

SGC's Comments on EPA's Proposed Plan for the Bonita Peak Repository

I. Executive Summary and General Comment

SGC appreciates the opportunity to comment on EPA's Proposed Plan for the Bonita Peak Repository (Proposed Plan) and looks forward to working with EPA and the community to make a sensible sitewide repository at the Mayflower a reality. SGC is uniquely suited to provide constructive input on a Mayflower repository. SGC has demonstrably improved Animas River water quality, including at the Mayflower, and SGC has itself constructed and operated a sensible and successful repository at Mayflower Impoundment No. 4, which facilitated basin wide remediation and water treatment precipitate disposal.

While a sitewide repository at the Mayflower makes eminent sense, EPA's Proposed Plan has numerous shortcomings and can be considerably improved upon. Cost-effectiveness, long-term-effectiveness, feasibility and safety, preservation of an historic mill, respect for private property rights, and minimization of environmental impacts all weigh conclusively in favor of a repository at Impoundment No. 4, and all weigh conclusively against a repository anywhere else.

The Mayflower Impoundments, including Impoundment No. 4, moreover, have been studied exhaustively and comprehensively. This exhaustive and comprehensive study of Impoundment No. 4 has demonstrated that it "has little, if any, impact on the underlying groundwater and there is no evidence that indicates Impoundment No. 4 is the source of elevated concentrations of metals in the Animas River."¹ Similarly, an independent review of this exhaustive and comprehensive study concluded that "there is no evidence that the Mayflower Facilities are the source of anything but negligible metals loading to the Animas River, if any," and "[t]here is no evidence to indicate that Mayflower Facilities tailings at TP-4 [Impoundment No. 4] contribute anything beyond negligible solutes to the Animas River."² No further study is needed, nor is any response action at Impoundment No. 4 warranted.

Even if additional study were somehow justified, it could be conducted simultaneously, consistently, and successfully with the construction and operation of a repository at Impoundment No. 4. There is nothing incompatible with further study and the construction and operation of a repository at Impoundment No. 4. In fact, the monitoring network at Impoundment No. 4, rather than complicating a repository, would actually facilitate one. The monitoring network would allow an Impoundment No. 4 repository's impact, if any, to be assessed continuously, and would provide feedback to adaptively manage and alter the repository's construction or operation if any issues were to arise.

Stakeholders and the community, moreover, must be actually and meaningfully involved in Mayflower repository site-related actions and decisions. Actual and meaningful involvement in repository actions and decisions will improve the Mayflower repository and related environmental outcomes. However, that involvement has not happened. For instance, SGC, a stakeholder possessing a unique and

¹ Formation Environmental, Draft Impoundment No. 4 Conceptual Site Model Mayflower Impoundments Area (July 2020) (Exhibit 2); Revised Draft Impoundment No. 4 Conceptual Site Model Mayflower Impoundments Area (Aug. 2020) (Exhibit 3).

² David Bird, Knight Piesold, Technical Memorandum: Review of Data Relating to Mayflower Area Water Quality (April 2, 2020) (Exhibit 4).

comprehensive knowledge of the Mayflower, including having designed, constructed, and operated a sensible and successful repository at Impoundment No. 4, was never engaged by EPA to discuss the Proposed Plan or the design, construction, or operation of a repository at the Mayflower. Such dismissal of stakeholder or community involvement is contrary to law and compromises environmental outcomes. A sensible and successful Mayflower repository can be constructed and operated. But it cannot be done if stakeholders and the community are not actually and meaningfully involved in Mayflower repository site-related actions and decisions.

SGC's more specific comments follow. Additionally, attached as Exhibit 1, are the comments of Pioneer Technical Services, Inc. (Pioneer Technical).³ Pioneer Technical has considerable experience in environmental science and engineering, including detailed performance analyses of dozens of mine waste and sludge repositories. Pioneer Technical's comments focus on the technical and logistical issues making a repository at Impoundment No. 4 the only logical choice, as well as specific issues in making the repository more successful. Additional exhibits include supporting materials necessary to the reasoned consideration of a repository at the Mayflower.

II. Comments

(1) A repository at Mayflower Impoundment No. 4 is indisputably the most sensible repository alternative, possessing unmatched feasibility, safety, efficiencies, and long-term- and cost-effectiveness, and singly satisfying all contemplated water treatment sludge and waste storage needs.

Feasibility and safety, operational efficiencies, long-term-effectiveness, and cost-effectiveness all weigh conclusively in favor of a repository at Impoundment No. 4, and against a repository anywhere else, including at Impoundment Nos. 1 and 2. This conclusion seemed self-evident, but for EPA's curious proposition in its Proposed Plan to start with some hybrid repository at Impoundment Nos. 1 and 2, before transitioning at some indeterminate time in the future to Impoundment No. 4. Pioneer Technical sums it up best:

Considering the conclusion in the FFS [Focused Feasibility Study] that the anticipated service life of a repository located at the Mayflower Tailings Impoundment #4 (Alternative R4) is more than 100 years, the Environmental Protection Agency (EPA) should consider only Alternative R4. The additional capacity offered by the Mayflower Tailings Impoundment #1 and Mayflower Tailings Impoundment #2 (Alternatives R1 and R2, respectively) does not justify the increased costs and complexity associated with using either of these options. These two areas are much smaller and have irregular configurations that make access, site layout, annual operations, and installation of the final upper liner more complicated. Starting with these smaller repositories and transitioning periodically to other locations is an unnecessary complication. Additionally, using multiple repositories will create a need for multiple monitoring systems and introduces separate operations and maintenance activities, increasing annual costs for

³ Pioneer Technical Services, Inc., Preliminary Comments on the Bonita Peak Mining District Superfund Site, Bonita Peak Repository Interim Remedial Action San Juan County, Colorado Final Focused Feasibility Study Report (Aug. 24, 2020) (Exhibit 1).

many decades. These factors combined with the 100-year service life of Alternative R4 make consideration of Alternatives R1 and R2 unnecessary.⁴

