

EXHIBIT A



October 7, 2025

Ms. Cory Shaw, Executive Director
Washington Aggregates & Concrete Association
22223 7th Ave South
Des Moines, WA 98198

**RE: Review of Department of Ecology's Small Business Economic Impact Analysis;
Sand & Gravel Permit**

Dear Ms. Shaw:

Crystal Waters Consulting, LLC (CWC) has reviewed the *Small Business Economic Impact Analysis: Sand and Gravel Permit* (SBEIA), prepared by Mr. Shon Kraley, Ph.D., for the Water Quality Program of the Washington State Department of Ecology (Ecology), dated August 2025. This letter provides background on the purpose of the SBEIA and the rationale for its preparation by Ecology. It also summarizes the key elements the SBEIA is required to address.

Following this background, the letter presents my analysis of the SBEIA. Based on this review, I have identified significant concerns with the report's methodology, particularly the cost calculation approach and the data sources used in developing the estimates. In my professional opinion, these methodological flaws result in a substantial understatement of the economic impact on small businesses. This, in turn, affects the adequacy of the selected mitigation measures and compromises the fair and effective implementation of the proposed Sand and Gravel General Permit. Furthermore, the report likely underestimates the economic impact on large businesses as well.

Background

The Washington State Department of Ecology recently issued proposed, draft changes to the Sand and Gravel General Permit. In accordance with Washington Administrative Code (WAC) 173-226-120, Ecology is required to assess whether the proposed permit changes would impose a disproportionate burden on small businesses by preparing a Small Business Economic Impact Analysis. If such a burden is identified, Ecology must take steps to mitigate it to the extent that is legal and feasible.

WAC 173-226-120 also requires the SBEIA to include the following elements:

- A brief description of the compliance requirements of the general permit.
- An estimate of the costs associated with complying with the permit, based on available data for the businesses expected to be covered, including:
 - Minimum technology-based treatment requirements as outlined in WAC 173-226-070
 - Monitoring requirements specified in the general permit

- Reporting and recordkeeping requirements
- Plan submittal requirements
- Equipment
- Supplies
- Labor
- Increased administrative costs

It is important to emphasize that cost estimates must be based on available data specific to the businesses expected to be covered under the permit. Additionally, the sources of this data must be clearly identified in accordance with RCW 34.05.272.

Under RCW 34.05.272(2)(a), before taking a significant agency action—including any Ecology rule implementing a regulatory determination under RCW 70A.350.040(1)(b) or (c)—Ecology is required to identify all sources of information it reviewed and relied upon during the rulemaking process. This includes peer-reviewed literature (if applicable), other scientific literature, and any additional sources used.

Furthermore, the Department must make available on its website an index of all records relied upon or cited in support of the proposed significant agency action.

In addition to clearly identifying data sources specific to the construction aggregates or sand and gravel industry, the methodology used to conduct the economic analysis must adhere to standard practices commonly accepted in economic studies. This includes clearly describing the type of economic analysis employed and explicitly stating the assumptions used to calculate the findings.

Throughout the remainder of this letter, CWC will address specific concerns with the SBEIA, including issues related to its methodology, data sources, cost estimates, and the lack of transparency in how those estimates are linked to the requirements outlined in the draft, proposed Sand and Gravel General Permit.

Methodology

Definition of a Small Business

In the SBEIA report, the cost analysis is presented by comparing small and large businesses. Initially, in Section 1.2, a small business is defined as “an independent entity with 50 or fewer employees.” However, in Chapter 2, the analysis is structured around seven types of facilities, categorized by size and operational type and does not structure the analysis by the size of a business:

1. Small, inactive sand and gravel pit
2. Small, active sand and gravel pit
3. Large, active sand and gravel pit
4. Small, active sand and gravel pit with concrete and recycling
5. Large, active sand and gravel pit with concrete and recycling
6. Small, active hot-mix asphalt facility
7. Large, active hot-mix asphalt facility

In Appendix A, all cost estimates are based on the size of the facility rather than on business size as defined by the number of employees. The report estimates the cost per employee for these facility types using Table 3, page 19 (as shown in Figure 1 below). However, the text above this table appears to contain a typographical error, referring to it as Table 2. Moreover, while the narrative claims to evaluate small businesses, the calculations are actually based on facility size, not business structure.

