

Chapter 62 addendum

Reports and a lawsuit

The status of the former Columbia Falls Aluminum Co. smelter plant in Montana as a Superfund site was well entrenched by 2017, as lawyers directed scientists to dig deep into concerns about potential pollutants leaving the site. The reports grew larger and more complex over time, while the plant's infrastructure shrank – buildings were removed and potroom basements were filled. During all this time, a Montana state health agency took a look at cancer threats in the Flathead Valley and Glencore, through its proxy the Columbia Falls Aluminum Co., sued Atlantic Richfield, by that time owned by British Petroleum, seeking funds to pay for expensive cleanup operations. The main threat was contaminated groundwater moving toward the Flathead River from improperly constructed landfills used for decades to hold spent potliner. CFAC claimed it had stopped dumping spent potliner after it bought the plant from ARCO in 1985, and that ARCO was responsible for any spent potliner or other hazardous materials dumped in the landfills prior CFAC's operations. ARCO denied the allegations.

Complex studies

Roux released its Sept. 18, 2017 Screening Level Ecological Risk Assessment Report on the CFAC Superfund site in mid-January 2018. The 351-page report could be downloaded from a CFAC website maintained by Ann Green Communications. The report by Michael Ritorto and Andrew Baris evaluated the potential risks to ecological receptors from materials released or disposed of at the former smelter site. The purpose of the assessment, in accordance with EPA guidance for Superfund sites, was to provide risk managers with sufficient information to determine what remedial actions were necessary to protect the environment from chemicals of potential ecological concern (COPECs) or other hazards at the site. The report relied on information gathered for Roux Associates' Phase 1 Site Characterization Report, including soil, sediment, groundwater and surface water sampling. The study site included 1,340 acres of Glencore's 3,196-acre property, including the footprint of historic industrial operations roughly bounded by the Cedar Creek Reservoir Overflow Ditch to the north, Teakettle Mountain to the east, the Flathead River to the south and Cedar Creek to the west. The site included seven closed landfills, one active landfill, material loading and unloading sites, two closed leachate ponds, and several percolation ponds. ¹

Water level data collected in summer 2016 for the Phase 1 Site Characterization Report when the Flathead River was at low flow indicated that the river was receiving groundwater from the upper hydrogeological unit beneath the CFAC site, the risk report stated. Based on the topography, Cedar Creek was within half a mile of the CFAC site but was at a higher elevation than the groundwater elevations at the site, indicating the creek was a perched or losing stream rather than a gaining stream. The overflow ditch also was higher than groundwater elevations at the site, indicating the ditch also could be a losing stream. The South Percolation Ponds were three ponds connected in series and adjacent to the Flathead River, measuring 2.4, 1.2 and 6.6 acres in size. Historically, the ponds received water from numerous sources, including the plant's sewage treatment plant, contact water from the casting plant's direct-chill equipment, non-contact cooling water, process wastewater from casting-mold cleaning, non-process wastewater from the fabrication's shop steam cleaning, and stormwater drainage. At the time of the sampling by Roux, only stormwater discharged into the South Percolation Ponds. ²

The North Percolation Ponds included two interconnected wastewater ponds. The two-acre Northeast Percolation Pond was built in 1955 and continued to be a discharge point for stormwater drainage. The Northeast Percolation Pond had received water from the Paste Plant's briquette production system; non-contact cooling water; non-process wastewater from the mason shop, battery shop and garage; wastewater from the garage's steam cleaning and anode pin steam-cleaning; boiler blowdown from the laboratory building; air conditioner condensate; Paste Plant wet scrubber blowdown until 1999; the cathode soaking pits prior to 1978; and process area stormwater drainage. The eight-acre Northwest Percolation Pond had received water from the Northeast Percolation Pond through a 1,440-foot long unlined ditch. Based on aerial photography, Roux suggested the Northwest Percolation Pond may have been constructed in 1972. The Northern Surface Water Feature was a seasonal ponding area discovered during the May 2016 habitat assessment. Located just south of the West Landfill, the feature was seasonally fed in the spring and early summer by at least two groundwater seeps north and west of the feature. ³

In developing a conceptual site model for the risk report on the Superfund site, Roux addressed ecological fate, transport pathways and media of concern; exposure pathways; key receptors; and assessment endpoints and measurement endpoints. Reconnaissance indicated that the site contained several functional terrestrial and

aquatic habitats. Roux Associates noted that according to the EPA, the “most significant exposure route for wildlife is ingestion of chemicals in impacted media.” Wildlife could ingest chemicals by drinking surface water or by incidentally ingesting contaminated soil or sediment while grooming or foraging. These ingested chemicals could bioaccumulate in the tissues of plants and animals. The EPA had developed a list of persistent bioaccumulative and toxic chemicals, which included polycyclic aromatic hydrocarbons (PAH), which were commonly emitted at the CFAC plant by the manufacture of anode briquettes and the burning of Soderberg anodes. The primary aquatic pathway of potential concern was the potential presence of COPECs either adhered to the sediment or dissolved in the surface water of the Flathead River. One area where groundwater from beneath the plant site seeped into the river already had been defined by CFAC’s Montana Pollutant Discharge Elimination System permit, so another area where groundwater seeped into the river was labeled by investigators as the Backwater Seep Sampling Area. ⁴

According to Roux Associates, dissolved COPECs in groundwater will tend to remain in the dissolved phase where there are coarse-grained sediments with little organic material, but groundwater-borne COPECs could adhere to sediment in fine-grained or organic-rich sediments. Whether the COPECs remained dissolved or adhered to sediments also depended upon chemical characteristics of the hazardous materials. According to Roux Associates, cyanide and metal-cyanide anions, as well as dissolved metals, “may adsorb onto oxide minerals or clays with high anion exchange capacities.” Roux noted that “the primary mechanism by which chemicals may migrate from sediments at this site would be through physical disturbance, including periods of high river discharge.” Another potential migration pathway to the sediments and surface water of the Flathead River would be through stormwater runoff, specifically by the Cedar Creek Reservoir Overflow Ditch, the report said. ⁵

Roux concluded in the risk report that, “Based on these findings, it is not anticipated that COPECs present in groundwater discharging to the Flathead River from the site would have a significant impact to the sediment due to the absence of fine-grained material, with the exception of the groundwater discharging in the Backwater Seep Sampling Area.” Roux also noted that whereas Cedar Creek was at a higher elevation than the groundwater at the CFAC site, and while there was no evidence of COPEC migration in Cedar Creek, “there is the potential for stormwater runoff from the industrial landfill area towards Cedar Creek.” Roux noted that the conclusions found in the Screening Level Ecological Risk Assessment report were “insufficient to

dismiss potential ecological risk, and further data gathering or data analyses is recommended to better understand the risk.” The company proposed to conduct a COPEC refinement investigation. ⁶

