FMC

TH!NK. SAFE.

Safety Summit

March 10, 2015

Pocatello, Idaho

DID YOU KNOW

YOU MIGHT BE ASLEEP AT THE WHEEL WITH EYES WIDE OPEN.

Fatigue can be fatal. Especially when you're driving.

To help avoid fatigue behind the wheel:

- Pull well off the road and rest if you feel fatigue coming on.
- Make frequent stops on extended trips.

Traffic accidents increase dramatically after approximately 7 hours of driving.

WELCOME

Marjo Carpenter

FMC Corporation

FMC'S COMMITMENT

Follow-up on November 20, 2014

Safety Summit

Robert Forbes

FMC Corporation

CONTRACTORS AND ROLES

Greg Beck

Parsons

CONTRACTOR ROLES

Parsons

- Construction Manager

CB&I

- General Contractor

KW

- Site Wide Security and Safety Manager
- USC Emergency Response Team
- Operations & Maintenance Manager for RCRA ponds

MWH

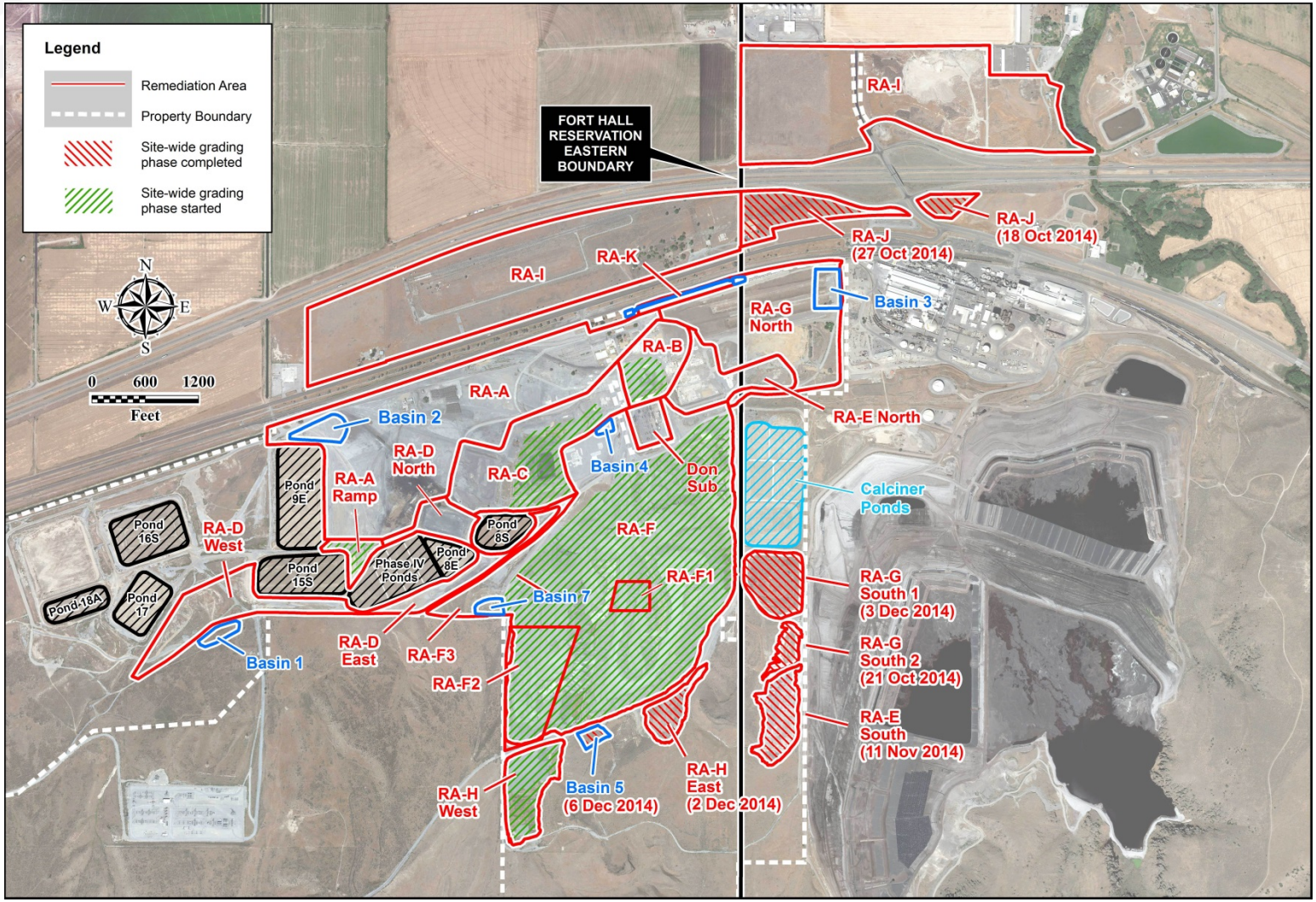
- Supervising Engineering Contractor

GRADING PROJECT UPDATE

Jo Everano

Parsons

2014 Site-Wide Grading



2014 Site-Wide Grading

- **2014** Grading for Stormwater Control and Cap Placement Completed In Following Areas:
  RA-E South, RA-G South 1 and 2, RA-H East, RA-J and Basin 5

- Quantity of Soil and Slag Moved to Grade Site for Capping
  - **1.2 million cubic yards**
- Approximately 30% of Site-Wide Grading Completed

2015 Site-Wide Grading

- **2015** Work Tasks:
  - Complete site-wide grading work in RAs B, C, D, E, F and K (~2.4 million cubic yards)
  - Prepare RAs for placement of caps
  - Raise RCRA and CERCLA groundwater monitoring wells to meet grade
- Grading Planned for Completion September 2015

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

AT-A-GLANCE

OSHA®

The *Occupational Safety and Health Act of 1970* (OSH Act) was passed to prevent workers from being killed or seriously harmed at work. This law created the Occupational Safety and Health Administration (OSHA), which sets and enforces protective workplace safety and health standards. OSHA also provides information, training, and assistance to employers and workers.

Under the OSH Act, employers have the responsibility to provide a safe workplace.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

OSHA INSPECTION

