Prepared for:

Department of Energy, National Energy Technology Laboratory (NETL)

Pursuant to:

Office of Manufacturing and Energy Supply Chains and Office of Energy Efficiency And Renewable Energy Grant Opportunity (DE-FOA-0002678) DOE/EA-2214

Date: September 2024

FINAL ENVIRONMENTAL ASSESSMENT

SILA NANOTECHNOLOGIES MOSES LAKE AUTO-SCALE SILICON ANODE PLANT

This page intentionally left blank

FINDING OF NO SIGNIFICANT IMPACT
FOR
MOSES LAKE AUTO-SCALE SILICON ANODE PLANT
SILA NANOTECHNOLOGIES, INC.
MOSES LAKE, WASHINGTON
DOE/EA-2214

RESPONSIBLE AGENCY: U.S. Department of Energy (DOE)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: DOE completed the Final Environmental Assessment (EA) for Sila Nanotechnologies, Inc. (Sila) – Commercial-scale Silicon Anode Plant (DOE/EA – 2214). Based on analyses in this EA, DOE determined that the Proposed Action - awarding a grant to Sila to partially fund the design, construction, and operation of their commercial-scale silicon anode manufacturing plant - would result in no significant adverse impacts. DOE further determined that there would be beneficial impacts to socioeconomics, environmental justice, and greenhouse gas emissions reduction from implementation of Sila's Proposed Project.

BACKGROUND: As part of the Infrastructure Investment and Jobs Act (Bipartisan Infrastructure Law; Public Law 111-58), DOE's National Energy Technology Laboratory (NETL), on behalf of the Office of Manufacturing and Energy Supply Chains and the Office of Energy Efficiency and Renewable Energy, jointly issued the Funding Opportunity Announcement (FOA) DE-FOA-0002678 Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing. The BIL appropriates more than $62 billion to the DOE to deliver advances toward a clean energy future for the American people and contribute to global greenhouse gas and carbon reduction by investing more than $7 billion in the battery supply chain over the five-year period encompassing fiscal years (FYs) 2022 through 2026.

Sila's new manufacturing facility would enable sourcing of critical battery materials from within the U.S. and reduce dependence on foreign material supply as well as improve the lithium-ion battery industry in the U.S. and anticipated growth in the EV and hybrid-electric vehicle industries. If approved, DOE would provide $100,000,000 in financial assistance in a cost-sharing arrangement with the project proponent, Sila, who would provide approximately $517,000,000 towards the total project cost of approximately $617,000,000.

Based on the scope of the Proposed Project, DOE prepared an EA to evaluate potential environmental and socioeconomic consequences of providing financial assistance for the proposed project in accordance with the requirements of the National Environmental Policy Act (NEPA), as amended (42 U.S.C. 4321 et seq.), the President's Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR Parts 1500 to 1508), and DOE's implementing procedures for compliance with NEPA (10 CFR Part 1021).

PURPOSE AND NEED: The overall purpose and need for DOE action pursuant to the Office of Manufacturing and Energy Supply Chains in collaboration with the Office of Energy Efficiency and Renewable Energy and the funding opportunity under the BIL is to accelerate the development and production of a resilient supply chain for high-capacity batteries by increasing investments in battery materials processing and battery manufacturing projects. Sila's project site was selected due to its proximity to supporting industries, availability of existing industrial facilities in the area, as well as the site's access to reliable green energy (hydroelectric and wind power) for Sila's energy-intensive operations. The site has room for future expansion, exceptional access to transportation infrastructure, public utilities, and has great potential to have a positive economic impact on the Moses Lake community. This and other selected projects are needed to maximize benefits of the clean energy transition as the nation works to curb the climate crisis. These projects would meet the objective of recruiting, training, and retaining a skilled workforce in communities that have lost jobs due to displacement of fossil fuel-based energy jobs. The proposed project will also meaningfully assist in the nation's economic recovery by creating manufacturing jobs in the United States in accordance with the objectives of the BIL. The funding received from BIL will make this project (and others) possible.

DESCRIPTION OF THE PROPOSED ACTION: DOE's Proposed Action is to provide a grant to Sila in a cost-shared arrangement to partially fund Sila's proposed project to design, construct, and operate an automotive-scale silicon anode manufacturing plant, up to 2,300 tpy, in Moses Lake, Washington (Proposed Project). The Facility consists of an existing, but vacant 613,000 square foot building on 162 acres, with modifications to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space, as well as installation of process equipment and utilities and storage vessels outdoors. The building was previously constructed for industrial use under prior owners, but never utilized. Once completed and at full production levels, the Facility would produce enough silicon-anode material to supply over 200,000 EVs annually.

The Facility build would occur within Sila's existing industrial site, which was zoned industrial in 2015 by the City of Moses Lake and the previous owner. The existing structure on the property would be expanded by an additional 26 acres and include new ancillary buildings (e.g., fire pump house, guard stations, etc.), tanks, process and balance of plant equipment, abatement tools, and various paved surfaces as well as stormwater management infrastructure and landscape plantings. The proposed project would create approximately 450-500 construction jobs at construction peak and between 150-300 new full-time jobs with benefits during Facility commercial operations.

ALTERNATIVES CONSIDERED: In addition to the Proposed Action, DOE considered the No-Action Alternative as required under NEPA. Under the No-Action Alternative, DOE would not provide funds for the Proposed Project. It is Sila's intent to proceed in the absence of DOE funding, and DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If Sila's Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To

allow a comparison between the potential impacts of the projects to be implemented and the impacts of not proceeding with the project, for purposes of analyzing potential impacts in the EA, DOE assumed that the Proposed Project would likely not proceed without DOE assistance. The baseline of potential impacts in this case would involve Sila not designing, building, and operating their Facility.

ENVIRONMENTAL CONSEQUENCES: DOE considered the potential effects of the Proposed Action and No-Action alternative on eighteen environmental resource areas in preparation of the EA; however, not all resource areas were evaluated at the same level of detail. DOE determined that community services, parks and recreation, and aesthetics and visual resources were resource areas that would either not be affected or would sustain negligible impacts from the Proposed Project and thus were dismissed from detailed analysis in the EA. The areas that DOE evaluated in more detail included socioeconomics, environmental justice, wetlands and floodplains, surface water and groundwater, land use, air quality, greenhouse gasses, noise and vibration, geology, soils and topography, cultural resources, vegetation and wildlife, regulated wastes (solid and hazardous wastes), utilities and energy use, transportation and traffic, and public and occupational health and safety. For these areas, DOE determined there would be negligible or minor potential environmental impacts.

Socioeconomics: The Proposed Project would provide approximately 450-500 jobs during the peak construction period, with approximately 25 percent hired from the local population, and Sila would demonstrate a preference for contracting with local companies. Once operational, the Proposed Project would initially create approximately 150 - 300 new FTE jobs at full capacity. Labor requirements are not expected to change drastically as most jobs would be in advanced manufacturing operations, which is already represented in the region. No substantial influx in population is expected, therefore the impact to housing demand, public services, and resources would be expected to be minor and beneficial.

Environmental Justice: The Proposed Project supports DOE's stated EJ policy priority to increase clean energy jobs, the job pipeline, and job training for individuals from disadvantaged communities. While the Proposed Project site is not within a disadvantaged community, Sila is committed to promoting benefits for communities in the greater Moses Lake, Washington area. Sila also intends to implement programs to train underrepresented individuals to increase the pool of qualified candidates. For example, Sila is currently partnered with Big Bend Community College and the Columbia Basin Technical Skills Center for workforce development through a first-of-its-kind education program geared towards training the future battery workforce in Moses Lake. The program, focused on providing hands-on training for technical, mechanical, electrical, and software skills, will prepare students for new employment opportunities at Sila's silicon anode manufacturing plant.

Wetlands and Floodplains: A total of three wetlands (i.e., Wetland A, Wetland B, and Wetland D) and one stream (Stream 1) were identified on the Proposed Project site. Stream 1 is associated with Wetland A. Wetlands A and B are classified as type III wetlands with 25-foot-

wide buffers in accordance with the Washington State Wetlands Rating System for Eastern Washington. Wetland D is considered a Type IV wetland with a 10-foot buffer width. The Army Corps of Engineers determined that none of the drainages were "waters of the United States" under the Clean Water Act. Under this determination, no Section 404 permit or Nationwide Permit concurrence is required for the Proposed Project. The Proposed Project does not include any construction or operations within or in immediate proximity to wetlands, wetland buffers, or streams. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map indicates that the Proposed Project site lies in Zone X, indicating the area has minimal flood hazards (above the 500-year floodplain). Thus, the Proposed Project is anticipated to have negligible impacts on wetlands and floodplains.

Cultural Resources: The Proposed Project site lies within the traditional territories of the Sinkayuse Tribe, currently represented only by the Confederated Tribes of the Colville Reservation (Colville Reservation), and according to the Washington State Department of Archaeology and Historic Preservation (DAHP), the Project Area is in an 'area of interest' for the Colville Reservation, the Confederated Tribes and Bands of the Yakama Nation, the Spokane Tribe of Indians, and the Confederated Tribes of the Warm Springs Reservation of Oregon. Several cultural resource and desktop analyses had previously been completed for the Proposed Project site. Details of these surveys are outlined in the EA, but none indicated the presence of cultural resources, materials, or historic properties eligible for inclusion on the National Register of Historic Places.

DOE initiated consultation with the Washington State Department of Archaeology and Historic Preservation (DAHP) regarding DOE's Proposed Action and Sila's Proposed Project on May 11, 2023, and initiated consultation with the Colville Reservation, the Confederated Tribes and Bands of the Yakama Nation, the Spokane Tribe of Indians, and the Confederated Tribes of the Warm Springs Reservation of Oregon throughout May and June of 2023. The Washington DAHP and tribal nations noted above also received copies of the Draft EA for review and comment as part of the 30-day public comment period. Consultation and/or review of the Draft EA resulted in responses from the Colville Reservation concurring with the findings, determination, and recommendations in the Cultural Resources Survey. The Washington DAHP and the Spokane Tribe of Indians responded to DOE and concurred with DOE's finding of "No Historic Properties Affected." Due to the absence of sensitive resources of historic, cultural, or tribal interest at the site, and based on the responses received from the Washington DAHP and tribal nations described above, the Proposed Project would have negligible impacts on cultural and historic resources.

Air Quality: The Proposed Project's operational impacts to air quality are subject to a Clean Air Act with an operating permit issued by the Washington State Department of Ecology's Eastern Regional Office. Sila submitted a Notice of Construction (NOC) application and Supporting Information to the Washington State Department of Ecology demonstrating the Proposed Project would comply with all state and federal air quality regulations and standards. Sila received an Approval Order for this project from Ecology. The site will be required to perform annual

emission monitoring to verify the site is at or below permitted air emission limits. Numerous mitigation measures and standard procedures related to air quality would be employed during construction and operation of the Proposed Project. These are consistent with the Proposed Project's NOC Approval Order, which incorporates all applicable requirements of the Clean Air Act, including those related to operations and specific processes, installation of source control equipment, emissions testing requirements, and monitoring and reporting protocols. Based on these factors, the Proposed Project would have minor adverse impacts on air quality which would be mitigated using the measures described above.

Greenhouse Gasses: The Proposed Project would incur a net-positive long-term impact to greenhouse gas (GHG) emissions through contributions to decarbonizing U.S. transportation, which would markedly outweigh GHG emissions from construction and operation of Sila's Facility. Sila estimates that production levels at the Proposed Project site would produce sufficient silicon anode material to create lithium-ion batteries for more than 200,000 EVs annually once Sila's facility is operating at full production levels. Emissions reductions associated with EV production as opposed to conventional gasoline and diesel-fueled vehicles would be expected to exceed any emissions anticipated from construction and operations of the Proposed Project during its operational lifetime.

Noise and Vibration: Typical construction noise would be generated during the construction phase of the Proposed Project. Noise producing equipment is planned to be located primarily on the south side of the Facility, approximately 1,000 feet from the nearest residences which are located north-northwest of the Facility. The current basis of equipment design specifies equipment sound levels to be no more than 85 dBA at 3 feet with a maximum of 115 dBA only during emergency and upset operating conditions. Based on State of Washington Administrative Code, the applicable noise limits at the property lines of adjacent and nearby properties are as follows: 70 dBA at industrial or agricultural receiving properties, 60 dBA (daytime), and 50 dBA (nighttime) at residential receiving properties. As the Proposed Project is located within an existing industrial area with other industrial tenants with mechanical and traffic-related noises, any increase in noise from operations of the Proposed Project over ambient conditions would be minor. Based on the location of the facility and the current and future land use and zoning of the project site and adjacent properties, operational noise associated with the Proposed Project would comply with all relevant noise regulations and is not expected to conflict with current uses of adjacent or nearby properties.

Geology, Topography, and Soils: Proposed Project impacts to geology, soils, and topography are anticipated to be direct, long term, and minor. The site would undergo site preparation and grading to achieve proper slopes for drainage as well as earthwork for construction of equipment and pipe rack foundations on the south side of the existing Sila building on site. Development in the vicinity of the Proposed Project consistent with existing zoning would not generate cumulative adverse impacts to geology, topography, or soils. Potential for future impacts to soils and underlying geology would be mitigated throughout the life of the Proposed Project through the implementation of spill prevention and emergency response procedures as well as a facility

monitoring and inspection program. Any and all erosion control measures required by the City of Moses Lake and the State of Washington would be implemented and followed throughout the construction phase and during plant operation as well as recommendations identified in a 2023 Geotechnical Report previously completed and referenced within the EA.

Surface Water and Groundwater: Construction of the Proposed Project would have minor temporary indirect impacts from runoff to surface waters. Sila has obtained a Construction General Stormwater Permit (WAR312862) from the State of Washington Department of Ecology for this project. These impacts would be minimized through implementation of best management practices (BMPs) required by Sila's stormwater permit, including installation of silt curtains and hay bales to slow and filter water runoff, reducing the time excavations are open to erosion, stabilized construction entrances, and other measures. The project includes a stormwater system including use of the existing stormwater retention and infiltration pond in the northwest portion of the site (which would continue to collect stormwater from the existing building roof) as well as a new stormwater retention and infiltration pond in the southwest portion of the site to control the remaining stormwater runoff generated on the site. All tanks would be located in an area with secondary containment (i.e., berms) to prevent release to the environment. All liquid tanker truck loading/unloading areas would be designed to collect all potential leaks from the transfer process. All wastewater discharges directed to the Sand Dunes Wastewater Treatment Plant would be subject to, and in compliance with, any necessary Clean Water Act permits or authorizations. Sila is currently working with Washington State Ecology and Moses Lake to obtain a waste discharge permit to this publicly-owned treatment works.

Water utilized for the Proposed Project would be provided by the City of Moses Lake, and there would be no use of groundwater. The spill prevention and response plan implemented by an onsite Emergency Response Team would prevent spilled constituents from infiltrating the soil and reaching groundwater. Given the low potential for discharges during operations to reach groundwater and the limited increase in water usage (estimated at 25,000 gallons/day) that Sila's water requirements represent in terms of the City's available water capacity, Proposed Project operations would have a minor long term direct impact on groundwater resources.

Vegetation and Wildlife: Impacts to vegetation from Proposed Project construction are anticipated to be minor, affecting primarily weedy nonnative vegetation and four to five acres of low-quality priority habitat (e.g., shrub steppe). The site would undergo preparation and grading to achieve proper slopes for drainage and earthwork for construction of equipment and pipe rack foundations on the south side of the existing building. As a result, impacts to vegetation from proposed project construction are anticipated to be direct, minor and long-term, and operations of the proposed project are not anticipated to create any additional impacts to vegetation.

Impacts to listed endangered or threatened species or designated critical habitat from the Proposed Project are not anticipated. This determination was based on conclusions of a Shrub Steppe Analysis previously completed in March 2023 and analysis of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPac) desktop analysis completed

in May 2023. No listed endangered or threatened species have been observed or documented on the site, and the Shrub Steppe analysis indicated that the site "has been disturbed in the past through both farming activity as well as the presence of a manufacturing facility," and that four to five acres of the site that could be considered priority habitat has been determined to be of very low quality, is small and isolated, and its proximity to the existing building renders it of minimal value to wildlife species associated with shrub steppe habitat. While the desktop analysis and report generated from a query of the USFWS IPaC tool identified theoretical potential for as many as two listed species to exist within or in proximity to the Proposed Project site, the March 2023 Shrub Steppe field survey associated with the Shrub Steppe analysis of the site did not identify these species or their critical habitat. As a result, DOE determined that there would be no effect on listed species resulting from its Proposed Action. in the project area in relation to the Proposed Project. DOE initiated consultation with the Washington Office of the USFWS on May 31, 2023, regarding its Proposed Action and Sila's Proposed Project, and a copy of the Draft EA was also submitted to the Washington Office of the USFWS as part of the 30-day public comment period. No comments were received from the USFWS in response to the Draft EA, or DOE's determination of effect.

