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Hi Temp 242 in the Steel Industry
Proof of Performance

CUSTOMER DATA

- Customer: Minera steel
- Segment: Steel-Pellet plant
- O.E.M.:URALMASH-Russia
- Capacity:0.6mn T
- Length of furnace:45.4 m
- Pump model and ratio: Fireball 300-50:1
- Model of distributors and numbers:
  Graco DL LS 6-6 Series (1.5cc/stroke)
- No of Injector points:
  128 (104-Longitudinal seals+24-Side plates)
- OEM recommendation :Lithium EP2 grease

Background Information

Industry: Steel
Application: Indurating Furnace
Equipment: Uralmash Furnace
Lubricant: Petron Hi Temp 242

Previous Condition:

1) OEM recommended to use EP2 grease for both side plate and seal bar lubrication.
2) OEM recommended lube consumption—9 barrels/Month

Current Condition:

1) Petron Hi Temp 242 is being used from furnace commissioning
2) Excellent Lubricant film visible on face of side plate and seal bar..
3) Consumption of Hi Temp 242 steady at approximately 2 barrels/month

Benefits:

1) Greater protection to side plates and seals due to superior film thickness of Hi Temp 242.
2) Lower consumption
3) Reduced injector points
4) Lower inventory of lube
5) Lower maintenance cost due to lower inventory of injectors and distributors
6) Better Housekeeping
7) No Fires

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Higher Viscosity Film Thickness Established

Longitudinal Seal

Side plate

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Hardware

Out put at one outlet of distributor = 1.5 cc
Each outlets adjustable between 0.1 – 1.5 cc
Output set at 100% of maximum = 1.5 cc per outlet

OEM Recommendation--- EP-2 Lubricant = 54 kgs per day

Lubrication cycle = 30 minutes (2 cycles per hour)
8.8 cm3 per cycle in all 128 points of side seal & longitudinal seal
Total consumption per cycle = 128*8.8=1126.4
Total consumption per day (24 Hr) = 1126.4*2*24=54067.2
= 54 kgs
Consumption per month = 54*30=1620
No barrels per month 1620/181.4 = 9 barrels
No of barrels per year 9*11 = 99 barrels

Note:Machine running considered for 11 months

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Current Status- Hi Temp 242 = 12.16 kgs. per day

Lubrication cycle	= 11 minutes (1min on +10 min off)
Total number of points.	= 128
Total consumption per cycle	= 93 cc/ Cycle
Consumption per hour	= 93*60/11= 507 cc
Consumption per day (24 Hr)	= 507*24=12,168 cc
	= 12.16 kgs
Consumption per Month	= 12.16*30 = 364 kgs
No barrels per month 364/181.4	= 2 barrels
No of barrels per year	= 2*11
	= 22 barrels

COST ECONOMICS

EP-2

Cost per kg- USD = 2.36 $ (average market price)
Consumption per day-Kgs = 54
Consumption per month-Kgs = 1620
Consumption per year-Kgs = 17,820
Cost of grease per year-USD = $ 42,095

PETRON Hi Temp 242

Cost per kg-USD = 6.14 $
Consumption per day-kgs = 12.16
Consumption per month-kgs = 364
Consumption per year-kgs = 4,004
Cost of grease per year-USD = $ 24,584

Total cost savings per year by using Petron Hi Temp 242 = 42,095- 24,584

= $ 17,511

Note:Machine running considered for 11 months

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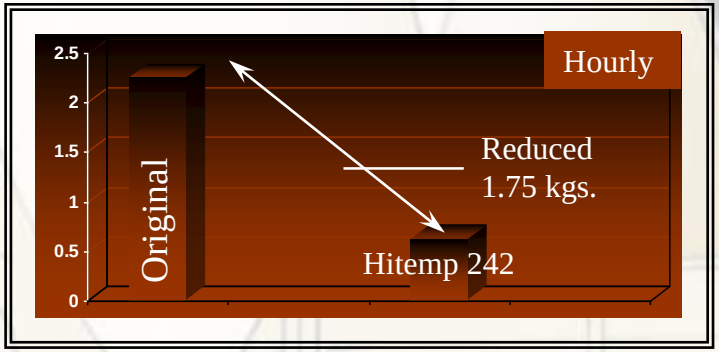
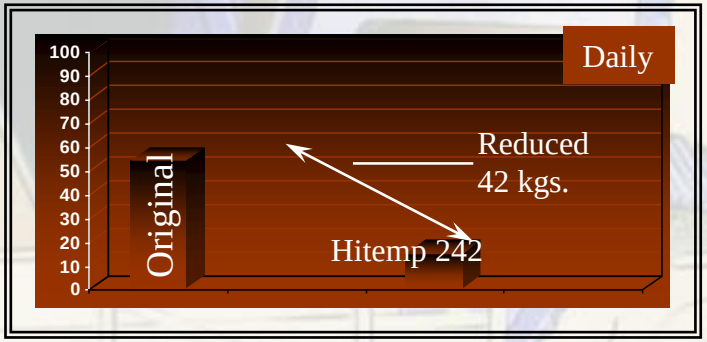
Comparison Of Total Lubricant Consumption (Kgs)
(EP2 VS Hi Temp 242)