This approach demonstrates Ecology's lack of knowledge regarding the industry it seeks to regulate. The approach fails to account for the reality that many small businesses in the sand and gravel, concrete and asphalt industry may own and operate multiple facilities. In these cases, employees are often shared across sites, meaning the cost per employee or per business cannot be accurately captured by analyzing each facility in isolation.

As a result, the methodology introduces inconsistencies and may significantly underestimate the actual burden on small businesses. For example, if a small business operates two or more facilities, the estimated cost could be effectively doubled or tripled, depending on how the report allocates costs. Additionally, the SBEIA also incorrectly accounts for the costs of large facilities by assuming employee counts (e.g., 27,167) apply to a single site, when in reality, the larger companies also own multiple locations.

Therefore, the SBEIA's approach does not provide a realistic or representative estimate of the sand and gravel, concrete, and asphalt industries' economic impact.

Table 2 lists the average number of employees for the small businesses (less than 50 employees) and the largest 10% of businesses in each of the representative industries.⁴

Table 3: Average employment estimates by sector

Type of facility	Number of employees
Inactive small facility	2
Active small facilities in NAICS 21232X	10
Active largest ten percent of facilities in NAICS 21232X	1,633
Active small facilities in NAICS 32412X	7
Active largest ten percent of facilities in NAICS 32412X	1,460
Active small facilities in NAICS 3273XX	6
Active largest ten percent of facilities in NAICS 3273XX	27,167

⁴ Employment data for potentially impacted entities comes from Ecology's third-party database of employers with locations in Washington State.

Figure 1: Table 3 from SBEIA Report

Data Sources

As discussed earlier, RCW 34.05.272 requires the SBEIA to clearly identify all sources of information relied upon and to maintain a public record of these sources. Table 3 (shown in Figure 1 above) of the SBEIA highlights a key example where this requirement is not met. Reference number 4 notes that "employment data for potentially impacted entities comes from Ecology's third-party database of employers with locations in Washington State." However, this "third-party" database is neither cited in detail nor included in the report's appendices, preventing any independent verification of the data's accuracy or relevance to the sand and gravel industry.

This lack of transparency is not isolated to Table 3 but is consistent throughout the report. Many references are vague or point to sources that are not publicly accessible, making it impossible to replicate or verify the findings. Although the report includes a list of references on page 69, it does not include critical underlying data or documentation to support key assumptions and estimates. The SBEIA thus does not meet the requirements of RCW 34.05.272.

Notably, the report does not appear to have undergone an independent or external peer review, nor does it indicate that Ecology sought input from stakeholders within the sand and gravel industry during the development of the analysis. This lack of industry engagement and external validation undermines the credibility and completeness of the economic impact assessment, particularly where the SBEIA demonstrates Ecology's lack of knowledge regarding the industry.

Within the "Independent Data" section of the report, several sources are listed. However, significant issues were identified with these sources, as outlined below.

- Everett Environmental Laboratory (2020). 2018 Everett Environmental Laboratory Price List.
 - This references an outdated price list.
- Permit and Reporting Information System (PARIS) (2025). Ecology database. <http://www.ecy.wa.gov/PROgrams/wq/permits/paris/index.html>
 - The Link provided is broken and does not provide the information used in the report.
- US Bureau of Labor Statistics (2024). May 2024 State Occupational Employment and Wage Estimates for Washington. https://www.bls.gov/oes/current/oes_wa.htm
 - The Link provided does not go to the wage rates used and the report fails to identify those labor positions within the analysis that would likely require the use of a Prevailing Wage Rate. This issue will be explored in more detail later in this letter.
- Records of the best professional judgment of Ecology employees or other individuals.
 - It is unclear what this means, what Ecology employees are referred to, what relevant knowledge or expertise that those employees may have, what records are being referred to or where they were used in the report.