Regulated Wastes (Solid and Hazardous Wastes): Construction is expected to generate negligible impacts from regulated waste. Solid waste and sanitary waste generated during construction activities would be limited to common construction-related waste streams which existing landfills or recycling facilities will have the capability and capacity to accept. Operations are expected to incur minor, long-term impacts from regulated wastes, including certain non-hazardous waste streams and oil. The quantity of hazardous waste generated by the proposed project would determine the Facility's updated generator status and which Federal and State regulations related to waste generation, management, and disposal would be applicable. Sila is committed to finding better methods to reduce onsite waste generation. For example, off-spec materials disposal will involve waste to energy methods while fuel blending and solvent recovery options are utilized where applicable. Sila is also currently investigating the ability to recycle and reuse caustic scrubber wastewater.

Utilities and Energy Use: Construction of the Proposed Project would have short-term, negligible adverse impacts on utilities, including electricity, water, gas, and sewer. Electrical service used during construction would be provided by tie-ins to the existing electrical facilities at the site. The existing potable water supply at the site would be utilized during construction. Temporary water storage tanks may be placed on site for use during construction. Temporary, portable restroom facilities would be used at the site during construction in addition to the existing restroom facilities. Proposed Project operations would have minor direct impacts on local utilities and energy use, as the industrial processes involved would increase the demand for electricity, water, and gas at the Proposed Project site, and increase the amount of wastewater generated on the site. However, the estimated maximum utility demands for the project are all anticipated to be less than the capacities that are currently provided by the existing infrastructure.

Transportation and Traffic: Construction would have short term but measurable minor adverse impacts to traffic lasting up to 15-18 months for Phase 1 and an additional 15-18 months for Phase 2. Operations would generate a minor long-term increase in anticipated daily truck and personal-vehicle traffic resulting from the expected 10 additional truck trips per day over existing traffic for delivery and shipments. Trucks would use the established road network to access the Project site, and these roadways are designed for and currently accommodate industrial truck traffic. Once fully operational the Facility would add approximately 150 - 300 new employees and there would be a corresponding daily increase in the number of personal vehicles at the site; however, the number of personal vehicles is expected to be distributed throughout the day, as the project would be operated in two shifts. Moreover, Facility design includes adequate parking, loading, and maneuver space for these vehicles.

Public and Occupational Health and Safety: Risks to public and occupational health and safety from Proposed Project construction and operations are expected to be minor, direct and indirect, and long-term. Sila's Facility is subject to numerous regulatory permitting requirements and planned mitigations addressing factors relevant to public and occupational health and safety, and Sila's existing corporate policies further address relevant health and safety risk factors and would be followed throughout construction and operations. Materials used during operation of the Proposed Project would include sodium hydroxide, sulfuric acid, silane and hydrocarbon gasses, nitrogen, oxygen, and other cryogenic gasses. To reduce risk, the materials would be received via tanker trucks within the designated receiving area, allowing for strictly controlled and consistent management. Sila will continue to incorporate emergency policies and procedures, required health, safety, and security training, and specialized training for individuals handling hazardous materials and wastes at the Facility. Sila would prepare an Emergency Action/Crisis Management (EA/CM) Plan that would address unanticipated events (e.g., natural disaster, terrorism, accidents, spills) and Sila would build on EA/CM Plans from their other facilities with similar operations.

PUBLIC AVAILABILITY: DOE issued the Draft EA and advertised its release in the *Columbia Basin Herald* on February 20, 2024, through February 22, 2024. The Draft EA was published online on DOE's NETL EA website (https://netl.doe.gov/node/6939) and DOE's NEPA EA website (https://www.energy.gov/nepa/doe-environmental-assessments). In addition, DOE sent hard copies for public review to the Moses Lake Public Library (Main Branch) in Moses Lake, WA. DOE established a 30-day public comment period that began on February 20, 2024, and ended March 20, 2024. DOE announced it would accept comments by mail, phone, and email. All comments received are located within Appendix 5 of the Final EA.

The Draft EA was distributed to tribal nations and federal, state, and local agencies with jurisdiction or special expertise. During development of the Draft EA, and prior to the public comment period, DOE initiated consultations with the U.S. Army Corps of Engineers office in Seattle, WA, the USFWS field office in Lacey, WA, and the Washington DAHP in Olympia, WA. DOE initiated consultations with the Confederated Tribes and Bands of the Yakama Nation, the Colville Reservation, the Spokane Tribe of Indians, and the Confederated Tribes of

the Warm Springs Reservation of Oregon. Through these consultations, DOE provided information about the Proposed Project and solicited input for consideration both prior to finalizing and releasing the Draft EA for public comment and then again concurrent with the public release of the Draft EA. All tribal nations and agencies noted above received copies of the Draft EA for review and comment.

PUBLIC COMMENTS: No comments were received from individuals of the general public. Region 10 of the U.S. Environmental Protection Agency and the State of Washington Department of Ecology provided comments via email. Responses received from the Washington DAHP, the Spokane Tribe of Indians, and the Colville Reservation are described in the "Cultural Resources" section above. DOE was also invited to participate in a government-to-government tribal consultation with the Colville Reservation's Colville Business Council on March 4, 2024. During this consultation, DOE received numerous questions and comments concerning Sila's Proposed Project. DOE subsequently incorporated additions, revisions, and responses to comments resulting from this consultation into a revised Draft EA, which was submitted to the Colville Business Council for additional review and comment on May 5, 2024. No further comments were received from the Colville Business Council on the revised Draft EA.

All comments received are acknowledged, addressed in the text of the Final EA, and included in Appendix 5 of the Final EA.

MITIGATION REQUIREMENTS: No additional mitigation measures beyond those contained in permits obtained or to be obtained by Sila from the appropriate permitting authorities are required.

DETERMINATION: Based on information presented in the Final EA (DOE/EA-2214), DOE finds that the Proposed Action to provide a financial assistance grant to Sila would not significantly affect the quality of the physical, biological, or human environment. Therefore, preparation of an Environmental Impact Statement is not required, and DOE is issuing this FONSI.

Copies of the Final EA and this FONSI are available at DOE's NETL EA website at: https://netl.doe.gov/node/6939. The Final EA and FONSI are also available at DOE's NEPA – EA website at https://www.energy.gov/nepa/doe-environmental-assessments. Copies of the Final EA and FONSI can also be obtained by sending a request to:

Mr. Stephen Witmer
NEPA Compliance Officer
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
412-386-7589
stephen.witmer@netl.doe.gov

SEAN PLASYNSKI Digitally signed by SEAN PLASYNSKI
Date: 2024.09.06 14:29:29 -04'00'

Sean I. Plasynski, Ph.D.
Principal Deputy Director (Acting), National Energy Technology Laboratory

National Environmental Policy Act (NEPA) Compliance
Cover Sheet

Proposed Action:

Sila Nanotechnologies proposes to construct a silicon anode manufacturing facility in Moses Lake, WA to support up to 2,300 tons/yr (tpy). The Proposed Project would consist of facility construction and operation, including modifications to an existing 613,000 square foot industrial building, plus site improvements, new sheds/buildings, new equipment installation, and other infrastructure upgrades. All ground disturbances beyond the footprint of the existing 613,000 square foot building would cover approximately 26 acres of the 162 acres of land owned by Sila Nanotechnologies. The Proposed Project would consist of two phases: Phase 1 includes installation of facility infrastructure and equipment to support up to 300 tpy of production capacity, while Phase 2 includes installation of additional equipment to expand production capacity up to 2,300 tpy. Phase 1 is designed for a 10-year operational lifespan but could be operational for up to 20 years. Phase 2 is designed for a 20-year operational lifespan. After both are constructed, both phases will run concurrently. While the overall synthesis pathway for Sila materials is unique, the individual synthesis steps utilize processes very similar to those employed in different, but well-developed, industries for many decades.

The Proposed Project is anticipated to generate approximately $25 million dollars in total net-positive economic impact during its 30-month construction period (for both phases). Then for the 20-year life expectation of the process equipment installed, Sila expects a $40 million-dollar positive economic impact into the local economy per year. The Sila factory in Moses Lake would enable the sourcing of critical battery materials from within the U.S. and reduce the dependence on foreign material suppliers. The Proposed Project would create approximately 150-300 full-time equivalent (FTE) jobs that offer benefits such as healthcare and stock options. Sila also plans to offer community benefits such as workforce training and education initiatives to raise equity levels in the greater Moses Lake community. Together, these efforts would engage the local workforce and make a positive contribution to the local economy of Moses Lake for decades to come, while significantly strengthening the U.S. lithium-ion battery industry. DOE's proposed action is to provide $100,000,000 of the project's total award value of **approximately $617,000,000** in a cost-shared arrangement.

Type of Statement: Final Environmental Assessment

Lead Agency: U.S. Department of Energy; National Energy Technology Laboratory

DOE Contacts:

Project Information:
Kristle Krichbaum
Project Officer
U.S. Department of Energy
Manufacturing and Energy Supply Chains
1000 Independence Ave., SW
Washington, DC 20585
240-474-3774
kristle.krichbaum@hq.doe.gov (e-mail)

NEPA Information:
Stephen Witmer
NEPA Compliance Officer
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
Pittsburgh, PA 15236
412-386-7589
stephen.witmer@netl.doe.gov (e-mail)

Abstract:

Sila Moses Lake would be constructed on four parcels (Parcel Numbers: 110069400, 120175300, 120175300 and 110077090) comprising approximately 162 acres. Phase 1 would commence with site improvements and all Phase 1 construction completed within the first 15 - 18 months. During the construction period, equipment would be specified, procured, and installed, and production lines would be tested and commissioned for commercial operation. All ground disturbances beyond the footprint of the existing 613,000 square foot building, (including new sheds/buildings, new equipment installation and other infrastructure upgrades) would cover approximately 26 acres of the project site; approximately 16 percent of the Sila Nanotechnologies-owned plot.

The environmental analysis identified that the most notable changes resulting from the proposed action would occur in relation to power consumption, air emissions, wastewater generation, and generation of regulated wastes, along with net-positive impacts to local socioeconomic conditions and supporting the decarbonization of transportation.

Public Participation:

DOE encourages public participation in the NEPA process. The Draft Environmental Assessment (EA) **was** released for public review and comment **through the close of** the comment period on **March 20, 2024**. Copies of the Draft EA **were** distributed to cognizant Federal and State agencies and Tribal Nations. Comments received by the close of the comment period **were** considered in preparing **this** Final Environmental Assessment for the proposed Sila Moses Lake action, and comments received after the end of the comment period **were** addressed to the extent practicable. Individual names and addresses (including email addresses) received as part of the public comment period normally are considered part of the public record. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, **were** included in the public record and open to public inspection in their entirety. The Final EA **is** available on the National Energy Technology Laboratory (NETL) website at https://netl.doe.gov/node/6939.

Public Comments Received:

DOE received comments on the Draft EA from the Washington Department of Archaeology and Historic Preservation (DAHP), Confederated Tribes of Colville Reservation (including the Colville Business Council), the Spokane Tribe of Indians, Region 10 of the United States Environmental Protection Agency (EPA), and the State of Washington Department of Ecology (Ecology). DOE was also invited to participate in a government-to-government tribal consultation with members of the Colville Business Council on March 4, 2024. During this consultation, DOE received numerous questions and comments from the Colville Business Council concerning Sila's proposed project, along with an additional proposed project to Group14 Technologies (Group14). Both proposed projects are in the Moses Lake area. Comments specific to the Group14 project were addressed in the Draft EA prepared for that proposed project. In particular, DOE incorporated additions, revisions, and responses to comments resulting from the

consultation with the Colville Business Council into a revised Draft EA, which was submitted to the Colville Business Council for additional review and comment on May 5, 2024. No further comments were received from the Colville Business Council on the revised Draft EA. The revised Draft EA served as the basis for this Final EA, which addresses comments received from the Colville Business Council, along with all comments received from other agencies and Tribal Nations. New or revised items since the original publication of the Draft EA are noted in bold. All comments received are included in Appendix 5.

Contents

Tables

Figures

Appendices

Acronyms and Abbreviations

AJD	approved jurisdictional determination
AOI	area of interest
APE	Area of Potential Effect
BIL	Bipartisan Infrastructure Law
BMP	Best Management Practice
CAA	Clean Air Act
CE	Categorical Exclusion
CEJST	Climate and Economic Justice Screening Tool
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGA	Compressed Gas Association
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
COF	Central Operations Facility
DOE	United States Department of Energy
EA	Environmental Assessment
EA/CM	Emergency Action/Crisis Management
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Environmental Site Assessment
EV	electric vehicle
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FOA	Funding Opportunity Announcement

FONSI	Finding of No Significant Impact
FTE	full-time equivalent
FY	fiscal year
GCPUD	Grant County Public Utility District
GHG	greenhouse gas
gpd	gallons per day
GPM	Gallons per Minute
HEV	hybrid-electric vehicle
kV	kilovolt
kWh/yr	kilowatt hours per year
WA SHPO	Washington State Historic Preservation Officer
LiB	lithium-ion batteries
LOS	Level of Service
MESC	Manufacturing and Energy Supply Chains (DOE)
mgd	million gallons per day
mtpy	metric tons per year
mVA	Megavolt Amperes
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NETL	National Energy Technology Laboratory
NFPA	National Fire Protection Agency
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOX	nitrogen oxide
NRHP	National Register of Historic Places
O_3	ozone

OMB	Office of Management and Budget (US)
OSHA	Occupational Safety and Health Administration
Pb	lead
PHA	Process Hazard Analysis
PM	particulate matter
PM_{10}	particulate matter 10 microns or less
$PM_{2.5}$	particulate matter 2.5 microns or less
POTW	publicly owned treatment works
ppm	parts per million
PSM	Process Safety Management
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RMP	Risk Management Program
ROD	Record of Decision
SCFH	Standard Cubic Feet per Hour
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
sq ft	square foot / square feet
SWPPP	Stormwater Pollution Prevention Plan
ug/kg	microgram per kilogram
ug/m^3	microgram per cubic meter
U.S.	United States
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WISSARD	Washington Information System for Architectural and Archaeological Records Data
WWTP	Wastewater Treatment Plant

1. Introduction & Purpose and Need

1.1 Introduction

This Final Environmental Assessment (EA) was prepared by the United States Department of Energy (DOE) - National Energy Technology Laboratory (NETL) pursuant to the National Environmental Policy Act of 1969 (NEPA) (Title 42, Section 4321 et. Seq., United States Code) and DOE's NEPA implementing procedures (Chapter 10, Part 1021, Code of Federal Regulations (CFR)) to evaluate the potential environmental and social impacts of DOE's proposed action to provide funding to Sila Nanotechnologies, Sila Nanotechnologies' Proposed Project, and the No Action alternative. The purpose of this Final EA is to provide the information needed to assess the potential environmental and social impacts associated with the proposed project to design, construct, and operate a 613,000 square foot automotive-scale silicon anode manufacturing plant in Moses Lake, Washington.

1.2 Background

The Office of Manufacturing and Energy Supply Chains, in collaboration with the Office of Energy Efficiency and Renewable Energy, has issued DE-FOA-0002678, under which FOA-2678 awarded projects will be funded, in whole or in part, with funds appropriated by the Infrastructure Investment and Jobs Act (USA 2021), also more commonly known as the Bipartisan Infrastructure Law (BIL).

DOE prepared an environmental synopsis to evaluate and compare potential environmental impacts for each proposal it deemed to be within the competitive range from proposals received in response to the FOA. The Department used the synopsis to evaluate appreciable differences in potential environmental impacts from those proposals. The synopsis included: (1) a brief description of background information for the Funding Opportunity area of interest, (2) a general description of the proposals DOE received in response to the Funding Opportunity Announcement and deemed to be within the competitive range, (3) a summary of the assessment approach DOE used in the initial environmental review to evaluate potential environmental impacts associated with the proposals, and (4) a summary of environmental impacts that focused on potential differences among the proposals. Appendix 1 contains a copy of the environmental synopsis developed for DE-FOA-0002678 proposal submissions.

DOE initially selected 21 projects under twelve topic areas of interest and provided cost-shared funding for project definition activities; all of the projects are subject to completion of project-specific NEPA reviews. DE-FOA-0002678 supports new, retrofitted, and expanded commercial-scale domestic facilities for battery materials production, materials processing, and battery recycling and manufacturing demonstrations. The applications reviewed under this FOA were selected for negotiations in October 2022. Twelve topic areas of interest (AOIs) were included in the FOA, and each AOI outlined project objectives that

were specific to that AOI. The twelve AOIs were separated according to BIL sections 40207(b)(3)(A) and 40207(c)(3)(A): AOIs 1–3 and 6–11 were directed to commercial level projects. AOIs 4, 5, and 12 were directed to demonstration level projects.