	Original	Hi Temp 242
Hourly	**2.25 kgs**	**0.5 kgs**
Daily	**54 kgs**	**12 kgs**





Benefits

- Reduced Cost For Lubricant
- No grease fires
- Improved Housekeeping

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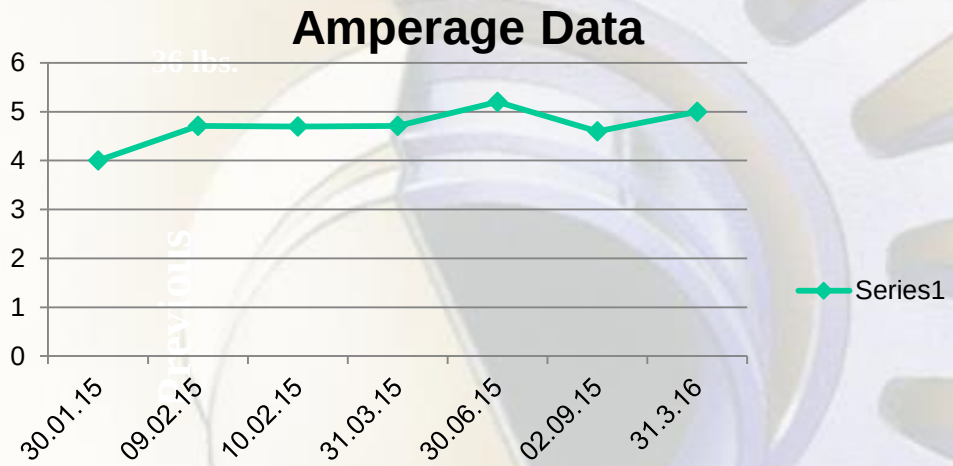
Indurating Machine
Amperage data



Benefits

- Increased surface Protection
- Reduced Lubricant Consumption
- Reduced Lubricant Cost
- Reduced Used Lubricant Disposal Cost
- Improved Housekeeping

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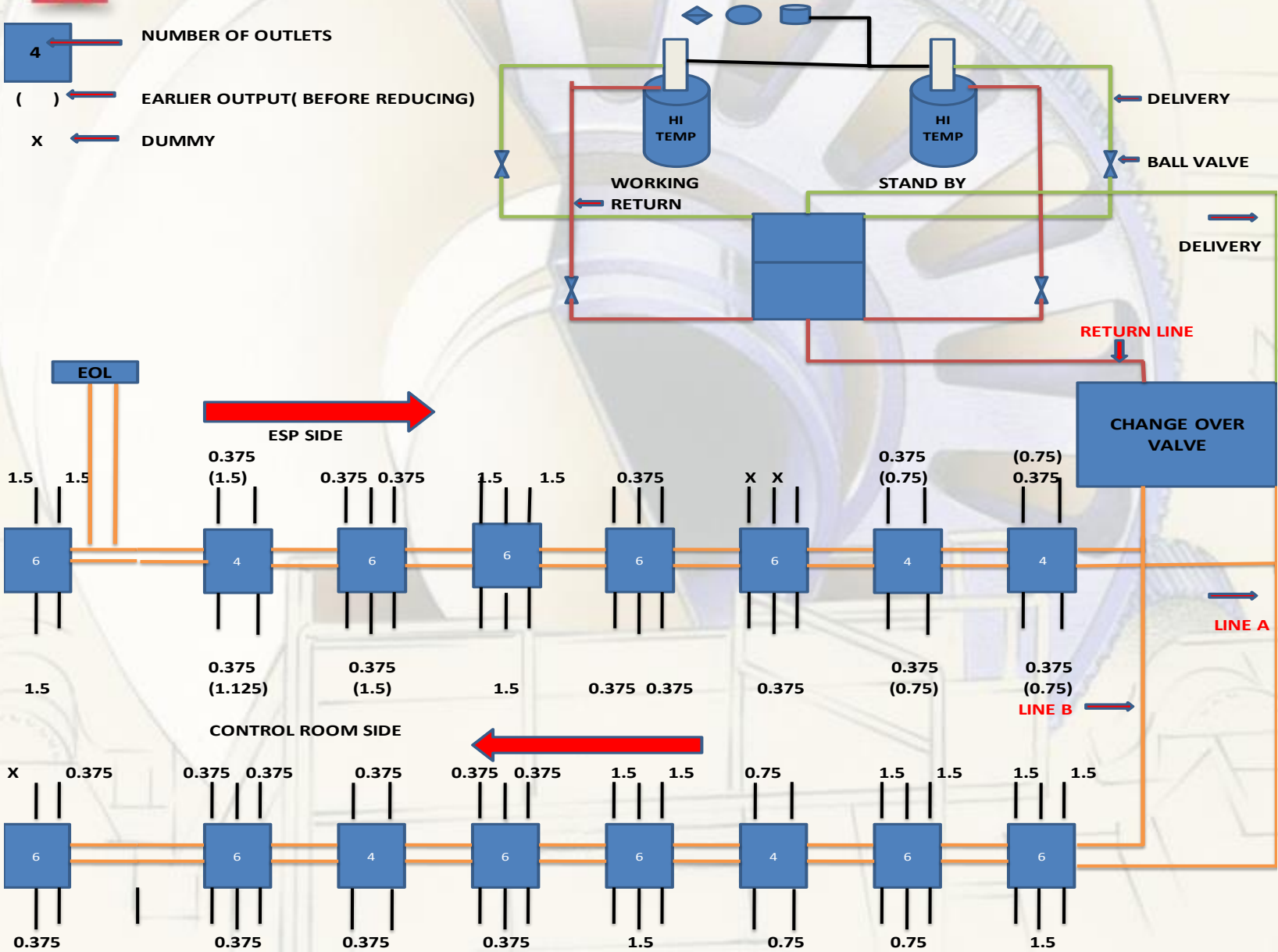
LUBE SYSTEM SCHEMATIC



