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February 2015 Safety Meeting





Agenda MRAP Environmental Exercises



Oil-Filled Electrical Equipment / PCB Management Training Morenci 2015





What are PCBs?



- PCB acronym for polychlorinated biphenyl
- PCBs
 - Are very stable (one of the most stable organic compounds known) and decompose very slowly once they are released into the environment
 - Exhibit low water solubility, low vapor pressure, low flammability, high heat capacity, low electrical conductivity, and have a favorable dielectric constant for use in electrical equipment
 - Were mostly manufactured between 1929 and 1977
 - Are toxic and persistent
 - Are one of the most widely studied environmental contaminants

Where Are PCBs Found?



- In oil-filled electrical equipment such as:
 - Transformers
 - Capacitors (both small and large)
 - Light Ballasts
 - Oil-Filled Circuit Breakers (OCBs)
 - Magnets
 - Potential Transformers
 - Circuit Transformers
 - Voltage Regulators
 - Manual or Automatic Circuit Reclosures
 - Busing Potential Devices
 - Feeder Regulators
 - Bushings
- > In non-liquid forms such as:
 - Compound/Tar Filled Equipment



Overall program is described in the Morenci Oil-Filled Electrical Equipment / PCB Management Plan

- Morenci maintains a comprehensive oil-filled electrical equipment inventory
 - Includes supporting analytical documentation for the equipment
 - It is critical that the inventory is maintained in order to comply with Freeport-McMoRan Inc. Corporate expectations

Primary Responsibilities For Contractors

- When the following occurs Contractors must submit a completed Electrical Equipment Data Form to the Morenci Environmental Department:
 - New oil-filled electrical equipment is purchased and brought to the site;
 - Previously used oil-filled electrical equipment is transferred to the site; or
 - A piece of oil-filled electrical equipment is moved from one location to a new location (even if one of these locations is storage)
- Ensure that any new, previously used or transferred piece of oilfilled electrical equipment has an established and verified PCB concentration of equal to or less than 2 ppm PCBs
- Morenci will not accept transferred or purchased oil-filled electrical equipment that was at any time reclassified from a PCB concentration of greater than or equal to 50 ppm



- Coordinate with the Environmental Department if it has been determined that an oil-filled piece of electrical equipment is going to be recycled, soled, scrapped, disposed or sent off site for repair
- Only equipment with a verified PCB concentration of less than 2 ppm will be permitted to be sent off-site for repair without coordinating with the Environmental Department prior to transport
 - Equipment with concentrations of greater than or equal to 2 ppm must be coordinated with the Environmental Department to ensure draining and proper management of oils
- Bring all oil-filled electrical equipment that is deemed for recycle, sale, scrap, or disposal to the Environmental Yard
- Only store oil-filled electrical equipment in areas previously designated for that purpose by Morenci Electrical or Environmental personnel

Oil-Filled EE Management



- PCB concentration of all transformers must be established through analytical testing.
 - The Environmental Department can assist with obtaining oil samples
- For newly purchased, transferred or re-built pieces of oil-filled electrical equipment, documentation from the manufacturer regarding an analysis for PCB concentration of the oil used is an acceptable form of analytical information
- PCB concentration/classification of large capacitors and fluorescent light ballasts shall be established by manufacture markings or labels (e.g. manufacture stamp states "NO PCBs")
- All oil-filled electrical equipment must be marked with some form of identification
 - The preferred form of identification is the serial number located on the manufacture name plate
 - If, however, the name plate is damaged or missing, the equipment must be labeled with a unique identification number

Oil-Filled EE Management



- Upon removing a electrical equipment or light fixtures from service, all fluorescent light ballasts and/or capacitors designated for disposal must be immediately removed from the fixture and evaluated for PCBs
- All ballasts and capacitors designated for disposal must be taken to the Environmental Yard
- Some apparent dry electrical equipment may contain small amounts of fluid or potting material which may contain PCBs therefore, all dry electrical devices should be taken to the Environmental Yard for evaluation and not placed directly into scrap metal storage containers
- The Environmental Department shall be notified if any leaking equipment is identified (leak or leaking means any instance in which a transformer has any dielectric fluid on any portion of its external surface)

Oil-Filled EE Management



- Removing/Replacing Oil When it is necessary to remove and replace or add oil to a transformer the following must occur:
 - Verify that the PCB concentration of the oil in the transformer has been established
 - The oil may be removed and placed in DOT approved containers then transferred to the Environmental Yard for determination of ultimate disposition
 - <u>Under no circumstances</u> shall oil that has been removed from a piece of oil-filled electrical equipment be placed in any dedicated used oil containers and all ultimate disposition of dielectric fluid will be determined by the Environmental Department – NO EXCEPTIONS!
 - The replacement oil or new oil that is to be added to the transformer must have a verified PCB concentration of less than 2 ppm





- Refer to Morenci's incident reporting protocols in the event that oil is leaking or has been spilled from electrical equipment.
- > General description of responsibilities:
 - The Environmental Department must be immediately notified through the spill hotline (928) 865-7745 (SPIL); and
 - The Environmental Department with support from the functional area responsible for the equipment will work together to address the spill.