Table 1. Areas of Interest under DE-FOA-0002678

Areas of Interest	Title
Battery Material Processing Grants pursuant to Section 402(b)(3)A)	
1	Commercial-scale Production Plants for Domestic Separation of Critical Cathode Battery Materials from Domestic Feedstocks
2	Commercial-scale Domestic Production of Battery-Grade Graphite from Synthetic and Natural Feedstocks
3	Commercial-scale Domestic Separation and Production of Battery-grade Precursor Materials (Open Topic)
4	Demonstrations of Domestic Separation and Production of Battery-grade Materials from Unconventional Domestic Sources
5	Demonstrations of Innovative Separation Processing of Matter Materials Open Topic
Battery Component Manufacturing and Recycling Grants pursuant to Section 402(c)(3)(A)	
6	Commercial-scale Domestic Battery Cell Manufacturing
7	Commercial-scale Domestic Battery Cathode Manufacturing
8	Commercial-scale Domestic Battery Separator Manufacturing
9	Commercial-scale Domestic Next Generation Silicon Anode Active Materials and Electrodes
10	Commercial-scale Domestic Battery Component Manufacturing Open Topic
11	Commercial-scale Domestic Battery Recycling and End-of-Life Infrastructure
12	Domestic Battery Cell and Component Manufacturing Demonstration Topic

DOE selected the project proposed by Sila Nanotechnologies under AOI 9 under DE-FOA-0002678 to support development of Sila Nanotechnologies' proposed facility. DOE's proposed action is to provide $100,000,000 of the project's total award value of **approximately $617,000,000** in a cost-shared arrangement.

1.3 Purpose and Need for Department of Energy Action

The overall purpose and need for DOE action pursuant to Office of Manufacturing and Energy Supply Chains requirements in collaboration with the Office of Energy Efficiency and Renewable Energy program and the funding opportunity under the BIL is to accelerate the development of a resilient supply chain for high-capacity batteries by increasing investments in battery materials processing and battery manufacturing projects. BIL

investments in the battery supply chain will include five main steps including: (1) raw material production; (2) materials processing including material refinement and processing; (3) battery material/ component manufacturing and cell fabrication; (4) battery pack and end use product manufacturing; and (5) battery end-of-life and recycling. DOE considers Sila's Proposed Project and location to be one that can meet the focus of BIL sections: a) creating and retaining good-paying jobs; b) supporting inclusive and supportive workforce development efforts to strengthen America's competitive advantage; c) ensuring that the United States has a viable domestic battery materials processing industry to supply the North American battery supply chain; d) expanding the capabilities of the United States in advanced battery manufacturing; e) enhancing national security by reducing the reliance of the United States on foreign competitors for critical materials and technologies; f) enhancing the domestic processing capacity of minerals necessary for battery materials and advanced batteries; and g) ensuring that the United States has a viable domestic manufacturing and recycling capability to support and sustain a North American battery supply chain. The Project site was selected due to its proximity to supporting industries, availability of existing industrial facilities in the area, as well as the site's access to reliable green energy (hydroelectric and wind power) for Sila's energy-intensive operations. The site has room for future expansion, exceptional access to transportation infrastructure, public utilities, and has great potential to have a positive economic impact on the Moses Lake community.

DOE intends to further the above-described purpose and satisfy stated needs by providing financial assistance under cost-sharing arrangements to this and the other 20 projects selected under DE-FOA-0002678. This and the other selected projects are needed to maximize benefits of the clean energy transition as the nation works to curb the climate crisis. These projects would meet the objective of recruiting, training, and retaining a skilled workforce in communities that have lost jobs due to displacement of fossil fuel-based energy jobs, including jobs in the manufacture of internal combustion engine vehicles and components as well as workforce opportunities in low- and moderate-income local or rural communities. This project will also meaningfully assist in the nation's economic recovery by creating manufacturing jobs in the United States in accordance with objectives of the BIL.

1.4 Broader DOE Goals, Initiatives, and Crosscutting Programs for the Clean Energy and Transportation Transition

DOE is also supporting the overall clean energy transition and sustainable, clean transportation sector by funding other program areas that will supplement and enhance the goals of DE-FOA-0002678. In particular, goals of DOE's Office of Energy Efficiency and Renewable Energy's (EERE) Vehicle Technologies Office (VTO) include deploying electric vehicle charging stations throughout the United States, improving EV infrastructure, improving batteries, vehicles, and electric drive systems, and sustaining over 75 Clean Cities coalitions across the country. Clean Cities Coalitions near the Moses Lake, WA area include the Columbia-Willamette (https://cleancities.energy.gov/coalitions/columbia-willamette), Western Washington

(https://cleancities.energy.gov/coalitions/western-washington), and Treasure Valley (https://cleancities.energy.gov/coalitions/treasure-valley) Clean Cities. These coalitions work with vehicle fleets, fuel providers, community leaders, and other stakeholders to identify community-driven choices that save energy and promote the use of alternative fuels and advanced vehicle technologies. Sila's proposed project would provide EV battery components that will support the goals of the clean energy and transportation sectors overall. More information about the Office of Energy Efficiency's Vehicle Technologies program can be found here: https://www.energy.gov/eere/vehicles/vehicle-technologies-office. Details specific to VTO's Batteries, Charging, and Electric Vehicle initiatives can be found here https://www.energy.gov/eere/vehicles/batteries-charging-and-electric-vehicles.

EERE also supports programs outside of the clean transportation sector and MESC that support development of clean and sustainable alternative and renewable energy technologies, including solar, geothermal, water, and wind energy, advanced manufacturing, sustainable and efficient building technologies, and hydrogen/fuel cell technologies. Details of the programs and projects can be found on EERE's website at https://www.energy.gov/eere/office-energy-efficiency-renewable-energy.

All awards made through these programs are subject to individual NEPA reviews to ascertain potential significant environmental, historic, and socioeconomic impacts prior to authorizing project activities. NEPA reviews requiring EAs or EISs, at a minimum, include consulting with tribal nations and state historic preservation offices potentially impacted by project activities.

DOE has committed to establishing a domestic supply chain for lithium-based batteries through these, and other programs and partnerships. In particular, DOE worked with other agencies and the Federal Consortium for Advanced Batteries to develop a "National Blueprint for Lithium Batteries." This blueprint outlines steps to ensure a domestic supply of lithium batteries and develop a robust and secure domestic industrial base. Goals include securing access to raw and refined materials, growing access to domestic materials for battery production, and enabling battery end-of-life reuse and recycling. Regarding water consumption: a number of factors go into the calculation of water usage (including variables like the materials a battery is composed of, the size of the battery, and type of construction of a battery), but this Blueprint notes that the benefits of using recycled materials include the potential to decrease water use by 77%. The Blueprint can be found at this link: https://www.energy.gov/sites/default/files/2021-06/FCAB%20National%20Blueprint%20Lithium%20Batteries%200621_0.pdf.

Additional details about how DOE is supporting the domestic battery supply chain can be found in the "Building a Robust and Resilient U.S. Lithium Battery Supply Chain" publication at this link: https://netl.doe.gov/sites/default/files/2023-03/Li-Bridge%20-

%20Building%20a%20Robust%20and%20Resilient%20U.S.%20Lithium%20Battery%20Supply%20Chain.pdf

1.5 National Environmental Policy Act and Related Procedures

This EA is prepared in accordance with the National Environmental Policy Act (NEPA), as amended (42 U.S.C. 4321), the President's Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR 1021). This statute and the implementing regulations require that DOE, as a federal agency:

- assess the environmental impacts of its proposed action;
- identify any adverse environmental effects that cannot be avoided, should the proposed action be implemented;
- propose mitigation measures for adverse environmental effects, if appropriate;
- evaluate alternatives to the proposed action, including a no action alternative; and
- describe the cumulative impacts of the Proposed Action together with other past, present, and reasonably foreseeable future actions.

These provisions must be addressed before a final decision is made to proceed with a proposed federal action, including providing federal funding to a project that has the potential to cause impacts to the human environment. This EA is intended to meet DOE's regulatory requirements under NEPA and provide DOE with the information needed to make an informed decision when providing financial assistance. In accordance with the above regulations, this EA: allows for public input into the federal decision-making process; provides federal decision-makers with an understanding of potential environmental effects of their decisions before making these decisions; and documents the NEPA process.

1.6 Laws, Regulations, and Executive Orders

- Advancing Racial Equity and Support for Underserved Communities Through the Federal Government (Executive Order [EO] 13985)
- Bald and Golden Eagle Protection Act (BGEPA)
- Clean Air Act (CAA)
- Clean Water Act (CWA)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Endangered Species Act (ESA)
- Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input (EO 13690)
- Executive Order on America's Supply Chains (EO 14017)
- Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations (EO 12898)

- Floodplain Management (EO 11988)
- Migratory Bird Treaty Act (MBTA)
- Pollution Prevention Act of 1990
- Protection of Wetlands (EO 11990)
- Resource Conservation and Recovery Act (RCRA)
- Revitalizing Our Nation's Commitment to Environmental Justice for All (EO 14097)
- Tackling the Climate Crisis at Home and Abroad (EO 14008)
- The Noise Control Act of 1972, as amended

1.7 Agency Consultation

DOE initiated consultations with the United States Fish and Wildlife Service (USFWS) under the Endangered Species Act, the U.S. Army Corps of Engineers, and the Washington State Department of Archeology and Historic Preservation Historic Preservation Office under Section 106 of the National Historic Preservation Act (NHPA). Response letters are included in Appendix 3.

1.8 Consultation with Tribal Nations

DOE initiated consultations with the Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Colville Reservation, Spokane Tribe of Indians, and Confederated Tribes of the Warm Springs Reservation of Oregon through each Tribal Nation's Tribal Historic Preservation Office. Response letters are included in Appendix 3.

2. Proposed Action and Alternatives

2.1 Department of Energy's Proposed Action

DOE proposes, through a grant with Sila Nanotechnologies, to partially fund the design, construction, and operation of an automotive-scale silicon anode manufacturing plant, up to 2,300 tpy, in Moses Lake, Washington. Sila previously purchased this existing 613,000 square foot building on 162 acres, but modifications would be required to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space. Installation of equipment and storage vessels outdoors would require ground disturbing activities to grade previously disturbed areas (formerly agricultural land prior to industrial zoning). DOE's proposed action is to provide $100,000,000 of the project's **approximately $617,000,000** total costs. Sila Nanotechnologies' private cost share would be **approximately** $**517,000,000**.

2.2 Sila Nanotechnologies' Proposed Project

The Proposed Project would involve the construction of up to a 2,300 tpy silicon anode manufacturing facility in Moses Lake, WA (see Figure 1). Sila has already acquired a 162-acre site with an existing 613,000 sq ft building for this project (see Figure 2). The purpose of the Proposed Project is to scale Sila's product output in order to enter the electric vehicle (EV) market in a timely and cost-efficient manner. The Project is needed to provide US-based manufacturing capacity for these and similar vital industrial components.

Figure 1 – Vicinity Map

Figure 2 – Existing Site Conditions Map

Sila proposes to construct a silicon anode manufacturing facility in Moses Lake, WA to support up to 2,300 ton/yr. The proposed project would consist of two phases: Phase 1 includes installation of facility infrastructure and equipment to support up to 300 tpy of production capacity while Phase 2 includes installation of additional equipment to expand production capacity (see Figure 3). While the overall synthesis pathway for Sila materials is unique, the individual synthesis steps utilize processes very similar to those employed in different, but well-developed, industries for many decades. **Sila's manufacturing process involves obtaining precursor raw material, sourced from non-FEOC countries (Foreign Entities of Concern), and raw materials. All processing chemicals and gases with the exception of the solid precursor (Non-FEOC country) comes from the Pacific Northwest. Generally speaking, as part of Sila's manufacturing process, for every ton of final product, one ton of raw materials will be needed. Silane gas will be used as the primary silicon component, and approximately 150 tons per year of silane gas will be used. Following Sila's manufacturing process, the final Sila materials are shipped in bulk containers/sacks to battery manufacturers who use the Sila materials to build anodes for incorporation into lithium-ion batteries (LiB), which typically contain two electrodes of which the anode is the negative electrode.** Similar process steps are currently utilized at Sila's Alameda, CA facility. **No LiB are produced at the Moses Lake site.**

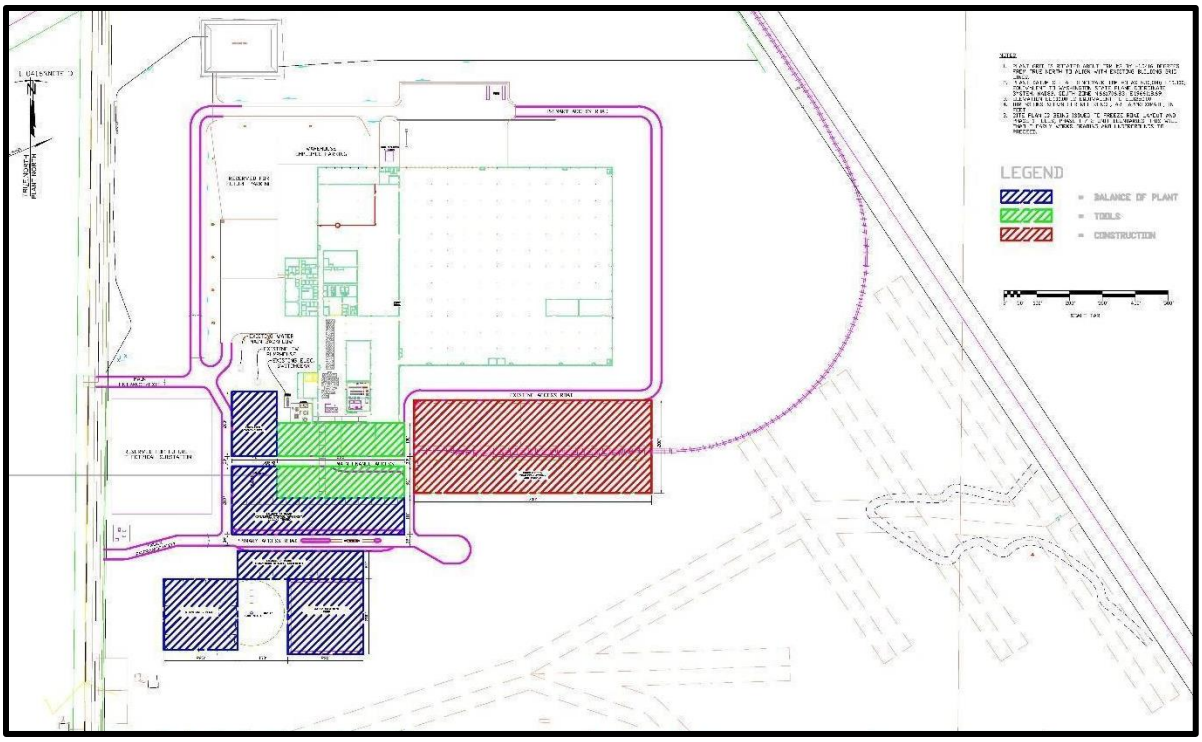


Figure 3 – Site Plan for Phase 1

The site would undergo site preparation and grading to achieve proper slopes for drainage and earthwork for construction of equipment and pipe rack foundations on the south side of the existing Sila building on site. Modifications would be required to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space. Installation of equipment and storage vessels outdoors would require ground movement activities to grade previously disturbed areas (e.g., currently agricultural land that has already been rezoned for heavy Industrial). These areas would be to the north, east, south, and west of the existing building and activities would include new access roads, installation of concrete slab service yards or pads for gas storage vessels, abatement unit systems, cooling water systems, wastewater treatment and other equipment. Additional land or disturbance of natural resources beyond the existing site is not required for the proposed project (see Figure 4). **Any future expansion of the project site/manufacturing activities would be predicated on increased demand for Sila's anode powder. If expansion were to occur in the future, it would likely occur on Sila's existing property and additional property is likely to be unnecessary.**

Figure 4 – Rendering of Proposed Project Looking from the Northwest to the Southeast

The Proposed Project is anticipated to generate approximately $25 million dollars in total net-positive economic impact during its 30-month construction period (for both phases). Then for the 20-year life expectancy of the process equipment installed, Sila expects a $40 million dollar positive economic impact into the local economy per year. Sila would enable sourcing of critical battery materials from within the U.S. and reduce the dependence on foreign material suppliers. The Proposed Project would create more than approximately 150-300 full-time equivalent (FTE) jobs that offer benefits such as healthcare and stock options. Sila also plans to offer community benefits such as workforce training and education initiatives to raise equity levels in the greater Moses Lake community. **Sila has documented these planned community benefits in their Equity Plan submitted to DOE and was found to be acceptable. Sila's Equity Plan provided a detailed plan for providing well-paying jobs, engagement and investment in the Moses Lake community (including creation of a Community Advisory Board), and partnerships with local educational institutions and training centers, including engagement with the Colville Reservation to expand access to employment, and science, technology, engineering, and math education.** Together, these efforts would engage the local workforce and make a positive contribution to the local economy of Moses Lake for decades to come, while significantly strengthening the U.S. lithium-ion battery industry.

