U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Integrated Waste Management Tire Fire - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region II

Subject: **POLREP #11**
Integrated Waste Management Tire Fire
A-23R
Penuelas, PR
Latitude: 18.0099907 Longitude: -66.7209286

To: Laura Velez, Puerto Rico EQB
Joel Figueroa, Puerto Rico Fire Department
Angel Crespo, Puerto Rico Fire Department
Claudia Gutierrez, USEPA
Meghan La Reau, USEPA

From: Paul L. Kahn, Kelli Lucarino, On-Scene Coordinators
Date: 4/27/2014
Reporting Period:

1. Introduction

1.1 Background

Site Number:	A-23R	**Contract Number:**	EP-S2-10-01
D.O. Number:	0069	**Action Memo Date:**	
Response Authority:	CERCLA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	3/19/2014	**Start Date:**	3/15/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:	PRN008020158	**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category

Tire fire at defunct tire shredding facility.

1.1.2 Site Description

The Site is located in a remote area bordered by tall hills on two sides. It is located approximately 2 miles from the Caribbean Ocean.

1.1.2.1 Location

The Site is located on a dirt side road off Rt. 385, Km. 2.9, approximately 10 miles north west of Ponce.

1.1.2.2 Description of Threat

There is a pile of shredded tires approximately 60 feet wide by 150 feet long and 60 feet high had caught fire in August, 2008. The fire was partially controlled by covering the pile with dirt. Subsequently, the fire smoldered until fissures in the pile began to allow air into the pile. The current potential threat is that the now-smoldering pile of shredded tires is on the verge of re-igniting.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Air monitoring and sampling data is still being acquired and no preliminary results are available. However, there is ample data/information on emissions from tire fires. See attached information in the Reference Section. Visible inspection of the top of the smoldering pile showed deposition of an oil-like substance, similar to condensation, on the edge of the fissures that have opened up on the pile. This suggests that an oil component of the smoke plumes is condensing on the cooler outer edges of the fissures. This would typically be polynuclear aromatic compounds such as benzo- and anthro- pyrenes, both which are carcinogenic substances.

On March 19, 2014 ERT returned to the Site, reestablished air monitoring (viewable via VIPER) and set up 4 data RAMS and SUMA canisters sampling stations. Sampling will run through Thursday March 20th. RST will sample piles of oil-contaminated soil and run-off water collected in a small trough at the base of the pile of smoldering tires. Visual observations by the OSC revealed that overnight portions of the soil covering the smoldering tire pile slid off the pile, exposing small fissures which allowed air to infiltrate the pile. This resulted in increased smoke plumes and the soil felt hotter to the touch than previously noted. This is probably indicative of increased burning inside the pile. If additional soil is eroded it is likely that the fire will re-ignite which will cause additional problems with smoke and pyrolytic oil releases.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

2.1.2 Response Actions to Date

UPDATED INFORMATION IS IN BOLD FONT.

The OSC has mobilized 5 ERT/SERAS staff to the Site to set up air monitoring uploaded to the VIPER system. Sampling of air, soil and water media has begun as well.

The OSC has contacted the Chief of the local Fire Department and a meeting has been set up to discuss the situation on 3/21/14.

On March 19, 2014 the ERRD Division Director authorized and partially funded a CERCLA response action at the Site. The ERRS contractor has been notified and mobilized to the Site. ETA for ERRS to arrive at the Site is Sunday, March 23, 2014. Additional contractor assets will be mobilized to the Site as deemed necessary.

The OSC has contacted the PR Environmental Quality Board (EQB) and informed the EQB that EPA will be able to assist in extinguishing the fire.

The OSC will attempt to meet with a local cement company (CEMEX) that may be willing to take the piles of approx. 8,000 unburnt scrap tires at the Site. They have historically used shredded tires as a supplemental fuel in the cement manufacturing process and are permitted by the EQB for this activity.

On March 21, 2014 the OSC met with representatives of the EQB, the Puerto Rico National Guard (PRNG) and the Puerto Rico Fire Department (PRFD) for a kick-off meeting. At that time all parties discussed possible response scenarios and the respective roles to be played by the participating organizations. Subsequently, all parties reconvened at the Site in the afternoon for further discussions regarding strategy and possible tactics to be employed to open the pile and extinguish the fire. A tentative schedule to initiate the actual 'attack' on the smoldering tire fire pile is April 1 - 3. The actual date will depend on how quickly assets such as command post, heavy equipment, air monitoring, water supplies and personnel can be mobilized to the Site.

