in excess of 25years. On behalf of MIT, RRMC has provided granular production, base laying and large scale excavations. In the past RRMC subcontracted all of their asphalt paving requirements. With the growing MIT budgets and the resulting increase in asphalt volumes, RRMC sees an oppurtunity to enter into the asphalt paving market as well. Therefore, RRMC has purchased a brand new Gencor 400 TPH Portable Asphalt Plant capable of meeting the provinces needs for asphalt pavements for years to come and ensuring greater efficiency thru the company's vertical integration. This plant has state-of-the-art technology that will allow RRMC to produce quality asphalt paving mixes with maximum efficiency and doing so while safegaurding the environment. Asphalt Plants are relatively clean operations. Nevertheless it is important to identify all Environmental risks associated with the operation thereof, and outlining the mitigating measeures to combat those risks. Through proper operation RRMC believes they can become an industry leader and provide Manitoba with quality asphalt pavements at cost effective rates, while complying to the highest of environmetal standards.



Introduction and Background

In recent years the province of Manitoba has become a “shining star” in Canada, which has stimulated growth and development. Essential to maintaining Manitoba’s success of continued growth is the need to invest in infrastructure.

Russell Redi-Mix Concrete (RRMC) has invested in Manitoba to continue working with the Province in achieving these goals. As such, RRMC has purchased a brand new state-of-the-art Gencor Portable Asphalt Plant capable of production rates of 400 tons per hour (Gencor 400 TPH Portable Plant). RRMC chose Gencor because of their many impressive features allowing the environmentally safe production of asphalt products which meet or exceed Manitoba Highways and Infrastructure Specifications. Gencor has been in the forefront of design and technology for the hot mix industry for over 50 years. Over that time, their focus has continued to be on advances in energy reduction and increased environmental controls to provide contractors with the cleanest and most pristine performing hot mix facilities in the industry.

The basic process that Gencor uses is similar to most other counter flow asphalt plants in the industry. There are a number of cold feed aggregate bins that collect the processed aggregate then proportionally add them to the drum for drying and mixing. Before the aggregates are dumped into the drum they go over a screen that removes all oversize materials and then over a belt scale to make sure the proper amount of material is being added. Once the material is in the drum the aggregate drying takes place, this is where the material is heated by the burner flame. As the material moves down the drum it is mixed together, after the material passes the burner it is introduced with recycled asphalt (if the specifications for the job requires recycled asphalt to be used in the mix), recycled dust from the bag house and asphalt cement liquid. The recycled asphalt material also has its own set of cold feed bins that control the input of the amount of recycled asphalt that is added to the mix. The dust from the drum is captured in the bag house where the dust particles are captured in the bags and drop down from where they are augured back into the mix. Once the all these materials are mixed together they are deposited in the drag slot conveyor which transfers the material to the load out silo where it waits to be dumped into a truck to be hauled to the project.

Although the process of asphalt production is similar to most other counter flow asphalt plant producers there are many ancillary designs which set Gencor apart from their competitors. Gencor’s Asphalt Plants are presently being operated under some of the most stringent environmental regulations around the world. As a result, Gencor has incorporated such environmental parameters in every aspect of their standard designs. The patented Ultradrum, captures vapours that are generated in the mixing section and pull them through the burner by a patented volatile reclaim system and then consume those vapours as fuel. In turn this process releases *no odor or blue smoke emissions* from the drum to pollute the environment (Gencor). The patented “Gen 3D Digital Burner Control” system that Gencor utilizes allows for optimal burner control which limits the spikes in fuel consumption and efficiency when starting the

burner up (Gencor). This in turn results in better burner fuel consumption. Along with these impressive features the Gencor 400 TPH Portable Plant uses a patented Ultraflo Baghouse that captures the emissions from the drum and recombines the dust that the baghouse captures back into the mix.

The demand for increased Asphalt Production capabilities is evident in the recent provincial budget announcements. Manitoba has announced a record investment in infrastructure for the 2014 Budget, promising to invest \$5.5 billion dollars into Manitoba's infrastructure over the next five years (CBC). Approximately \$3.7 billion dollars will go directly to Manitoba roads, highways, and bridges. In 1999 Manitoba's highways budget was \$174 million and it since has tripled to \$532 million in 2013. For the next 5 years the Manitoba Infrastructure and Transportation budget will average \$750 million (CBC). The need to invest in infrastructure is to keep pace with the Province's anticipated growth, facilitate economic growth and the rehabilitation of existing infrastructure.