Roux Associates also released its Sept. 18, 2017 Phase 1 Site Characterization Data Summary Report for the CFAC Superfund site in mid-January 2018. This was the final version of the Feb. 27, 2017 report, and the 7,415-page report also could be downloaded from a CFAC website maintained by Ann Green Communications. According to Roux, the conceptual site model presented in the EPA’s remedial investigation and feasibility study work plan had identified the landfills at the site as a potential source for cyanide and fluoride and potentially other chemicals of potential concern (COPCs). The area of elevated cyanide and fluoride concentrations in groundwater within the upper hydrogeological unit appeared to originate immediately to the west of the Wet Scrubber Sludge Pond, where concentrations of cyanide and fluoride each exceeded 5,000 micrograms per liter. This area of maximum concentration was located immediately downgradient of the West Landfill and the Wet Scrubber Sludge Pond. ⁷

Roux noted that this finding was consistent with historical use of these features as disposal locations for cyanide in spent potliner dumped in the West Landfill and fluoride contained in the calcium fluoride sludge dumped in the Wet Scrubber Sludge Pond. In addition, Roux noted, both landfills were unlined and the West Landfill was not covered with a clay cap until 1995. Roux also noted that groundwater elevations in the upper hydrogeological unit adjacent to the West Landfill could fluctuate by more than 50 feet seasonally, indicating the potential for groundwater to rise above the base of the West Landfill. Groundwater sampling elsewhere led Roux to conclude that the Sanitary, Center and East landfills were not contributing sources for cyanide or fluoride to groundwater. Soil sampling around the West Landfill and Wet Scrubber Sludge Pond contained concentrations of cyanide, fluoride and polycyclic aromatic hydrocarbons (PAHs). The concentrations were similar to concentrations found in soil sampled around the Paste Plant, Main Plant and railroad sidings and could be explained as resulting from historical waste-handling practices near the landfills and by aerial deposition of COPCs from historical plant emissions, Roux said. ⁸

The Former Drum Storage Area became a feature of concern to the investigators after samples from a well drilled in the center of the storage area were found to contain the highest concentration of cyanide at the plant site – a September 2016 sampling contained 7,320 micrograms per liter. The storage area could be a contributing source to elevated cyanide and fluoride concentrations in the landfill

area, Roux said. The North Percolation Ponds were also a feature of concern to the investigators. Soil and sediment samples from the Northeast Percolation Pond and its influent ditch contained among the highest concentrations of cyanide and PAHs, followed by the effluent ditch, the connected Northwest Percolation Pond and the West Pond. Roux noted, however, that COPC concentrations decreased with increased depth in the soil sampled around the North Percolation Ponds. Both the Northeast Percolation Pond and the West Percolation Pond were hydraulically downgradient of the West Landfill and the Wet Scrubber Sludge Pond. Soil samples taken around the CFAC site contained concentrations of cyanide and fluoride that typically exceeded the EPA's protection of groundwater risk-based soil screening levels but below the EPA's industrial regional-screening levels at all locations and below the EPA's residential regional-screening levels at all locations but two. Soil samples from across the plant site also contained PAH concentrations that exceeded the EPA's industrial regional-screening levels. ⁹

In its discussion of cyanide, Roux noted that prior studies of spent potliner leachate had documented that cyanide at aluminum smelter sites existed primarily in the form of iron-cyanide complexes. "Typically, ferrocyanide and ferricyanide are more stable in the environment (tend not to release free cyanide and are less bioavailable)," Roux said. "Thus, any potential for effects due to cyanide exposure is likely to be overestimated, as free cyanide would only comprise a fraction, if any, of the total cyanide present." Roux, however, said it would continue to look for free cyanide in future sampling. In its discussion of volatile organic compounds, including benzene, toluene, ethyl benzene and xylene, together grouped as BTEX, Roux noted that the widespread occurrence of acetone in soil samplings may have resulted from laboratory contamination. The widespread distribution of volatile organic compounds in general across the CFAC plant site was similar to that of PAHs and was likely the result of the use of petroleum coke and coal tar pitch at the smelter, Roux suggested. ¹⁰

Multiple metals were detected in site-wide soil sampling at concentrations that exceeded the EPA's residential regional-screening levels, including aluminum, iron, cobalt, manganese and thallium, Roux said. Based on background sampling and statistical data analysis, those metal concentrations were likely background concentrations, Roux suggested. However, certain metals were found at higher concentrations than background levels within the North Percolation Ponds and the ditch connecting the two ponds. Soil sampling also was conducted in the plant's switchyards because of past transformer fires

in the historical record. The low occurrence of chemicals that could be generated by the combustion of polychlorinated biphenyls (PCBs commonly found in electrical equipment) during a transformer fire, however, suggested that dioxins and fibenzofurans no longer needed to be retained as a COPC in future study of the Superfund site. ¹¹

Groundwater sampling indicated a southerly flow pattern in the upper hydrogeological unit, but also that the impacted groundwater had not migrated beneath Aluminum City and other neighboring residential areas and was not migrating in that direction. Well sampling also indicated only limited, if any, hydraulic connectivity between the upper hydrogeological unit and the water-bearing zones in the underlying glacial till, Roux reported. While the presence of some metals in the groundwater was attributed to the same source as cyanide and fluoride – that is, the landfills – sampling indicated that metals in groundwater had not migrated as far as cyanide and fluoride. Groundwater sampling also indicated that PAHs, while common in surface soil samples, had not impacted groundwater. Roux also noted that the Cedar Creek Reservoir Overflow Ditch lost water to the area directly adjacent to the West Landfill and Wet Scrubber Sludge Pond, and this water could get into the upper hydrogeological unit and contribute to groundwater flow at the plant site. ¹²

Surface water samples from the South Percolation Ponds adjacent to the Flathead River contained maximum concentrations of cyanide at 12.5 micrograms per liter and of fluoride at 379 micrograms per liter, but cyanide had not been detected in the discharge from the ponds since October 2015. Sediment was not observed at most sampling locations along the river because of the fast-flowing nature of the river. Roux also noted that the water level in the South Percolation Ponds correlated closely with surface water elevations in the Flathead River, indicating a hydraulic connection between the two water bodies. Roux concluded that preliminary findings indicated that elevated levels of cyanide and fluoride in groundwater, the Backwater Seep Sampling Area and the South Percolation Ponds “are not significantly impacting surface water quality within the main stem of the Flathead River.” Further sampling and evaluation would be conducted, Roux said. ¹³

Demolition and cancer

By January 2018, demolition had begun on Potroom 5 at the CFAC site. Demolition of the North Crane Bay structure and Potrooms 1 through 4 were completed. ¹⁴ On Jan. 31, 2018, the Hungry Horse News reported on past work at the CFAC Superfund site and future plans. Cirian told the newspaper eight more monitoring wells would be drilled across the