The PRNG rep stated he is willing to use NG heavy equipment to cut two access/egress roads into the Site and to clear fire breaks around the pile of smoldering tires. An existing abandoned road will provide the basis for the fire break. The EQB will forward a request to the Office of the Governor requesting authorization for the use of National Guard assets to assist in this response.

On Saturday, March 22, 2014 the OSC visited the Site and used a thermal imaging camera to assess temperatures in and on the pile of smoldering tires. The thermal camera recorded temperatures at the large opening on the top at 300F + temperatures. Temperatures at the fissures on top of the pile are in the 240F - 260F range. The camera revealed a hot spot on the south facing slope of the pile where the soil has subsided. Temperatures at that location varied from 114F- 140F. The presumption is that if the temperatures on the top of the pile are in the 240F - 300F+ range then the temperatures inside the pile are in the high hundreds of degrees. Pyrolysis of tires generally begins at about 250C, or roughly 480F. Based on the range of surface temperatures at the main opening, it is highly likely that pyrolytic oil is being generated inside the pile. Additional thermal imaging will be performed on a daily basis and will be a task included in the HASP and Work-Plan.

On March 25- 26, 2014 the PR DPNR was able to clear and level the two access roads to the Site, enabling ERRS to mobilize an office trailer, generator, dozer, excavator and other support functions into the Site. On March 26th ERRS and the OSC retrieved the Portable Satellite Unit (PSU) from the EPA CEPD office and transported it to the Site.

The physical appearance of the smoldering pile of tires continues to change daily. The pile seems to be splitting in half vertically and additional fissures/subsidence are visible. Infra-red readings of the face of the pile and top/sides reveal increasing surface temperatures. Additional areas of the top of the pile appear to be collapsing into subsurface voids and smoke/odor emissions continue to be more dense each day.

The Site command post should be fully operational by March 28th. Night-time security guard services will commence on March 28th. DPNR Enforcement police officers will assist with traffic control on the access road to the Site during the tear-down event. OSC Lucarino will deploy to the Site on March 27th. The OSC has contacted the adjacent landfill owner and is coordinating Site events with landfill ops to minimize impact on refuse disposal.

OSC Lucarino mobed to the site on 3/27/2014 and began transitioning with OSC Kahn. The OSCs met with EQB on 3/37/2014 and discussed air monitoring activities when the smoldering tire pile is addressed. EQB has offered air monitoring support with the use of their AreaRae equipment. The command post was

delivered and a generator has been connected, making the command post fully operational as of 3/28/2014. The secondary access road clearing was completed on 3/28/2014.

On Saturday, 3/29/2014, ERRS loaded auto tires into a roll-off provided by Waste Management for energy recycling use for their operations. ERRS began installing high visibility safety fencing and installing other site control measures to protect the large number of people currently on site and anticipated to arrive on site for the removal operations of the smoldering tire pile. PRFD requested the National Guard widen the fire break around the smoldering tire pile.

On Sunday, 3/30/2014, ERRS continued site preparation work including installing additional safety barriers/fencing and clearing the area where the majority of the equipment will be staged for the operation of the removal of the smoldering tire pile. The National Guard was on site and completed the berm around the base of the smoldering tire pile. The National Guard also completed work on the access roads and widening the fire break. CST was on site today conducting air monitoring.

On Monday, 3/31/2014, the National Guard completed all work requested by PRFD. The National Guard began demobilizing their equipment and personnel from the site. ERRS continued site preparation activities and procuring an excavator with a thumb attachment. ERRS had procured the necessary excavator for delivery today, however, last Friday at the end of the day the vendor canceled the delivery stating they did not have the required equipment. ERRS worked all weekend on finding the necessary equipment and was able to find a vendor, however the equipment would not be ready for delivery until this Wednesday because the vendor had to weld the thumb attachment to the excavator. An excavator with a thumb attachment is necessary in order remove a section of the tire pile, quench the heat by dipping the bucket in a water bath contained within a sludge box and moving the material to the staging location. This process is necessary in order to reduce the heat of the smoldering material to avoid reigniting. This will delay the start date of the removal operations of the smoldering tire pile until this Thursday.