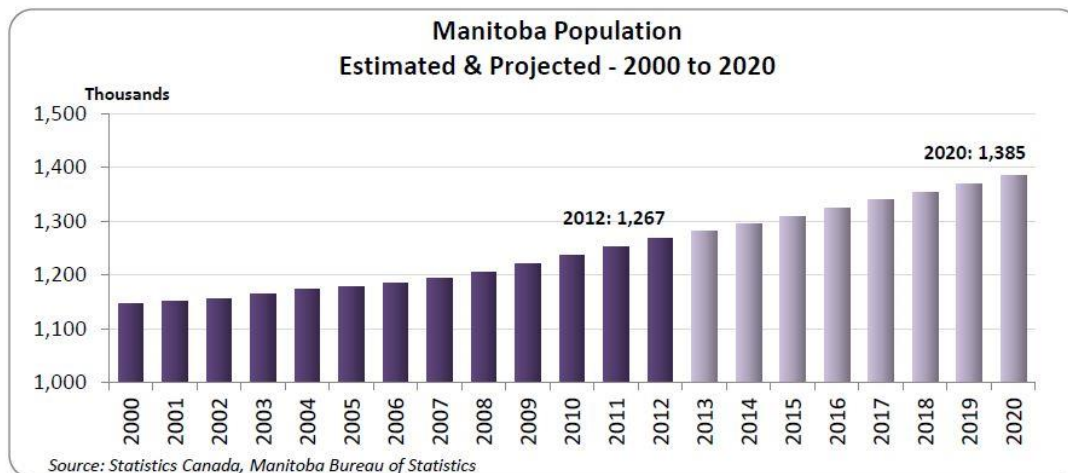
From 2009 to 2013 there has been a steady decline in amount of Asphalt tendered (see below for table).

Year	Asphalt Tonnes Tendered by MIT (Tonnes)
2009	1,135,250
2010	986,000
2011	536,200
2012	656,200
2013	486,300
2014	1,200,000* ^{APPROXIMATE}

However, in 2014, Manitoba is on track for a record year with approximately 1,200,000 tonnes of hot mix expected to be tendered. As a result, another portable asphalt plant makes economic sense for the province of Manitoba. Russell Redi-Mix Concrete has the support of many in Manitoba Infrastructure and Transportation (MIT) who realize Manitoba is lacking the necessary amount of asphalt producers to complete the anticipated volume of work. In addition, RRMC has been a long standing business in the Province, working hand in hand with government to improve infrastructure. An additional asphalt plant will maintain a healthy competitive market giving tax payers the most for their hard earned tax dollars and provide the province of Manitoba with another contractor to help facilitate the five year-year plan of building a stronger Manitoba.

*SOURCE: The Five Year Plan To Build a Stronger Manitoba	2013/14 Forecast	2014/15 Budget	2015/16 Planned	2016/17 Planned	2017/18 Planned	2018/19 Planned	5-Year Total
Roads Highways & Bridges	532	707	746	755	762	771	3,741
Flood Protection	64	42	49	54	68	107	320
Municipal Infrastructure	258	277	288	299	315	327	1,506
<i>Total Planned Investment</i>	854	1,026	1,083	1,108	1,145	1,205	5,567

Manitoba's population was 1,267,000 in 2012 and it is projected to rise to 1,385,300 by 2020 which is an increase of 9.3%. This relates to an annual growth rate of 1.1% compared to the 1% annual growth rate Manitoba had for the previous 8 years (2004 to 2012) (Winnipeg free press). With a growing population comes the need for a transportation network that can handle the current population along with the population growth. Since 42% of Manitoba's highways and road systems (MIT 2013 annual report) are comprised of bituminous pavement there will be a need to revitalize the existing roadways along with creating new ones to sustain future population growth and remain as a competitive province which promotes economic growth.