2.3 General Description and Location

The Proposed Project would take place in Moses Lake, WA within Section 16 of Township 19 north and Range 29 east of the Willamette Meridian (see Figure 1). The Project site consists of

four parcels (Parcel Numbers: 110069400, 120175300, 120175300 and 110077090) comprising approximately 162 acres. The Project site is bound by Road N NE to the west, an unnamed stream to the north, railroad tracks to the east and industrial-zoned land to the south (see Figure 2). The partially developed site contains a non-operational approximately 613,000 square-foot industrial building, two associated approximately 200 square-foot structures (housing backflow preventers and emergency fire pump), and a vacant single-family house. **The entire site was zoned industrial in 2015 by the City of Moses Lake and the previous owner.** Prior to construction of the currently non-operational industrial building and associated structures in 2007, use of the entire site was in farmland. Approximately 37 acres of the site **that is currently zoned industrial and was** used as farmland in the past will not be impacted by the Proposed Project. The site is bordered by a private rail line and agricultural land to the east, agricultural land to the south, Road N NE and a manufacturing facility to the west, and agricultural land to the north. **Any future expansion of the project site/manufacturing activities would be predicated on increased demand for Sila's anode powder. If expansion were to occur in the future, it would likely occur on Sila's existing property such that additional property is likely to be unnecessary.**

2.4 Categorical Exclusion Issued and Washington State Environmental Policy Act Compliance

Prior to the completion of **the** Draft EA, DOE issued a Categorical Exclusion (CX) determination to authorize activities limited to Budget Period One of the Proposed Project. The activities authorized under this CX include project management, planning, procurement activities, community outreach, site engineering (including site design and permitting activities), external lab-scale testing, equipment procurement and validation, and general interior refurbishment/safety enhancement activities within the existing Sila facility. These activities would not have the potential to cause significant impacts, affect the significance of the overall Proposed Project effects as analyzed in **the** Draft EA, nor would they limit the range of possible alternatives to the Proposed Project or DOE's proposed action. A copy of this CX, including the specific CX designations applied, is included in Appendix 2. Sila Nanotechnologies has also completed an environmental evaluation of their Proposed Project at the state level through the Washington State Environmental Policy Act (SEPA) process. **During the SEPA process, no comments were received from the general public. As part of the SEPA Mitigated Determination of Non-Significance (MDNS) that was issued by the City of Moses Lake for this project, there were a series of conditions that require resolution as part of the construction process and must be completed and approved by the City of Moses Lake before Sila will receive a Certificate of Occupancy for the project.** A number of reports used to support Sila's SEPA application were also used to inform details of this Final EA. Details of Sila's SEPA application**, along with contacts to obtain the SEPA Mitigated Determination of Non-Significance** can be found at this website:
https://apps.ecology.wa.gov/separ/Main/SEPA/Record.aspx?SEPANumber=202303262

2.5 Activities Completed for the Proposed Project

Sila Nanotechnologies has elected to initiate groundbreaking and earth-moving activities prior to the completion of DOE's NEPA process. Appropriate response notifications have been issued by DOE. These activities are in previously undisturbed areas and include the set-up of construction stormwater fences and security fencing, site grading for a new construction entrance and south yard (where process equipment will be installed), digging of a new stormwater retention pond on the southwest side of the property, non-building foundations, and initial installation of stormwater piping to connect building areas to the stormwater pond. Sila Nanotechnologies also indicated that installation of new fire rings for the south yard and installation of conduit feed into the **new plant has been completed.**

2.6 Proposed Activities at Other Locations

Sila Nanotechnologies has planned other activities in support of the Proposed Project at locations other than the Moses Lake facility analyzed in this Final EA. These activities include battery testing, R&D, and design/testing of prototype equipment at Sila's headquarters in Almeda, CA, R&D at Argonne National Laboratory (Argonne, IL), Pacific Northwest National Laboratory (Richland, WA), Tuskegee University (Tuskegee, AL), and India, and teaching/outreach at Big Bend Community College and Columbia Basin Technical Skills Center (both in Moses Lake, WA). The information and data presented within this Final EA are limited to activities at the Moses Lake facility and do not include activities at these satellite locations. However, given the scope and nature of these additional support activities, these activities would not have the potential to cause significant effects, or amplify the significance of effects at the proposed Moses Lake facility analyzed in this Final EA, and thus will not be discussed further in this Final EA.

2.7 Alternatives

DOE's alternatives to this Project consist of the numerous technically acceptable applications received in response to FOA DE-FOA-0002678 encompassing all twelve AOIs. Because DOE's Proposed Action is limited to providing financial assistance in cost-sharing arrangements to projects submitted by applicants in response to a competitive funding opportunity, DOE's ultimate decision is limited to either accepting or rejecting a project as proposed by the proponent, including its proposed technology and selected sites. DOE's consideration of reasonable alternatives is therefore limited to the technically acceptable applications and a no-action alternative for each selected project. Appendix 1 includes DOE's Environmental Synopsis that further specifies all applicants that submitted proposals to FOA-2678. Sila Nanotechnologies was one of 21 applications having merit and selected for receiving Federal assistance.

2.8 No Action Alternative

Under the No Action Alternative, DOE would not provide funds to the Proposed Project. Without DOE funding, for the project to be completed as proposed, the applicant would need to identify, obtain, and use an alternative source of funds equal to the amount of funding that the applicant would have received from DOE under the above-listed funding opportunity. As a

result, these projects would be de-scoped or delayed while the applicant seeks other funding sources and may be canceled if sufficient funding is not obtained. Furthermore, acceleration of the development of industrial scale U.S. production capacity of silicon anode materials would be delayed or perhaps not occur. DOE's ability to achieve its objectives under the Infrastructure Investment and Jobs Act would be reduced.

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If DOE's selected projects proceed without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the project to be implemented and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance. DOE's ability to achieve its objectives under the Infrastructure Investment and Jobs Act would be reduced.

2.9 Alternatives Considered by Sila Nanotechnologies

Initially, Sila Nanotechnologies considered eight (8) alternative locations as potential sites for the construction of its auto scale silicon anode plant. The alternatives evaluated included both greenfield and brownfield sites in Michigan, Texas, Tennessee, and Nevada. Each site was ranked in a matrix of factors including: land/building size; site zoning; labor access; market access; energy generation mix (carbon intensity); transportation; climate; taxes and incentives; and proximity to Sila's headquarters. The Moses Lake site was chosen in part for its superior environmental scores compared to alternative sites in Michigan, Tennessee, Texas, and Nevada. Specifically, the Moses Lake site demonstrated the:

- lowest CO_2e footprint for electrical service due to the region's hydroelectric power;
- lowest requirement for additional ground-disturbing activities (e.g., building new structures);
- lowest transport cost/CO_2e emissions for several critical input materials; and
- second-lowest CO_2e footprint for Sila personnel traveling from headquarters to the Project site.

In addition, a greenfield site alternative was considered instead of purchasing an existing building. This option was rejected not only because an existing facility results in a faster project timeline, but also because a brownfield site limits new environmental impacts to the region.

2.10 Summary of Environmental Consequences

Table 2 provides a summary of the environmental, cultural, and socioeconomic impacts of the No Action Alternative and the Proposed Project:

Table 2. Summary of Environmental, Cultural, and Socioeconomic Impacts

Impact Area	No Action Alternative		Proposed Project	
	Construction	Operations	Construction	Operations
Community Services	Negligible	Negligible	Negligible	Negligible
Parks and Recreation	Negligible	Negligible	Negligible	Negligible
Aesthetics and Visual Resources	Negligible	Negligible	Negligible	Negligible
Socioeconomics	Negligible	Negligible	Minor (beneficial)	Minor (beneficial)
Environmental Justice	Negligible	Negligible	Minor (beneficial)	Minor (beneficial)
Wetlands and Floodplains	Negligible	Negligible	Negligible	Negligible
Surface Water and Groundwater	Negligible	Negligible	Negligible	Negligible
Land Use	Negligible	Negligible	Negligible	Negligible
Air Quality	Negligible	Negligible	Minor	Minor
Greenhouse Gasses	Negligible	Negligible	Minor (beneficial)	Minor (beneficial)
Noise and Vibration	Negligible	Negligible	Minor	Minor
Geology, Soils and Topography	Negligible	Negligible	Minor	Minor
Cultural Resources	Negligible	Negligible	Negligible	Negligible
Vegetation and Wildlife	Negligible	Negligible	Negligible	Negligible
Regulated Wastes (Solid and Hazardous Wastes)	Negligible	Negligible	Minor	Minor
Utilities and Energy Use	Negligible	Negligible	Minor	Minor
Transportation and Traffic	Negligible	Negligible	Negligible	Negligible
Public and Occupational Health and Safety	Negligible	Negligible	Minor	Minor

3.0 Affected Environment and Environmental Consequences

Chapter 3 provides a description of the affected environment (existing conditions) at the Proposed Project site and a discussion of the environmental consequences of the No Action Alternative and the Proposed Project. Additionally, cumulative impacts and mitigation measures are discussed, where appropriate. The methodology used to identify existing conditions and to evaluate potential impacts on the physical and human environment involved the following: review of the State Environmental Policy Act (SEPA) Checklist prepared by Sila (PLN2023-0040) that was submitted to the City of Moses Lake to comply with WA State regulatory requirements (Sila SEPA Checklist, 2023); review of documentation provided by Sila; searches of various environmental databases; and agency consultation.

3.1 Resource Areas Dismissed from Further Consideration

DOE has determined that certain resources would either not be affected or would sustain negligible impacts from the Proposed Project and were dismissed from further evaluation. These dismissed resources include community services, parks and recreation, and aesthetics and visual resources. These resource areas are briefly discussed in this section of the EA; however, they will not be evaluated further.

Community Services: Community services pertinent to the Proposed Project include schools, police, fire, and emergency medical support, all of which are provided in Moses Lake. The nearest law enforcement headquarters is located within the city center, approximately 4.7 miles west of the Project site, and includes the Moses Lake Police Department. The closest Fire stations to the project site are the Moses Lake Fire Station located within the city center, roughly 4.8 miles west of the project site, and the Grant County Fire District #5, located approximately 4.8 miles to the southwest of the Proposed Project site. Current response time is roughly 6 minutes for the Moses Lake Fire Department, which is responsible for providing the initial response to an emergency at the project site. Grant County Fire District #5, which has an approximate 10-minute response time to the project site, serves as the backup/support response team to the Moses Lake Fire Department in case of an emergency. As well, Sila would have its own on-site Fire Brigade that would be trained to manage emergencies such as fires or spills on site in coordination with the Moses Lake and Grant County Fire Departments, if necessary.

The Moses Lake Fire Station, mentioned above, is also equipped for emergency medical services in the vicinity of the Proposed Project site. There are also several hospitals and medical clinics located within the central city area, including Samaritan Hospital, Samaritan Healthcare, Moses Lake Community Health, and Providence Medical Group, all of which are located approximately 5 miles to the west of the Proposed Project site. Sila would have an onsite medical facility for handling minor to moderate injuries associated with construction and industrial operations.

Moses Lake has eleven public elementary schools, three public middle schools, and four public high schools – Moses Lake High School, Vanguard Academy, Columbia Basin Technical Skills Center, and Digital Learning. The region also supports numerous private schools. The city also supports higher education opportunities at Central Washington University and Big Bend Community College. Both of these schools offer advanced degrees and are located near the Grant County International Airport, which is approximately 10 miles to the northwest of the Proposed Project site.

Construction crews as well as permanent operational employees are anticipated to be drawn mostly from local and regional residents and not constitute a notable permanent migration of workers and their families to the region. The anticipated additional operational staff would not exert an undue burden on existing community services. In addition, road closures or other impacts that would restrict or impede the movement of emergency personnel or other traffic through the region are not anticipated as part of construction and operations activities associated with the Proposed Project (see Section 3.2.15 for a discussion of transportation and traffic related impacts).

The increased burden on existing police, fire, emergency medical, and other community services during construction and operations of the Proposed Project is expected to be negligible.

Parks and Recreation: The City of Moses Lake maintains 45 facilities that include 38 developed parks and six undeveloped areas that are maintained by the Parks Department, as well as some indoor facilities. In total, the parks system encompasses approximately 400 acres of park land and approximately 63 miles of paths and trails. Undeveloped park lands include Laguna Park,

Longview Park, Municipal Tracts, Sun Terrace, Three Ponds Wetland Park, and Vehrs Wetland Property (City of Moses Lake Parks, Recreation & Open Space Plan, 2022). The closest facilities to the Proposed Project site (Crossroads Park being the closest) are all located near the central city area, which is roughly 4 miles to the west, and would be accessed via E Wheeler Road from the project site. Rural recreation, such as public hiking and camping are available in the Moses Lake area as well, and are mostly located to the south of the central city area. The closest private camping facility, Cougar Campers RV Park, is located directly to the southeast of the Project Site. The Cougar Campers RV Park is a campground that provides specialized accommodations for Recreational Vehicles and allows overnight stays by RV Campers and provides amenities like electrical hookups and water hookups for visitors.

Due to the zoning and existing land use, including commercial agricultural crop production, heavy industrial, and rail service, in proximity to the Proposed Project site, minimal impacts are anticipated. Current and anticipated parks and recreation opportunities for the citizens of Moses Lake are not expected to be impacted by construction and operations of the Proposed Project, as there are no publicly designated recreation areas or parks adjacent to the site and the nearest public facility is roughly 4 miles away via paved highway. Additionally, no impacts are anticipated for the RV park either, as all construction and operational activities would be mostly contained on-site.

The impact upon recreation and parks from the Proposed Project is anticipated to be negligible.

Aesthetics and Visual Resources: The partially developed project site contains an existing approximately 613,000 square-foot vacant industrial building, two associated approximately 200 square-foot structures (housing backflow preventers and emergency fire pump), and an uninhabitable single-family house (see figure below). The City of Moses Lake zoning for the Proposed Project site and area to the west and south is *Heavy-Industrial*, and is designated Industrial by the City's Comprehensive Plan. The area to the immediate north and east of the site is designated as *Resource Land – Irrigated Agriculture* by Grant County. The topography of the Proposed Project site and surrounding properties is relatively flat with a slight downward slope to the south and west, and therefore the site does not offer notable vistas or views.

Although the new construction and operational activities would be visible from the immediately surrounding landscape, the scale and massing of the building would be consistent with other existing and planned buildings in the surrounding industrial area (see figure below).

The impact upon aesthetics and visual resources from the Proposed Project is anticipated to be negligible.

3.2 Resource Areas Considered Further

Environmental resource areas carried through for further consideration of the potential impact of Sila's Proposed Project include: socioeconomics; environmental justice; wetlands and floodplains; cultural resources; land use; air quality, greenhouse gasses; noise and vibrations; geology, soils, and topography; surface water and groundwater; vegetation and wildlife; regulated wastes (solid and hazardous wastes); utilities and energy use; transportation and traffic; and public and occupational health and safety. The values are inclusive of maximum planned operational output through and including Phase 2.

3.2.1 Socioeconomics

3.2.1.1 Affected Environment

Moses Lake is a city in Grant County, WA, with a population of 24,764 residents.[1] Historically, the economy of Moses Lake was mainly supported by agricultural business. However, due to the availability of affordable power and inexpensive land, manufacturing and technology have experienced considerable growth in this area in recent years.[2]

Grant County is currently (as of 2022) home to an estimated 101,800 residents, reflecting a 14.2% increase in population since the 2010 U.S. Census. The total county labor force is estimated at 44,343. Within this total labor force, the majority are employed within private businesses (73.8%), with the public sector (Federal, state, and local government) employing 21.1%, and with 4.9% self-employed. Grant County's estimated employed population (60.3%) is similar to that estimated for Washington as a whole (60.5%).[3]

Agriculture, forestry and fishing is the single largest industry in terms of employment (21.4%), followed by educational services and health care and social assistance (20.8%), manufacturing (13.4%), retail trade (7%), transportation and warehousing, and utilities (6.6%), professional, scientific, and management and administrate and waste management services (5.7%), arts, entertainment, and recreation, and accommodation and food services (5.6%), public administration (5.4%), construction (4.7%), finance and insurance and other (2.8%), wholesale trade (2.5%), and other occupations (3.1%). In terms of occupations, management, business, science and arts occupations make up the largest share (29.8%), followed by natural resources, construction and maintenance (23.5%), production, transportation and material moving (17%), service jobs (15.5%), and sales and office occupation (14.2%).[4]

---

1 American Community Survey (ACS), Demographic and Housing Estimates, 2021: 5-Year Estimates.

2 Grant County Economic Development Council. Community Information Moses Lake. https://www.grantedc.com/site-selection/community-information/moses-lake/. Accessed April 2023.

3 American Community Survey (ACS), Selected Economic Characteristics, 2021: 5-Year Estimates.

4 American Community Survey (ACS), Selected Economic Characteristics, 2021: 5-Year Estimates.

3.2.1.2 Environmental Consequences

3.2.1.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance. In that case, existing socioeconomic conditions associated with the site and greater site vicinity of Moses Lake and Grant County would remain similar to existing conditions.

3.2.1.2.2 Proposed Project

3.2.1.2.2.1 Construction

Under the Proposed Project, taxes would continue to be paid on the property and no adverse impacts would be anticipated. Approximately 25 percent of the estimated 450 to 500 peak construction workers employed for the construction period could be hired from the local populations and may be currently unemployed or underemployed as well as residing and paying taxes in Grant County or the surrounding area. Increased sales transactions for the purchase of materials and supplies would generate additional tax revenues for local and state governments, which would have a beneficial impact. Secondary jobs related to the increased economic activity stimulated by the Proposed Project may be created. Additional retail services and business employment may result from the Proposed Project through a multiplier effect, yielding additional sales and income tax revenues for local and state governments, also generating a minor beneficial impact. The Proposed Project is anticipated to generate approximately 25 million dollars in total net-positive economic impact during its 30-month construction period (for both phases).