Impoundment No. 4 would singly satisfy all contemplated water treatment sludge and waste storage needs. It would do so with unparalleled efficiencies and without unnecessary redundancies. Its operational life, 128 years at the current estimated rate, is comprehensive, significantly facilitating long-term sludge storage, including operation of EPA's Gladstone Water Treatment Plant at capacity, and significantly facilitating basin wide remediation. It would require no complex transition of operations or materials between multiple Impoundments. It would require only a single, safe, and convenient access route. It would allow considerable flexibility in repository design, site layout, and operations, including construction of the repository in phases. All operations, moreover, excluding haulage, could be conducted on the surface of a single Impoundment. It has the shortest haulage distance from EPA's Gladstone Water Treatment Plant, or for mine waste generated from sites in Cement or Mineral Creeks, and its access route is the most operationally feasible. The inclusion of stockpile and drying areas within the working repository area would eliminate the need to construct and decommission separate cells. It is also the safest alternative. It "has the highest safety factor and will continue to have the highest safety factor once loads are applied," and it "has the highest relative stability ranking."⁵ Impoundment No. 4 would not require multiple facilities, multiple operations, multiple maintenance activities, or multiple monitoring networks, including during both the operation phase and the closure and monitoring phase, nor would it require the attendant compounding of costs. It would not risk impacts to a mill of national historic significance (*See Comment (2)*), nor would it unnecessarily impact property rights or unnecessarily expand environmental disturbance (*See Comment (3)*). In short, there would be one repository, not three, and that single repository would be sufficient for all sludge and waste storage needs.

Impoundment No. 4, moreover, has already been demonstrated to be a feasible and environmentally sound repository for the storage of water treatment sludge and remediation waste from sites throughout the Animas River Basin. During SGC's water treatment operations, SGC deposited water treatment precipitate at Impoundment No. 4. SGC also accepted third party mine waste from Animas River Basin remediation work for deposition on Impoundment No. 4. Impoundment No. 4 accepted these materials without incident or concern, and Impoundment No. 4 "has little, if any, impact on the underlying groundwater and there is no evidence that indicates Impoundment No. 4 is the source of elevated concentrations of metals in the Animas River"⁶ (*See Comment (5)*).

The remedial investigation (RI) of the Mayflower, including of Impoundment No. 4, moreover, could progress simultaneously and consistently with the construction and operation of a repository at Impoundment No. 4. In fact, "Impoundment #4 already has a robust monitoring system in place that can be used to detect and assess potential changes in groundwater beneath the existing impoundment and

⁴ Pioneer Technical Services, Inc., Preliminary Comments on the Bonita Peak Mining District Superfund Site, Bonita Peak Repository Interim Remedial Action San Juan County, Colorado Final Focused Feasibility Study Report (Aug. 24, 2020) (Exhibit 1).

⁵ CDM Smith, Final Focused Feasibility Study Report (July 2020), Appendix C: Bonita Peak Repository Slope Stability Memorandum.

⁶ Formation Environmental, Draft Impoundment No. 4 Conceptual Site Model Mayflower Impoundments Area (July 2020) (Exhibit 2); *see also* Revised Draft Impoundment No. 4 Conceptual Site Model Mayflower Impoundments Area (Aug. 2020) (Exhibit 3).

the proposed new repository.”⁷ Thus, any continued study is not only compatible with an Impoundment No. 4 repository, it would actually facilitate the operation and monitoring of an Impoundment No. 4 repository (See Comment (4)).

Use of Impoundment Nos. 1 and 2 as repositories, by contrast, exhibits none of Impoundment No. 4’s advantages as a repository. Instead, they possess a multitude of inefficiencies, infeasibilities, and safety concerns. With respect to Impoundment No. 1, the actual useable surface area due to operational constraints is small, especially when considering the step back from its steep southern slope. With respect to Impoundment No. 2, it is smaller still. And both are irregularly configured, compromising operational flexibility, layout, and efficiency, and posing higher short-term safety risks. Sludge and waste storage are limited at Impoundment Nos. 1 and 2 (an estimated 13 and 4 years respectively, compared to Impoundment No. 4’s 128 years), and the existing sludge stockpiled at EPA’s Gladstone Water Treatment Plant and proposed IROD wastes would likely already instantly consume a significant portion of an Impoundment No. 1 repository’s capacity. The slope to the north of the Impoundment No. 1 access road, moreover, is an unstable scree slope, and the road itself is very narrow and would require considerable fill for safety purposes. Impoundment No. 2 has still more difficult access. Sludge and waste, moreover, would be spread across numerous storage areas, not a best practice, and compounding opportunities for issues to arise. Transitioning operations and materials between repositories, moreover, would introduce unnecessary complexity, inefficiency, and risk, and would also require crossing Boulder Creek, risking impacts to the Creek. Facilities, operations, maintenance, and monitoring would require duplication at each repository, compounding costs and operational inefficiencies. Whereas one repository at Impoundment No. 4 could satisfy all sludge and waste storage needs, 3 repositories are needed if Impoundment Nos. 1 and 2 are used.

EPA’s contemplated haulage or access routes, moreover, are not clear, and were rendered less so by EPA’s passing comment at the August 11, 2020, public meeting that additional routes may be considered. These routes must be clarified and subjected to stakeholder and community review, input, and involvement in decision making, as certain potential routes used in transitioning between Impoundment Nos. 1 and 2, or between Impoundment Nos. 1 and 2 and Impoundment No. 4, could have significant impacts. For instance, in transitioning operations between Impoundment Nos. 1 and 2, if a potential northern haulage route were to be used, a significant construction undertaking would be necessary to cross Boulder Creek, risking impacts to the Creek. In transitioning operations between Impoundment Nos. 1 and 2 and Impoundment No. 4, again if a northern haulage route were to be used, significant reclaimed land would be torn up, the Galvin Springs drainage would have to be crossed, the route would impinge upon the hiking corridor to the north of the Impoundments, and the route would be at the base of an avalanche path. A repository at Impoundment No. 4 eliminates these impacts and risks (See Comment (3)).

With a repository at Impoundment No. 1, moreover, the industrial park’s and some residential user’s water system could be compromised. A repository at Impoundment No. 1 would also compromise the material storage area on the west side of the historic Mayflower Mill, it would compromise access to the Mill for any repairs that might be needed in the future, and it risks other impacts to this historically

⁷ Pioneer Technical Services, Inc., Preliminary Comments on the Bonita Peak Mining District Superfund Site, Bonita Peak Repository Interim Remedial Action San Juan County, Colorado Final Focused Feasibility Study Report (Aug. 24, 2020) (Exhibit 1).

significant structure (*See Comment (2)*). Repositories at Impoundment Nos. 1 and 2, moreover, also risk unnecessary damage to private property and would unnecessarily expand environmental disturbance (*See Comment (3)*).