A number of contractors in Manitoba have successfully applied for “development license issued in accordance with the Manitoba Environment Act”. This license would be described as a “Portable Asphalt Plant” and examples of such licenses are seen on Manitoba’s “Conservation and Water Stewardship” website under “environmental approvals” and then “minor license alterations”. From this web page there are eight licensed portable asphalt plants with Environmental License Numbers 2923, 2831, 2925, 2826, 2822, 2823R, 2823R and 2916 (Manitoba, conservation, minor license alterations). “Summary of Comments/Recommendations” can also be found on the Manitoba government website for other contractors applying for an asphalt license, such as Mulder Construction and Materials Ltd. (Client File No.: 5443.00; Proposal Name: Asphalt Plant – Unit Terex, ES-400) and Borland

Construction Inc. (Client File No.: 5454.00; Proposal Name: Asphalt Plant – Terex, E3-400P, Unit 1006).

Description of Proposed Development

The location of the Gencor 400 TPH asphalt plant will vary from location to location throughout the province for the duration of the paving season based on government tenders and requirements. Predominately the plant will be set up in MIT owned pits, stipulated by the details of the contract.

The land the asphalt plant will occupy will vary from site to site depending on the nature of the project that the plant is supplying. Some examples of land that the plant may occupy will be pre-determined sites designated by MIT, such as a MIT gravel pits that will supply a MIT project. Other locations may be lay-down areas adjacent to a project for easy access to the project site. In addition to MIT owned lands, lay-down areas may be privately owned. However, locations cannot be pre-determined until the construction phase of a project has begun. Ultimately, in choosing the location for the setup of RRMC's Asphalt plant, it will be in full accordance with MIT specifications regarding bituminous mixing plants and the Manitoba Heavy Construction Association's "Best Environmental Management Practice", ensuring the maximum regard to traffic management and public health and safety.

When the asphalt plant moves onto a site, typically the native ground will be stripped of its topsoil and piled up adjacent to the plant. A proper base for the plant is usually constructed out of granular material to support the weight of the plant. The existing land will in most cases be a gravel pit but will vary from project to project, as well as the adjacent lands will all vary on a project specific basis.

Since the asphalt plant is going to be based in rural locations across Manitoba it will not be governed by planning jurisdictions such as "The City of Winnipeg Act". If in case this portable asphalt plant does come into contact with a planning area, RRMC will adhere to the laws that govern that specific area. In addition to local planning laws the "Primary Manitoba Temporary Asphalt Siting Criteria" (TAPSG) states:

- Minimum of 400 metres from a residence other than the residence of the landowner where the plant is located unless agreed to in writing by the residents
- There should not be more than four residences within 1000 meters of the asphalt plant unless otherwise agreed to in writing by the residents
- Temporary asphalt plants are to be reasonably located such that prevailing winds will not carry solid emissions to a community

Gencor has begun manufacturing the 400 TPH asphalt plant for RRMC and will be available for delivery the end of April 2014. Gencor has produced hundreds of asphalt plants for customers all around the globe and they are one of the largest most advanced manufacturers of asphalt plants in the world. Since the asphalt plant is fully portable the components will be delivered by truck from Gencor's manufacturing facilities in Orlando, Florida and Marquette, Iowa to Russell, Manitoba. Once the plant is delivered to RRMC's yard it will be checked over and prepared by RRMC staff as well as Gencor staff to make sure all aspects of the plant are operational for the upcoming paving season. At this time the plant will be delivered to RRMC's first paving job of the season where it will be assembled and commissioned to produce its first batch of asphalt for a MIT project. The location of the first project has yet to be decided but the commissioning is anticipated for the later portion of May 2014. Weather dependent the typical paving season and corresponding yearly asphalt production will be May to November.

The funding for the purchase and implementation of this Gencor 400 TPH Portable Plant has been undertaken entirely by RRMC.

A "valid development license issued in accordance with the Manitoba Environmental Act" is required to perform asphalt production in Manitoba. Asphalt Production is not on the "Regulations Designating Physical Activities" therefore it doesn't require a federal environmental assessment (Canadian Environmental Assessment Agency).