3.2.1.2.2.2 Operations

The Proposed Project would create approximately 150-300 new, FTE, permanent jobs and would look to increase the workforce as the site continues to grow throughout the 20-year equipment operational lifespan.[5] Labor requirements are not expected to change drastically as most jobs would be in advanced manufacturing operations, which is already represented in this region. There may be some additional requirements for certain engineering disciplines that may not already be present; Sila has stated they expect to fill as many positions as possible from the local population and estimates approximately 50 percent of jobs could be filled by the local labor force. Sila is planning to work with local non-profit organizations and government agencies to target underrepresented populations for recruitment. Sila also intends to implement programs to train underrepresented individuals to increase the pool of qualified candidates. **For example,**

[5] Sila, 2023.

Sila is currently partnered with Big Bend Community College and the Columbia Basin Technical Skills Center for workforce development through a first-of-its-kind education program geared towards training the future battery workforce in Moses Lake. The program, focused on providing hands-on training for technical, mechanical, electrical, and software skills, will prepare students for new employment opportunities at Sila's silicon anode manufacturing plant (Business Wire, 2.22.24). In addition, Sila's goal is to ensure that employees are reflective of the local population, at a minimum. Sila expects the population influx to be modest and not significantly impact housing demand or population.

3.2.1.3 Cumulative Impacts

There is currently a forecasted modest population influx to Moses Lake or Grant County from the Proposed Project. While hiring from existing facilities in the area is anticipated for many of the plant operational roles, approximately 15-30 employees could transfer to the Moses Lake area to support operational and technical managerial positions.

Additionally, another battery-related project is planned for the same general area, but it will be subject to the same regulations (e.g. EPA, state-level zoning and permitting, etc.) as the Sila project and thus would not be expected to contribute to significant cumulative impacts. Assuming a potential similar modest population influx could result from the other battery-related project (15-30 employees), this population combined with the Proposed Project would not be expected to result in significant cumulative impacts.

Additionally, another battery-related project is planned for the same general area, but it will be subject to the same regulations (e.g., EPA, state-level zoning and permitting, etc.) as the Sila project, and thus would not contribute to significant cumulative impacts.

3.2.1.4 Proposed Mitigation Measures

No mitigation measures would be required for socioeconomics.

3.2.2 Environmental Justice

President Biden established the Justice40 Initiative in Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad.* Building on Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, the Justice40 Initiative established a goal that at least 40% of the benefits of certain Federal investments, including investments in clean energy, energy efficiency, and clean transit, flow communities, the White House Council on Environmental Quality (CEQ) developed the Climate and Economic Justice Screening Tool (CEJST) (CEQ 2022), which identifies census tracts as disadvantaged based on consideration of environmental and socioeconomic burdens.

Secretary Granholm published a letter to DOE Stakeholders on July 25, 2022, to inform them that "DOE intends to implement the Justice40 Initiative throughout all its BIL efforts, wherever

authorized by law, and within well-established DOE programs that fall within the climate and clean energy investment categories covered by Justice40." (US Department of Energy, 2022). In follow-up, DOE adopted eight policy priorities that govern the Department's implementation of the Justice40 Initiative.

1. Decrease energy burden in disadvantaged communities (DACs).
2. Decrease environmental exposure and burdens for DACs.
3. Increase parity in clean energy technology (e.g., solar, storage) access and adoption in DACs.
4. Increase access to low-cost capital in DACs.
5. Increase clean energy enterprise creation and contracting (MBE/DBE) in DACs.
6. Increase clean energy jobs, job pipeline, and job training for individuals from DACs.
7. Increase energy resiliency in DACs.
8. Increase energy democracy in DACs.

DOE concurrently published a list of the Department's programs covered by the Justice40 Initiative because the programs include investments that can benefit disadvantaged communities (Office of Management and Budget [OMB] Memorandum 21-28 [M-21-28]). Within the Manufacturing and Energy Supply Chains Office, DOE identified the Battery Manufacturing and Recycling Grants and the Battery Material Processing Grants programs as Justice40 covered programs (Section IIAii *Clean Energy and Energy Efficiency* within OMB M-21-28).

Additionally, DOE developed a DAC Reporter to define and identify disadvantaged communities for the purposes of Department programs. The DAC Reporter identifies disadvantaged communities based on the cumulative burden the community faces from 36 burden indicators. The top 20% of communities within a state are designated as disadvantaged and interested parties can use the DAC Reporter to generate community-specific reports that include the results for each of the 36 burden indicators. Nationwide, 13,581 communities have been identified as disadvantaged by the DAC Reporter.

There are also several other screening tools used by different agencies. For example, EJScreen is EPA's environmental justice mapping and screening tool that provides a nationally consistent dataset and approach for combining environmental and demographic socioeconomic indicators. EJScreen allows users to access high-resolution environmental and demographic information for locations in the United States and compare their selected locations to the rest of the state, EPA region, or the nation.

The tool may help users identify areas with:

- **People of color and/or low-income populations**
- **Potential environmental quality issues**
- **A combination of environmental and demographic indicators that is greater than usual; or**
- **Other factors that may be of interest**

All of the EJScreen indicators are publicly-available data. EJScreen simply displays this information and includes a method for combining environmental and demographic indicators into EJ indexes. EPA uses EJScreen as a preliminary step when considering environmental justice in certain situations, such as when the agency uses it to screen for areas that may be candidates for additional consideration, analysis or outreach as EPA develops programs, policies and activities that may affect communities.

Sila aspires to attract and maintain a diverse workforce that reflects the region of Moses Lake and Grant County. The goal is to target underrepresented populations in recruitment efforts to promote diversity and underrepresented populations in the labor workforce and ensure the employee population is reflective of the local population, at a minimum.

3.2.2.1 Affected Environment

The Proposed Project is not located within a census tract that was designated as disadvantaged in either the DAC Reporter or the CEJST. The DAC Reporter ranked the cumulative burden faced by the census tract as being in the top 63% of communities in the State of Washington, well below the 80% threshold required for a community to be designated as disadvantaged. There is one census tract in the vicinity, within Moses Lake North, that is designated as disadvantaged by the DAC Reporter.

The CEJST identified three adjacent census tracts in Grant County as disadvantaged because they meet one burden threshold, as well as the associated socioeconomic threshold (CEQ 2023). The burden thresholds that are currently met by one or more of the three tracts include those related to climate change (projected flood risk), legacy pollution (formerly used defense site), and workforce development (linguistic isolation and high school education). All three tracts also met low-income thresholds.[6]

EPA's EJScreen mapping indicates that the Proposed Project could be in an area of potential EJ concern because the EJScreen analysis for the project area shows one or more of the twelve EJ Indices at or above the 80th percentile in the state. It is noted that, according to EJScreen, the Proposed Project area, which is located northeast of the City of Moses Lake, exceeds the 80th percentile for particulate matter (94th percentile) when compared to the State of Washington (see Appendix 7). See *Section 3.2.6 – Air Quality* for more detailed information.

3.2.2.2 Environmental Consequences

3.2.2.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between

[6] Census Tracts 530250111000, 53025010700 and 53025011300.

potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance. In the event that the project does not proceed, existing environmental justice conditions on the site and in the larger site vicinity of Moses Lake and Grant County would remain the same as described under existing conditions.

3.2.2.2.2 Proposed Project

3.2.2.2.2.1 Construction and Operations

DOE's selection of the project proposed by Sila is consistent with the provisions of Executive Orders 12898 and 14008, aligns with DOE's eight policy priorities, and advances the Department's progress toward the goal established by the Justice40 Initiative that at least 40% of the benefits of certain types of Federal investment flow to disadvantaged communities.

The Proposed Project supports DOE's stated EJ policy priority to increase clean energy jobs, the job pipeline, and job training for individuals from disadvantaged communities. As discussed in *Section 3.2.1.2.2* above, Sila expects to employ 450 to 500 individuals during the construction stage of the Proposed Project and create approximately 150-300 FTE jobs once operational. While the Proposed Project site is not within a disadvantaged community, Sila has committed to promoting benefits for communities in the greater Moses Lake/Grant County area including local hiring and purchase of supplies to the greatest extent possible. Sila anticipates that up to approximately 25 percent of construction jobs and up to 50 percent of operational jobs could be filled by the local population. To facilitate these goals, Sila will be partnering with two local schools (i.e., Big Bend Community College and Columbia Basin Technical Skills Center) to create a program to provide students with key skills and qualify them for operational positions at Sila's new manufacturing facility. Sila intends to expand these programs to other institutions as they grow. Sila also intends to create a paid apprenticeship program that would provide both classroom and hands-on training. Apprenticeships would be paid, with the goal of converting 80 to 90 percent of apprentices to full-time employees.

In total, Sila expects to invest up to $3,000,000 over five years to support the goals of empowering students with key skills and qualifications for operational positions at the new facility via the partnership with local schools and the creation of a certification program and paid apprenticeship program. The Proposed Project is therefore anticipated to provide positive short and long-term benefits to communities in the vicinity.

3.2.2.3 Cumulative Impacts

No reasonably foreseeable development projects have been identified for the Proposed Project site vicinity. Development in the vicinity of the Proposed Project site consistent with existing zoning would not be expected to generate cumulative adverse environmental justice impacts.

3.2.2.4 Proposed Mitigation Measures

No mitigation measures would be required for environmental justice.

3.2.3 Wetlands and Floodplains

3.2.3.1 Affected Environment

The Proposed Project site contains approximately 162 acres of industrial development and farmland. GeoEngineers, Inc. performed a wetland reconnaissance and delineation of the Proposed Project site on February 15 and 16, 2022 to determine the presence of aquatic resources regulated under federal and state statutes. The wetland delineation was conducted in accordance with the *U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987)* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USAC 2010*). A total of three wetlands (Wetland A, Wetland B, and Wetland D)[7] and one stream (Stream 1) were identified on the site. Stream 1 is associated with Wetland A. Wetlands A and B are classified as type III wetlands with 25-foot-wide buffers in accordance with the Washington State Wetlands Rating System for Eastern Washington. Wetland D is considered a Type IV wetland with a 10-foot buffer width. As discussed further in Section 3.2.3.2.2.1, the Army Corps of Engineers determined that none of the drainages were "waters of the United States" under the Clean Water Act. Under this determination, no Section 404 permit or Nationwide Permit concurrence is required for the Proposed Project.

3.2.3.2 Environmental Consequences

3.2.3.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance.

3.2.3.2.2 Proposed Project

3.2.3.2.2.1 Construction and Operations

After considering the results of the GeoEngineers wetland delineation, the Seattle District of the Army Corps of Engineers issued an Approved Jurisdictional Determination (AJD) concluding the Proposed Project site "does not include navigable waters of the U.S" and is not subject to Section 10 of the Rivers and Harbors Act of 1899. The AJD further evaluated potential water resources under the Clean Water Act and determined that there were no jurisdictional water

[7] Wetland C identified in an original 2006 delineation was not identified as wetland area during the 2022 field investigation.

resources on the Proposed Project site. The Proposed Project does not include any construction of operations within or in immediate proximity to wetlands, wetland buffers, or streams. DOE requested consultation from the Seattle District of the USACE regarding this proposed project via letter on June 8, 2023. Copies of the correspondence from DOE to the USACE is in Appendix 3, and the Draft EA **was** provided to the Seattle District of the USACE for review and comment. **No comments from the USACE were received on the Draft EA.**

A review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Numbers 53025C1100C, effective October 2020, indicates the Proposed Project site lies in Zone X (unshaded), indicating the area has a minimal flood hazard, usually above the 500-year flood (see Figure 5 below for a snippet of the Flood Hazard Map for the project site – the original Flood Hazard Map is contained in Appendix 4).

Figure 5 – FEMA Flood Hazard Map

3.2.3.3 Cumulative Impacts

No reasonably foreseeable development has been identified for the Proposed Project site vicinity. Development in the vicinity of the Proposed Project consistent with existing zoning would not generate cumulative adverse impacts to wetlands and floodplains.

3.2.3.4 Proposed Mitigation Measures

No mitigation measures would be required for wetlands and floodplains.

3.2.4 Cultural Resources

3.2.4.1 Affected Environment

The Proposed Project site lies within the traditional territories of the Sinkayuse Tribe, currently represented only by the Confederated Tribes of the Colville Reservation. According to the Tribal Historic Preservation Officer (THPO) of the Confederated Tribes of the Colville Reservation, the precontact and ethnohistoric Sinkayuse group later came to be referred to as the Moses-Columbia, based on the following events:

1) **several bands/tribes are referred to as the Middle Columbia Salish, which includes the Sinkayuse;**
2) **through the family of leaders for this group, Chief Moses rose to prominence during the 1856-1858 war between the United States and several tribal groups as a consequence of events related to the 1855 Treaty with the Yakama Nation;**
3) **not all tribal groups involved in the war were signatory to the Yakama Treaty nor part of the Yakama Nation; and**
4) **during and after the wars, some people from several of the Middle Columbia Salish bands became affiliated with Moses and were located at the Moses Reserve in 1879. When that reservation returned to the public domain, Moses and other chiefs signed the Moses Agreement, relocating Moses and his people to the Colville Reservation.**

The Moses-Columbia are a member tribe of the Colville Confederacy. No Sinkayuse or Moses-Columbia signed the Yakama Treaty, they are not a member of the Yakama Nation, and the Moses Columbia never ceded any territory or rights.

According to the Washington State **DAHP,** the Project Area is in an 'area of interest' for the Confederated Tribes of the Colville Reservation, the Confederated Tribes and Bands of the Yakama Nation (Yakama Nation), the Spokane Tribe of Indians, and the Confederated Tribes of the Warm Springs Reservation of Oregon.

A Cultural Resource Survey (Plateau CRM, 2023) was **previously** completed for this specific project site. Additionally, there have been seven previously conducted cultural resources surveys within one mile of the Project Area, none of which intersect with the project area, and none yielded newly recorded cultural resources within one mile of the site.

A total of five Historic Property Inventories (HPIs) have been inventoried or derived from the Grant County Assessor's records within one mile of the Project Area. None of these structures have a determination regarding NRHP eligibility.

A pedestrian survey was **previously** conducted over the portions of the Project Area surrounding the existing structure on the site. A total of 88 subsurface probes were excavated. No Native

American or historic-era cultural materials or features were observed during the pedestrian survey or excavations.

Plateau CRM inventoried one property on the project site, a single-story Ranch-style residence located at 3741 Road North NE. Actual build dates of the structure are unknown, however, the home is reminiscent of a mid-century style found predominantly in California Ranch homes in the 1960s. The home is vacant and appears to have been abandoned many years ago; the interior is in very poor condition and inhabited by wildlife. Due to a lack of structural integrity and not meeting any of the four NRHP criteria, the survey concluded that the property would not be eligible for listing on the NRHP.

EA Engineering, Science, and Technology Inc. also completed a review of previously recorded cultural resources and archaeological surveys through the Washington Information System for Architectural and Archeological Records Data (WISSARD) system on March 15, 2023. This database includes recorded archaeological resources, historic property inventories, properties and districts on the National Register of Historic Places and the Washington Heritage Register, identified cemeteries, and previously conducted cultural resource surveys found throughout the state. This review found no properties eligible for national historic designation within the Sila Nanotechnologies area of potential effect (APE). Results of this WISSARD review are included in Appendix 4.

3.2.4.2 Environmental Consequences

3.2.4.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance. In the event the project does not proceed, existing cultural resources conditions on the site would continue, and no unanticipated impacts to cultural resources would be expected.

3.2.4.2.2 Proposed Project

Construction and Operations

The Cultural Resources Survey previously completed for the project determined that the proposed undertaking would result in No Historic Properties Affected, and no further archaeological investigations are recommended prior to, or during, execution of the project. An Inadvertent Discovery Plan (IDP) has been prepared for use during all ground disturbing work on the project.

DOE initiated consultation with the DAHP via letter on May 11, 2023, and initiated tribal consultation with the Confederated Tribes of the Colville Reservation, the Confederated Tribes

and Bands of the Yakama Nation, the Spokane Tribe of Indians, and the Confederated Tribes of the Warm Springs Reservation of Oregon by letters throughout May and June of 2023. The Confederated Tribes of the Colville Reservation responded to DOE's consultation concurring with the findings, determination, and recommendations in the Cultural Resources Survey and requested that the project work proceeds with caution, that recommendations from the Cultural Resources Survey are adhered to, and that cultural resource concerns regarding the groundbreaking activities referenced in Section 2.5 were alleviated by Sila's site orientation training for contractors (including training on the IDP). The Spokane Tribe of Indians responded to DOE and concurred with a finding of "no historic properties affected" and that the project may proceed, but the Spokane Tribe of Indians should be notified immediately if any artifacts or human remains are found, if the scope of work changes, or if additional information becomes available. **The Spokane Tribe of Indians also deferred the project to the Confederated Tribes of the Colville and noted "no further concerns on the project."** Consultation letters sent, along with responses from the DAHP and Tribal Nations, are included in Appendix 3. Based on the scope of the proposed project, previous studies of the APE (including findings from the Cultural Resource Survey), and results from Washington's WISAARD eAPE tool, DOE's Determination of Effect is that no historic properties will be affected by **Sila's** proposed project. The four Tribal Nations and the **Washington State** DAHP **were also** provided copies of the Draft EA **for review and comment**, and **the Washington State DAHP subsequently concurred with DOE's Determination of Effect with the stipulation for an IDP, which has been developed for Sila's Proposed Project**. **DAHP's concurrence is provided in Appendix 5**.

