

Wings / City of Crystal City Proposed Smelter Information Summary

BACKGROUND INFORMATION

- Wings Enterprises has said they will produce 150,000 tons of “pig iron” per year (**output**) in September, 2007,
- Last week in an email to Roger Baker, Mr. Kennedy says he will be producing 2,000,000 tons of pig iron.
- The range of 150,000 tons/yr to 2,000,000 tons/year is quite a range of output for any proposed facility; it is not possible to do an engineering estimate with this kind range!
- Wings Enterprises has said they will use a new technology to convert the iron ore “concentrates” from the Wings Enterprises Pea Ridge Mine into “pig iron”; this new process is called the “**Tecnored**” process
- The Technored process uses **other sources of fuels** such as:
 - “biomass (i.e., “waste or garbage” from grain processing, wood chips)
 - **shredded tires**,
 - Pet coke (oil refinery by-product)
 - **Low-grade high sulfur coal not suitable for the “coking” process.**
- We don’t know how much biomass; high sulfur coal, shredded tires or other carbon sources will be needed to convert the incoming iron ore into 150,000 tons/year of finished Iron pellets or castings.
- The data from the Technored process says that it takes 250,000 tons of iron ore to net out 150,000 tons of iron metal
- Wings Enterprises will transport their high concentrate iron ore from Sullivan, Mo to Crystal City, MO (about 55 miles) in the form of iron ore pellets, or as 70% slurry.

- 250,000 tons/year = 685 tons/day of concentrates, so about 294 tons of water/day or 70,500 gallons/day (49 gallons/min). (This water portion of the slurry would be cleaned and used as process water in the smelter for cooling towers make-up and other process cooling or quenching operations.)
- The iron ore pellets would be brought by truck or train
- The 70% slurry would be pumped thru a large pipeline the 55 miles from Sullivan to Crystal City.
- The blast furnace will produce High purity iron (99%), as well as “slag”. The “slag” is the left-over portion of the entire process and Wings says that will be about 2.6%, or about 18 tons/day
- Wings says they will be able to sell 100% of all slag and by-products produced from the operation to the two Ste Genevieve County Cement producers for use in their Cement making process.

SUMMARY

- The proposed Smelter **output** of 150,000 tons/year to 2,000,000 t/year of 99% pure iron is a very large range of output !
- The amount of fuel/reductant will depend on material used for fuel/reductant.....coke, coal or other biomass materials. The ratio of coke, coal or Biomass to iron ore processed is not known
- The **operating cost** to process 150,000 tons/year of finished iron product per year will include utilities (gas, electric, city water, city sewer), maintenance expenses, direct materials such as the iron ore, the reducing agent / fuel (coke or biomass), blast furnace & pellet making ingredients such as limestone, cement, coke dust, other fluxes, taxes, insurance, hired services costs (janitorial, grounds maintenance, laundry, catering/cafeteria, etc), mobile equipment (trucks, tractors, switch engines, etc) rental or maintenance, mortgage repayment/depreciation and labor costs.

These costs are unknown to the city or to the public.

- The stated cost of the facility is \$1.0 billion; a 30-year amortization of that amount at 5% is about **\$64,418,595 per year**
- The labor cost for 750 good paying jobs is calculated using the average of the Wings Enterprises stated wage rate range of \$20/hr to \$40/hr, times a 30% allowance for employer paid taxes and benefits:

$(\$20 + \$40)/2 = \$30/\text{hour average wage}$
 $\$30/\text{hr} \times 1.3 = \text{“loaded” of fully burdened average hourly wage} = \$39/\text{hr}$
 Annual cost of one employee at 2,050 hours per year = \$79,950

Total potential smelter payroll per year:

$\$79,950 \times 750 \text{ employees} = \mathbf{\$59,962,500 \text{ per year}}$

- The price of pig iron from November 2005 (the latest I could get for free!) was about \$350/ton. If we use \$500/ton until we can verify the current price of pig iron, we would get an approximate annual pig-iron sales number of

$150,000 \text{ tons/year} \times \$500/\text{ton} = \mathbf{\$75,000,000 \text{ per year}}$

- There will be additional income from the sales of by-products, but that number is not known

How will Wings Enterprises be able to justify this facility if the stated income is less than the Capital cost amortization, labor cost, and operating costs?

If Wings defaults, Minmetals takes over and the City becomes responsible for a number of unknown liabilities