During the licensing application the Environmental Approvals Branch will provide feedback to RRMC's application for the new asphalt plant. Similar feedback can be expected from archived "summary of comments/recommendations" found on Manitoba's government website. We anticipate comments/recommendations and will be happy to address them accordingly. Previous comments/recommendations faced by other applicants have been addressed in this proposal. RRMC looks forward to working with the community in this process to hear their concerns and try and work with various levels of community, municipalities and government and proactive measures to mitigate any concerns.

Description of Existing Environment in the Project Area

Since the Gencor 400 TPH asphalt plant is portable the location of the plant will vary through the asphalt paving season and because of this it will be hard to pin point a specific biophysical or socioeconomic environment that this asphalt plant will influence. For a majority of the time the asphalt plant will be located in an existing aggregate source (such as a pit or a quarry) which will cause very minimal to no adverse effects on the existing area. Most likely the aggregate source will already be developed for aggregate extraction so the operation of the asphalt plant will not change the composition of the land. In the case where the asphalt plant is set up outside an aggregate source the natural land will be stripped bare of the fertile soil (if there is any) and the plant will be set up. Once the asphalt production is complete and the asphalt plant

moves away the natural soil will be reinstated or however the land owner decides they would like it left. Since the duration of the asphalt plant's stay at any one location will be relatively short (depending on the size of the job but usually around 25 days) the impact that the plant will have on its surroundings will be minimal. On the other hand while looking at other previous license applications some factors will be taken into consideration such as:

- “The siting of a temporary asphalt plant shall be located at least 100 metres from any surface water and minimum a 30 metre buffer of natural vegetation is maintained between the perimeter of the asphalt site and the surface water” (comments/recommendations Mulder 2010).
- “Any contaminated liquid generated on the site (i.e. cleaning of truck boxes, fuel spillage) must be contained and all efforts to ensure the protection of groundwater and surface water resources should be implemented” (comments/recommendations Mulder 2010).
- “No asphalt plant without a pollution control device is to be operated within 3 km of any developed area of a provincial park (hiking trails, canoe routes, campgrounds etc.) to reduce disturbance to park visitors” (comments/recommendations Mulder 2010).
- “No asphalt plant is to be operated within 1.5 km of an ecological reserve or protected area within a provincial park to maintain the ecological integrity of these sites” (comments/recommendations Mulder 2010).
- “No asphalt plant without a pollution control device is to be operated within 3 km of any ecological reserve or protected area within a provincial park to maintain the ecological integrity of these sites” (comments/recommendations Mulder 2010).

Along with the aforementioned bullets, RRMC will adhere to any MIT specifications and conditions set out in a contract.

Description of Environmental and Human Health Effects of the Proposed Development

The impact that will take place on the biophysical environment will not be large in nature since the asphalt plant in question is portable. This means it will only have minimal impacts for a short duration of time until the work is completed. For the majority of the projects the portable plant will be in an existing plant; therefore the plant itself will have no impact on the environment. In a case where the site has been altered for the plant, once the project has been completed the land will be restored to its previous state, or as stipulated by the owner of the property. Ground water and surface water will not be effected as all components of the Gencor asphalt plant are self-contained and designed to be mobile therefore engineered to withstand rugged applications.

The type of emissions, that this Gencor asphalt plant will release are carbon monoxide, volatile organic compounds, nitrogen oxides, sulfur oxides and particulate matter. To get a proper quantity of the amount of pollutants released per year by the plant we estimated a normal asphalt plant production of 200,000 metric tonnes per year. Not only does the yearly production have to be defined but also the type of fuel that will be burned and in this case used oil will be burned. With the parameters being set we come up with the following quantity and concentrations of pollutants per year.