3.2.4.3 Cumulative Impacts

No reasonably foreseeable development projects have been identified for the Proposed Project site vicinity. No reasonably foreseeable actions have been identified that would interact with the Proposed Project to generate cumulative adverse impacts to cultural resources.

3.2.4.4 Proposed Mitigation Measures / Inadvertent Discovery Plan

The Proposed Project would implement an Inadvertent Discovery Plan (IDP) that details a protocol to follow in the event of an unanticipated discovery of cultural materials during Project construction. The protocol is dependent on the type of feature or artifact discovered and outlines specific stop-work steps to take in the event human remains are uncovered. Appropriate contact information is provided for Emergency Dispatch in Grant County, Confederated Tribes of the Colville Reservation, Spokane Tribe of Indians, Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Warm Springs Reservation of Oregon, DAHP, and Plateau Archaeological Investigations. The IDP is attached in Appendix 4.

3.2.5 Land Use

3.2.5.1 Affected Environment

The Proposed Project site comprises approximately 162 acres of land fronting Road N NE, in the extreme eastern portion of the City of Moses Lake. The City of Moses Lake zoning for the site and area to the west and south is *Heavy-Industrial*, and is designated *Industrial* by the City Comprehensive Plan. The area to the immediate north and east of the site is administered by Grant County, and is designated as *Resource Land – Irrigated Agriculture* by Grant County.

The partially developed site contains an approximately 613,000 square-foot vacant industrial building, two associated approximately 200 square-foot structures (e.g., housing backflow preventers and emergency fire pump), and a vacant single-family house. Prior to construction of the currently vacant industrial building and associated structures in 2007, the site was in farmland. Approximately 37 acres of the site is currently in farmland that will not be impacted by the Proposed Project. The site is bordered by a private rail line and agricultural land to the east, agricultural land to the south, Road N NE and a manufacturing facility to the west, and agricultural land to the north.

3.2.5.2 Environmental Consequences

3.2.5.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance.

3.2.5.2.2 Proposed Project

3.2.5.2.2.1 Construction and Operations

Construction of the Proposed Project on the site would be consistent with the current Heavy – Industrial zoning cited above, which considers the site suitable for heavy industrial use with a Conditional Use Permit.

Moses Lake Municipal Code Title 18, Chapter 18.40 provides development standards and site requirements for uses in the industrial zones. The Proposed Project would be consistent with all applicable development standards, including development standards for building height, setbacks, and landscaping. The Proposed Project is consistent with applicable zoning standards, compatible with adjacent land uses, and no impacts to land use would occur.

3.2.5.3 Cumulative Impacts

The Proposed Project is consistent with the City of Moses Lake's Comprehensive Plan and associated zoning changes to continue a trend of land use changes from agricultural to industrial

in designated areas of the city, and the Proposed Project would thus add incrementally to cumulative land use impacts anticipated in land use plans and zoning priorities set by the City of Moses Lake. Future development in the area administered by Grant County would continue the current agricultural land use character.

3.2.5.4 Proposed Mitigation Measures

No mitigation measures would be required for land use.

3.2.6 Air Quality

The Proposed Project would be subject to the applicable requirements of the Clean Air Act (CAA). Two agencies have jurisdiction over the ambient air quality in the project area: the US Environmental Protection Agency (EPA), and the Washington State Department of Ecology's (Ecology) Eastern Regional Office. These agencies have established regulations that govern the sources and ambient concentrations of pollutants. Although their regulations are similar in stringency, each agency has established its own ambient air quality standards. Unless the state or local jurisdiction has adopted more stringent standards, EPA standards apply. These standards have been set at levels that EPA and Ecology have determined are protective of human health with a margin of safety, including the health of sensitive individuals such as the elderly, the chronically ill, and the very young. As the Proposed Project would be subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP; 40 CFR 63 Subpart VVVVVV), the Facility is subject to Title V of the CAA. **EPA has delegated authority for air quality regulatory enforcement to Ecology in this jurisdiction. Sila has submitted a Notice of Construction (NOC) application and Supporting Information to Ecology that demonstrates the proposed project would comply with all state and federal air quality regulations and standards. Sila has received an Approval Order for this project from Ecology (see Appendix 6).**

The CAA requires the United States Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The EPA has established NAAQS for six (6) principal pollutants, which are called "criteria pollutants": ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter (PM), sulfur dioxide (SO_2), and lead (Pb) (Table 3).

Table 3. EPA National Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3-month average	0.15 μg/m^3 (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O_3)		primary and secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	12.0 μg/m^3	Annual mean, averaged over 3 years
		secondary	1 year	15.0 μg/m^3	Annual mean, averaged over 3 years
		primary and secondary	24 hours	35 μg/m^3	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24 hours	150 μg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Source: https://www.epa.gov/criteria-air-pollutants/naaqs-table

Notes:

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 μg/m^3 as a calendar quarter average) also remain in effect.

(2) The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O_3 standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) O3 standards.

(4) The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) would additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a State Implementation Plan (SIP) call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

3.2.6.1 Affected Environment

Moses Lake, Grant County, Washington is currently designated as an area that is considered in attainment for all monitored air pollutants. The surrounding area is primarily agricultural, with transportation and light industry to the west and south (see Section 3.2.5 *Land Use* and Section 3.2.11 *Vegetation and Wildlife*). The nearest population (sensitive receptor) are rural (farm) residences, the closest of which is roughly 1,200-1,350 feet north of the Proposed Project site. The nearest residential neighborhood to the Proposed Project site is part of the City of Moses Lake, located approximately 4.5 miles west of the Proposed Project's western boundary. Other

sensitive receptors (e.g., schools, hospitals) are not located in close proximity to the Proposed Project site (see *Section 3.1 Community Services*).

As stated earlier in *Section 3.2.2 Environmental Justice*, EPA's EJScreen mapping indicates that the Proposed Project could be in an area of potential EJ concern. According to EJScreen, the Proposed Project area exceeds the 80th percentile for particulate matter (94th percentile) when compared to the State of Washington (see Appendix 7).

3.2.6.2 Environmental Consequences

3.2.6.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance.

3.2.6.2.2 Proposed Project

3.2.6.2.2.1 Construction

Construction of the Proposed Project is expected to be conducted over 1,200,000 square feet of the total property area of 162 acres. Minor, temporary, intermittent air emissions are anticipated during project construction which could potentially have a short-term, minor adverse impact on air quality. Air emissions of CO, NO_X, SO_2, PM_{10}, $PM_{2.5}$ and VOC associated with operation of construction equipment and vehicles are anticipated during site grading and leveling, installation of facility equipment, and delivery of construction materials and supplies both by road and by rail. As such, in addition to short-term tailpipe emissions, surface soil disturbances during excavation and grading could result in generation of fugitive dust. Fugitive dust could potentially affect both public health and the environment. The severity of its effects on health depends on the size and composition of the particulate matter. Typical effects are persistent coughs, respiratory distress, eye irritation, asthma etc. Sila's construction contractor would implement best management practices to minimize generation of dust during construction activities. These impacts are anticipated to be temporary, minor, and largely contained at and anticipated within short distances from the proposed project site. Sila would utilize the proposed mitigation measures outlined below to mitigate or eliminate any wind-carried construction-generated dust off of the property.

Construction-related air quality impacts, including the impact of operating construction-related equipment and vehicles, are expected to be small.

3.2.6.2.2.2 Operations

The Proposed Project's operational impacts to air quality are expected to be minor, direct, and long term, **and are subject to the NOC Approval Order issued by Ecology (see Appendix 6)**.

In general, the Proposed Project would include the following emission points:

- Thermal Oxidizers: Two thermal oxidizers would control criteria pollutant and toxic air pollutant (TAP) emissions from multiple process units with a destruction efficiency of at least 99.99%. In addition to the emissions from the process, the thermal oxidizers would produce emissions of criteria pollutants and TAPs associated with natural gas combustion.
- Caustic Scrubbers: Two caustic scrubbers would control emissions of silane from multiple tools. Sodium hydroxide (NaOH) would neutralize emissions, with a destruction removal efficiency of at least 99 percent. Sila is not expecting any regulated pollutants to be emitted from these scrubbers, but would continue to work with Ecology to understand the potential for regulated pollutant emissions and apply operational controls, if required.
- Tanks and equipment fugitive emissions: There would be fugitive emissions of volatile organic compounds (VOCs) from flanges, valves, and connectors associated with the hydrocarbon storage vessel, process vessels, and piping distribution system.
- Filters and Baghouses: PM emissions from tools would be controlled with cartridge filters and baghouses. Filters and baghouses are not expected to be a source of TAPs.
- Diesel Emergency Generator: The generator would produce emissions of CO, NO_X, SO_2, PM_{10}, $PM_{2.5}$ and VOCs during routine maintenance testing and in the event of an unplanned utility outage at the Facility.
- Emergency Flare: In the unlikely event the thermal oxidizers have an emergency upset condition, process gasses would be temporarily routed to an open flare for combustion.

3.2.6.3 Cumulative Impacts

To demonstrate compliance with the National Ambient Air Quality Standards, Sila would evaluate cumulative impacts associated with criteria pollutant emissions from the proposed project and offsite sources per Ecology requirements. **Ecology has ultimate responsibility for monitoring air pollution in WA State including permit approvals for this, and other projects in WA State. This project would not proceed as planned unless permitting requirements are met by Sila, including requirements from the U.S. Environmental Protection Agency (EPA). Comments received from the EPA are included in Appendix 5 of this EA.**

Although additional development could occur in the area, the type and extent of impacts to air quality is not reasonably foreseeable due to the unknown nature of any use by existing or future property owners. No reasonably foreseeable actions have been identified that would interact with the Proposed Project to generate cumulative adverse impacts to air quality.

Another battery-related project is planned for the same general area, but it would be subject to the same regulations (e.g., EPA, state-level zoning and permitting, etc.) as the Sila project, and thus would not contribute to significant cumulative impacts.

Any future site upgrades would also be subject to similar regulatory requirements related to air quality. Sila would continue to find ways to reduce emissions through process improvements, substitution, and improved technologies.

3.2.6.4 Proposed Mitigation Measures

Numerous mitigation measures and standard procedures related to air quality would be employed during construction and operation of the Proposed Project. These are consistent with the Proposed Project's NOC Approval Order, which incorporates all applicable requirements of the Clean Air Act, including those related to operations and specific processes, installation of source control equipment, emissions testing requirements, and monitoring and reporting protocols.

During construction, dust generation would be reduced and controlled to comply with Washington State air quality regulations. Construction-industry best management practices would be incorporated into construction plans and contractor specifications, which could include, but not be limited to, the following: spraying exposed soil with water, covering exposed soil during grading and pre-seeding periods, adding silt fences and netting on fences surrounding construction zone, covering all truck beds transporting materials, wetting materials in trucks, and providing wheel washers for trucks traveling offsite.

To reduce carbon monoxide and particulate emissions from gasoline and diesel engines, construction equipment would have the best available emission control devices generally available to the contractor. Also, using well-maintained equipment and turning off construction equipment when not in use would reduce construction engine emissions.

Emissions from the Project operations would be controlled using the control devices listed above. The NOC application would include a review of available emission controls options and Sila would employ what Ecology determines to be the best available control technologies for the project. Facility operations would comply with all air permit conditions, which would ensure compliance with all state and federal regulations. Staging areas for deliveries are planned, which would minimize idling associated with delivery vehicles.

Per Ecology's NOC air permit, Sila will be required to complete initial air emission monitoring as part of tool commissioning, and then annually thereafter.

3.2.7 Greenhouse Gasses

Greenhouse gasses (GHGs) are of concern for climate change, and include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), and several hydro and per-chlorofluorocarbons. GHG emissions are often expressed in terms of carbon dioxide equivalent (CO_2e), which accounts for GHGs in addition to CO_2 by converting the GHG impact of other gasses to the equivalent amount of CO_2.

The CEQ issued interim guidance on January 9, 2023, relevant to the consideration of GHGs and climate change effects of proposed actions under NEPA (CEQ 2023). The guidance advises federal agencies to consider "(1) the potential effects of a proposed action on climate change, including by assessing both GHG emissions and reductions from the proposed action; and (2) the effects of climate change on a proposed action and its environmental impacts."

3.2.7.1 Affected Environment

Rising global temperatures are associated with weather and climate shifts driving environmental and human impacts across a range of spatiotemporal scales and intensities (Intergovernmental Panel on Climate Change [IPCC] 2013). The IPCC, an international group of scientists from 130 governments, has concluded that it is "extremely likely" - a probability listed at more than 95 per percent - that human activities and fossil fuels explain most of the warming over the past 50 years."

The IPCC predicts that under current human GHG emission trends, the following results could be realized within the next 100 years: [8]

- Global temperature increases between 0.3 – 4.8 degrees Celsius;
- Potential sea level rise between 26 to 82 centimeters or 10 to 32 inches;
- Reduction in snow cover and sea ice;
- Potential for more intense and frequent heat waves, tropical cycles and heavy precipitation, and;
- Impacts to biodiversity, drinking water and food supplies.

The Climate Impacts Group (CIG), a Washington-state based interdisciplinary research group that collaborates with federal, state, local, tribal, and private agencies, organizations, and businesses, studies impacts of natural climate variability and global climate change on the Pacific Northwest. CIG research and modeling indicates the following possible impacts of human-based climate change in the Pacific Northwest:[9]

- Changes in water resources, such as decreased snowpack; earlier snowmelt; decreased water for irrigation, fish and summertime hydropower production; increased conflict over water; increased urban demand for water;
- Changes expected for many federally-listed endangered and threatened species, including salmon, trout, and steelhead;
- Changes in forest growth and species diversity and increases in forest fires; and
- Changes along shorelines, such as increased coastal erosion and beach loss due to rising sea levels, increased landslides due to increased winter rainfall, permanent inundation in some areas, and increased coastal flooding due to sea level rise and increased winter streamflow.

3.2.7.2 Environmental Consequences

3.2.7.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between

[8] Intergovernmental Panel on Climate Change (IPCC). *Summary for Policymakers.* (2014).

[9] Climate Impacts Group. Accessed 01/7/2022. *Climate Impacts in Brief.* https://cig.uw.edu/learn/climate-impacts-in-brief/.

potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance.

3.2.7.2.2 Proposed Project

3.2.7.2.2.1 Construction

Construction of the Proposed Project would result in temporary GHG emissions from sources including vehicle transportation of equipment and materials, use of construction machinery, and curing of concrete. Use of electricity during construction may indirectly increase GHG emissions depending on electric generation sources/methods employed by local utilities serving the site. Current online resources allow for very general estimates for order of magnitude of GHG emissions for construction projects, based on input of known project parameters. One of these resources, http://buildcarbonneutral.org, provides rough estimates using only basic input parameters: area of total site, area of disturbance planned within the site, region within the US, prior land use, and current vegetation type (or unvegetated). Estimates are provided as net embodied carbon from construction activities, where "embodied carbon" includes emissions from raw material extraction, transportation of materials, materials wasted, building operations and maintenance, and the emissions a building continues to produce after it is no longer in use. From Sila Moses Lake Plant project inputs, including construction of few small, single-story, metal-frame structures (less than 1000 square feet total), disturbance of approximately 26 site acres with sparse existing vegetation, and planting approximately 40,000 square feet with low-water trees and shrubs, this resource estimates net emissions of approximately 1,450 metric tons of embodied carbon from construction of the Proposed Project.

3.2.7.2.2.2 Operations

Facility operations would include natural gas-fired pilots for two thermal oxidizers, two emergency flares, and two diesel-fired emergency generators. Natural gas contains methane, a small amount of which can escape into the atmosphere as fugitive emissions. Combustion of natural gas produces CO_2 and other GHGs. Estimated annual CO_2e emissions from natural gas and diesel fuel are itemized in Table 4 (GHG Calculation Tables are contained in Appendix 4).

The project site was initially provided with 20 megavolt amperes (MVA) of power by Grant County PUD prior to Sila purchasing the property. The Proposed Project plans to purchase up to 15MVA which equates to 120,000,000 kilowatt hours per year (kWh/yr) of electricity for facility operations. **The estimated maximum utility demands for the project are all anticipated to be less than the capacities that are currently provided by the existing infrastructure. Power used for the Proposed Project would indirectly contribute to the Proposed Project's GHG emissions. The quantity of emissions that are associated with the purchased electricity would vary year-to-year based on electric generation sources and methods employed by local utilities serving the Proposed Project site.** The EPA estimates an average of approximately 0.203 lb CO_2e emissions per kWh for Washington State (EPA 2021). Maximum CO_2e emissions from estimated electricity use per year for Proposed Project operations are outlined below in Table 4.