Pre-Investigation Conference

- OSHA inspector is required to explain the nature and purpose of the inspection.

- Limited scope inspections, such as a complaint or accident inspections, cover only those areas or items mentioned in the OSHA complaint form.

- Under the law, the inspector cannot release the names of the person(s) filing complaints against the company. However, the employer can ask whether the complaint was filed by an employee, or an outside party not employed at the workplace.

OSHA INSPECTION

Complaints to OSHA

1. Workers are being exposed to chemicals – phosphine, elemental phosphorus, heavy metals and radionuclides. Workers may not be wearing appropriate personal protective equipment.

2. Workers are not properly trained in Hazard Communication or HAZWOPER (Hazardous Waste Operations and Emergency Response).

SAFETY PROGRAMS UPDATE

Marcella Wallace

CB&I

Mark Smith

KW

OSHA INVESTIGATION - CB&I

- **Reported Complaint #1** – Employees working on a hazardous waste site while being exposed to chemicals such as phosphine, elemental phosphorous, heavy metals and radionuclides. Employees may not be wearing appropriate personal protective equipment such as respirators.
  - ***OSHA FINDING –***
    - ***Employees were not being exposed at levels of concern - verified through OSHA sampling.***
    - ***Personal protective equipment is being utilized by all employees on site when warranted (i.e. Hotzie use, power washing, and filter maintenance) and level D was found to be adequate for daily activities.***
    - ***No OSHA citation issued.***

- ***CB&I results negative for airborne contaminants.***

OSHA INVESTIGATION - CB&I

- **Reported Complaint #2 –** Employees working on a hazardous waste site while not being properly trained in hazard communications or HAZWOPER.
  - ***OSHA FINDING – All employees were trained properly in both hazard communications (Hazcom) and HAZWOPER.***
  - ***No OSHA citation issued.***

- ***OSHA case closed.***

CB&I HEALTH AND SAFETY UPDATE

2014 Site-Wide Grading OSHA Incident Reports

- Total CB&I Work-Hours 2014: 28,960
- OSHA Lost Work-Day Injuries: 0
- OSHA Recordable Injuries: 0
- OSHA First Aid Cases: 1