Repository construction and operation at Impoundment No. 1 also risks compromising several monitoring wells in the area that are associated with the RI of the Mayflower. Curiously, EPA intimates concerns regarding the potential incompatibility between continued study and the construction and operation of a repository at Impoundment No. 4 (there is none, *See Comment (4)*), but EPA generally dismisses any potential incompatibility at Impoundment Nos. 1 and 2.⁸ Given the smaller and irregular configurations of Impoundment Nos. 1 and 2, and the lack of operational flexibility on their surfaces, any incompatibility is actually more pronounced at Impoundment Nos. 1 and 2 than at Impoundment No. 4.⁹

The cost effectiveness of an Impoundment No. 4 repository, moreover, is unequalled. EPA's preferred alternative is one using Impoundment Nos. 1 and 2 at an estimated cost of \$96 and \$158 dollars per cubic yard of storage for 13 and 4 years of storage respectively. Impoundment No. 4, by contrast, which would singly satisfy all contemplated water treatment sludge and waste storage needs, would cost only \$26 dollars per cubic yard of storage for 128 years of storage.¹⁰ An alternative using Impoundment Nos. 1 and 2 wastes an estimated \$12 million. This approach reflects an imponderable misallocation of resources that could otherwise be used to improve Animas River water quality.¹¹

⁸ EPA has demanded additional study at Impoundment Nos. 1 and 2, in addition to Impoundment No. 4. *See e.g.* Parker Email to Maley (Aug. 6, 2020); *see also* Maley Letter to Parker (May 15, 2020) (addressing need for work) (Exhibit 5).

⁹ *See also* Comment (4); *infra* no. 32.

¹⁰ *See* U.S. EPA, Proposed Plan for the Bonita Peak Repository (July 2020).

¹¹ For instance, EPA's Gladstone Water Treatment Plant, whether using EPA's conservative capacity estimate of 1200 gpm, or the Plant designer's estimate of 1800 gpm, has the capacity, with negligible capital expenditures, to treat the combined flows of the Gold King Mine, the federally-owned and operated American Tunnel, and the EPA-operated Red & Bonita Mine (combined average flow of approximately 1,100 gpm). In fact, the Plant has the capacity to treat, and with minor capital expenditures could also additionally treat, the entirety of Upper Cement Creek except during periods of high flow. *See* CDM Smith, Gladstone Interim Water Treatment Plant Engineering Evaluation/Cost Analysis (EE/CA), Appx. A, Technical Memorandum (Nov. 2016); *see also* Pioneer Technical Services, Inc., Technical and Engineering Considerations Summary Treatment Options for Mining-Influenced Water Upper Cement Creek, Bonita Peak Area (Feb. 2018). According to EPA, the Plant is treating approximately 600 gpm at an annual operating cost of \$924,000. CDM Smith, Gladstone Interim Water Treatment Plant Engineering Evaluation/Cost Analysis (EE/CA) (Nov. 2016). Given economies of scale and essentially fixed labor needs, the incremental cost of treating an additional 600 gpm would be substantially less than the annual cost to treat the first 600 gpm. However, even if the additional incremental cost were conservatively assumed to be the same, \$10 million would cover the incremental cost of running the Plant at 1,200 gpm for more than 10 years. Spending \$10 million to run the Plant at capacity would result in substantially more than 2.5 million pounds of additional metals being kept out of lower Cement Creek.

(2) A repository at Mayflower Impoundment No. 4 preserves the character of and does not risk impacts to the Mayflower Mill, a National Historic Landmark possessing significant historic, cultural, educational, and economic value.

Impoundment No. 1 sits “adjacent to [the] Mayflower Mill,”¹² a National Historic Landmark. According to History Colorado,¹³ the Mayflower Mill “is an exceptionally intact example of a selective flotation mill reflecting the distinctive characteristics of hard-rock milling processes in the early 20th century Rocky Mountain West. It is also the only intact and functional late 1920s-era, wooden gravitational selective flotation mill in Colorado.”¹⁴ “The continuing preservation of the Shenandoah-Dives [Mayflower] Mill will not only ensure the continuing stability of the mine complex but also add educational value for local students and the regional understanding of early 20th-century mining.”¹⁵ As noted by the National Trust for Historic Preservation, moreover, “the San Juan Mountains are now home to a trove of intact, nationally significant historic sites, including boarding houses, mills, trams, and former residences. Together they make a wild chapter in American history come alive for hundreds of thousands of visitors every year.”¹⁶ This situation resulted from a “strategy to rely on historic preservation as an economic development engine.”¹⁷

Access to Impoundment No. 1, as well as repository construction and operations at Impoundment No. 1, could negatively impact the historic Mayflower Mill, its character and setting, as well as its educational and economic function. As recognized by EPA, construction of a repository at Impoundment No. 1 has “[p]otential impacts to visitors and museum workers at the Mayflower Mill—dust, noise, increased truck traffic,” and “[p]otential safety issues exist for workers related to community traffic along the access road that connects to the Mayflower Mill parking lot.”¹⁸ Logistical complications will also arise, as there would be “[a]dditional agency coordination for Alternative RI, because of proximity to the Mayflower Mill and museum.”¹⁹

EPA does little to articulate what it is going to do about the impacts to the historic Mayflower Mill, nor does EPA provide any indication that it satisfied its consultation requirements under the National Historic Preservation Act.²⁰ EPA merely states “Alternative RI construction would work to eliminate or minimize

¹² U.S. EPA, Proposed Plan for the Bonita Peak Repository (July 2020).

¹³ History Colorado is a 501(c)(3) charitable organization and an agency of the State of Colorado under the Department of Higher Education.

¹⁴ History Colorado, Shenandoah-Dives Mill, available at: <https://www.historycolorado.org/location/shenandoah-dives-mill>; *see also* Larry Perino, Mayflower Mill: An Iconic National Historic Landmark (Sept. 2019) (Exhibit 6).

¹⁵ History Colorado, Shenandoah-Dives Mill, available at: <https://www.historycolorado.org/location/mayflower-millshenandoahdives-mill>.

¹⁶ Kate Siber, Ghost of a Chance: Animas Forks, Colorado: Learn how the residents of Silverton, Colorado beat the odds to rescue a long-abandoned mining town, *Preservation Magazine* (Spring 2015).