Table 4. Estimated Annual CO_2e Emissions (Phases 1 and 2)

Source	Metric Ton CO_2e
Natural Gas Use (flare, thermal oxidizer)[1]	4,800
Waste Gas Control (thermal oxidizer)[1]	85,811
Emergency Generators[1]	139
Total Direct CO_2e Emissions	**90,750**
Electricity Use (indirect CO_2e emissions)	11,100
Total	**101,851**

[1] Emission Factors: 40 CFR Part 98, Tables C-1 and C2

3.2.7.2.3 Social Cost of Carbon

DOE's Social Cost Estimating Tool (SC-GHG) was used to estimate the social cost of CO_2, CH_4, and N_2O associated with the Proposed Project. The SC-GHG was designed to help agencies understand the social costs and benefits associated with various decisions. The SC-GHG assigns a monetary value to the net harm to society associated with adding small amounts of GHG to the atmosphere in a given year. The SC-GHG is intended to include "the value of all climate change impacts, including (but not limited to) changes in net agricultural productivity, human health effects, property damage from increased flood risk natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services." (Interagency Working Group on Social Cost of Greenhouse Gases 2021).

Conservatively high emission estimates for CO_2, CH_4, and N_2O were calculated based on estimated electricity use, natural gas consumption, and operation of emergency generators and thermal oxidizers. Emission factor sources included 40 CFR Part 98, Tables C-1 and C2, EPA eGRID data (EPA 2021), and vendor-provided emission specifications for the thermal oxidizers.

Table 5 shows the calculated social cost of carbon for production during Phase 1 and Phase 2 of the proposed project. Table 5 also factors in 1,450 metric tons of CO_2 associated with construction of the Sila facility (see Section 3.2.7.2.2.1). Construction of Phase 1 and Phase 2 would last for approximately 15-18 months prior to each phase being initiated. Detailed breakdowns of the figures noted in Table 5 are included in Appendix 4.

Table 5: Social Cost of Carbon – Sila Construction and Production

Present Value (in Base Year) for all emissions (2020$)				
	Discount Rate			
	5% Average	3% Average	2.5% Average	3% 95th Percentile
SC-CO_2				
Phase 1	$6,813,807	$25,784,802	$38,968,787	$78,430,318
Phase 2	$17,864,818	$68,976,663	$104,683,499	$210,315,162
Total	$24,678,625	$94,761,465	$143,652,287	$288,745,480
SC-CH_4				
Phase 1	$33,410	$83,836	$112,517	$223,515
Phase 2	$132,981	$342,452	$462,068	$913,931
Total	$166,391	$426,288	$574,584	$1,137,447
SC-N_2O				
Phase 1	$21,286	$74,188	$111,292	$197,095
Phase 2	$58,347	$207,979	$313,550	$553,241
Total	$79,633	$282,167	$424,842	$750,336
Grand Total	$24,924,649	$95,469,919	$144,651,713	$290,633,263

In terms of operational outputs, Sila estimates that production levels for the Proposed Project would be sufficient to produce lithium-ion batteries for approximately 27,200 EVs per year for Phase 1 of production, increasing to approximately 209,000 EVs per year within approximately two years (once Phase 2 becomes operational). The GHG reduction associated with driving EVs instead of gasoline fueled vehicles (GVs) was calculated using emission factors and fuel efficiency data from EPA (EPA), 40 CFR Part 98 Tables C-1 and C-2, average electric vehicle energy use per mile (DOE), and average miles per year per driver (FHWA) (Table 6). These savings would offset the GHG emissions from Sila's facility construction and operation beginning when Phase 2 becomes operational. The GHG emission estimates used to calculate the reductions shown in Table 6 include miles driven and do not include GHG produced during the manufacture or maintenance of EVs or GVs. Detailed breakdowns of the figures and assumptions noted in Table 6 are included in Appendix 4.

Table 6: Annual GHG Savings Associated with Replacing GVs with EVs

GHG	EV Emissions (a)	GV Emissions (b)	Net Reduction in GHG Emissions
	(metric tons per year)		
Phase 1			
CO_2	35,426	126,668	(91,242)
N_2O	0.4	1.08	(0.67)
CH_4	2.95	5.41	(2.46)
Phase 2			
CO_2	272,211	973,295	(701,084)
N_2O	3	8	(5.1)
CH_4	22.7	41.6	(18.9)

3.2.7.3 Cumulative Impacts

In context of annual global GHG emissions, the Proposed Project would support a net-positive, long-term impact to reduce GHG emissions and global warming through its contributions to decarbonizing U.S. transportation, which would markedly outweigh Proposed Project GHG emissions. Within the first five years of operation, the Proposed Project is expected to contribute to the production of batteries for approximately 681,000 EVs.

In general, the potential benefits associated with reducing CO_2e emissions would support a reduction in GHG concentrations and reduce the associated climate change impacts (e.g., increases in atmospheric temperature, changes in precipitation, increases in the frequency and intensity of extreme weather events, rising sea levels, etc.).

3.2.7.4 Proposed Mitigation Measures

GHG emission reductions would be realized through the manufacturing of components within the United States rather than importing them from another country. These components would be used as precursors to the domestic manufacture of lithium-ion batteries to be used in EVs. Sila estimates that production levels at the Proposed Project site would be sufficient to produce lithium-ion batteries for approximately 27,200 EVs per year for Phase 1 of production, increasing to approximately 209,000 EVs per year within approximately two years (when Phase 2 would become operational). Sila estimates that use of Sila's product can increase energy density in lithium-ion batteries by 20 percent compared to batteries produced using the current technology (graphite), resulting longer EV range per charge, which is expected to encourage EV adoption.

The available power mix in Moses Lake, Washington, includes a greater percent of hydroelectric power, resulting in lower GHG emissions associated with Sila's product than similar materials produced elsewhere. The Northwest subregion has an average CO_{2e} emission rate per kWh that is 75 percent of the national average and 40 percent of the US subregion with the highest CO_{2e} emissions per kWh. Washington State is the state with the second lowest CO_{2e} emissions per kWh, at 24 percent of the national average and 10 percent of the state with the highest CO_{2e} emissions per kWh (EPA 2021). If the Proposed Project were located elsewhere in the US, the estimated indirect CO_{2e} production associated with electricity use would be, on average, 46,648 metric tons CO_{2e}; therefore, locating the facility in Washington State results in a reduction of 35,601 metric tons CO_{2e} per year over potential facilities located outside of Washington State.

Market displacement of gasoline and diesel-powered vehicles through battery production support at the Sila Moses Lake Plant for U.S. EV manufacture is expected to realize GHG emissions reductions greater than GHG emissions from plant operations**.** Therefore, the impact to GHG emissions from this project is a net reduction in GHGs, and no further mitigation measures are proposed.

3.2.8 Noise and Vibration

3.2.8.1 Affected Environment

Regulatory Context

Moses Lake Municipal Code (MLMC) Chapter 8.28 regulates noise within the city; however, the MLMC is complaint-driven and does not include quantitative noise limits. Sounds originating from construction sites in commercial and industrial zones are exempt from the noise code [MLMC Chapter 8.28.50(B)(4)].

Chapter 173-60 (Maximum Environmental Noise Levels) of the Washington Administrative Code (WAC), which regulates noise sources and associated impacts in Washington State, is applicable to the proposed project. The regulations specify maximum permissible noise levels that can be received in any 1-hour period at designated property classifications (classified by general property use), using the Environmental Designation for Noise Abatement (EDNA) classification system for receiving property type. The regulations also establish the maximum permissible noise levels that can be received (or conversely imposed) by one EDNA property use classification as a result of activities generating noise at another classified EDNA property use classification. Noise limits apply at the proposed project property line. The noise limits at residential (Class A EDNA), commercial (Class B EDNA), and industrial/agricultural (Class C EDNA) properties are shown in A-weighted decibels (dBA) in the following table:

Table 7. Maximum Permissible Noise Limits (dBA) at Property Line

	Class A	Class B	Class C
Class A (residential)	55	57	60
Class B (commercial)	57	60	65
Class C (industrial, agricultural)	60	65	70

EDNA of Noise Source, EDNA of Receiving Property, and Noise Limit (dBA)

Maximum permissible noise limits are reduced by 10 dBA during nighttime hours for Class A receiving properties. Maximum permissible noise levels may be exceeded for short periods less than an hour by a receiving property. These exceedances (during any 1-hour period) are 15 dBA for a total of 1.5 minutes, 10 dBA for a total of 5 minutes, and 5 dBA for a total of 15 minutes.

Motor vehicles are required to comply with EPA and WAC noise generation limitations for individual vehicles. While motor vehicle noise on public roadways is exempt from the maximum noise level regulations, traffic noise generated within project site boundaries must comply with the WAC noise regulations when noise is received at Class A EDNA properties.

Existing Conditions

As noted above, the Proposed Project site contains an approximately 613,000 square-foot vacant industrial building, two associated approximately 200 square-foot structures (e.g., housing backflow preventers and emergency fire pump), and an uninhabitable single-family house. The project site is zoned for industrial use. Immediately adjacent properties are currently zoned for either industrial or agricultural use. Residences are located north and northwest of the project site, approximately 700 feet or farther from the truck delivery entrance/exit and employee parking areas in the northwest portion of the site. Existing noise and vibration sources within the Proposed Project site vicinity include rail traffic and activity, local transportation on primary and secondary roads, and certain industrial activities, located primarily west and south of the Proposed Project site.

The nearest sensitive receptors to the Proposed Project site are rural (farm) residences, the closest of which is roughly 1,200 feet to the north of the Proposed Project boundary. The nearest residential neighborhood to the Proposed Project site, Wheeler, is located roughly 0.75 miles southeast of the Proposed Project site boundary, adjacent to the railroad right of way and the intersection of E Wheeler Road and Front Street NE. Other sensitive receptors (e.g., schools, parks) do not occur within close proximity (e.g., less than 0.5 miles) to the Proposed Project site (see Section 3.1).

Based on the WAC, the applicable noise limits at the property lines of adjacent and nearby properties are as follows: 70 dBA at industrial or agricultural receiving properties, 60 dBA (daytime) or 50 dBA (nighttime) at residential receiving properties.

3.2.8.2 Environmental Consequences

3.2.8.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance.

3.2.8.2.2 Proposed Project

3.2.8.2.2.1 Construction

Short-term but measurable adverse minor impacts to noise levels may occur during the construction phase of the Proposed Project, associated with site grading, installation of Facility equipment, and use of heavy machinery during construction. Construction noise and vibration would primarily be limited to the immediate vicinity of the Proposed Project site and would be short-term and intermittent. The location is at a sufficient distance from the nearest sensitive receptors such that noise and vibration impacts are anticipated to remain minor, though it is

possible that intermittent noise may be detectable by the nearest residents. Each construction period (for Phase 1 then Phase 2) is expected to last for approximately 15 - 18 months.

3.2.8.2.2.2 Operations

Long-term operational noise associated with the Proposed Project would be similar in noise level and character to noise produced by existing, adjacent facilities. Noise sources associated with long-term operations at the property include truck traffic and employee vehicle traffic; and exhaust fans on the roof of the main building; heating, ventilation, and air conditioning (HVAC) units; baghouses; blowers on thermal oxidizers and flare; caustic scrubber pump, vacuum pumps, compressor, backup generator, and fire water pumps.

The facility is expected to operate 24 hours per day, 7 days per week for the 20-year operation lifespan of the processing equipment installed. The generator and fire water pumps would be operated only during emergencies and for occasional scheduled maintenance.

Noise producing equipment is planned to be located primarily on the south side of the facility, approximately 1000 feet from the nearest residences which are located north northwest of the facility. The current basis of equipment design specifies equipment sound levels to be no more than 85 dBA at 3 feet, with a maximum of 115 dBA only during emergency and upset operating conditions. Point sources sound levels decrease by approximately 6 dBA for every doubling of distance from the source (not taking into account intervening buildings and topography, which further attenuate noise). Typical equipment sound is expected to attenuate to below 50 dBA (nighttime noise limit) within 200 feet from the equipment.

Noise associated with emergency equipment is exempt from both the Moses Lake and Washington noise regulations; however, sound levels associated with emergency operations would attenuate to below 60 dBA within approximately 2000 feet.

3.2.8.3 Cumulative Impacts

Based on the location of the facility and the current and future land use and zoning of the project site and adjacent properties, operational noise associated with the Project would comply with all relevant noise regulations and is not expected to conflict with current uses of adjacent or nearby properties. The Proposed Project, along with any future development in the area administered by the City of Moses Lake would continue a land use change trend from agricultural to industrial, and the Proposed Project would add incrementally to cumulative ambient noise levels in and around the area. Any increase in ambient noise levels resulting from operations of the Proposed Project would be minor, with maximum decibel levels of the Proposed Project anticipated to remain below that of existing rail traffic. The facility would be subject to and would comply with the noise limits described above. No reasonably foreseeable actions have been identified that would interact with the Proposed Project to generate cumulative adverse noise and vibration impacts.

Additionally, another battery-related project is planned for the same general area, but it would be subject to the same regulations (e.g. EPA, state-level zoning and permitting, etc) as the Sila project, and thus would not contribute to significant cumulative impacts.

3.2.8.4 Proposed Mitigation Measures

Construction-industry best management practices would be incorporated into construction plans and contractor specifications, which could include the following:

- where possible, construction equipment engines would be fitted with mufflers, intake silencers, or engine enclosures;
- construction equipment would be turned off during prolonged periods of non-use; and
- stationary equipment would be located as far as possible from sensitive receptors.

3.2.9 Geology, Topography and Soils

3.2.9.1 Affected Environment

A geotechnical report (GeoEngineers, 2023) of the site reports the following stable conditions: general surficial geology in the vicinity of the Proposed Project area is described as a mixture of fine to coarse sand and silt, overlying basalt rock. The Washington Division of Geology and Earth Resources "Geologic Map of the Moses Lake 1:100,000 Quadrangle," indicates the site is underlain by Quaternary Age sand and silt consisting of "horizontally bedded or laminated lacustrine fine sand and silt, which contain lenses of basaltic sand and gravel and ice-rafted erratic boulders...deposited in low-energy slackwater environments created by temporary ponding of glacial outburst floodwaters."

Test bores performed by GeoEngineers for the 2023 report included 10 drilling borings throughout the site, ranging from depths between approximately 20 to 35.5 feet below-ground surface (bgs). Approximately two to six inches of topsoil was encountered at the boring locations with the exception of borings B-1, B-2, B-4 and B-5. In borings B-1, B-2 and B-4, which were in the alfalfa field, approximately 12 inches of topsoil was encountered which could be due to cultivation of the field which mixed the upper 12 inches of the soil profile with organic matter. Boring B-5 was drilled on the edge of a road and encountered approximately six inches of crushed rock at the ground surface. The topsoil was generally comprised of silty fine sand, silty fine to coarse sand, and silty fine to coarse sand with gravel, all with organic matter (roots). The subsurface profile was generally consistent between the borings and with the above-referenced geologic map and soil descriptions. For the purposes of this analysis, the subsurface materials are characterized into five general units including: 1) fill; 2) silty sand; 3) silt with sand; 4) caliche; and 5) decomposed basalt.

There are no steep slopes, landslide hazard areas, or localized flood zones on the site and the site is not considered a seismic hazard area. The site was characterized as a "Class D" classification, which is a moderate seismic class. Given the gently sloping topography and ground cover by grasses, the site's susceptibility to erosion is expected to be low.

The Proposed Project site was previously zoned agricultural and was used for agriculture prior to being developed for industrial uses in 2010. Environmental due diligence conducted at the Proposed Project site found no evidence of the use or presence of hazardous substances or

petroleum products and no recognized environmental conditions or areas of impacted soil were observed (Maul Foster Alongi, 2022).

3.2.9.2 Environmental Consequences

3.2.9.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance.

3.2.9.2.2 Proposed Project

3.2.9.2.2.1 Construction and Operations

Proposed Project impacts to geology, soils, and topography are anticipated to be direct, long term, and minor. The site would undergo site preparation and grading to achieve proper slopes for drainage and earthwork for construction of equipment and pipe rack foundations on the south side of the existing Sila building on site. Total limit of the work area is 1,200,000 square feet. The total excavation material quantity is anticipated to be 100,000 cubic yards, of which roughly 60,000 cubic yards of material is estimated to be certified for re-use as general backfill and for grading the site. The general import backfill quantity is approximately 35,000 cubic yards with an additional roughly 5,000 cubic yards of engineered structural fill to be used beneath foundations. Based on the results of the 2023 Geotechnical Report, site explorations, laboratory testing and engineering analysis indicate that site conditions are favorable for the design and construction of the proposed improvements provide recommendations are incorporated into the design and implemented during construction.

Based on the past use of the property and the results of previous site investigations, there is no indication that constituents of concern are present in the soil at the Proposed Project site and, therefore, no risk that planned activities during construction and operations (e.g., site grading, equipment foundation construction, and facility operations) would inadvertently accelerate the migration of such constituents across the Proposed Project site. Planned grading activities would redistribute soils to accommodate planned development of the Proposed Project site.