Emission Type	Quantity (tonnes/year)	Concentration (mg/ dry std. Nm³)
Carbon Monoxide	13.28	491.5
Volatile Organic Compounds	3.30	116.8
Nitrogen Oxides	5.63	208.3
Sulfur Oxides	5.93	213.4
Particulate Matter	3.00	91.5

To combat these emissions Gencor has engineered numerous designs to their plants. One of these designs is the use of the patented “Volatile Reclaim System”. This system takes the vapours that are generated in the mixing section and pull them through the burner and consume them as fuel. Due to this “there are no odors or blue smoke emissions to pollute the environment” (Gencor). To make sure the burner runs at optimal efficiency the Ultra II burner utilizes compressed air to atomize each droplet of fuel for optimal efficiency which in turn leads to better fuel efficiency. The use of a bag house and a primary dust collector drastically cuts down the particulate matter (dust) emissions from this asphalt plant. All of the emissions that are produced in the drum while mixing the asphalt are sucked out of the drum and pulled the duct work. The primary dust collector stands in between the drum and the bag house and by using baffles it in turn takes out the larger dust particles out of the emissions. After the primary dust collector the emissions move to the bag house where are pulled through hundreds of hanging bags that capture the majority of the rest of the dust. Once the dust hits the hanging bags inside the bag house it falls to the bottom of the bag house where an auger lies. This auger then recirculates the dust back into the mix (which is optimal due to the elimination of waste) or into a silo waiting to be disposed of. The primary collector runs at 39.300 percent efficiency and the baghouse operates at a 99.932 efficiency which in the end means the total efficiency of the particulate matter emission reduction system is **99.959 percent**.

Any toxic waste that an asphalt plant may produce is used oil from the changing of oil for lubricants. This used oil that is generated will be captured and stored in proper containers and disposed of through appropriate certified companies.

Used oil will be the fuel that will power the burner of the asphalt plant. The used oil will be stored in a “super B” tanker trailer for mobility purposes. The advantage of using a “super B” tanker trailer for a storage tank is for the purpose of not having to handle the liquid more than needed. The used fuel can be loaded into the “super B” tank trailer and then pumped out of the tank trailer right to the burner. This limits the amounts of transfers the used oil has to go through thus diminishing the possibility of a spill occurring. Also when a job is completed and there is some used oil left in the tank then trailer can be hauled to the next location without having to transfer the oil.

RRMC’s asphalt plant will not affect heritage resources since the location of the asphalt plant will be clear of any designated areas. Since the plant will be located predominantly in pre-determined pits from MIT there should be minimal interaction with heritage resources. In case RRMC’s asphalt plant interferes with heritage resource, we will work with local governing bodies to mitigate the effects of the interaction, find an alternative location and avoid any impacts.

The operation of the asphalt plant will predominately take place in rural areas so socio-economic implications will be minimal, if any. In the case where the plant is set up in a pit the owner of the pit, be it MIT or a private land owner, will benefit from the royalties that the aggregate production will bring in for the material needed to produce asphalt.

Less than 50,000 tonnes of carbon dioxide equivalent per year is produced and therefore a report to the federal “Greenhouse Gas Emissions Reporting Program” (Environment Canada) is not required.

The potential impacts on human health are minimal due to setback requirements from any residential dwellings (Best Environmental Management Practice: Asphalt Plants). Noise is a byproduct of the productions of asphalt and the effects of such noise on surrounding populations will be minimal for the short duration of time and corresponding setback requirements. More harmful emissions such as particulate matter are absorbed by the primary collector within the baghouse. The other toxic emissions such as carbon monoxide, volatile organic compounds, nitrogen oxides and sulfur oxides are negligible quantities. An “Emergency Management Plan” will always be adhered to as per “Best Environmental Management Practices”. The primary focus will be to ensure public health and safety. A Hazardous Spill Procedure will be in place prior to undertaking and work. Within the procedure will be emergency response plan (police, fire, EMS), emergency contacts (Manitoba Environment, Environment Canada, Emergency Company Contacts) and the location of the nearest hospitals.

Aboriginal Treaties

To mitigate the effects on aboriginals and treaty rights, RRMC will work with local aboriginals and the owner of the project to ensure compliance with all treaties. The positive effect of an asphalt plant moving into or close to an aboriginal community will be the addition of

jobs to the area. In regards to aboriginal hunting, fishing, trapping, gathering, cultural and traditional activities prior to the set-up of the asphalt plant, rights and concerns of aboriginals in that community will be addressed to ensure compliance thereof.