Staffing

- Total CB&I project staff: 47
- Health Safety and Environment (HSE) Manager
- 2 HSE Technicians

Training

- 40HR Hazardous Waste Operations and Emergency Response (HAZWOPER) Class
- Site Specific Orientation for all new & returning employees (e.g., Health and Safety Plan, Hazcom, substance abuse policy)

OSHA INVESTIGATION/RESULTS - KW

- **Reported Complaint #1** – Employees working on a hazardous waste site while being exposed to chemicals such as phosphine, elemental phosphorous, heavy metals and radionuclides. Employees may not be wearing appropriate personal protective equipment such as respirators.
  - ***OSHA Findings:***
    - ***Phosphine monitoring and procedures adequate.***
    - ***Personnel monitoring showed metals below OSHA Permissible Exposure Limits (non-detect).***
    - ***Personnel monitoring showed phosphorous pentoxide non-detect.***
    - ***Accepted prior on-site monitoring for radionuclides as adequate to negate the need for additional worker monitoring.***
    - ***No OSHA citations.***

OSHA INVESTIGATION/RESULTS - KW

- **Reported Complaint #2 –** Employees working on a hazardous waste site while not being properly trained in hazard communications or HAZWOPER.
  - ***OSHA Findings:***
    - ***Based in site inspection, interviews and documentation provided, confirmed that training in both hazard communications and HAZWOPER meets OSHA standards.***
    - ***No OSHA citations.***

- **OSHA case closed.**

KW OSHA Safety Program Statistics

- KW has worked at FMC site since 2001 plant closure.
- Logged over 650,000 work hours on-site without an OSHA lost work-day injury.
- 180,000 work hours and over 8 years since last OSHA recordable injury (12/29/06).
- During 2014, KW completed over 21,000 work hours.
  - OSHA Lost Work-Day Injuries: 0
  - OSHA Recordable Injuries: 0
  - OSHA First Aid Cases: 0

KW Safety Program Highlights

- Daily Safety Meetings
- Monthly Site-Wide Safety Meetings
- Project-Specific Safety Meetings
- Job Planning Safety Analysis (JPSA) Program
- Task-Specific Training
- Stop Work Authority – Any on-site worker has the authority to stop work if there is an unsafe act or condition.

KW Worker Site Safety

- Key site personnel skilled in the safe handling of phosphorus were retained by KW following plant shutdown.
- Developed procedures for the safe handling and decontamination of phosphorus-contaminated materials, equipment, piping and vessels.
- KW employees have completed OSHA's required 40-hour HAZWOPER and 8-hour annual refresher training.
- KW employees have training in Phosphorus Safety Standards, Confined Space, Hazardous Work Permits, RCRA Contingency Plan.
- KW performs all work in compliance with applicable site safety rules, regulations and emergency response plan procedures.

AIR ISSUES UPDATE

Dust Control

Greg Cunningham

Parsons

Dust Control Practices

- EPA-directed Goal at the FMC Pocatello Site During the Soil Remedy Construction is “No Visible Emissions”
- Dust Control Measures Are Taken Proactively To Suppress Potential Dust Sources
- Dust Control Measures Are **Immediately Increased In Frequency and/or Intensity** to Suppress Dust Where Needed

Dust Control Water Use

- Dust Control Measures Performed via Water Truck Application.
  - Water application is a common and accepted construction practice to control and prevent dust emissions.
    - 4 Water Trucks are in the field during grading activities
    - 2 Water Towers are on-site for supplemental water storage
    - Additional Trucks will be used if necessary

Prioritized Strategy

- Prioritized Strategy for Dust Control Includes:
  - Application of Water
    - Water Trucks
    - Stationary Sprays
  - Application of Tackifiers (to increase adhesion)
  - Localized Control