¹⁷ Clarion Associates of Colorado, LLC, *The Economic Power of Heritage and Place: How Historic Preservation is Building a Sustainable Future in Colorado*, prepared for the Colorado Historical Foundation (Oct. 2011).

¹⁸ U.S. EPA, Proposed Plan for the Bonita Peak Repository (July 2020).

¹⁹ U.S. EPA, Proposed Plan for the Bonita Peak Repository (July 2020).

²⁰ EPA provides no evidence that it satisfied its Section 106 consultation requirements under the National Historic Preservation Act, or, if it did so, what the results of the consultation were. *See* U.S. EPA, Proposed Plan for the Bonita Peak Repository (July 2020). The Colorado State Historic Preservation Officer (SHPO) has already emphasized to EPA the necessity of this consultation and the requirement that EPA take into account the effects of its response actions on historic properties. The SHPO further noted:

adverse effects to the landmark in accordance with the National Historic Preservation Act,” and it would “begin[] with cells on the western portion of the impoundment to minimize repository-related impacts to the adjacent Mayflower Mill.”²¹

What can be done about these impacts seems self-evident. They can be eliminated altogether. A repository at Impoundment No. 4 has no impact on the historic Mayflower Mill, and a repository at Impoundment No. 4 can singly satisfy all contemplated water treatment sludge and waste storage needs. Rather than trying to ascertain the degree and extent to which the historic Mayflower Mill, and its attendant historic and cultural, educational, and economic value, will be impacted by a repository at Impoundment No. 1, and then endeavoring to design and adopt measures to mitigate, to the extent possible, these impacts, why not simply eliminate the issue altogether by constructing and operating a repository at Impoundment No. 4?

(3) A repository at Mayflower Impoundment No. 4 respects property rights and minimizes impacts to property owners and the environment.

A repository at Impoundment No. 4 predominantly impacts the property rights and alternative property uses of SGC. Using only Impoundment No. 4, moreover, minimizes those impacts, and also allows Impoundment Nos. 1 and 2 to remain in their fully reclaimed and remediated state, or to potentially be used for other higher and better, and less impactful, uses.

A repository at Impoundment Nos. 1 and 2 expands unnecessarily the risk of property and environmental impacts to the San Juan County Historical Society (Mayflower Mill (*See Comment (2)*)) and potentially to other Silverton County residents. For instance, if certain suboptimal access routes were to be used or developed, or if certain suboptimal transitioning operations between Impoundment Nos. 1 and 2, or ultimately between Impoundment Nos. 1 and 2 and Impoundment No. 4, were to become necessary, significant property and environmental damage could occur to lands adjacent to Impoundment Nos. 1 and 2. These areas are undisturbed and uncontaminated, and their disturbance (potentially for decades or more) could significantly impair that property’s use, value, and environmental character. Boulder Creek, moreover, bisects Impoundment Nos. 1 and 2, and it risks impacts from operations at Impoundment Nos. 1 and 2.

These impacts are all unnecessary and are all eliminated if the repository is located at Impoundment No. 4. A repository at Impoundment No. 4 respects property rights and minimizes impacts to property owners and the environment.

In August it was made clear to everyone present that the local community views the mining resources not only as important evidence of their past, but a vital component of their economic health as this area of the state relies heavily on the revenue generated by Heritage Tourism. These conversations, as well as the substantial number of letters and telephone we have been receiving from members of the local community indicate that they believe the continued sustainability of heritage tourism is at risk due to EPA activities.

Turner, State Historic Preservation Officer, Letter to Sopkin, EPA Regional Administrator (Exhibit 7).

²¹ U.S. EPA, Proposed Plan for the Bonita Peak Repository (July 2020).

(4) Impoundment No. 4 has been studied exhaustively and comprehensively, but any additional study, if even necessary, could be conducted simultaneously, consistently, and successfully with the construction and operation of a repository at Impoundment No. 4, and the robust monitoring network at Impoundment No. 4, rather than complicating a repository there, actually facilitates it.

EPA's only apparent rationale for questioning the Mayflower generally, and Impoundment No. 4 specifically, concerns implementability, and in particular the "allow[ance] for continuation of [the] OU2 remedial investigation, within key focus areas, including Impoundment 4."²²

The Mayflower, including Impoundment No. 4, has been studied exhaustively and comprehensively. Since 2015, SGC has spent 5 years and in excess of \$10 million on investigations at the Mayflower.²³ SGC has installed 48 monitoring wells (including 14 monitoring wells at, or used in characterizing, Impoundment No. 4) in the glacial drift, alluvial, and bedrock groundwater systems in the 0.9-square-mile Mayflower Study Area.²⁴ SGC has taken in excess of 1,655 samples in the Mayflower Study Area. SGC has conducted ground, surface, and pore water sampling, monitoring, and analysis, fish and macroinvertebrate tissue analysis, soil, sediment, and sediment toxicity sampling and analysis, and acid generation potential study and analysis.²⁵ SGC has installed a meteorological station and conducted geophysics studies. Despite this exhaustive and comprehensive study of the Mayflower, there is no evidence indicating that the Mayflower Facilities, including Impoundment No. 4, are the source of anything but negligible metals loading to the Animas River, if any (See Comment (5)). No response action at the Mayflower, including at Impoundment No. 4, is needed.

There is no need for additional study of the Mayflower, nor does EPA's Proposed Plan articulate any. As clearly stated in the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA:

The objective of the RI/FS process is not the unobtainable goal of removing *all* uncertainty, but rather to gather information sufficient to support an informed risk management decision regarding which remedy appears to be most appropriate for a given site.

The National Contingency Plan (NCP), moreover, provides that the "purpose of the remedial investigation (RI) is to collect data necessary to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives,"²⁶ and "[t]he investigative and analytical studies should be

²² See U.S. EPA, Bonita Peak Mining District Superfund Site Bonita Peak Repository Proposed Plan (Aug. 11, 2020) (EPA presentation presented at Aug. 22, 2020, public comment meeting).

²³ See *e.g.* SGC, The Mayflower (May 28, 2020) (presented to the Bonita Peak Community Advisory Group at its May 28, 2020 community meeting) (Exhibit 8).