Cost Data Issues

Within Appendix A of the SBEIA report, multiple tables are presented for each of the evaluated facility types, listing unit costs for various line items. However, none of these unit costs are directly referenced or sourced, making it impossible to verify their origin or understand the assumptions used in their calculation.

While the report mentions wage data from the Bureau of Labor Statistics (BLS), the provided link does not lead to a specific table or dataset that includes the actual wage values used in the analysis. As a result, it remains unclear how the reported labor costs were derived.

Table 1 below summarizes commonly used line items from Appendix A across all facility types, with the columns shaded in gray reflecting data taken directly from the SBEIA. It appears that

the unit cost for labor (Ref # 1) was based on private sector wage rates. This is one of the few line items where the nature of the cost (i.e., labor) is clearly identifiable. However, the analysis appears to either incorrectly apply a private-sector wage rate or fails to account for the fact that many operations in the sand and gravel, concrete, and asphalt industries are unionized or subject to prevailing wage requirements because many of the industry's customers are public entities subject to those requirements.¹

According to the Washington State Department of Labor and Industries, the prevailing wage for a laborer is \$46.74² per hour. This wage rate is more appropriate because it reflects prevailing wage rates, which Washington sand and gravel businesses must routinely pay. If this rate had been used in the cost analysis, the unit cost for labor would be significantly higher than what is presented in the report, altering the overall cost estimates, potentially substantially.

While the "Supervision" (Ref # 2) line item is also assumed to be associated with labor costs, it is reasonable to conclude that this position would be compensated at a private-sector wage rate, rather than prevailing wage. However, even in this case, the wage rate used in the SBEIA appears to be inaccurate. According to the BLS, the mean hourly wage for a Supervisor in the Construction Trades and Extraction sector in Washington State (SOC code 47-1011) is \$53.84.³ In contrast, the SBEIA lists the Supervisor's hourly wage as \$31, a figure that significantly underestimates the actual market wage for this position. Further, the SBEIA does not reference a Standard Occupational Classification (SOC) code that would link the data to a specific occupation and corresponding wage rate within the BLS database. As a result, the validity of the SBEIA's cost analysis is further undermined, as the source and accuracy of the wage rates used cannot be independently verified.

In Table 1, References #3 and #4 list a Grader and a Front-End Loader, each with a unit cost of \$39 per hour; again, these rates originate from the SBEIA Appendix A. However, it is unclear whether this hourly rate includes both the cost of owning or renting the equipment and the labor required to operate it. Standard practice in economic cost analysis is to separate these two components: equipment costs and labor costs for the equipment operator.

For heavy equipment, it is customary to apply a prevailing wage rate for the operator, as many facilities in the sand and gravel, concrete, and asphalt industries are unionized or otherwise subject to prevailing wage requirements. According to the Washington State Department of Labor and Industries, the prevailing wage for a Heavy Equipment Operating Engineer is \$67.26 per hour.⁴

This labor cost would be in addition to the cost of renting or owning the equipment itself. Therefore, the \$39/hour unit cost listed in the SBEIA appears to significantly underestimate the true cost. It is unclear whether the report omitted the labor cost, the equipment cost, or both—calling into question the accuracy and completeness of the cost estimates provided.

¹ <https://teamsters174.net/building-materials-construction/>

² <https://secure.lni.wa.gov/wagelookup/rates/apprentice-rates>

³ First Line Supervisor from Construction for Construction Trades and Extraction Workers. www.bls.gov/oes. Washington. OES_Databook_2025 for Washington.

⁴ <https://secure.lni.wa.gov/wagelookup/rates/apprentice-rates> - "Construction Equipment Operator"

Table 1: Unit Cost Analysis

Ref #	Item	Unit	Unit Cost	Other Sources
1	Labor	Hours	\$31	\$46.74
2	Supervision	Hours	\$35	\$53.84
3	Grader (heavy equipment)	Hours	\$39	\$67.26
4	Front-End Loader (heavy equipment)	Hours	\$39	\$67.26

Throughout the tables in Appendix A of the SBEIA, there are no citations identifying labor rates for Operating Engineers or equipment operators responsible for running heavy equipment or smaller vehicles such as water trucks, support vehicles, or mowers. As a result, it is unclear whether the unit costs provided for these items include labor or only represent equipment costs.