900-acre site, and wells located at the southeast end of the site would be tested in 2018. Two of the new wells would be drilled near the Aluminum City residential area. In 2017, crews obtained 520 soil samples, 12 sediment samples, 87 surface water samples and 242 groundwater samples. Cirian said sampling in 2018 would take place during high water, likely in June, and during low water, likely in the fall. Investigative work would be done at several water-production wells in the southeast corner of the site, including pulling the pumps. Former CFAC workers had criticized the EPA for not having those water-production wells tested. Cirian also reported that crews had shored up a coffer dam along the Flathead River that protected CFAC's settling ponds along the river. About 30 feet of river bank washed out in spring 2017, so the EPA decided to bolster the coffer dam with rip-rap. Roux Associates also had recently released two important reports on the Superfund site – the Screening Level Ecological Risk Assessment Report and the Final Phase 1 Site Characterization Data Summary Report, the newspaper reported. ¹⁵

In the meantime, concerns had been raised by a doctor in Whitefish about a spike in cancer cases in Flathead County that could be linked to emissions by the CFAC smelter or by Plum Creek Timber Co.'s medium-density fiberboard plant. The MDF plant had emitted large amounts of formaldehyde until the company installed a \$9.5-million biofilter in 2008. According to statistics provided in February 2018 by Heather Zimmerman, an epidemiologist at the Montana Department of Public Health and Human Services, Cancer Control Programs, Flathead County had a statistically and significantly higher incidence rate of cancer per 100,000 people than Montana from 2011 to 2015 in four age-adjusted categories – all sites (533.8 to 451), prostate (158.9 to 112.2), lung (64.9 to 55.9) and melanoma (36.3 to 25.9). ¹⁶

“Flathead County does have a higher cancer incidence rate than what we see in Montana overall,” Zimmerman said. “When I look at the incidence rate for the 10 most common types of cancer in Montana, we can see that this increased cancer rate is probably because of an increase in prostate cancer, lung cancer, and melanoma.” Zimmer said the tumor registry could not explain why these cancers were occurring more often in Flathead County residents, and her agency didn't collect any information about potential risk factors or environmental exposures in the registry data. “However, when we look at the rate of deaths due to cancer, we can see that the rate of death is the same in Flathead County as in Montana overall for all cancers and for the 10 most common types of cancer,” Zimmerman said. “This tells us that the increased incidence is likely not due to more severe cases of cancer occurring in Flathead County. The increased incidence may be

because of more screening (especially for prostate cancer) or more aggressive diagnosis that finds early cancers or slow-growing cancers that would not ultimately progress to more severe disease and death.”

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Zimmerman said the Montana Environmental Health Assessment and Education program, which is part of her agency, was working on an assessment of public health risks from the CFAC site. “They have reviewed all of the environmental data that has been collected thus far on the site,” she said. “Next they will estimate the amounts of contaminants workers and trespassers might have taken in from touching surface soil and sediments and accidentally swallowing them from hand-to-mouth contact.” The Environmental Health Assessment and Education program staff also would estimate residents’ past exposure levels from drinking tap water with cyanide levels found in off-site private wells in 2013. “They call these completed exposure pathways - the means by which people might take in site-related contamination,” Zimmerman said. “Only then can they determine what adverse health effects might be expected from these estimated exposure levels, by comparing them with levels known to cause illness from animal and medical studies.” Contaminant levels measured in surface water and most groundwater samples would only pose a risk if people used this water as a drinking water source, she noted. Because of the known emissions of polycyclic aromatic hydrocarbons by the CFAC smelter, the Environmental Health Assessment and Education program staff “will recommend testing of off-site yard surface soil for PAHs, as currently no such testing has been done,” Zimmerman said. “They will also recommend continued testing of nearby off-site drinking water wells.”¹⁸

In April, IRS Environmental reported to the Montana DEQ that 69,900 pounds of regulated asbestos waste had been removed from the CFAC site since demolition began. Another 635,380 pounds of non-regulated asbestos material was removed in March 2018, bringing the total of non-regulated asbestos material removed since demolition began to 5.5 million pounds. The materials came from the West Rectifier, Rod Mill, Paste Plant, Quonset Hut, West Aluminum Unloader, Compressor Building, Laboratory, Building 1 (the 10 potrooms) and the Changehouse. The asbestos project permit and demolition notification for Building 1 was extended by the DEQ through August 2018.¹⁹

On May 9, 2018, more than 50 people attended a presentation and tour led by the EPA, Roux Associates and CFAC to learn about progress at the CFAC Superfund site. During demolition, more than 29,000 tons of hazardous materials had been removed, and more than 131,000

tons of materials were recycled. Project managers said the 10th and final potroom would be dismantled by early 2019. The fabrication building, warehouses and main office building would remain standing for use by any industrial businesses that occupied the site after the site was cleared by the EPA, which officials said would be no earlier than 2021. ²⁰ CFAC environmental project manager John Stroiazzo said the company received about three to four inquiries each month from companies interested in using one of the buildings still standing at the CFAC site. "They're good buildings," Stroiazzo said. "They could be renovated and used for something." He noted that the fabrication building had rail service. ²¹

EPA project manager Mike Cirian told the tour group that the potroom basement floors had been punctured so water could drain through them. The concrete walls and floors of the basements had been tested, and no contaminants had been found. About 450,000 cubic yards of material mined from the CFAC site would be used to fill the basements. The potrooms should be gone by November or December 2018, and the entire demolition should be completed in the first quarter of 2019, Stroiazzo said. Mike Ritorto said Roux Associates planned to take 425 additional soil samples in 2018, along with 33 sediment samples, 50 pore water samples from sediment, 152 groundwater samples and 103 surface water samples. Plans also called for conducting a background study using soil and water collected off the site. Questions were also asked about the future of the Gateway to Glacier Trail planned to run along the south side of the Flathead River opposite from the CFAC plant site. The land on both sides of the river at that point belonged to Glencore, CFAC's owner. A licensing agreement had been negotiated between Glencore and the trail group, but when the group approached the city of Columbia Falls in spring 2018 about the city taking over long-term administration of the license, the city's insurance company said it wouldn't cover the proposed bike-pedestrian path. Justin Breck, the city's attorney, suggested that the trail group obtain an easement for the trail, which would be a real property right that insurance would cover. But when asked whether Glencore would grant an easement, CFAC president Cheryl Driscoll said the company had already spent a lot of time and effort on the license. "We're not in a position to grant an easement," Driscoll said. ²²

On June 5, 2018, EPA Region 8 Administrator Doug Benevento and Mike Cirian met with local officials in Columbia Falls to discuss the CFAC Superfund site. "One of the priorities we have is trying to move things along safely but also getting it done expeditiously," Benevento said. "We want to start bringing things to some sort of resolution so that people can move on." Benevento said the EPA wanted to enact a

remedy that protected both human health and the environment. "It appears to me that things are going pretty well, though our job is to trust by verify and make sure that things are moving forward the way they should be moving forward," he said. The process the EPA was taking to identify any contaminants at the CFAC site and to find their source was a lengthy one, but Columbia Falls City Manager Susan Nicosia said she wanted it to be done right the first time. "We don't want people sitting around this table years down the line surprised that there is water contamination and wondering why we missed it," she said. "We all share this water, and we certainly don't want contaminated water 25 years from now." ²³