Mitigation Measures and Residual Environmental Effects

The Gencor 400 TPH portable asphalt plant is designed to mitigate any risks associated with residual environmental impacts. The Gencor Ultraflo Baghouse is 99.959 percent efficient, Asphalt Cement Piping and Pumps are a double wall jacketed design and the storage tanks are engineered with the utmost extreme durability. The fuel tanks for the Portable Generator are of a Double Wall Design. The Used Oil utilized to fuel the Burner will be transported in Tank Trailers which will meet the requirements of Transport Canada's Transportation of Dangerous Goods (TDG Act).

The used oil will be stored in a tanker trailer for mobility purposes. The use of a mobile tanker eliminates the need of transferring the Used Oil. The Used Oil can be pumped out of the tank trailer directly to the burner, thus mitigating the risk of a spill. In addition, when the project is completed the remaining Used Oil will be hauled to the next location without the requirement of pumping and transferring.

RRMC's plants are trained to mitigate the potential risk of hazardous spills. In addition, they are trained in accordance with the "Emergency Management Plan" along with the proper steps of containment and remediation of spills.

In case RRMC's proposed location to set up the asphalt plant may interfere with natural or heritage resources, RRMC will find an alternative location as to conserve and protect as its first priority.

RRMC places the protection of the environment and human health at the forefront. All appropriate steps of planning will be taken before a project commences. RRMC has a significant Health and Safety Staff which provide extensive pre project planning to ensure compliance with all applicable rules and regulations. This ensures that all RRMC employees have the required tools necessary to provide a safe working environment.

In compliance with the Best Environmental Management Practice, RRMC will ensure spill kits will be stored at the asphalt plant site. In addition, all storage tanks of hazardous material will abide by governing laws for storage, handling and disposal thereof.

After final production and the plant has been removed, RRMC will ensure the land is clean of any environmentally hazardous materials contained on the site as a direct result of RRMC's asphalt production.

The residual effects left on a site after an asphalt plant leaves are mitigated. With spill kits located on the site as well as containers to capture possible spills before they occur, the effects in turn will be negligible. If in case a spill does occur and hazardous liquid is released into the environment then the proper authorities will be notified and together with those authorities RRMC will work to contain and clean up the spill.

This Gencor plant not only has a bag house but also a primary collector which improves the efficiency from 99.932 percent for a plant with just a bag house, to 99.959 percent for a plant with both components. The Ultraflo Baghouse is extremely efficient and because of the design it houses more bags than other manufactures providing more filter area in a much smaller structure. The use of the GEN 3D burner control system also provides optimal efficiency of the burner. This computer controlled system regulates the amount of fuel that is burned; because of the efficiencies of this system it in turn means greater fuel efficiency and thus fewer emissions are released compared to a manually operated burner control system. Another feature of this plant is the use of insulated oil tanks and an insulated drum which in turn minimizes the heat loss in both of these processes. With the mitigation of heat loss the plant will again run more efficient and lead to less fuel consumption and thus less emissions.

Follow-up Plans, including Monitoring and Reporting

In the operation of the Gencor 400 TPH portable asphalt plant RRMC will perform routine maintenance to the plant as specified by the manufacturer to ensure it is running at optimal efficiency as per design. A Groundman located at the asphalt plant during production will monitor compliance and ensure there are no environmental impacts with the operation thereof. Yearly over hauls on all major components during the winter, will ensure the plant will be operating at a maximum efficiency and in accordance with the environmental regulations.

Conclusion

RRMC sees great growth opportunities in Manitoba's Asphalt Paving industry. As a result thereof a purchase of a brand new state-of-the-art Gencor asphalt plant will not only benefit RRMC but will benefit the province of Manitoba. This plant will provide Manitoba the asphalt capabilities required to meet its future infrastructure goals along with maintaining healthy competition in the market place. In addition, the plant will provide employment opportunities for Manitobans, since RRMC is based out of Russell, Manitoba. RRMC has been in the construction industry for over 50 years and has been working hand in hand with Manitoba Infrastructure and Transportation. Our work record, environmental attention and community care are established cornerstones of the business.

RRMC chose Gencor to manufacture its plant because they are at the forefront of design, technology and environmental protection. They continue to focus on advances in energy reduction and increased environmental controls, coupled with quality asphalt production. The plants are market leaders!

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