²⁴ By comparison, for the remedial investigation of the original "Box" centered on the former Bunker Hill lead smelter at the Bunker Hill Superfund Site, approximately 70 monitoring wells were installed over a 21-square-mile area, and for the remedial investigation of the Butte Priority Soils Operable Unit of the Silver Bow Creek/Butte Area Superfund Site, approximately 60 monitoring wells were installed over a 5-square-mile area. In other words, the equivalent of 53.3 wells per square-mile have been installed at the Mayflower, compared to 3.33 and 12 at major mining-related Superfund sites.

²⁵ See *e.g.* SGC, The Mayflower (May 28, 2020) (presented to the Bonita Peak Community Advisory Group at its May 28, 2020 community meeting) (Exhibit 8).

²⁶ 40 C.F.R. § 300.430(d)(1).

tailored to site circumstances so that the scope and detail of the analysis is appropriate to the complexity of site problems being addressed.”²⁷

The exhaustive and comprehensive study of the Mayflower, including Impoundment No. 4, has more than satisfied these objectives. EPA, moreover, provides no objective, scientific evidence supporting any need for further study of the Mayflower, including Impoundment No. 4.²⁸

EPA must reassess its preoccupation with perpetual study and the harm it is doing to improving Animas River water quality. EPA has allegedly spent in excess of \$75 million at the so-called Bonita Peak Mining District (BPMD), but there “has yet to be meaningful improvements to water quality and aquatic life.”²⁹ EPA, moreover, is still studying the watershed, and “there’s no time frame for when the agency will present its final work plan for a comprehensive cleanup in the Animas River basin.”³⁰ In short, that \$75 million has bought study and deliberation,³¹ and now EPA is contemplating a cost-ineffective and nonsensical approach to a repository at the Mayflower in order to perpetuate study for an indeterminate amount of time at the already exhaustively and comprehensively studied Mayflower Impoundment No. 4. That makes no sense.

Even if more study was somehow warranted, EPA never explains how the design, construction, or operation of a repository at Impoundment No. 4 would in any way impede or interfere with the OU2 RI conducted by SGC at the Mayflower, or at Impoundment No. 4 in particular.³² It would not. There is no reason that the two actions could not be carried out simultaneously and consistently, and SGC is willing and able to work with EPA to ensure that any additional study at Impoundment No. 4 and the construction and operation of a repository at Impoundment No. 4 could be pursued simultaneously, consistently, and successfully.

As recognized by Pioneer Technical, “monitoring and repository construction [at Impoundment No. 4] can progress simultaneously and consistently,” and “it would be possible to maintain the existing monitoring network to facilitate continuous data collection and assessment.”³³ Moreover, rather than complicating

²⁷ 40 C.F.R. § 300.430(b).

²⁸ See e.g. U.S. EPA, Proposed Plan for the Bonita Peak Repository (July 2020).

²⁹ The Durango Herald, Five years after Gold King Mine spill, water quality remains a concern (Aug. 5, 2020), available at: <https://durangoherald.com/articles/334236-five-years-after-gold-king-mine-spill-water-quality-remains-a-concern>.

³⁰ The Durango Herald, Five years after Gold King Mine spill, water quality remains a concern (Aug. 5, 2020), available at: <https://durangoherald.com/articles/334236-five-years-after-gold-king-mine-spill-water-quality-remains-a-concern>.

³¹ An exception is EPA’s Gladstone Water Treatment Plant’s treatment of the Gold King Level 7 Adit. *But see supra* n. 11.

³² See e.g. U.S. EPA, Proposed Plan for the Bonita Peak Repository (July 2020). And even if more study was somehow warranted, EPA provides no reason why any continued study of Impoundment Nos. 1 and 2 would be any less necessary, or the construction and operation of a repository any less interfering with the investigations at Impoundment Nos. 1 and 2, than at Impoundment No. 4. See *id.* If EPA were truly interested in continued study at the Mayflower, it makes no sense, and EPA provides no explanation, that the study of Impoundment Nos. 1 and 2 would be any less necessary than at Impoundment No. 4. See also text accompanying *supra* n. 9. The fact is more study is not needed at any of the Impoundments.

³³ Pioneer Technical Services, Inc., Preliminary Comments on the Bonita Peak Mining District Superfund Site, Bonita Peak Repository Interim Remedial Action San Juan County, Colorado Final Focused Feasibility Study Report (Aug. 24, 2020) (Exhibit 1).

a repository at Impoundment No. 4, this monitoring system actually facilitates a repository at Impoundment No. 4. The monitoring network allows the Impoundment No. 4 repository's impact, if any, to be assessed continuously, and provides feedback to adaptively manage and alter the repository's construction or operation if any issues arise.

The Mayflower Impoundments, including Impoundment No. 4, have been studied exhaustively and comprehensively. There is no need for additional study. Even if additional study were somehow warranted, it could be conducted consistent with the construction and operation of a repository at Impoundment No. 4.

(5) The comprehensive and exhaustive investigation of the Mayflower has demonstrated that the Mayflower facilities, including Impoundment No. 4 have little, if any, impact on underlying groundwater, and there is no evidence that indicates the Mayflower, or Impoundment No. 4, is the source of elevated concentrations of metals in the Animas River.

SGC has fully reclaimed and remediated the Mayflower, including reclamation and remediation of Impoundment No. 4, and including the remediation of historical wastes over which SGC had no involvement.³⁴ SGC conducted its operations and reclamation at the Mayflower, moreover, pursuant to modern mining methods and in conformance with modern environmental laws, mining and discharge permits, and a court approved consent decree.³⁵ SGC's actions at the Mayflower improved water quality, and the Mayflower is not polluting the Animas River.³⁶

The exhaustive and comprehensive investigation of the Mayflower, including Impoundment No. 4, confirms this fact. The exhaustive and comprehensive investigation has demonstrated that "Impoundment No. 4 has little, if any, impact on the underlying groundwater and there is no evidence that indicates Impoundment No. 4 is the source of elevated concentrations of metals in the Animas River."³⁷ Similarly, "there is no evidence that the Mayflower Facilities are the source of anything but negligible metals loading to the Animas River, if any," and "[t]here is no evidence to indicate that Mayflower Facilities tailings at TP-4 contribute anything beyond negligible solutes to the Animas River."³⁸

(6) A repository liner is unnecessary and may actually compromise environmental outcomes.

SGC has given considerable attention to a repository liner, believing initially that one may be useful,³⁹ but, upon considerable further analysis and review, transitioning to an understanding that a liner may actually compromise environmental outcomes, and that a liner's benefits, if any, likely do not outweigh its

³⁴ See e.g. Summary of SGC Remedial Actions: Mayflower Mill and Impoundments (Exhibit 9).