Representatives from PREQB and PRFD arrived on site this afternoon and informed the OSC that delaying the start of the operations was not possible. The PRFD had arranged to have equipment and personnel mobilize to the site in order to start operations tomorrow. EQB had also arranged for two public information sessions this evening to inform the community the work would begin tomorrow. Also, a press event had been scheduled for tomorrow in anticipation of the start of the work. The OSC had not been aware that PRFD was mobilizing all personnel and equipment to the site today. A discussion was held with PRFD and EQB regarding the site operations and EPA's situation with the excavator. The operations were explained to all parties and why the excavator with the thumb attachment was imperative to completing the operations safely. PRFD and EQB offered to arrange to have an excavator with a thumb attachment delivered to the site for the work. Both agencies were able to mobilize three excavators without thumb attachments to the site this evening. While greatly appreciated by the OSC, the excavators are not what was requested and are not appropriate for operations.

Ramon Torres and Brenda Reyes from CEPD attended the two public information sessions in the evening as representatives from EPA along with EQB and PRFD.

EQB has arranged to remove the remainder of the whole tires from the site. The tires will be transported to JDJ Recycling in Guayama and then will be transported off island for disposal in Vietnam. EQB is funding this operation and will seek legal action for reimbursement from the PRP.

OSC Kahn demobilized from the site.

On Tuesday, 4/1/2014, the OSC met with representatives from EQB and PRFD to discuss the current site operations. The OSC explained operations to remove the smoldering tire pile would not begin until all necessary equipment was on site in order to safely remove the pile. While both parties were disappointed at this decision; the situation was understood by all parties and health and safety is the priority for all involved. The PRFD decided to demobe some personnel and equipment until operations begin on the removal of the smoldering tire pile. Some confusion arose as to who was in charge of the operations and how to effectively communicate among all parties involved. The OSC established a Unified Command structure and established a daily meeting schedule with all parties meeting at 0800 and 1600 daily to discuss operations.

A press conference was held on site with Ramon Torres and Brenda Reyes attending for EPA. CEPD PAD will be coordinating all public affairs issues with representatives from EQB and PRFD.

Task order 69 was issued to ERRS for $250,000 for the confirmation of the verbal authorization dated 3/19/2014.

On Wednesday, 4/2/2014, all equipment necessary for the removal operations of the smoldering tire pile was on site and ready to begin operations tomorrow. This includes the excavator with the thumb attachment and seven 7,000 gallon water tankers staged with PRFD's portable pools and set up for the operations.

Heavy rains inundated the site in the afternoon and persisted through the evening. The heavy rains caused some flooding issues and made the access roads inaccessible to trucks. This is a major concern since the roads need to be accessed by the water tanker trucks in order to supply PRFD with water for fire suppression operations. The OSC spoke with EQB and PRFD about the site conditions and concerns in anticipation of beginning the removal of the smoldering tire pile tomorrow. The OSC agreed to meet with a representative from PRFD at 0600 tomorrow to assess site conditions. If conditions are acceptable, this will allow enough time for PRFD to mobilize personnel and equipment to the site to begin removal operations. The heavy rains also caused some erosion of the smoldering tire pile and visible smoke is now emanating from the sides of the pile and other areas on the top of the pile.

EQB removed 7 truck loads (approximately 1,000 tires) from the site today. A large number of tires still

remain on site and EQB will continue to coordinate removal activities of the tires.

On Thursday, 4/3/2014, the OSC arrived on site at 0600 and met with a representative from the PRFD. The conditions of the access roads are impassable to the water tanker trucks. After speaking the PRFD Chief, it was determined the water tanker trucks, the portable pools and most of PRFD's equipment should be relocated to the base of the exit access road. More rain is anticipated and this will prevent this issue in the future. It was agreed that operations to remove the smoldering tire pile will be delayed until tomorrow, allowing PRFD enough time to relocate their equipment. ERRS worked to repair the damaged access roads and installing flood prevention measures in anticipation of more rain.