Please contact Cynthia Christenson 928-965-1030 cynthia_Christenson@fmi.com

for information regarding electrical equipment on site and electrical equipment data forms!



Incident Review





STRENGTH IN RESOURCES

Safety Performance – February 8, 2015



STRENGTH IN RESOURCES

Injuries for January 2015

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Incident Date	lnjury Type	Organization	Division	Short Description
1/2/2015	First Aid	Processing	Hydromet	An employee was stripping cable when his knife slipped causing a laceration to his finger.
1/5/2015	Restricted Duty	Mine	Haulage	Operator of Haul Truck reported he injured his ankle while resetting transmission lock switch on front bumper
1/6/2015	Lost Time	Mine	Mine Maintenance	An employee was stepping from the platform onto the torque tube when he foot became caught in brake valve and he struck his knee against the fuel tank.
1/6/2015	First Aid	Mercantile	Motel	A Motel employee received a minor burn to the wrist.
1/6/2015	Lost Time	Mine	Mine Maintenance	An employee had been kneeling and when he stood and turn he felt a pop in his knee.
1/7/2015	First Aid	Processing	Maintenance Services	An employee stepped on a rock and fell to the ground causing an abrasion to his knee.
1/11/2015	Lost Time	Mine	Mine Maintenance	A Mechanic stepped on an air hose and felt pain in his lower back.
1/13/2015	Restricted Duty	Mine	Haulage	Van heading out to 46 shovel hit a bump in the road causing pain to passenger's back.
1/14/2015	First Aid	Administration	Security	Security officer utilized her feet to move wheel chocks causing lower back pain.
1/15/2015	Lost Time	Mine	Mine Maintenance	An employee was using a hand drill when the big snagged and the drill twisted causing a fracture to the finger.
1/15/2015	Medical Treatment	Mine	Fragmentation-Loading/ Support	An employee was getting out the pick up truck when she slammed her right index finger in the door.
1/19/2015	First Aid	Processing	Maintenance Services	An employee was shoveling and felt in lower back.
1/19/2015	First Aid	Contractor	Leaching	Five Southwest Irrigation employees felt sick after flushing lines at the Santa Rosa Canyon Dump.
1/20/2015	First Aid	Processing	Concentrator	Employee was using an airlance to unplug the chute when he felt pain in his back.
1/21/2015	Restricted Duty	Contractor	Mine Maintenance	An Empire employee was pulling the slack out of his harness when he felt a pop in his shoulder.
1/19/2015	First Aid	Contractor	Administration	An Ames employee was hit in the knee by a rock.
1/22/2015	First Aid	Processing	Concentrator	An employee was walking and felt his knee pop.
1/23/2015	Medical Treatment	Administration	Administration	An employee was cutting plastic when the blade slipped causing a laceration to the finger.
1/25/2015	First Aid	Mine	Mine Operations	The 555HT was being loaded by the 57 Loader when the bucket struck the bed of the haul truck and the operator felt pain in his back.
1/24/2015	Restricted Duty	Mine	Mine Maintenance	An employee was attempting to change the steering cylinder when it slipped off the frame and pinching his left hand between the cylinder and the jack plate.
1/29/2015	Lost Time	Contractor	Concentrator	H&S employees were installing flange segments on the HRC when a liner fell and impact an employee's foot.



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2015 TRIR Breakdown



TRIR BREAKDOWN	MTD REP	MTD TRIR	YTD REP	YTD TRIR	1Q REP	1QTD TRIR
FMMO	1	1.44 (138438)	10	<mark>2.96</mark> (674885)	10	2.96 (674885)
TOTAL CONTRACTORS	0	0.00	2	0.92	2	0.92
2015 TOTAL MORENCI ALL	1	0.88	12	2.16 (1108852)	12	2.16 (1108852)

Incident Rate = <u># of Incidents X 200000</u> / # of Hours Worked

STRENGTH IN RESOURCES



Injuries for February 2015

Incident Date	lnjury Type	Organization	Division	Short Description
2/2/2015	First Aid	Mercantile	Motel	A Motel employee was cooking with oil and received a burn to the finger.
2/3/2015	First Aid	Processing	Concentrator	An employee was attempting to dislodge the trougher when his hand became caught between the belt and the trougher.
2/4/2015	First Aid	Processing	Crush & Convey	An employee was chipping Nordback from the crusher bowl when he felt something in his eye.
2/5/2015	First Aid	Contractor	Processing	A Western Industrial employee was walking up the stairs and felt pain in his lower back.
2/6/2015	Lost Time	Mine	Fragmentation- Loading/ Support	An employee was dismounting the F-66 Loader when he stepped on the ground and felt a pop in his right knee.