³⁵ See e.g. Westesen Letter to Naftz (Aug. 28, 2018) (addressing the Mayflower history, SGC's operations, and SGC's lack of liability at the Mayflower) (Exhibit 10).

³⁶ See e.g. Steven Lange, Knight Piesold, Evaluating the Effectiveness of Sunnyside Gold Corporation's Reclamation, San Juan County, Colorado (2019) (Exhibit 11); Formation Environmental, Draft Impoundment No. 4 Conceptual Site Model Mayflower Impoundments Area (July 2020) (Exhibit 2); David Bird, Knight Piesold, Technical Memorandum: Review of Data Relating to Mayflower Area Water Quality (April 2, 2020) (Exhibit 4).

³⁷ Formation Environmental, Draft Impoundment No. 4 Conceptual Site Model Mayflower Impoundments Area (July 2020) (Exhibit 2); see also Revised Draft Impoundment No. 4 Conceptual Site Model Mayflower Impoundments Area (Aug. 2020) (Exhibit 3).

³⁸ David Bird, Knight Piesold, Technical Memorandum: Review of Data Relating to Mayflower Area Water Quality (April 2, 2020) (Exhibit 4).

³⁹ See e.g. Roach Letter to Sopkin (Sept. 10, 2019) (Exhibit 12).

additional costs and complexities. As explained by Pioneer Technical, which has completed detailed performance analyses on dozens of mine waste and sludge repositories with and without liners:

Additional analysis to determine if a bottom liner will provide demonstrated benefits proportional to the associated additional cost and complexities should be completed. Use of a bottom liner complicates initial construction, water management, stockpiling, drying, phasing, and operations much more than an unlined system and adds unnecessary cost, risk, and operational complexity over the life of the repository.

...

Installation of a bottom liner system typically provides limited additional protection that is not proportional to the additional costs.⁴⁰

Mixing sludge from EPA's Gladstone Water Treatment Plant, moreover, "with mine wastes in the cell (like the approach used by EPA at the Kittimac Tailings) is likely a desirable co-disposal alternative that could be used to treat or stabilize the mine waste materials placed in the repository," and there is also a "potential for the high-pH seepage from the sludge to decrease the mobility of metals in the existing underlying tailings."⁴¹ The high-pH leachate, moreover, may buffer the underlying materials in the event of any infiltration.

Construction of a liner system with leachate collection and removal system, moreover, would require a separate collection, handling, and management of the high-pH liquids, creating unnecessary costs and complexities. Retreatment at EPA's Gladstone Water Treatment Plant is not justified:

There does not appear to be a justifiable reason to collect high-pH drainage from the IWTP sludge and haul it back to the IWTP for retreatment. An unlined cell will likely have the same volume of leachate and a lower runoff volume than an equally sized lined cell and may reduce the volume enough to allow evaporation of the internal runoff during the annual drying and placement process. On-Site evaporation and management are much less expensive operations and would have nearly identical overall effectiveness.⁴²

(7) Stakeholders and the community must be actually and meaningfully involved in Mayflower repository site-related actions and decisions, and stakeholder and community involvement in repository actions and decisions will improve the Mayflower repository and related environmental outcomes.

Historically, stakeholders and the community have been significantly involved in characterization and successful remediation of the Animas River Basin. Stakeholders and the community can bring this

⁴⁰ Pioneer Technical Services, Inc., Preliminary Comments on the Bonita Peak Mining District Superfund Site, Bonita Peak Repository Interim Remedial Action San Juan County, Colorado Final Focused Feasibility Study Report (Aug. 24, 2020) (Exhibit 1).

⁴¹ Pioneer Technical Services, Inc., Preliminary Comments on the Bonita Peak Mining District Superfund Site, Bonita Peak Repository Interim Remedial Action San Juan County, Colorado Final Focused Feasibility Study Report (Aug. 24, 2020) (Exhibit 1).

⁴² Pioneer Technical Services, Inc., Preliminary Comments on the Bonita Peak Mining District Superfund Site, Bonita Peak Repository Interim Remedial Action San Juan County, Colorado Final Focused Feasibility Study Report (Aug. 24, 2020) (Exhibit 1).

knowledge and expertise to a repository at the Mayflower,⁴³ crafting a sensible approach that successfully and cost-effectively facilitates remediation of the Animas River Basin, and that avoids the significant negatives of EPA's Proposed Plan. But stakeholders and the community can only do this if EPA actually and meaningfully involves them in Mayflower repository actions and decisions. This has not been done. EPA has failed to actually and meaningfully involve stakeholders and the community in crafting its Mayflower repository Proposed Plan, or in involving stakeholders and the community in any Mayflower repository actions or decisions. EPA's Proposed Plan, moreover, appears at risk of becoming a *fait accompli*.

SGC has a unique and comprehensive knowledge of the Mayflower, including having constructed and operated a sensible and successful repository at Impoundment No. 4 that facilitated basin wide remediation and the storage of water treatment precipitate. SGC has been offering the Mayflower, and specifically Impoundment No. 4, to EPA for use as a repository since 2016.⁴⁴ SGC has provided EPA prospective Impoundment No. 4 repository design drawings,⁴⁵ and SGC has offered to meet with EPA to address repository logistics and implementation.⁴⁶

EPA, however, has *never* engaged SGC in *any* conversation concerning the design, construction, or operation of a repository at the Mayflower or any of its Impoundments (or, to SGC's knowledge, any other stakeholder or community member). EPA's failure includes not engaging SGC on any aspect of EPA's Proposed Plan for a repository at the Mayflower or on any aspect of the focussed feasibility study⁴⁷ on a repository at the Mayflower. It is incomprehensible that EPA has failed to engage at all the stakeholder with the most unique and comprehensive knowledge of the Mayflower, and the stakeholder with the most unique and comprehensive knowledge of the design, construction, and operation of a sensible and successful repository at Mayflower Impoundment No. 4.⁴⁸

Additionally, SGC has provided EPA with voluminous data and extensive reports and analyses⁴⁹ comprehensively characterizing the environmental condition of the Mayflower, including Impoundment

⁴³ For instance, as stated by the Bonita Peak Community Advisory Group (CAG) "[s]ome members of the CAG and [Silverton Planning Group] have twenty-five years of experience with water quality and mine remediation in the Animas Basin. As far as we can tell, currently only one EPA person who is heavily involved with the site has more than four years of direct experience in the Animas Basin. EPA should welcome the use of long-term, local experience." Bonita Peak CAG, Draft Chapters 2 & 4 of the BPMD Site Management Strategy (June 22, 2020).