Moreover, the report does not explain how any of the unit costs were derived, nor does it clarify whether labor is included in cases where the line item references equipment. This lack of transparency raises serious concerns about the accuracy and completeness of the cost estimates. If labor is not included for operating or using the equipment, the reported figures significantly understate the true cost of complying with the permit requirements.

Without clear sources, the figures in Appendix A cannot be verified, reviewed, or cross-referenced—making it impossible to assess whether the estimates accurately reflect real-world conditions or industry standards. This compounds the lack of transparency noted above.

Effluent Monitoring Costs

Within the SBEIA Appendix A, each facility has a table associated with Compliance Costs and a separate table associated with Effluent Monitoring Costs. Table 2 below summarizes the total Compliance and Effluent Monitoring Costs for each facility evaluated in the SBEIA.

Table 2: Total Compliance & Effluent Monitoring Costs Per Facility Type from SBEIA Appendix A

Facility Type	New	Existing
Small, Inactive Sand & Gravel Pit		
-Compliance Costs	\$2,909	\$2,565
-Effluent Monitoring Costs	No Data Provided	No Data Provided
Total Small Inactive Sand & Gravel Pit	\$2,909	\$2,565
Small, Active Sand & Gravel Pit		
-Compliance Costs	\$74,812	\$32,456
-Effluent Monitoring Costs	\$18,962	\$18,962
Total Small Active Sand & Gravel Pit	\$93,774	\$51,418
Large, Active Sand & Gravel Pit		
-Compliance Costs	\$127,288	\$66,391
-Effluent Monitoring Costs	\$39,810	\$39,810
Total Large Active Sand & Gravel Pit	\$167,098	\$106,201
Small, Active Sand & Gravel Pit with Concrete & Recycling		
-Compliance Costs	\$133,525	\$81,247
-Effluent Monitoring Costs	\$81,365	\$81,365
Total Small Active Sand & Gravel Pit w/Concrete & Recycle	\$214,890	\$162,612
Large, Active Sand & Gravel Pit with Concrete & Recycling		
-Compliance Costs	\$216,692	\$132,330
-Effluent Monitoring Costs	\$81,884	\$81,884
Total Large Active Sand & Gravel Pit w/Concrete & Recycling	\$298,576	\$214,214
Small, Active Hot Mix Asphalt Facility		
-Compliance Costs	\$35,815	\$19,722
-Effluent Monitoring Costs	\$30,424	\$30,424
Total Small Active Hot Mix Asphalt Facility	\$66,339	\$50,146
Large, Active Hot Mix Asphalt Facility		
-Compliance Costs	\$74,639	\$43,756
-Effluent Monitoring Costs	\$30,282	\$30,282
Total Large Active Hot Mix Asphalt Facility	\$104,921	\$74,038

On page 18 of the SBEIA, and as shown in Figure 2 below, compliance costs are presented by facility in thousands of dollars. However, these figures do not include the Effluent Monitoring Costs detailed in Appendix A and summarized in Table 2 above. For example, according to Figure 2 below (which reflects Table 2 in the SBEIA report), the compliance cost for an existing small, active sand and gravel pit is listed as \$32,000. In contrast, Table 2 above shows a total compliance cost of \$32,456 and effluent monitoring costs of \$18,962—bringing the actual total to \$51,418. These values are taken directly from Appendix A of the SBEIA. By omitting these costs—and without providing an explanation for their exclusion—it is not possible to determine whether the economic comparisons are valid. This omission further undermines the overall credibility of the report and its ability to accurately estimate the true cost of implementing the proposed draft general permit.

The SBEIA report does not explain why only compliance costs were included in the analysis, and why effluent monitoring costs, despite their presence in Appendix A and despite such costs being compliance costs (because such monitoring is required for permit compliance) were

excluded. If effluent monitoring costs were not intended to be part of the total cost analysis, their inclusion in Appendix A is unclear. If, on the other hand, such costs were inadvertently included in Appendix A, those costs should be included because they are costs of compliance. This omission, whether intentional or not, results in a significant underestimation of total compliance costs and raises concerns about the transparency, consistency and validity of the report's methodology.