City councilors present at the meeting said they wanted information provided to the public in a way that could be easily understood and in a way that would quell rumors. "With the innuendos and the rumors and half-truths and the outright bald-face lies that float around, there is an undercurrent of 'what if,'" Councilor Mike Shepard said. "It has more than one person concerned, because half of them don't know a damn thing about what they are talking about, but they are relying on that crazy information that is out there." To address how information was provided to the public, the EPA and local officials discussed the use of a Technical Assistance Group, which would hire an expert to break the large amount of technical data down into simpler-to-understand terms. "I think a technical assistance grant makes some sense for this community," Benevento said. ²⁴

Shepard noted that testing so far had done a good job of identifying some of the contaminated sites at the CFAC plant, but investigators needed to talk to former employees whose job had been to bury materials at the plant. "The only people that buried stuff at this plant were the materials department and the service crew," Shepard said. "When things happened, the order was to get rid of it immediately. The ex-employees that know where things are felt that no one listened to them when they came to initial meetings, so they quit coming. There are some that could tell you where things are." Benevento acknowledged that Shepard's suggestion could be a worthwhile avenue to pursue, and he noted that the cleanup project would continue to do everything in its power to identify and locate all possible contaminants. Cirian spoke of the possibility of dividing the cleanup project into "operable units" that would allow specific problems to be dealt with if a simple solution was available. "Just because we are still investigating doesn't mean we can't solve problems as we find them," he said. Benevento elaborated on that approach. "We are looking at adaptive management approaches, where we can see some progress,

not just constant study followed by work,” he said. “We are trying to be quick, smartly. That is what we are trying to implement.” ²⁵

CFAC sues ARCO

The Superfund drama took a new direction on July 13, 2018, when CFAC filed a complaint against ARCO in U.S. District Court in Missoula, Mont. claiming damages at the Superfund cleanup site in Columbia Falls caused by ARCO dumping hazardous materials in the smelter’s landfills. Local newspapers in the Flathead Valley reported the story in front-page articles. According to CFAC’s complaint, ARCO dumped many tons of spent potliner in the west and center landfills, and CFAC never dumped materials in either of them. CFAC also claimed millions of gallons of water used to cool spent pot bottoms or discharged from wet scrubbers went to percolation ponds on the plant site. ²⁶ On Aug. 8, 2018, the Hungry Horse News reported that EPA project manager Mike Cirian said CFAC’s lawsuit should not delay the cleanup at the former aluminum smelter. Cirian said the lawsuit was not uncommon in Superfund cleanups, and by the time the remedial investigation and feasibility study of the site was completed in a few more years, the lawsuit might have already gone through the federal court system. ²⁷ Judge Donald W. Molloy was assigned to the case, and the Browning Kaleczyc Berry & Hoven law firm of Bozeman, Mont. represented CFAC. According to the court docket, CFAC filed 26 exhibits, including reports on spent potliner, production and consumption; hydrological data and analytical reports; reports on dry scrubber operations and stormwater pollution prevention; agreement and plan for merger of the Anaconda Company and ARCO; and letters between CFAC and state or federal officials. ²⁸

CFAC filed the complaint against ARCO under the Comprehensive Environmental Response, Compensation and Liability Act and the Montana Comprehensive Environmental Cleanup and Responsibility Act. CFAC sought a contribution from ARCO for expenses that CFAC had incurred and would continue to incur in the future by responding to releases or threatened releases of hazardous substances at the former smelter site near Columbia Falls. According to complaint, ARCO or its corporate predecessor, the Anaconda Company, owned and operated the site from 1955 to 1985 and was responsible for the disposal and release of significant amounts of hazardous substances, including cyanide, fluoride and polycyclic aromatic hydrocarbons. “To date, ARCO has refused to contribute toward any portion of the response costs that CFAC has, and will incur,” the complaint said. From 1955 to 1985, the Anaconda Company and ARCO produced 3,523,501 tons of aluminum. According to the complaint, ARCO sold the plant in 1985 to the

Montana Aluminum Investors Corp., which became CFAC Montana in 1989. CFAC Montana produced 2,380,973 tons of aluminum from 1985 through 1998. Glencore, operating under the name CFAC, acquired the plant in 1999. CFAC produced 810,755 tons of aluminum from 1999 to 2009.²⁹

“Both CFAC Montana’s and CFAC’s production of aluminum at the site caused substantially fewer releases or threatened releases of hazardous substances than ARCO’s ownership and operation of the site did,” the complaint said. The Anaconda Company’s and ARCO’s operation of the smelter created several waste streams which ended up in various landfills, ponds and other areas on the plant site. From 1955 to 1970, the Anaconda Company disposed of about 50,000 tons of spent potliner into the West Landfill while spilling waste material around the landfill. ARCO closed, capped and revegetated the West Landfill in 1981 and no more materials were disposed there. From 1970 to 1980, ARCO disposed of 50,000 tons of spent potliner in the Center Landfill while spilling waste material around the landfill. ARCO closed, capped and revegetated the Center Landfill in 1981 and no more materials were disposed of there. From 1955 through 1978, the Anaconda Company disposed of sludge from the pot gas wet scrubbers in the Wet Scrubber Sludge Pond. The wet scrubbers were replaced with dry scrubbers by 1978 and no more waste was sent to the Wet Scrubber Sludge Pond, which was closed in 1981.³⁰

From 1964 to 1977, the Anaconda Company soaked failed cathode pot bottoms in a pit to cool the spent potliner before it was disposed of in the West Landfill and the Center Landfill, according to the complaint. About 180 million gallons of water used to soak the cathodes was disposed of in the North-East Percolation Pond. Discharge water from the Paste Plant wet scrubber also was disposed of in the North-East Percolation Pond. The Paste Plant wet scrubber was replaced with a dry scrubber using coke in 1999. During the time that the Anaconda Company and ARCO owned and operated the smelter, the plant used about 2,105,151 tons of carbon, which came to the Paste Plant in the form of petroleum coke, coal tar pitch and even anthracite coal. These materials were released during unloading and storage in uncovered piles around the Paste Plant. From 1963 to 1985, the Anaconda Company and ARCO disposed of water used for cooling in the Casting Plant and sewage treated in the plant’s sewage plant in the South Percolation Ponds, located along the Flathead River.³¹