Heavy rains again began this afternoon and persisted throughout the evening. PRFD was able to relocate their equipment and were able to relocate four of the seven pre-staged water tankers. This was a difficult operation due to the flooding issues. The remainder of the trucks will be moved tomorrow morning.

The heavy rains today caused more erosion of the tire pile. In conjunction with PRFD and EQB, it was decided to place more dirt on the top of the pile and the sides of the pile to prevent complete erosion of the pile as an interim measure until removal operations begin. It is anticipated removal operations will begin tomorrow.

A Task Order modification was issued to ERRS for the second verbal authorization of $250,000.

On Friday, 4/4/2014, site preparation activities continued in anticipation of the removal work on the smoldering tire pile. This included moving the remaining water tankers to the base of the exit access road where PRFD has been able to relocate all their equipment. PRFD conducted a test to ensure the water pressure would be sufficient for fire suppression activities. The test was successful and removal operations began around 1400. A portion of the top and side of the pile was successfully removed. There was not much rubber material observed in this area, however some metal belts and wires were encountered. The material is also extremely hot.

RST 2 conducted air monitoring operations. Air monitoring for VOCs, SO2, NO2, H2S, CO, O2, LEL and total particulates was conducted during the operations and are uploaded to VIPER. Elevated concentrations of total particulates were observed at one monitoring location near the removal operations. No other elevated concentrations were observed.

EQB is conducting air monitoring operations within the communities located near the site. No elevated concentrations were reported.

In discussions with EPA management and OSC Rodriguez, it was decided to conduct air sampling on site for asbestos. There are concerns based on the proximity of this site to the Puerto Rico Olefins site. RST 2 will conduct the sampling.

OSC Kahn canceled the FPN request.

On Saturday, 4/5/2014, removal operations of the smoldering tire pile continued. PRFD is providing fire suppression support. All activities to date have been successful. EQB removed seven more truck loads of the remaining tires. RST 2 continued air monitoring activities and EQB continued air monitoring activities within the communities. RST 2 conducted air sampling activities for asbestos.

On Sunday, 4/6/2014, removal operations of the smoldering tire pile continued. PRFD is continuing to providing fire suppression support. RST 2 continued air monitoring activities and EQB continued air monitoring activities within the communities. Removal of the pile is approximately 40% complete.

During this reporting period, 4/7/2014 - 4/11/2014, removal operations of the smoldering tire pile continued. PRFD continued providing fire suppression support. RST 2 continued air monitoring activities and EQB continued air monitoring activities within the neighboring communities.

EQB was unable to continue removal operations of the remaining tires on site due to equipment issues at the recycling facility. The tire removal operations are scheduled to resume on Tuesday, 4/15/2014.

A public meeting was held on 4/9/2014 with representatives from EQB, PRFD and Ramon Torres and Jose Font as representatives attending as representatives from EPA.

ERRS collected samples of the stock piled soil and runoff water for TAL Metals, TCL VOCs, SVOCs, DRO, GRO, TPH analysis in addition to the required disposal analysis. Results are anticipated early next week.

Results for the TEM analysis for asbestos were negative.

OSC Lucarino is demobing today, 4/11/2014 and will be replaced by OSC Kahn on 4/15/2014. ERRS and PRFD will not resume work until 4/15/2014.

OSC Kahn has replaced OSC Lucarino on Site as of 4/15/2014. Removal operations continue. ERRS is removing approx. 500 cu. yds. of burned/burning tires/metal wires each day and stockpiling debris on Site. It is estimated that 7,000 cu. yds. of waste has been generated. So far very little actual pieces of rubber tires have been excavated. The material is essentially a mass of wire mesh intertwined with burnt soil and pieces of carbon (carbon black from tires). Analytical results of composite samples of the debris being excavated passed TCLP testing for RCRA regulated wastes. Although total metals for lead, cadmium and chromium was high, and the pH (11.6) is close to being RCRA Corrosive, *extractable* contaminants are less than regulatory standards. A second set of confirmatory composite samples was taken; those results are pending.

The PRFD has been applying water to the excavation as needed by the operator. It is estimated that more

than 2 million gallons of water have been applied to the excavation, most of which has turned to steam when it hits the 300F+ dirt and wire bands. Analysis of collected run-off water reveals no levels of contamination above applicable standards. This water is being reapplied to the excavated area to recycle and conserve water. Final run-off that is collected will be re-sampled and disposed of as regulated waste if necessary.