09 Oct 2014 11:06 AM

Top Area of RA-F East

09 Oct 2014 02:10 PM
RA-H West Fill Area

RA-G South
16 Oct 2014 09:56 AM

Water Truck Wetting Down Slag Pit Area
10/18/2014 9:35

Water Truck Washing and Wetting Down Road

Valley Between RA-F East & West, North End
11/ 7/2014 12:13

AIR ISSUES UPDATE

Air Monitoring

Rob Hartman

MWH

Total Suspended Particulate (TSP) - Ambient Air Monitoring

- Dust Control and Air Monitoring Plan
- Three fixed real-time TSP air monitoring stations (E-samplers)
  - ES-1 Northern property line (near front gate)
  - ES-2 Western Undeveloped Area (generally upwind)
  - ES-3 Fenceline between FMC and Simplot
- Three “roamers” located at construction areas, two spares
- Log 5-minute and 1-hour TSP averages

Legend
Remediation Area
Property Boundary
RCRA Cap
Colonial Pond Cap
DETAIL A RA-K Railroad Swale
RA-K Railroad Swale
Fixed Sampler
Meteorological Station
RA-H Fuel hydrocarbon area
SEE DETAIL A
Fixed Sampler
RA-F1 Road Ditches
RA-F2 Historic Landfill
Fixed Sampler
MWH
FMC
Figure 1-3
Placement of Fixed
Air Samplers

Roaming Sampler

TSP Air Monitoring

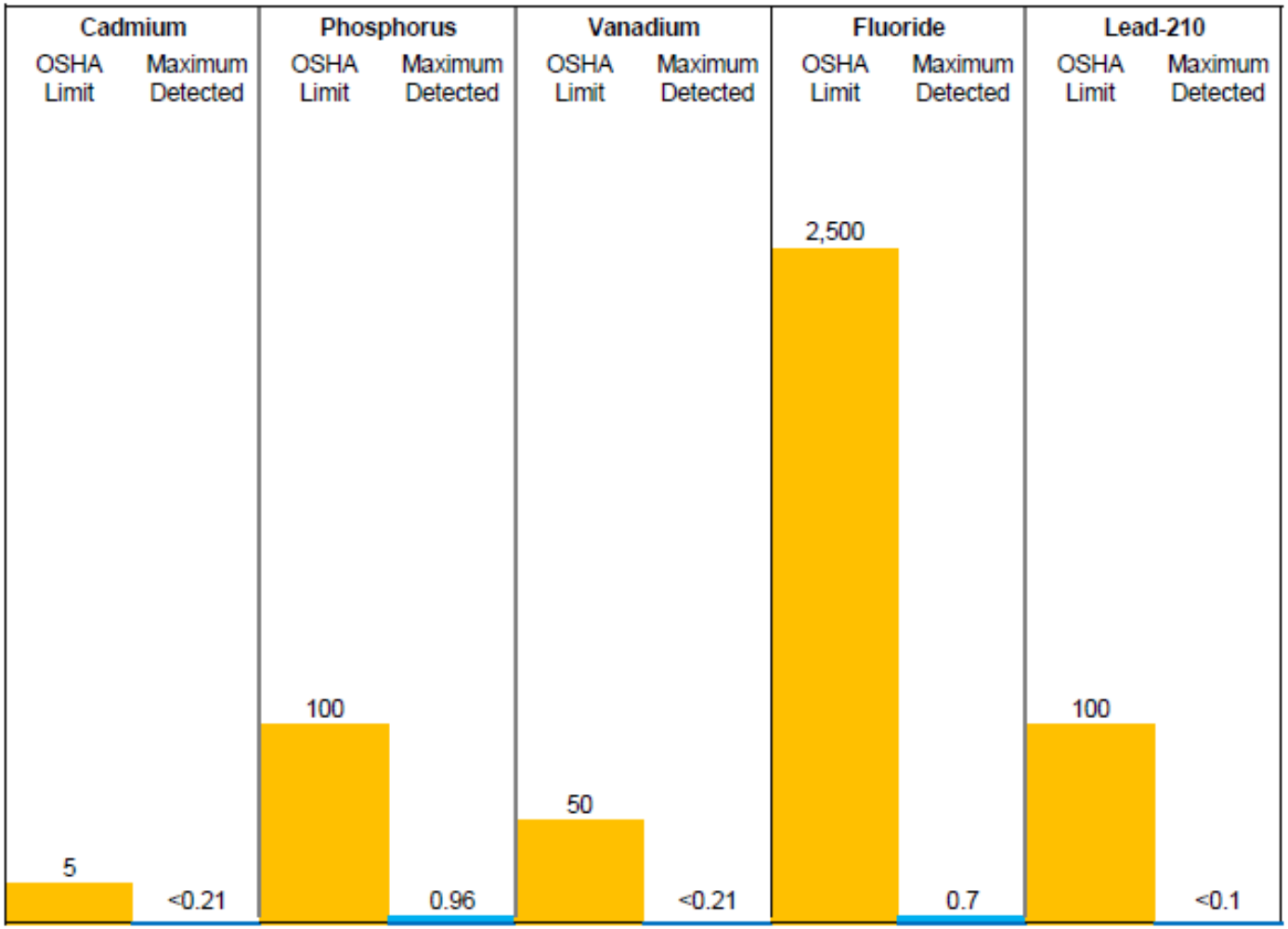
- Real-time alarm if TSP exceeds 152 µg/m^3 (trigger)
  - Trigger based on most conservative OSHA air limit for phosphorus
  - Then a safety factor of 10 was applied to the trigger level to ensure workers' safety and further limit any potential exposure due to offsite migration of airborne contaminants
- Data reported in real time on website – http://209.141.122.28/FMC%20Pocatello/index.html
- Quarterly reports with data to EPA, Tribes, IDEQ