Contrasting the Anaconda Company’s and ARCO’s practices, CFAC Montana and CFAC were more careful in disposing of hazardous materials, according to the complaint. CFAC Montana disposed of spent

potliner onsite from 1985 to 1990 in a landfill lined with a clay pad from two to five feet thick. The landfill was capped and revegetated in 1990, and spent potliner from then on was shipped off site to a landfill out of state. From 1999 to 2009, CFAC under Glencore ownership also disposed of spent potliner off site. According to the complaint, CFAC Montana and CFAC utilized the Sumitomo design reduction pots, which released less polycyclic aromatic hydrocarbon emissions to the air. The pot gas dry scrubbers also did a better job of controlling emissions of fluoride and PAHs than the wet scrubbers and did not produce a sludge that was discharged into the Wet Scrubber Sludge Pond.³²

CFAC under Glencore ownership also spent money investigating the site for cleanup. The EPA hired Weston Solutions Inc. to investigate the site, and a report was released April 4, 2014. CFAC participated in a teleconference with the EPA and Montana DEQ on May 23, 2014 and met with the DEQ in Helena on July 8, 2014. The DEQ sent an email to CFAC on July 31, 2014 notifying the company that CFAC was liable for remedial actions under CECRA. On Aug. 14, 2014, in response to these communications, CFAC hired Roux Associates to prepare a remedial investigation and feasibility study work plan for the site. Cooperation between CFAC and the state of Montana deteriorated at that point. "Unable to agree to an administrative order on consent with Montana DEQ, however, CFAC reached out to EPA in November 2014 to note its desire to begin discussions about entering into an administrative order on consent with EPA regarding assessment activities at CFAC," the complaint said. "Negotiations with Montana DEQ ended in December 2014."³³

According to the complaint, CFAC contacted ARCO on Feb. 25, 2015 to notify them that CFAC was beginning to negotiate an administrative order on consent with the EPA to address contamination identified at the site. "In that same letter, CFAC told ARCO that it welcomed any views that ARCO had with respect to the site," the complaint said. On June 8, 2015, CFAC contacted the EPA to reiterate its interest in discussing an administrative order on consent and to notify the EPA that CFAC had already prepared a remedial investigation and feasibility study work plan for the site. The next day, the EPA sent a letter to ARCO and CFAC demanding that both companies were potentially responsible parties and should pay the response costs the EPA had incurred so far at the site. The EPA also asked ARCO and CFAC to "voluntarily negotiate a consent order" in which both parties "perform a remedial investigation and feasibility study .. under EPA's oversight at the site," according to the complaint. CFAC accepted the EPA's invitation to negotiate an administrative order on consent on June 25, 2015. That same day, ARCO rejected the EPA's invitation to engage in

negotiating the administrative order on consent, “leaving 100 percent of the burden and financial costs on CFAC,” the complaint said. “To date, ARCO has refused to reimburse CFAC for any of the pre-AOC costs.” Furthermore, ARCO refused to reimburse the EPA for any of its expenses incurred to date, despite the EPA’s demand for ARCO to do so. The EPA’s costs had reached \$743,133 by that time.³⁴

The EPA approved CFAC’s remedial investigation and feasibility study work plan on Nov. 23, 2015 as prepared by Roux. CFAC entered into an administrative order on consent with the EPA on Nov. 30, 2015. Roux’s work plan identified several sources and pathways for contaminants of potential concern (COPCs) – cyanide, fluoride and PAHs, which qualified as hazardous substances under CERCLA. “Each of the specific areas where COPCs are found at potentially hazardous levels are all closely associated with ARCO’s historic ownership and operation of the site,” the complaint said. Roux’s groundwater sampling indicated that the highest concentrations of cyanide and fluoride were found next to the West Landfill and Wet Scrubber Sludge Pond. “ARCO is solely responsible for depositing the material that are the likely sources of this contamination,” the complaint said. “ARCO disposed of over 50,000 tons of (spent potliner), which contains cyanide and fluoride, into the West Landfill.” Furthermore, Roux determined that “the soils around the landfills have likely been impacted by the historical waste handling practices around the landfills and by aerial deposition of COPCs (like PAHs) from historical plant emissions,” the complaint quoted Roux. The same situation was described at the Center Landfill and the Wet Scrubber Sludge Pond, where the calcium fluoride sludge from the pot gas scrubbers that was pumped into the pond contained elevated levels of PAHs.³⁵

According to the complaint, CFAC had spent at least \$7 million in response costs to date and would incur additional costs under the administrative order under consent. These costs would include data collection, human risk assessment, site reconnaissance, well monitoring, sediment sampling, groundwater sampling surface water sampling, ecological screening, assessment of treatment technologies, and further analysis of alternative remedial methods. “ARCO has refused to reimburse CFAC for any of the (administrative order on consent) costs incurred to date,” the complaint said. CFAC’s first claim for relief was for cost recovery based on CERCLA and incurred in connection with the investigation, assessment and monitoring of the site. CFAC’s second claim for relief was for contribution under CERCLA for ARCO’s equitable portion of the response costs. CFAC’s third claim for relief was for a declaratory judgment based on the belief that “the extent and magnitude of the contamination in, around and under the

site ... is not yet fully known, and because the contamination has not yet been fully mitigated, CFAC will incur further necessary response costs, which may include (but not be limited to) additional investigatory, remedial and removal expenses,” the complaint said. “There is a present and actual controversy between CFAC and ARCO concerning their respective rights and obligations with respect to the response costs associated with the releases of hazardous substances at the site,” the complaint said. CFAC’s fourth and fifth claims for relief were similar but based on Montana’s CECRA laws. In summary, CFAC sought damages and prejudgment interest to be proven at trial and a declaration that ARCO was responsible and liable for any and all remedial actions costs and responses at the site. ³⁶

Several observations could be made about the facts and claims made in CFAC’s lawsuit. For one, ARCO was no newcomer to CERCLA and CECRA actions in Montana – the Butte-Anaconda Superfund site in the Upper Clark Fork River Basin has been characterized as the largest and oldest Superfund site in the U.S. The EPA placed the Butte-Anaconda copper mining and smelting complex on the Superfund’s National Priorities List in September 1983. The Anaconda Company owned and operated the copper complex there since 1884, and ARCO became the responsible party because it acquired the Anaconda Company in the late 1970s. Thirty-five years after the site was placed on the National Priorities List, on July 28, 2018, the EPA, U.S. Department of Justice, State of Montana, Anaconda Deer Lodge County and ARCO reached a conceptual settlement framework that addressed final cleanup actions at the giant Superfund site. ³⁷ Furthermore, ARCO became a subsidiary of British Petroleum in 2000. Tony Hayward, who was CEO of British Petroleum at the time of the Deepwater Horizon oil spill in the Gulf of Mexico in April 2010, became chairman of the board of Glencore in May 2013. ³⁸

The lawsuit differentiated between CFAC Montana and CFAC. The former grew out of the Montana Aluminum Investors Corp., which was composed of two men – Brack Duker and Jerome Broussard – and which owned and operated the aluminum smelter outside of Columbia Falls from 1985 to 1989. According to the lawsuit, the Montana Aluminum Investors Corp. became CFAC Montana in 1989, although ownership continued to be by Duker and Broussard. Glencore acquired the smelter plant in 1999, at which point the lawsuit referred to the operating company as CFAC. The lawsuit also provided interesting figures for aluminum production at the plant – the Anaconda Company and ARCO produced 3,523,501 tons of aluminum from 1955 to 1985, the Montana Aluminum Investors Corp. and CFAC Montana produced 2,380,973 tons of aluminum from 1985 through 1998, and Glencore,

operating under the name CFAC, produced 810,755 tons of aluminum from 1999 to 2009. A correlation could be made between the amount of aluminum produced and the amount of hazardous materials handled, produced, released or emitted, but the lawsuit made the claim that CFAC employed better practices and procedures and relied on better pollution control equipment to limit releases or emissions.