EQB trucking contractor has completed removal of all unburned scrap tires from the Site, eliminating the potential threat of another tire fire. It is estimated that 12,000 tires have been transported from the Site to a recycling facility for further processing.

Removal operations will be curtailed on Saturday and Sunday as the PRFD will not be on Site those days. ERRS will use this time to reposition and reshape the pile of excavated debris and perform general site/equipment cleaning/maintenance.

Air monitoring at four locations around the Site revealed no measurable impacts for pollutants of concern.

An EPA attorney from ORC has been assigned to this Site.

As of 1000 hours on 4/24/14 the pile of smoldering tires has been extinguished. There are no remaining areas in what used to be the pile that are smoldering. Likewise, there is no threat of the pile re-igniting.

The PRFD has demobed it's personnel and equipment from the Site.

ERRS will now transition into backfilling the excavated material and closing the open pit where the tire pile used to be located.

Air monitoring results for PM only shows spikes less than 3,500 micro grams per cubic meter, much less than was being generated when excavation activities were on-going.

On 4/24/14 the OSC met with Julio Gonzales, the former operator of the IWM facility. The OSC gave Mr. Gonzales a brief tour of the Site and he seemed favorably impressed with the accomplishments. Afterwards a brief meeting was convened with Mr.Gonzales and he was told about the information request/cost recovery process that EPA will be initiating. Contact information for the EPA-ORC attorney assigned to this Site was provided to Mr. Gonzales.

At 0730 hours on 4/25/14 ERRS began relocating stockpiled non-hazardous tire fire debris/soil to a designated area approx. 50 yards away from the stockpile. Prior to EPA initiating this removal action that area of the Site was a gouged-out section of a hillside that was filled with approx. 12,000 scrap tires abandoned by IWM in 2006. In connection with this removal action the PREQB transported those tires to a recycling facility for subsequent export. The back-fill will be sloped and covered with fresh dirt to match the surrounding terrain rendering it topographically-correct. ERRS will continue to relocate backfill until the area is restored. Excess backfill will be put back from where it had been removed. The remnants of that original pile will be contoured and also covered with fresh dirt. The earthen containment berm surrounding the tire fire pile was collapsed into the excavated pit .

Inasmuch as there is no further excavation work being done, as of COB 4/24/14 air monitoring activities performed by EPA contractor, Weston Solutions, Inc., was discontinued. Weston cleaned the instruments and shipped them back to Edison. As such, the VIPER air monitoring uplink from the Site has been shut down. ERRS will make every effort to minimize airborne dust from roadways during the backfilling process.

Security guard service remains in effect from 6PM to 7AM daily.

OSC Kahn will transition back to NJ on 4/28/14 and will be replaced on-Site by OSC Lucarino on 4/29/14 to continue the removal action.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The OSC has met with one of the former owners/operators (PRP) of the defunct tire processing business and obtained access to perform the current activities. The PRP has stated his willingness to cooperate with EPA to resolve the problem.

The PRP has offered to contact the local cement manufacture to get the company to take the piles of shredded, unburned tires to use as a supplemental fuel. As of the date of this POLREP the OSC has not heard back from the RP on the status of that offer. Additional information pertaining to other PRPs will be forthcoming.

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*
tire fire debris	solid	7,200 cu. yds.	non-hazardous	none	backfilled on Site
fire fighting run-off water	liquid	54,000 gals	non-hazardous	none	recycled onto tire fire pile

2.2 Planning Section

2.2.1 Anticipated Activities

See Planned Activities Below.

2.2.1.1 Planned Response Activities

Backfill areas of the Site with non-hazardous excavated material and collapse remains of tire pile into the hole that was created. Swale the back-fill, cover with fresh soil, and sow grass seed on top if practicable.

2.2.1.2 Next Steps

Continue coordinating with the EQB to complete removal operations.

2.2.2 Issues

No major issues encountered.

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

Puerto Rico Environmental Quality Board

Puerto Rico Dept. of Natural Resources

4. Personnel On Site

One EPA OSC

One tech with Weston Solutions, Inc., an EPA technical assistance contractor.

Seven response contractor personnel with Kemron Environmental Services Inc.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.