INSPECTION REPORT

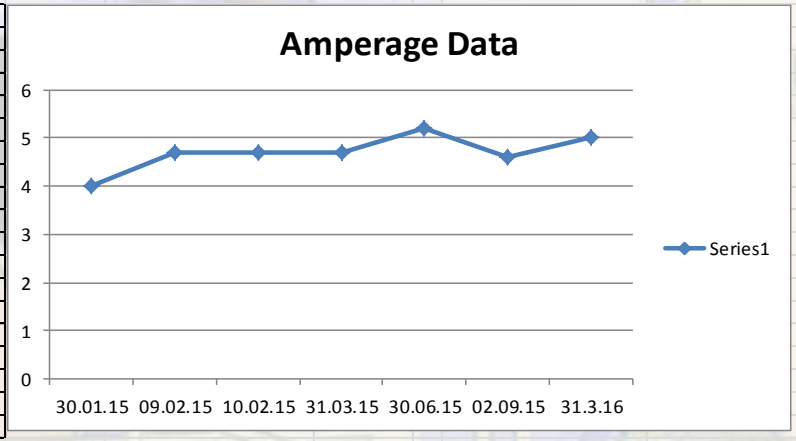
16800 W. Glendale Drive
New Berlin, WI, 53151
Phone:
: 800-757-5796
Email: rchandrasekar@petroncorp.com
ISO 9001:2008 CERTIFIED

ENGINEERED INDUSTRIAL LUBRICANTS FOR THE INDUSTRY

Customer Service Report

Auto Lube System	Graco			Customer	Minera	Application :	Indurating furnace
Injectors/Blocks	24			Plant Location :	Tornagallu		
Number of outlets	6			Plant Area :	Pellet		
Cycle time, mins	1 min on, 10 min off			Temperature reported in	°C		
Consumption / 24hrs	11.7	Kg				Product in use	Hi Temp 242
Inspection Date:	31	Mar	2016	Service Rep:	Chandrasekar	Recommended	

Date	Amperage drawn	Temp before entry (material inlet)	Temp after exit (material outlet)
	Amps	Deg c	Deg c
30.01.15	4	67	59
09.02.15	4.71	50.6	58
10.02.15	4.7	62	65
31.03.15	4.71	68	53
30.06.15	5.2	69	54.5
02.09.15	4.6	67.8	53.6
31.3.16	5	73.2	62.2
Check list-Daily			
Flow from distributor outlet	Yes		
Scraper cleaning surface	No		
Leakage in fittings	Yes		
Air pressure into pump	5	Bar	
Pressure at injector block	80	Bar	
Lubricant level in barrel	135	kgs	
Spare drum at lube station	Yes		



PHOTOS


Grease leakage


Good lube film


Good lube film on seal bar


Good lube film on wear plate


pump station maintained well

COMMENTS

Lube room maintained well
The excess grease needs to be cleaned to have better housekeeping
Kindly arrest the grease leakage and check the functioning of the motion indicators of all the distributors once in 15 days
Good lube film observed on seal bar & wear plates

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Thickness measurements-Side plate-Car no 33

Date—08.11.2015

THICKNESS		
A	19 mm	
B	18.8 mm	
C	19.3 mm	
D	19 mm	
Distance from edge is 60 mm		
Wheel no 33		

Thickness measurements-Side plate-Car no 33

Date—12.11.2016

THICKNESS		
A	18.8 mm	
B	18.5 mm	
C	19 mm	
D	18.6 mm	
Distance from edge is 60 mm		
Wheel no 33		

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CONDITION MONITORING

- The lubricant consumption was optimised by adjusting the injector screws and reducing the output for individual zones.

- We closely monitored the following parameters

1.) Seal bar/side plate-Lubricant film.

2.) Temperature measurements at each injector position.

3.) Amps drawn.

4.) Wear plate thickness measurement at prescribed intervals to assess the performance of the product.
Reduced wear on the side plate even after running for more than 1 year.

5.) Monitoring and adjusting individual distributor output