But several points could be made about that claim – first, the lawsuit itself stated that CFAC Montana placed spent potliner in a clay-lined landfill from 1985 through 1990 that was later capped with a clay liner and revegetated. Some may argue that those hazardous materials should be removed from the smelter site and shipped to a certified landfill because their status will never be certain. Even if the plans for the landfill could be reviewed and the construction contractors interviewed to see if the landfill was well built, the landfill was perched above groundwater and the Flathead River and could be considered always at risk of leaking. CFAC did not name Duker or Broussard as responsible parties. Secondly, while the dry scrubbers used for pot gases were very efficient, nevertheless significant amounts of fluoride and polycyclic aromatic hydrocarbons continued to be present in the plant’s primary emissions from 1985 to 2009. And while the use of Sumitomo-type reduction pots reduced the amount of fluoride or polycyclic aromatic hydrocarbons escaping through the potrooms’ rooftop clamshell vents, nevertheless significant amounts of hazardous materials continued to be released as secondary emissions. The materials in primary and secondary emissions were deposited on the ground and surface water at the plant site and for miles around the plant – extending all the way to lakes in Glacier National Park where evidence of polycyclic aromatic hydrocarbons traced to the aluminum smelter has been found in sediment samples.

In March 2019, ARCO filed a motion in the CFAC v ARCO case seeking a dismissal on the grounds that when it sold the aluminum smelter in Columbia Falls to the Montana Aluminum Investors Corp. for \$1 in 1985, the buyer agreed to “indemnify and hold harmless ARCO for all contingent liabilities relating to the operation of the smelter business post closing.” Under the purchase agreement, ARCO claimed, CFAC couldn’t seek liabilities more than five years after the sale was completed. U.S. District Court Judge Donald Molloy ruled against ARCO’s motion on April 11, 2019. “CFAC’s indemnification obligation could reasonably be interpreted not to include pre-existing environmental conditions,” Molloy said in his ruling. He cited Stimson Lumber Co.’s lawsuit against International Paper Co. over disputed liabilities related to PCBs found in cooling ponds at the former timber mill site at Bonner, Mont. In that case, Stimson was not found to

expressly assume International Paper's environmental liabilities under CERCLA law. Molloy, however, noted that the indemnify provision in the sale of the aluminum smelter to CFAC was "ambiguous" and it was "not possible to ascertain the intent of the parties at this stage of the proceeding."³⁹

While the CFAC v. ARCO case was slated to continue, ARCO filed a counterclaim for \$160,000 in attorneys fees. In addition, ARCO noted that if it paid for cleaning up the landfills blamed for groundwater contamination, CFAC would be able to sell the site for a profit. "CFAC will benefit from any increase in the value of the property above the \$1 attributable to any cleanup," ARCO attorneys said. "It therefore should be allocated a share of the response costs accordingly." CFAC claimed in its initial filing that it had already spent \$7 million on demolition and investigations, and that more expenditures were expected.⁴⁰ According to the National Law Review report on Molloy's ruling, the decision "illustrates the challenges of contracting away CERCLA liability even when contractual negotiations occur between sophisticated parties."⁴¹

Under CERCLA, parties could assign environmental liabilities and CERCLA liabilities to other private individuals through an indemnification agreement. ARCO claimed that this was done in the 1985 sales agreement, in which it sold the smelter plant and related company assets to CFAC. Montana law governed the interpretation of the contract provisions at issue in this case. Citing case law, Molloy noted that to the extent that there was ambiguity, indemnity clauses generally should be liberally construed in favor of the party intended to be indemnified. Furthermore, if the language of a contract was ambiguous, a factual determination must be made as to the parties' intent in entering into the contract.⁴²

The 1985 sales agreement stated that CFAC would indemnify and hold ARCO harmless from and against "all damages, losses and out-of-pocket expenses arising out of the assumed liabilities, contingent or otherwise, relating to the operation of the smelter business after the closing date, other than obligations or liabilities as to which [ARCO] is obligated to indemnify [CFAC] pursuant to Section 10(a)(iii)." The closing date was Sept. 17, 1985. Section 10(a)(iii) of the sales agreement stated that ARCO would indemnify and hold CFAC harmless from and against "all damages, losses and out-of-pocket expenses... caused by or arising out of obligations or liabilities relating to the smelter business resulting from events or conditions in existence prior to the closing date." But, Molloy noted, according to the sales agreement CFAC could not make a claim with respect to ARCO's

indemnity in Section 10(a)(iii) after Aug. 31, 1990, that is five years later, except for tax matters.⁴³

As a result of that language, ARCO claimed CFAC assumed broad liability for all contingencies, including CERCLA liability, after Aug. 31, 1990. CFAC, however, claimed that the mere expiration of ARCO's indemnification obligation did not expand CFAC's indemnification obligation. Both parties also claimed that the plain language of the sales agreement unambiguously supported their claims. "The parties' arguments, however, emphasize that the agreement is susceptible to more than one reasonable interpretation, making it ambiguous," Molloy said. "And because that ambiguity cannot be resolved at this stage of proceedings, ARCO's motion is denied."⁴⁴

ARCO first argued that the "obligations and liabilities" for which CFAC sought contributions did not accrue until 2015, when the EPA issued an order in the Superfund cleanup matter, or in 2013 at the earliest, when CFAC first incurred investigation expenses in response to the EPA's inquiries. According to ARCO, "the CERCLA liability at issue and CFAC's contribution claim did not arise from pre-closing events, but rather from the EPA's post-closing CERCLA action." Molloy bluntly characterized this argument as "unpersuasive," particularly because the 1985 sales agreement referred to "events or conditions prior to the closing date." ARCO also argued that all liability for environmental conditions at the site shifted to CFAC five years after the closing date. But CFAC argued that "the mere fact that ARCO is not obligated to indemnify CFAC for a particular liability does not mean CFAC is obligated to indemnify ARCO for that liability."⁴⁵