Table 2: Summary of annual equivalent compliance costs

Facility Type	Estimated Compliance Cost (thousands of \$) New	Estimated Compliance Cost (thousands of \$) Existing
Small, inactive sand and gravel pit	\$3	\$3
Small, active sand and gravel pit	\$75	\$32
Large, active sand and gravel pit	\$127	\$66
Small, active sand and gravel pit with concrete and recycling	\$134	\$81
Large, active sand and gravel pit with concrete and recycling	\$217	\$132
Small, active hot-mix asphalt facility	\$36	\$20
Large, active hot-mix asphalt facility	\$75	\$44

Figure 2: SBEIA Compliance Costs

On page 19 of the SBEIA, the estimated number of employees used to calculate the cost per employee is included in the table titled 'Average Employment Estimates by Sector'. However, as on page 20 of the SBEIA (shown in Figure 3 below), the cost per employee is derived solely from compliance costs, excluding the effluent monitoring costs also presented in Appendix A. This is clearly illustrated in Table 3 below, where the calculated cost per employee used in the SBEIA only accounted for compliance and did not consider the effluent monitoring costs. (the cells highlighted in yellow in Table 3 match Table 4 in Figure 3 below from the SBEIA report). As mentioned above, there is no explanation why effluent monitoring costs were excluded, as they are clearly compliance costs.

Table 4: Relative costs of compliance

Facility Type	NAICS	Compliance Cost per Employee (dollars): New	Compliance Cost per Employee (dollars): Existing
Small, inactive sand and gravel pit	21232	\$1,455	\$1,283
Small, active sand and gravel pit	21232	\$7,481	\$3,246
Large, active sand and gravel pit	21232	\$78	\$41
Small, active sand and gravel pit with concrete and recycling	3273	\$22,254	\$13,541
Large, active sand and gravel pit with concrete and recycling	3273	\$8	\$5
Small, active hot-mix asphalt facility	32412X	\$5,116	\$2,817
Large, active hot-mix asphalt facility	32412X	\$51	\$30

Figure 3: SBEIA Estimated Compliance Costs per Employee

Table 3: Evaluation of the Cost Per Employee Estimated in the SBEIA

Facility Type	Total Facility Cost New	Total Facility Cost Existing	Cost/Employee New	Cost/Employee Existing
Small, Inactive Sand & Gravel Pit	Est. No. of Employees⁵ (2)			
-Compliance Costs	\$2,909	\$2,565	\$1,455	\$1,283
-Effluent Monitoring Costs	No Data Provided	No Data Provided		
Total Small Inactive Sand & Gravel Pit	\$2,909	\$2,565	\$1,455	\$3,246
Small, Active Sand & Gravel Pit	Est. No. of Employees (10)			
-Compliance Costs	\$74,812	\$32,456	\$7,481	\$3,246
-Effluent Monitoring Costs	\$18,962	\$18,962		
Total Small Active Sand & Gravel Pit	\$93,774	\$51,418	\$9,377	\$5,142
Large, Active Sand & Gravel Pit	Est. No. of Employees (1,633)			
-Compliance Costs	\$127,288	\$66,391	\$77.95	\$40.66
-Effluent Monitoring Costs	\$39,810	\$39,810		
Total Large Active Sand & Gravel Pit	\$167,098	\$106,201	\$102.33	\$65.03
Small, Active Sand & Gravel Pit with Concrete & Recycling	Est. No. of Employees (6)			
-Compliance Costs	\$133,525	\$81,247	\$22,254	\$13,541
-Effluent Monitoring Costs	\$81,365	\$81,365		
Total Small Active Sand & Gravel Pit w/Concrete & Recycle	\$214,890	\$162,612	\$35,815	\$27,102
Large, Active Sand & Gravel Pit with Concrete & Recycling	Est. No. of Employees (27,167)			
-Compliance Costs	\$216,692	\$132,330	\$7.98	\$4.87
-Effluent Monitoring Costs	\$81,884	\$81,884		
Total Large Active Sand & Gravel Pit w/Concrete & Recycling	\$298,576	\$214,214	\$10.99	\$7.89
Small, Active Hot Mix Asphalt Facility	Est. No. of Employees (7)			
-Compliance Costs	\$35,815	\$19,722	\$5,116	\$2,817
-Effluent Monitoring Costs	\$30,424	\$30,424		
Total Small Active Hot Mix Asphalt Facility	\$66,339	\$50,146	\$9,463	\$7,164
Large, Active Hot Mix Asphalt Facility	Est. No. of Employees (1,460)			
-Compliance Costs	\$74,639	\$43,756	\$51.12	\$29.97
-Effluent Monitoring Costs	\$30,282	\$30,282		
Total Large Active Hot Mix Asphalt Facility	\$104,921	\$74,038	\$71.86	\$50.71