⁴⁴ See e.g. Perino Letter to Thomas (June 24, 2016) (Exhibit 14); Stoneback Letter to Naftz (June 11, 2018) (Exhibit 15).

⁴⁵ See Roach Letter to Sopkin (Sept. 10, 2019) (Exhibit 12). These design drawings, and SGC's unique familiarity with the Mayflower and expertise in repository design, construction, and operation, moreover, could greatly facilitate the cost-effective implementation and operation of a sensible and successful repository at the Mayflower (See *Also* Comment (1)).

⁴⁶ See e.g. Maley Letter to Naftz (Aug. 9, 2019) (Exhibit 13).

⁴⁷ EPA's only engagement was to demand SGC provide access to SGC's property to allow EPA to perform its geotechnical studies, which access SGC provided. See Consent for Access (Aug. 12, 2019).

⁴⁸ Additionally, it is SGC's property that will be taken, and alternative uses of that property precluded, by the construction and operation of a repository at the Mayflower. Except for demanding SGC provide consent for construction and operation of a repository and waive any takings claim SGC might have, EPA did not engage SGC at all on the taking of its property for this public use. See e.g. Stoneback Letter to Naftz (Aug. 10, 2020) (Exhibit 16); Stoneback Letter to Naftz (Aug. 17, 2020) (Exhibit 17).

⁴⁹ See e.g. Formation Environmental, Draft Impoundment No. 4 Conceptual Site Model Mayflower Impoundments Area (July 2020) (Exhibit 2); Revised Draft Impoundment No. 4 Conceptual Site Model Mayflower Impoundments Area (Aug. 2020) (Exhibit 3); David Bird, Knight Piesold, Technical Memorandum: Review of Data Relating to

No. 4 (See Comment (5)). EPA apparently considered *none* of these Mayflower reports or analyses in crafting its Mayflower repository Proposed Plan,⁵⁰ and EPA’s contractor only referenced certain Mayflower Investigation Summary and Data Interpretation Reports, and failed to even reference the Impoundment No. 4 Conceptual Site Model Mayflower Impoundments Area or the Knight Piesold, Technical Memorandum: Review of Data Relating to Mayflower Area Water Quality, in its Focused Feasibility Study.⁵¹ EPA failed to consider these reports or analyses despite their unmistakable relevance to crafting a sensible repository at the Mayflower, despite their unmistakable relevance to understanding the environmental condition of the Mayflower, and despite their undermining certain of EPA’s erroneous assumptions regarding the Mayflower.

EPA, moreover, may not predetermine that it is going to design, construct, or operate a Mayflower repository its way, regardless of stakeholder or community input, comments, or, involvement in Mayflower repository analysis or decision making.⁵² Yet this is what EPA appears to be doing. On July 29, 2020, the same day EPA’s Mayflower repository Proposed Plan was sent out for public comment, EPA sent a letter to SGC demanding access to the Mayflower to, among other things, “construct the site-wide repository *as outlined in the Proposed Plan issued on July 29, 2020.*”⁵³ EPA asserted that it intended “to initiate construction of the site-wide repository in 2020,”⁵⁴ and that access was needed for this planned action in advance of issuance of the Record of Decision.⁵⁵

SGC responded to EPA, recognizing the utility of the Mayflower as a sitewide repository and confirming that SGC would not restrict, impede, or interfere with any efforts EPA or its agents needed to undertake to make a Mayflower repository a reality.⁵⁶ But SGC noted that the Mayflower repository was still a proposal, “subject to community and stakeholder review, input, and involvement in decision making, and

Mayflower Area Water Quality (April 2, 2020) (Exhibit 4); Summary of SGC Remedial Actions: Mayflower Mill and Impoundments (Exhibit 9); Formation Environmental, Draft Aquatic Biota Baseline Ecological Risk Assessment, Mayflower Tailings Impoundments Area (Jan. 2018) (Exhibit 18); Formation Environmental, 2019 Investigation Summary and Data Interpretation Report, Mayflower Mill and Tailings Impoundments Area (May 2020); Formation Environmental, Draft 2018 Investigation Summary and Data Interpretation Report, Mayflower Mill and Tailings Impoundments Area (March 2019); Formation Environmental, 2017 Investigation Summary and Data Interpretation Report, Mayflower Mill and Tailings Impoundments Area (July 2018); Formation Environmental, 2016 Investigation Summary and Data Interpretation Report, Mayflower Mill and Tailings Impoundments Area (Feb. 2017); Formation Environmental, Draft 2015 Investigation Summary and Data Interpretation Report, Mayflower Mill and Tailings Impoundment Areas (Feb. 2016); SGC, Monthly Progress Reports (submitted monthly since June 2017 for all months in which field activities conducted, and including all data received by SGC and collected pursuant to the AOC).

⁵⁰ See U.S. EPA, Proposed Plan for the Bonita Peak Repository, Documents to Support this Action Section (July 2020).

⁵¹ See CDM Smith, Final Focused Feasibility Study Report (July 2020).

⁵² See *also* Comment (1) (portion addressing need for haulage and access route clarification, and stakeholder and community review, input, and involvement in decision making).

⁵³ Naftz Letter to Stoneback (July 29, 2020) (emphasis added) (Exhibit 19).

⁵⁴ EPA’s assertion that construction would commence in the fall of 2020 contradicted EPA’s public representations that construction would not commence until the fall of 2021. See U.S. EPA, Bonita Peak Mining District Superfund Site Bonita Peak Repository Proposed Plan Public Comment Meeting (Aug. 11, 2020) (presented at August 11, 2020, public meeting, wherein the “Bonita Peak Repository Schedule” notes “Construction: fall 2021”); U.S. EPA, Proposed Plan for Bonita Peak Repository (July 2020) (noting “[t]he initial construction timeframe is one season and the repository should be able to accept wastes from the Gladstone IWTP by the time storage runs out in late 2021 or 2022”).

⁵⁵ Naftz Letter to Stoneback (July 29, 2020) (emphasis added) (Exhibit 19).