"Contrary to the position taken by both parties, the plain language of the contract does not answer this question," Molloy said. The language used in the sales agreement "does not mention environmental liability," Molloy said. If the language of the sales agreement was broad enough, environmental liability could be considered included, Molloy said citing precedent. ARCO insisted the language in the sales agreement was broad enough, but the only reference to hazardous materials in the sales agreement dealt with permits for waste production and disposal, Molloy noted. According to language in the sales agreement, CFAC's assumption of liability was limited to operation of the smelter business after the closing date. "It is not clear that the parties intended pre-existing CERCLA liability to fall within the gambit of the smelter's future 'operation,'" Molloy said. The situation in the 2011 *Stimson Lumber Co. v. International Paper Co.* ruling in a lawsuit over PCB contamination at the former Bonner timber mill east of Missoula was similar, Molloy said. In that case, U.S. District Court

Judge Jeremiah C. Lynch denied summary judgment because the sales agreement between the two companies did not expressly state that Stimson was to assume International Paper's statutory environmental liabilities once the indemnification period ended. ⁴⁶

Cleanup progress

On Sept. 21, 2018, the Montana Department of Environmental Quality announced that Calbag Resources had completed cleaning all the reduction pots in the CFAC smelter building. An agreement between DEQ and Calbag in 2015 called for removal of hazardous potlining material from the 451 reduction pots in the smelter room. Consultant TetraTech submitted a closure report that included closure certifications, annual hazardous waste registration and a total project summary log of wastes disposed and recycled materials. About 415,881,518 pounds of waste had been removed from the plant site, including solid waste, asbestos, hazardous waste, universal waste and reused and recycled waste. "We are happy to have reached this milestone in the cleanup of the Columbia Falls Aluminum Co.," DEQ waste management and remediation administrator Jenny Chambers said in a press release. "While there is still work to do, DEQ is committed to making sure all aspects of the cleanup are done right to protect human health and the environment." ⁴⁷

On Oct. 17, 2018, CFAC, Roux Associates and EPA officials addressed the public in Columbia Falls MT to provide an update on contamination at the closed smelter site. Roux hydrogeologist Mike Ritorto said his company had taken 860 samples over summer 2018 from soil, surface water, groundwater and sediment. The results confirmed what Roux had suspected - that groundwater contamination was moving south toward the Flathead River and not toward the Aluminum City residential neighborhood. EPA project manager Mike Cirian said a sample taken several years ago from a drinking well in Aluminum City that detected low levels of cyanide could not be repeated and might have been the result of methods used by the testing lab. Ritorto said levels of groundwater contamination flowing beneath the smelter site dropped off the further away from old landfills, which were located located north of the potlines buildings. By the time the contaminated groundwater reached the Flathead River, cyanide levels were below the safe drinking water standard of 100 micrograms per liter. Some monitoring wells near the river didn't detect cyanide at all, Ritorto said. The data bolstered CFAC's legal case against ARCO, Glencore-Xstrata environmental manager John Stroiazzo said. ⁴⁸

Meanwhile, Calbag had completed demolition of the potlines buildings and had filled many of the basements with gravel mined on site. Five alumina silos for the East Plant remained standing as they still held alumina. Calbag planned to sell the alumina and then tear down the silos in spring 2019. Several warehouses, the machine shop and the administrative offices also remained standing, as they could be used by a future business that moved onto the industrial site. The next phase in the cleanup project was for Roux to draft a characterization data summary report for Phase 2 testing that was done in 2018. After that, EHS Support would look at risk assessments for humans and ecology. The EHS Support report was expected to be completed by late 2019. Drafting a feasibility work plan to determine the best way to clean up the smelter site would start in 2020, with a final report due to the EPA by 2021. ⁴⁹

According to the official minutes to the Oct. 17, 2018, liaison panel meeting at the Columbia Falls High School cafeteria, Stroiazzo said demolition was expected to be completed by the end of January 2019. Once the alumina in the East Plant silos was sold, the silos could be torn down, possibly by spring 2019. Railcars were being used to haul steel from the site for recycling. Any material taken from the site by truck through Columbia Falls was tested before leaving the site to ensure all laws and regulations were followed. Some hazardous material, such as asbestos, needed to be packaged in specific ways, Stroiazzo said. He expected truck shipments would be completed by early December 2018. The onsite borrow pit being used to provide gravel to fill in the potlines basements would be reclaimed with onsite topsoil and then reseeded, he said. ⁵⁰

CFAC environmental manager Steve Wright said 10 to 11 community drinking water wells were being tested by CFAC along with the rest of the plant-site testing. The drinking water wells were tested quarterly, with three tests so far in 2018, he said. Because no variability had been seen, the community wells testing would be done twice annually starting in 2019, Wright said – in the spring and fall. Cirian reviewed the remedial investigation for the liaison panel and reported that no cyanide had been detected in wells near Aluminum City. The older landfills at the smelter were the source of cyanide and fluoride in groundwater, Cirian said. He also noted that the EPA was looking for ways to manage the project more efficiently. One approach could shorten the review process by four months, he said. In response to a question by former CFAC engineer Nino Berube about the transparency of the review process, Cirian said discussions between the parties needed to be candid and so were not open to the public. Dick Sloan from Montana DEQ said the reports would be made public and there

would be a public comment period for the proposed remediation plan that would follow the remedial investigation and risk assessment process. Berube pointed out that pertinent documents were no longer up to date at the local library. It was noted that the library was unwilling to manage the documents until Wright dealt with the issue. ⁵¹

The Columbia Falls Planning Board discussed future uses of the CFAC site as part of the board's review of the city's growth policy on Dec. 11, 2018. It was believed that the property could one day be valuable real estate for industrial or even residential purposes, but that depended on the level of cleanup under the Superfund program. Glencore had hired rePlan to look at future uses of the property, but rePlan's report had never been published, the board noted. The potrooms and subsidiary buildings had been removed, except for some silos that temporarily held alumina, and the basements had been filled with gravel, so all that remained for a future buyer were the machine shop and some warehouses. The board went through possible problems with the site, including the BPA's plans to tear down the switchyard, which the federal agency said dated back to the 1950s and 1960s and was too old to refurbish. An industrial buyer would need the Flathead Electric Cooperative to put in a new power service, the board noted. City councilor Mike Shepard, who also sat on the board, said heating and cooling systems had likely frozen and broken and needed replacement. Contaminants leaking from the landfills still needed to be addressed before residential uses at the CFAC site could be considered. The board noted that Glencore had cleaned up its Vanalco aluminum smelter property at Vancouver WA on the Columbia River about 10 years ago, but the cleanup there only met industrial standards and covenants for the site restricted many uses, such as residential. ⁵²

In January 2019, the Montana Department of Environmental Quality posted a draft environmental assessment on its website stating that a preferred action had been determined to terminate the Montana Pollutant Discharge Elimination System permit for the CFAC site. The permit governed the point-source discharges from the aluminum smelter, but the plant was no longer operating and had been torn down and removed. No other persons or agencies had been consulted in this decision, but a 30-day comment period would be held. The assessment said nothing about nonpoint pollution discharges that could come from leaking landfills or other hazardous materials at the site. ⁵³