Air Filter Sampling and Analysis

- Particulate filters installed on all air samplers (3 fixed and 5 roamers)
- Filters collected particulate from October 4 to November 11, 2014
- Lab analyses for total particulate, cadmium, phosphorus, vanadium, fluoride and lead-210

Air Filter Analytical Results

(Values in micrograms per cubic meter (µg/m^3))



RADIONUCLIDE MONITORING

Rob Hartman

MWH

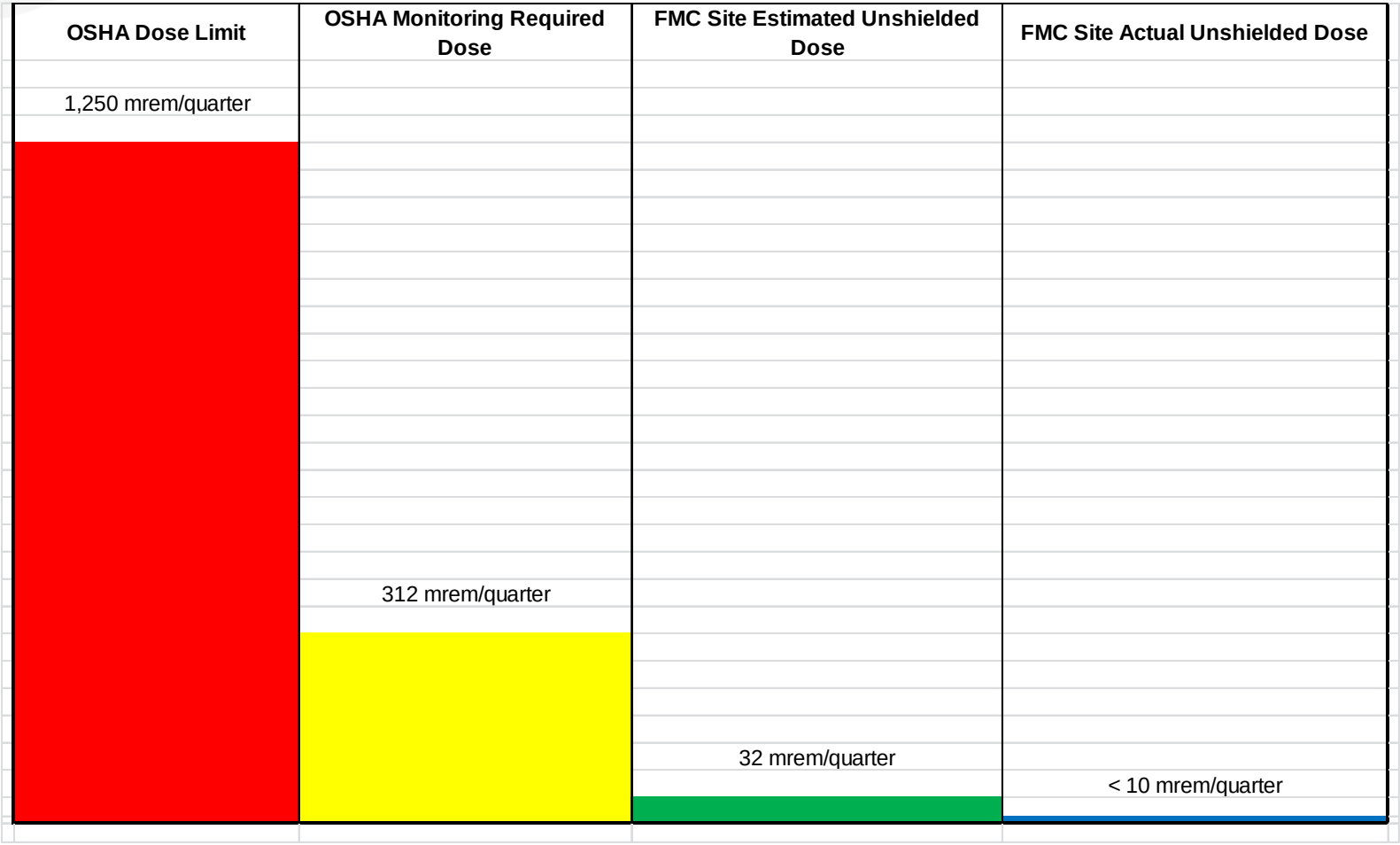
Gamma Radiation at FMC Plant Site

- OSHA Standard:
  - **1,250** mrem/quarter -- **5,000** mrem/year
  - Monitoring required if potential exposure is 25% limit (312 mrem/quarter / 1,250 mrem/year)
- Area Background Exposure
  - 50-hour work week for 13 weeks = **9** mrem/quarter
  - 50-hour work week for 52 weeks = **38** mrem/year
- FMC Site Estimated Exposure (Unshielded):
  - 50-hour work week for 13 weeks = **32** mrem/quarter
  - 50-hour work week for 52 weeks = **130** mrem/year

Personal Radiation Monitoring at FMC Plant Site

- During SRI in 2007, 10 workers monitored for gamma using radiation badges for ~6 months
- Workers averaged 50 hours/week in unshielded conditions in areas with ore and slag at the surface
  - **Actual total gamma dose was < 10 mrem/quarter for all 10 workers**
  - Personnel in vehicles / heavy equipment would have lower dose due to shielding (50 to 90% lower than unshielded exposure)

OSHA Radiation Limits and Estimated/Actual Dose Measured at FMC Site



AIR ISSUES UPDATE

Personal Monitoring

Marcella Wallace

CB&I

UPDATE ON AIR QUALITY ISSUES — PERSONAL MONITORING

Radiological Monitoring

- CB&I Radiological Department Reviewed and Approved Prior Study
- OSHA Determined That No Additional Monitoring Is Warranted

Personal Monitoring Continuing (real-time)