⁵ Estimated Number of Employees is from Table 3, page 19 of the SBEIA report.

Effluent Sampling and Labor Costs

A review of the effluent monitoring costs in the SBEIA reveals discrepancies in both the cost per test and the labor rates for sampling. In Appendix A, the estimated cost per test is \$16.50, and the sampling labor rate is listed as \$30.66 per hour. However, the SBEIA references a 2018 Everett Environmental Laboratory price list, which is significantly outdated. The attached 2025 Everett Environmental Laboratory Price List, effective February 1, 2025, provides updated pricing: pH and turbidity tests are listed at \$21 each, while Total Dissolved Solids (TDS) and Total Suspended Solids (TSS) tests are priced at \$41 and \$35, respectively—substantially higher than the \$16.50 figure used in the report. The SBEIA provides no explanation why it relied on the 2018 price list when the 2025 price list from the same laboratory is readily available.

In addition, the SBEIA's labor cost estimate of \$30.66 per hour makes the same underestimation error discussed above. According to the 2025 Washington State Prevailing Wage Rates, the hourly rate for a landscape maintenance construction worker—a classification likely to be responsible for sample collection—is \$46.74. The SBEIA does not cite a source for its labor cost figure, making it impossible to verify whether the rate is accurate or relevant to workers in the sand and gravel, concrete, or asphalt industries.

These errors and inconsistencies call into question the accuracy and reliability of the effluent monitoring cost estimates used in the SBEIA's overall cost analysis.

Permit Compliance Cost Issues

To verify that the cost estimates in Appendix A of the SBEIA accurately reflect the full range of both existing and new requirements outlined in the General Permit, the estimates would need to reference specific sections of the permit. However, this cross-referencing was not provided. While Appendix A includes a list of assumed actions for each facility type, these actions are not linked back to the permit language, making it difficult to determine whether all relevant requirements—particularly new or revised ones—have been accounted for in each scenario.

The SBEIA lacks transparency regarding which specific provisions of the draft general permit were included in the cost analysis, making it unclear whether costs associated with new requirements were considered. Without clearly identifying the permit sections evaluated, it is not possible to assess the completeness or accuracy of the underlying cost assumptions. Based on our detailed review, it appears that several newly proposed requirements were excluded from the analysis. This likely results in a significant underestimation of the actual cost of compliance, particularly when compared to the current permit framework.

The omission of these new requirements represents a critical flaw in the SBEIA. The fundamental purpose of the SBEIA is to evaluate the economic impact of regulatory changes on small businesses. By failing to include all newly imposed obligations, the report does not fully assess those impacts. This further highlights deficiencies in the analysis and reinforces the conclusion that the report does not adequately capture the true economic burden of the proposed draft permit.

Although the permit comment period did not provide sufficient time to assess whether all new requirements in the Draft General Permit were included, we identified the following list of new

requirements within the Draft General Permit that do not appear to be reflected in any of the costs in Appendix A.

1. Reporting

- a. **Annual Report** – Permit Condition S10.G
 - i. None of the scenarios contained in Appendix A of the SBEIA report reference costs for preparing an Annual Report.