On March 12, 2019, CFAC environmental project manager John Stroiazzo announced that three important draft reports on contamination at the CFAC Superfund site had been submitted to the

EPA and DEQ, marking a milestone in the cleanup effort. The 17,000 total pages included the Phase II Site Characterization Data Summary Report, the Baseline Human Health Risk Assessment, and the Baseline Ecological Risk Assessment. “We are pleased to keep moving this project forward,” Stroiazzo said. “We have a dedicated team and regulatory agencies who are keeping to their commitment. That means a great deal to this project and to getting the work completed. This portion is critical to understanding the big picture of the site.”⁵⁴

The Baseline Human Health Risk Assessment preliminarily confirmed that constituents from the site did not impact plant neighbors or other off-site people. The Baseline Ecological Risk Assessment preliminarily indicated some potential, theoretical impact from the site to a backwater seep along the Flathead River but didn't show any actual impact to organisms. The assessment also determined that the area impacted by the seep had limited fish habitat and that the plant did not impact the rest of the Flathead River. The Phase II Site Characterization Data Summary Report confirmed site facts indicated by the earlier Phase I report, including that groundwater flow was south to southwest toward the Flathead River during all seasons and flowed away from the Aluminum City residential area. In addition, the new report confirmed that the highest concentrations of cyanide and fluoride in groundwater were found near the legacy landfills, indicating that the landfills were the primary source of cyanide and fluoride. Also, the report confirmed that polycyclical aromatic hydrocarbons were detected at the site, mostly in soil samples, and the highest PAH concentrations were found near the main smelter building and operational areas. EPA and DEQ personnel would review the three reports and provide comments.⁵⁵

Signs of cleanup progress or community optimism became evident when the Columbia Falls City Council approved a new growth policy in mid-August 2019. Slated for updates every five years, the city's planning board had worked on the growth policy revision for several months before submitting it to the city council. The policy document was intended to be a guide to future development both inside the city limits and in the planning area surrounding the city. Depending on land availability, economic trends and housing demands, some areas would be targeted for increased development through zoning and extension of services by the city.⁵⁶

Slowly but surely, Columbia Falls was losing its title to the “Industrial Hub of the Flathead,” a slogan that found itself in newspapers and publications and on signs around the city. But with the demolition of the sawmill and plywood plant by Weyerhaeuser and the demolition of

the CFAC smelter plant, along with its Superfund designation for cleanup, heavy industry was no longer the primary economic driver for the city. Instead it was housing for residents who commuted to neighboring towns for work. Median house prices in Columbia Falls had increased from \$100,000 in 2011 during the Great Recession to \$309,500 in 2019. The median price in 2007, one year prior to the Wall Street meltdown, was \$183,000. With increased demand for new housing, the city's planners turned to the area surrounding the former aluminum smelter site, where contamination was believed to be primarily in groundwater caused by leaky landfills. The new growth policy called for designating land surrounding the plant property for suburban-residential development once the cleanup was completed. The heart of the plant, where 10 potrooms once stood, would remain zoned for industrial use, but the rest of the plant site would be zoned suburban-agricultural. Large parcels of industrially-zoned land remained within the city's growth-policy area, and more than 80% of the residents surveyed for the document revision supported new clean industries.⁵⁷

On Sept. 18, 2019, the public was invited for an update and tour of the CFAC plant. Representatives from CFAC, EPA, Roux and EHS Support presented findings and answered questions. Roux and EHS Support had worked to collect data and prepare the EPA-required human health and ecological risk assessments, which were completed in August and sent to the EPA and Montana DEQ for review. The assessments made up the first part of the remedial investigation and feasibility study, which in turn was step three of the nine-step Superfund process the EPA required in full before any Superfund site could be deemed reusable, Mike Cirian explained. According to Gary Long with EHS Support, the assessments would help engineers determine what areas of the project site needed further attention.⁵⁸

According to findings in the human health risk assessment, the percolation ponds north of the potlines building, operational areas between the main plant and the central landfill, and the industrial landfill were primary areas in need of further evaluation for risk reduction. Long said constituents of possible concern at those areas primarily included cyanide, fluoride and polycyclic aromatic hydrocarbons. The same three areas were in need of further evaluation for risk to human health. Long added that a backwater seep area along the Flathead River and the cooling ponds next to the river might require further evaluation for risk posed to aquatic life. Long emphasized that the risk calculations for the assessments "are estimated for theoretical current use of the site and future scenarios."

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“We basically wanted to look at scenarios where humans or wildlife would come in contact with the site and what are the risks that would be associated with those exposures,” Long said. For the human health report, consultants analyzed situations where commercial or industrial workers, trespassers, recreationists or others might be impacted by entering the site. For the ecological assessment, they analyzed potential impacts to terrestrial and aquatic animals and looked at routes of exposure, such as humans drinking water from the site or coming into contact with soils, or animals ingesting plants or sediments. The potential for humans and wildlife to experience adverse effects from contaminants on the site varied greatly depending on how they might come into contact with the site, how long they might be exposed and other factors, Long said. Notably, the ecological assessment found no impacts to the Flathead River, upstream or downstream, and that contaminated groundwater flowing south toward the Flathead River was not impacting the nearby Aluminum City subdivision.⁶⁰

During a meeting of the CFAC liaison panel, community leaders and stakeholders were told the health and ecological risk assessment was just another step in eventually “cleaning up” the Superfund site. Richard Sloan, of the Montana Department of Environmental Quality, however, said the term “cleaning up” was not entirely correct. “We’re going to remediate to the extent necessary to reduce the risk to an acceptable level,” Sloan told the panel. “It’s important to understand that.” Long said that while the smelter site proper had contaminants, the modeling also didn’t indicate any “bioaccumulation” of hazards in animals such as fish and game. Cyanide and PAHs don’t bioaccumulate – they tend to metabolize, he said.⁶¹

According to Ritoro, nearly 2,000 samples were collected from soil, groundwater and other potential points of contamination on the 1,300-acre project site. In addition, 52 monitoring wells were installed and 20 existing wells were redeveloped to establish a “robust” data set. “There really wasn’t a portion of the site that wasn’t evaluated extensively,” he said. Cirian added to that point. “There were so many hands and eyes on these assessments,” the EPA official said. “There were hundreds of comments on all of these initial documents, and people from multiple agencies were involved.” With most of the remedial investigation completed, the consultants expected to begin work on the feasibility study. Ritoro said a work plan draft, which involved looking at possible methods for remediating the identified risk areas, would be submitted by 2020. The hope was to have the final feasibility study report completed by the first quarter of 2021, after state and federal agencies had completed extensive reviews.

According to Cirian, the teams were on track to meet those deadlines. “We definitely aren’t done yet. We have a long ways to go,” he said. “But we are on schedule and we are moving ahead.” He noted that it wasn’t uncommon for the Superfund process to take a decade or longer.⁶²

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