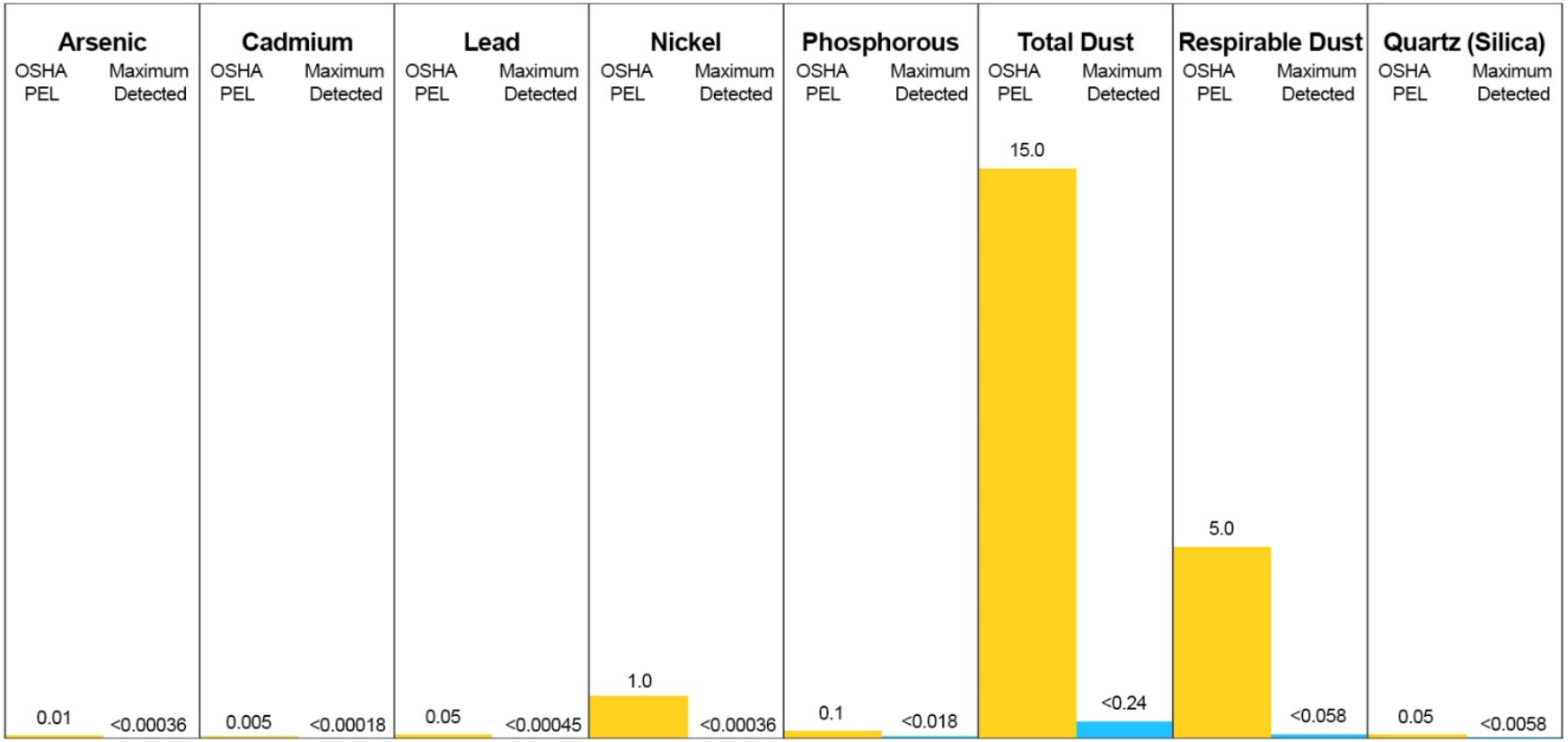
- Total Dust Monitoring In Operator Cabs
- Phosphine Monitors
- OSHA Determined That Current Personal Monitoring Is Appropriate

Industrial Hygiene (IH) Monitoring

- Explanation
- 2014 CB&I Sampling

UPDATE ON PERSONAL MONITORING

— 2014 SAMPLING RESULTS (mg/m³)



UNDOCUMENTED SUBGRADE CONDITIONS (USCs)

Mark Smith

KW

Protocol for Managing Undocumented Subgrade Conditions (USCs)

- USC - Isolated Encounters of Phosphorus-Impacted Material During Site Wide Grading
- Response Protocol – Emergency Response Plan (ERP):
  - All USCs Managed by KW Response Team
  - Contractor staff contact On-site Incident Commander
    - Work immediately suspended in the area of USC
  - Secure Area
    - Work from upwind or cross wind position if phosphorus pentoxide is visible
    - Cover the USC with wet sand/soil
    - Flag off USC area
  - Complete “Job Planning Safety Analysis”
  - Determine Extent of and Relocate USC

Update on USC Material Handled

- Total volume of soil and slag material moved: 1,200,000 cubic yards
- Total USCs to date: 87
- Total Volume: 420 cubic yards of USCs
  - Less than 0.04% of total material moved
- USCs currently relocated to EPA-Approved locations on FMC property

COMMENTS

QUESTIONS

CLARIFICATIONS

THANK YOU!

FMC

TH!NK. SAFE.

Safety Summit

March 10, 2015

Pocatello, Idaho