2. Special Conditions

- a. **S3.D.c – Lined Impoundment Requirements** – Impermeable Liner to include:
 - i. Synthetic membrane material, hardened concrete or hardened asphalt.
 - 1. Appendix A includes a lined impoundment assuming the use of concrete for the new small and large active sand and gravel pits. However, no other facility type includes a cost for lining an impoundment.
 - 2. The lined impoundment cost estimate used for the new small and large sand and gravel with concrete and recycling facilities was \$4,747. However, no citation or reference was provided that would allow for the verification of how this cost was estimated. Nor was this a cost included in any of the other scenarios.
- b. **S3.E. – all new facilities require a Chemical Use Plan.**
 - i. The cost of developing a Chemical Use Plan for the new facility options was not listed in Appendix A of the SBEIA report.
- c. **S8**
 - i. **S8.B.2.** – Impermeable Surfaces to be paved with concrete, asphalt, or synthetic membrane.
 - ii. **S8.E.9** – Impermeable Surfaces,
 - iii. **S8.F.3.b-** impervious surfaces where recycle concrete is stored must be lined.
 - 1. The revised permit requires certain impermeable surfaces to be paved or lined with a synthetic membrane; however, the SBEIA appears to estimate costs for hydromulching exposed surfaces instead. It is unclear which specific permit section the SBEIA assumes the hydromulching is intended to comply with. Whether it is intended to address requirements under Sections S8.B.2, S8.E.9, or S8.F.3.b, hydromulching does not appear to be the most suitable best management practice (BMP) for these scenarios. If paving with concrete, or asphalt is required to meet permit conditions, as the language suggests, none of the scenarios presented in Appendix A account for this more costly and labor-intensive requirement. This raises concerns that the SBEIA underestimates compliance costs by substituting an incorrect BMP or excluding it all together.

2. Additionally, for existing facilities to comply with Section S8.F.3.b, it would be necessary to relocate existing recycle material piles, pave the areas where they are stored, and then return the materials to the newly paved surfaces. The estimated costs associated with these activities are not included in the SBEIA report. As a result, the cost estimates provided do not accurately reflect the full cost of implementing the proposed general permit.

Conclusion

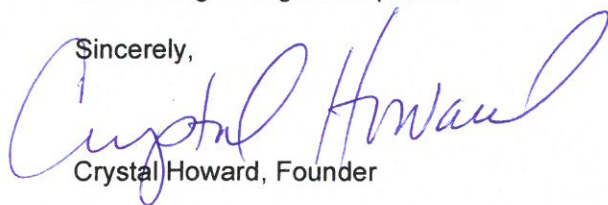
The SBEIA lacks the transparency and analytical rigor necessary to support a credible cost analysis. Key data sources—particularly those related to labor and sampling costs—are either outdated or not cited, making it impossible to verify their accuracy or relevance. The report also inconsistently applies the definitions of “small business” and “small site,” overlooking the fact that a single small business may operate multiple facilities and therefore face significantly higher cumulative compliance costs.

Labor rates appear to be underestimated, and sampling costs are based on outdated 2018 pricing, despite the availability of more current data. Most notably, while effluent monitoring costs are included in Appendix A, they are excluded from the overall cost estimates and cost-per-employee calculations without explanation. This omission significantly understates actual compliance costs.

Additionally, the assumptions in Appendix A are not clearly tied to specific permit requirements, making it difficult to determine which elements of the draft general permit were considered in the analysis. This lack of clarity prevents stakeholders from verifying the completeness or accuracy of the cost estimates, especially for new or revised permit obligations.

Taken together, these issues demonstrate that the SBEIA is not methodologically sound and lacks the necessary rigor to accurately estimate the true economic impact of the proposed, draft sand and gravel general permit.

Sincerely,



Crystal Howard, Founder

Attachments

Qualifications of the Author

Crystal Howard is the founder of Crystal Waters Consulting, LLC, and has a Master's Degree in Natural Resource Economics from Purdue University and mineral valuation training from the Colorado School of Mines. Ms. Howard has 20 years of experience performing economic and mineral valuation services in the form of producing construction aggregate market studies, forecasts, economic impact reports, mineral royalty evaluations, and expert witness testimony. Additionally, Ms. Howard has also developed a forecasting model that accurately estimates construction aggregate, concrete, and asphalt demand by region and state.