		Lost Time	
Date	01.29.2015		
Organization	Contractor		
Division	Concentrator		
Detential Dick	3	2	6
Potential Kisk	Consequence	Likelihood	Potential Risk
Brief Description	employees wer An extend-a-fork rai magnet to lift the lin magnet approximate	e installing the flange segment ised the pallet to the top leve er off the pallet to set on the ti ely two feet and impacted his ri	s on the fixed side of the HRC. I. An employee was using the re when the liner fell from the ght foot.





STRENGTH IN RESOURCES





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		Restricted Duty		
Date	01.24.2015			
Organization	Mine			
Division	Mine Maintenance			
Dotontial Dick	3	2	6	
Potential Risk	Consequence	Likelihood	Potential Risk	
	While an employee was attempting to change the right side steering cylinder of			
Brief Description	naul truck, the cylinder slipped off the inner frame boss and his left hand wa			
	caught in between	the cylinder and the top of	the Jack plate resulting in	
	fractured finger.			





STRENGTH IN RESOURCES

Reportable Injuries – Discussion Points

5.

1. Back sprain riding in bus

- Rough road conditions (hard bottom not identified and mitigated)
- Not driving to road conditions / illumination / not using bright lights / distractions?
- Improper body positioning when riding in man vans / buses
- Provided & maintained with adequate shocks, struts, tires, etc...?

2. <u>Smashed finger in door jam</u>

- In a hurry / rush-pace
- Eyes not on path not paying attention to surroundings
- Not using the provided handles when opening / keeping hand out of pinch point

3. Broken knee fall in torque tube area (tripped on valve)

- Tripping hazard present (R6 brake valve) / eyes not on path
- Accessing area using another route / alternative access method available (platforms)
- o Complacency with fall hazards

4. Sprain from twisting motion in transmission area

- Physical constraints / limitations / Prior Injury
- o Extended time in one position/ uneven surface

Back sprain stepping on hose (twisting motion)

- Physical constraints / limitations / Prior Injury
- Eyes not on path of travel inadequate inspection
- Housekeeping / House not delineated or provided with crossover

6. <u>Broken finger while operating hand drill (bit broke and twisted the</u> <u>drill)</u>

- Using better tool for the job (drill press, pneumatic tool, lubricating surface)
- Body positioning / positioning of stock material (prepare for unexpected hang up)
- Physical constraints / medical condition not rotating work duties to give break
- 7. Sprained Ankle
 - Tripping Hazards/ Uneven ground
 - Eyes not on path of travel Foot Placement

Walking and working surface, Housekeeping, Hand Injuries



Fatal Event

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OPERATION:	Sociedad Minera Cerro Verde S.A.A	Personnel related:	x
ISSUED BY:	Jeff Monteith <u>. General Manager of</u> <u>Administration</u>	Equipment-related:	
DATE:	31/01/2014	Property/Process- related	
TIME:	14:40	Health-related:	
CONTACT INFORMATION FOR ADDITIONAL DETAILS:	Raúl Ávila Project Superintendant <u>Raul_avila@fmi.com</u>	Other:	
BRIEF DESCRIPTION/DETAILS OF ADVISORY:	GyM is the primary contractor working construction project. On Saturday, January made a call to evacuate personnel from the conditions. At that time SMCV monitoring had reported any potential lightning strike ala During the evacuation process, the Area 2 lightning which also caused minor injurie making their way to the evacuation area Alvaro Torres, age 48 and from Trujillo, was The call to evacuate was made at ~2:20pm alarms. SMCV and GyM monitoring syst ~2:25pm, the lightning strike occurred at ~2:	on the Pad 1X F 31st, contractor sup field due to changing nor GyM handheld arms. 2A supervisor was s s to 12 workers w . The supervisor, S killed instantly. , prior to the reportin tems triggered an a 40pm.	Phase 3 pervision weather monitors struck by ho were fr. Rolan ng of any alarm at













Exercise for the Group.