⁵⁶ Stoneback Letter to Naftz (Aug. 10, 2020) (Exhibit 16).

the repository EPA conceives of today may be very different from the repository actually built.”⁵⁷ EPA dismissed this concern, repeating in response that access is “needed to construct the site-wide repository as outlined in the Proposed Plan issued on July 29, 2020.”⁵⁸ Stakeholder and community involvement, if ever permitted, is nullified and without effect if EPA has predetermined what action it intends to take.

EPA’s dismissal of stakeholder and community involvement, moreover, appears to be systemic. In the Bonita Peak CAG’s (CAG) Comments on Draft Chapters 2 & 4 of the BPMD Site Management Plan, the CAG noted that:

With regard to setting more specific goals and objectives, our biggest concern with these chapters lies with the structure laid out in Chapter 4 for the roles of the CAG and the BPMD Silverton Planning Group (SPG). First, Section 4.1 states that the initial Site Principles (site goals and objectives) were developed collaboratively by EPA and Site stakeholders. In fact, community stakeholders were not part of that process. Several government agencies developed those Site Principles and presented them to the local community. While these initial Site Principles are reasonable, we are concerned that as they are revisited and potentially become more specific, they will again be developed with little input from community stakeholders. Local stakeholders are directly impacted by the goals and objectives selected at this site. We want our perspectives included in the initial “input” stage in the Site Principles development.⁵⁹

Similarly, EPA determined in its Interim Record of Decision (IROD) to spend millions of dollars on a plethora of temporary, interim remedial actions with no demonstrated improvement to water quality. EPA determined to do so despite public opposition to the interim actions,⁶⁰ and EPA determined to do so while dismissing stakeholder and community input:

EPA has not made any significant changes to the original proposal but has provided clarifying information in this IROD based on the comments.⁶¹

Inviting public comment and then changing nothing is not engaging stakeholder and community members in active participation in site related actions or decisions or in improving EPA’s decisions and environmental outcomes through public participation. It is EPA simply saying it is its way or nothing.

EPA, moreover, has failed to permit public participation where information directly relevant to the construction and operation of a repository has been sought. SGC, interested in seeing the construction and implementation of a sensible, cost-effective, and long-term repository, and in facilitating transparent selection of a repository, sought information from EPA regarding the Kittimac Tailings facility, which EPA

⁵⁷ Stoneback Letter to Naftz (Aug. 10, 2020) (Exhibit 16).

⁵⁸ Naftz Letter to Stoneback (Aug. 13, 2020) (Exhibit 20); *see also* Stoneback Letter to Naftz (Aug. 17, 2020) (Exhibit 17).

⁵⁹ Bonita Peak CAG, Draft Chapters 2 & 4 of the BPMD Site Management Strategy (June 22, 2020).

⁶⁰ *See e.g.* Published Comments on Multi Source Proposed Plan for 2018 Interim Record of Decision (Released September 10, 2018); Durango Herald, EPA won’t release public comments about Superfund cleanup until after decision on plan (Aug. 29, 2018); Durango Herald, EPA’s quick-action Superfund plan receives flak from commenters (Sept. 14, 2018); Silverton Standard, EPA interim remedial plan draws criticism (June 28, 2018); Silverton Standard, Comments on EPA interim plan (Sept. 13, 2018).

⁶¹ IROD, RS-23.

used as an interim repository prior to turning its attention to the Mayflower.⁶² EPA provided none of the requested information, calling it “not necessary.”⁶³

The Partnership and Stakeholder Engagement Strategy developed by the Superfund Task Force states that “EPA recognizes the importance of meaningful participation of stakeholders, and will enhance engagement with local communities and stakeholders to ensure transparency, community buy-in, and more timely cleanup decisions.”⁶⁴ A Key Goal set forth in EPA’s Superfund Community Involvement Handbook is to ensure that affected community members are aware of EPA’s activities and have the opportunity to influence site cleanup and reuse decisions.⁶⁵ The NCP requires EPA to provide the public with “appropriate opportunities for involvement in a wide variety of site-related decisions, including site analysis and characterization, alternatives analysis, and selection of remedy.”⁶⁶ The Community Involvement Plan (CIP) expressly addresses planned actions and the need for stakeholder and community involvement, noting the need to “engage community members so they can actively participate during the cleanup decision-making process.”⁶⁷

Stakeholder and community involvement in Mayflower repository analysis and decision making, however, is not merely a legal requirement. It is necessary to improve environmental outcomes. “[D]evelopment of strong stakeholder relationships is key to EPA’s remediation success.”⁶⁸ “Giving the public an opportunity to communicate their concerns, problems, and alternatives can improve the Agency’s decisions and environmental outcomes.”⁶⁹

During the development of the Mayflower repository Proposed Plan, stakeholders and the community were not asked for input or consideration. Their prior site analyses, reports, or repository designs were ignored or dismissed without explanation. They were not involved in the analysis of alternatives, nor provided information relevant to evaluating repository alternatives. Stakeholders and the community, moreover, were not involved despite consistent advocacy for openness, cooperation, and involvement.⁷⁰ A sensible and successful Mayflower repository can be constructed and operated. But it cannot be done if stakeholders and the community are not actually and meaningfully involved in Mayflower repository site-related actions and decisions.

⁶² See Roach Letter to Jenkins (Oct. 17, 2019) (Exhibit 21).

⁶³ See Jenkins Letter to Roach (Received Nov. 20, 2019) (Exhibit 22).

⁶⁴ Partnership and Stakeholder Engagement Strategy Superfund Task Force Recommendation 40.

⁶⁵ U.S. EPA, Superfund Community Involvement Handbook (OLEM 9230.0-51) (March 2020).

⁶⁶ 40 C.F.R. § 300.430(c)(2)(ii).

⁶⁷ U.S. EPA, Final Bonita Peak Mining District Superfund Site Community Involvement Plan (Aug. 2017).

⁶⁸ Superfund Task Force Recommendations, Executive Summary (June 21, 2017).

⁶⁹ U.S. EPA, Superfund Community Involvement Handbook (January 2016).

⁷⁰ See e.g. Perino Letter to Citizens Superfund Workgroup (Aug. 20, 2017) (Exhibit 23); Westesen Letter to Sisk (Sept. 8, 2017) (Exhibit 24); Westesen Letter to Sisk (Feb. 13, 2018) (Exhibit 25).