3.2.9.3 Cumulative Impacts

No reasonably foreseeable development has been identified for the Proposed Project site vicinity. Development in the vicinity of the Proposed Project consistent with existing zoning would not generate cumulative adverse impacts to geology, topography, or soils.

3.2.9.4 Proposed Mitigation Measures

Potential for future impacts to soils and underlying geology would be mitigated throughout the life of the Proposed Project through the implementation of spill prevention and emergency response procedures, and a facility monitoring and inspection program. The Proposed Project would include a spill prevention and response plan implemented by an onsite Emergency Response Team intended to prevent constituents that may be spilled from infiltrating the soil and reaching underlying geology and groundwater.

Any and all erosion control measures required by the City of Moses Lake and the State of Washington would be implemented and followed throughout the construction phase and during plant operation, as well as recommendations identified in the 2023 Geotechnical Report. These measures would include but are not limited to use of a water truck to control dust, installation of fabric fences or similar measures to prevent off site release as well as protect the wetlands during construction, and revegetation of stockpiles or areas of disturbed soil. Rip Rap, gravel, or similar material would be used at the entrance to Road N to reduce or eliminate vehicle track-out onto the public roadway by construction vehicles.

3.2.10 Surface Water and Groundwater

3.2.10.1 Affected Environment

3.2.10.1.1 Surface Water

The Proposed Project is located in the Crab Creek Watershed, which extends from Ritzville, Washington to Beverly, Washington (along the Columbia River). The site contains three wetlands (Wetland A, Wetland, and Wetland D) and one stream (Stream 1). The East Low Canal (a conduit of the Columbia Basin Irrigation Project) is located approximately 0.5 mile east of the Proposed Project site, with Moses Lake located approximately 5 miles to the west. Sources of inputs to surface water to the Proposed Project site currently include direct precipitation, with surface water runoff from impervious surfaces associated with the existing industrial facility. An existing stormwater retention and infiltration pond is located in the northwest portion of the Proposed Project site.

3.2.10.1.2 Ground Water

The Proposed Project site is underlain by Quaternary Age sand and silt and contains a shallow aquifer with a level maintained by the U.S. Bureau of Reclamation. The U.S. Department of Agricultural SCS mapping classifies soils at the Proposed Project site as Type B hydraulic soils, which are characterized by infiltration rates in the range of 0.15 to 0.30 inches per hour.

3.2.10.2 Environmental Consequences

3.2.10.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If

the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance.

3.2.10.2.2 Proposed Project

3.2.10.2.3 Surface Water

3.2.10.2.3.1 Construction

Construction of the Proposed Project would have minor temporary indirect impacts from runoff to surface waters. Sila has obtained a Construction General Stormwater Permit (WAR312862) from the Ecology for this project. These impacts would be minimized through implementation of BMPs required by Sila's stormwater permit, including installation of silt curtains and hay bales to slow and filter water runoff, reducing the time excavations are open to erosion, stabilized construction entrances and other measures.

The Proposed Project includes a stormwater system including use of the existing stormwater retention and infiltration pond in the northwest portion of the site (which would continue to collect stormwater from the existing building roof), as well as a new stormwater retention and infiltration pond in the southwest portion of the site to control the remaining stormwater runoff generated on the site. The new pond would be sized to contain water from a 24-hour 100-year storm. Sila would undertake all operations and maintenance of this pond once constructed. Other methods for controlling stormwater include maintenance of stormwater conveyance systems, and general parking area sweeping and cleaning.

3.2.10.2.3.2 Operations

Operation of the Proposed Project would include the production of certain wastewater streams (See Table 6). Specifically, waste materials present on the property would include 25-percent sodium hydroxide (NaOH), which would feed into a caustic scrubber and be buffered with sodium carbonate and neutralized with sulfuric acid (H_2SO_4) and ran through a clarifier, Reverse Osmosis (RO) membrane and centrifuge to remove Total Suspended Solids (TSS), Total Dissolved Solids (TDS) before being discharged to the Moses Lake Sand Dunes wastewater treatment plant (WWTP) or on-site lined evaporation ponds minus the clarifier, RO membrane and centrifuge. **Sila's prior plans to utilize a Class 5 well for wastewater discharge have been removed from consideration.** The wastewater disposal decision would be driven after completing an All Known, Available and Reasonable methods of prevention, control and Treatment (AKART) evaluation, which would be approved by Ecology. All tanks would be located in an area with secondary containment (berms) to prevent release to the environment. All liquid tanker truck loading/unloading areas would be designed to collect all potential leaks from the transfer process. Periodic cooling tower blow-down would contain water treatment chemicals, which would be properly contained and treated to acceptable thresholds prior to being discharged to the Moses Lake Sand Dunes WWTP; all wastewater discharges directed to the

Sand Dunes WWTP would be subject to, and in compliance, with any necessary Clean Water Act permits or authorizations. **Sila is currently working with Ecology and Moses Lake to obtain a waste discharge permit to this publicly-owned treatment works (POTW).** All other process chemicals are gasses that do not have a risk of entering groundwater or surface waters. Process materials consist of carbon and silicon, which are not considered hazardous based on aquatic toxicity testing.

3.2.10.2.4 Groundwater

3.2.10.2.4.1 Construction

The potential impact of Proposed Project construction on groundwater would be negligible. No discharges to land are anticipated during construction, and stormwater discharges would comply with the City of Moses Lake, State of Washington, and other requirements. The Proposed Project would include a spill prevention and response plan implemented by an onsite Emergency Response Team intended to prevent constituents that may be spilled from infiltrating the soil and reaching groundwater.

3.2.10.2.4.2 Operation

Water utilized for the Proposed Project would be provided by the City of Moses Lake and there would be no use of groundwater. The spill prevention and response plan implemented by an onsite Emergency Response Team would prevent constituents that may be spilled from infiltrating the soil and reaching groundwater.

3.2.10.3 Cumulative Impacts

No reasonably foreseeable development has been identified for the Proposed Project site vicinity. Development in the vicinity of the Proposed Project consistent with existing zoning would not generate cumulative adverse impacts to surface water or groundwater. **Permitting is under the purview of Ecology, and adherence to their permits would ensure non-significant cumulative impacts, including downstream impacts to vegetation and wildlife resources (e.g. salmon populations, other wildlife, or other users of water).**

3.2.10.4 Proposed Mitigation Measures

Activities associated with construction and operation of the proposed project are currently using BMP measures required by Ecology's Stormwater Management Manual for Eastern Washington, as well as the 'How to Meet Ecology's Construction Stormwater General Permit Requirements' handbook to reduce and minimize potential impacts to surface water or groundwater. Sila has confirmed that the proposed project activities do not meet the requirements for a Dam Safety construction permit issued through Ecology.

Sila will adhere to the permit conditions issued by Ecology to ensure stormwater is managed appropriately. This project would not proceed as planned unless permitting requirements are met by Sila.

3.2.11 Vegetation and Wildlife

3.2.11.1 Affected Environment

Ecosystems North West conducted a Shrub Steppe analysis for the project to determine the presence/absence of Priority Habitats on the site in compliance with the Moses Lake Critical Areas Ordinance (CAO) chapter 19.03 (Appendix 4). Shrub Steppe habitat is identified as priority habitat by Washington State and defined as Fish and Wildlife Habitat Conservation Area. For listed species, desktop analysis including U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) data identified habitat potential for Yellow-billed Cuckoo and Monarch Butterfly on the site (Appendix 4).

3.2.11.1.1 Vegetation

The Proposed Project site was historically farmed and is presently either farmed or has been mowed repeatedly over the past several years. The south, east and north borders of the site are large acreage irrigated agriculture. The site has no shrub component, and the existing grasses/herbaceous layer of vegetation is dominated by weedy, nonnative species. The plant vegetative cover of the site is dominated by crested wheatgrass (Agropyron cristatum), bulbous bluegrass (Poa bulbosa) and cheatgrass (Bromus), with a cover ranging between 70 to 90 percent. Tumble weed is also present at 10 to 20 percent cover. Less than 1 percent native bunch grass is present; this appears to be Sherman bunch grass (Poa secunda). Immediately west of the existing building is four to five acres of very low-quality shrub steppe.

3.2.11.1.2 Wildlife

Species observed on the site during the habitat survey included: raven, black-billed magpie, western meadowlark, European starling, American robin, pheasant, red-winged blackbird, and mourning dove. Moderate fossorial activity was observed throughout the site. None of the two listed species identified in the IPaC desktop analysis were observed. No critical habitat for the listed species was observed during the field survey on the Project site. Except for an approximately four-to-five-acre portion of the site located along the west and northwest side of the existing building, the site would not be considered priority habitat. The four to five acres that could be considered priority habitat is very low quality, is small and isolated and its proximity to the existing building renders it of minimal value to wildlife species associated with shrub steppe habitat.

3.2.11.2 Environmental Consequences

3.2.11.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely

not proceed without DOE assistance. In the event that the project does not proceed, existing vegetation and wildlife conditions on the site would likely remain unchanged.

3.2.11.2.2 Proposed Project

3.2.11.2.3 Vegetation

3.2.11.2.3.1 Construction

Impacts to vegetation from construction of the Proposed Project are anticipated to be minor, affecting primarily weedy, nonnative vegetation and four to five acres of low-quality priority habitat (shrub steppe). The site would undergo preparation and grading to achieve proper slopes for drainage and earthwork for construction of equipment and pipe rack foundations on the south side of the existing building. Total limit of the work area is estimated at approximately 1,200,000 square feet. The total excavation quantity is 100,000 cubic yards.

3.2.11.2.3.2 Operations

Operation of the Proposed Project is not anticipated to create any additional impacts to vegetation.

3.2.11.2.4 Wildlife

3.2.11.2.4.1 Construction

Impacts to listed endangered or threatened species or designated critical habitat from the Proposed Project are not anticipated. No listed endangered or threatened species have been observed or documented on the site. As noted previously, the four to five acres of the site that could be considered priority habitat has been determined to be of very low quality, is small and isolated and its proximity to the existing building renders it of minimal value to wildlife species associated with shrub steppe habitat.

While the desktop analysis and report generated from query of the USFWS IPaC tool (Appendix 4) identified theoretical potential for as many as two listed species to exist within or in proximity to the Proposed Project site, a 2023 field survey of the site did not identify these species or their critical habitat. As a result, DOE has determined that there would be no effect on listed species in the project area in relation to the proposed project. DOE also initiated consultation with the Washington Office of the USFWS via letter on May 31,2023 (Appendix 3) and provided a copy of the Draft EA to their office for review and comment. **No comments were received from the USFWS in response to the Draft EA or DOE's determination of effect.**

3.2.11.2.4.2 Operations

Operations of the Proposed Project are not anticipated to create any impacts to wildlife.

3.2.11.3 Cumulative Impacts

No reasonably foreseeable development projects have been identified for the Proposed Project site vicinity. Development in the vicinity of the Proposed Project consistent with existing zoning

would not be expected to interact with the Proposed Project to generate cumulative adverse impacts to vegetation and wildlife.

3.2.11.4 Proposed Mitigation Measures

No mitigation measures for vegetation and wildlife are proposed at this time.

3.2.12 Regulated Waste (Solid and Hazardous Wastes)

3.2.12.1 Affected Environment

The Proposed Project is located on an approximately 162-acre site at 3741 Road N NE in Moses Lake, Washington. A Phase I Environmental Site Assessment (ESA) was conducted for the site in 2022. The Phase I ESA did not identify any current, historic, or controlled Recognized Environmental Conditions (RECs) on the property. The property was used for agriculture prior to being developed for industrial uses in 2010, and agricultural uses can often be associated with herbicides and pesticides. The Phase I ESA included surface soil sampling from agricultural areas, stormwater basins and soil stockpiles. Based on the analytical results, surface soil and fill material at the site are not impacted by hazardous substances (Maul Foster Alongi, 2022).

Based on the age of the current industrial facility (constructed in 2010), lead and asbestos are not anticipated to be present in that structure. The existing residence on site (1950s), was surveyed and no lead-based paint and asbestos-containing materials is present. Building materials would be sampled prior to any future demolition or disturbance of the residence and any hazardous materials would be disposed of in accordance with applicable regulations. In addition, no heating oil tank was discovered.

3.2.12.2 Environmental Consequences

3.2.12.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance.

3.2.12.2.2 Proposed Project

3.2.12.2.2.1 Construction

Construction of the Proposed Project is expected to generate negligible to minor, direct, temporary impacts from regulated waste. Solid waste and sanitary waste generated during construction activities would be limited to common construction-related waste streams. It is estimated that we would generate less than 300-400 cubic yards of miscellaneous construction

and demolition debris. In-state or out-of-state landfills or recycling facilities would have the capability and capacity to accept these wastes, and therefore, there would be no impact associated with the disposal of these materials. In addition, the Facility would implement BMPs to minimize the quantity of non-hazardous solid waste generated, as appropriate, during construction and to ensure proper handling of materials.

3.2.12.2.2.2 Operations

Operations are expected to incur minor, direct, long-term impacts from regulated wastes. There would be certain non-hazardous waste streams generated during facility operations including municipal solid waste, which would include out of spec solid raw materials, process intermediates and final product associated with Sila's anode processes. Sila's in-process materials consist of carbon and silicon, which are not considered hazardous based on aquatic toxicity testing. It is anticipated that approximately 25 - 35 gallons per minute (gpm) of process wastewater would intermittently be generated from the caustic scrubber unit associated with silane operation. Currently, Sila is looking at **three** options for the disposal of this wastewater: **(i) ship untreated wastewater containing Sodium silicate/Silicon Dioxide solids off site as hazardous waste for disposal, (ii) neutralize onsite, remove the Sodium silicate/Silicon Dioxide solids and discharged to the local publicly owned treatment works (POTW) within effluent guidelines; or (iii) neutralize onsite, remove the Sodium silicate/Silicon Dioxide solids and send to an onsite evaporation pond and dredge out any settled solids.** Sila's processes, except for the caustic scrubber, cooling tower and hot oil system, do not utilize any hazardous liquids or solids. Major waste stream estimates that are anticipated with operation of the facility are shown in Table 8.

Table 8. Major Waste Stream Estimates for Operations

Production Area	Description	Classification	Estimated Annual Production Rate (tons/year)	Estimated 20-year Production Amount (tons)
Manufacturing	Out of Spec process solids	Non Haz Waste	100	2000
Wastewater	Sodium Silicate/SiO_2	Non Haz Waste	5,000	100,000
Maintenance Shop	Paints, grease, oil, degreasers	Waste (hazardous)	0.1	2
Laboratory	Onsite QC lab Waste	Waste (hazardous)	0.5	10
Battery Test Lab	Lithium-Ion Batteries + Components	Hazardous	0.5	10

No underground storage tanks are included in the Proposed Project design. Materials would be stored in containers appropriately designed for spill containment in accordance with best management practices and any applicable regulatory requirements.

It is anticipated that the on-site quality control (QC) laboratory may produce some amount of hazardous waste. The quantity of hazardous waste generated at the facility would determine the facility's generator status and which Federal and State regulations related to waste generation,

management, and disposal would be applicable. Sila also plans to add as part of Phase 2 a battery testing facility onsite where we build test cells to evaluate the performance of the anode material produced at the site.

Sila is committed to finding better methods to reduce onsite waste generation. For example, off-spec materials disposal will involve waste to energy methods while fuel blending and solvent recovery options are utilized where applicable. Sila is also currently investigating the ability to recycle and reuse caustic scrubber wastewater.

Sila's goal of continuous waste minimization efforts through the lifetime of the plant would continue to reduce the volumes of annual waste generated during the 20-year process operational life expectancy. Sila intends to recycle or reuse co-products and non-hazardous waste to the extent possible, minimizing the amount of waste that would be disposed of offsite.

3.2.12.3 Cumulative Impacts

Although additional development could occur in the area, the type and extent of impacts from regulated wastes are not reasonably foreseeable due to the unknown nature of any use by existing or future property owners. No reasonably foreseeable actions have been identified that would interact with the Proposed Project to generate cumulative adverse impacts to regulated waste.

Additionally, another battery-related project is planned for the same general area, but it would be subject to the same regulations (e.g., EPA, state-level zoning and permitting, etc.) as the Sila project, and thus would not contribute to significant cumulative impacts. **This project would not proceed as planned unless permitting requirements are met by Sila.**

Any future site upgrades would also be subject to similar regulatory requirements related to waste generation and disposal. Sila would continue to find ways to reduce waste generation through process improvements, substitution, and improved technologies.

3.2.12.4 Proposed Mitigation Measures

During construction, standard BMPs and preventative measures, such as maintaining fencing around construction areas, establishing designated materials containment and storage areas, and controlling the flow of construction equipment and personnel through the Proposed Project site, would minimize the potential for a release to occur. If a release occurs, immediate action would be taken to contain, remediate, and dispose of any contaminated materials in accordance with Federal, State, and local regulations and site-specific spill plans.

3.2.13 Utilities and Energy Use

3.2.13.1 Affected Environment

The Proposed Project is located within the service area of the City of Moses Lake municipal water system and municipal sewer/wastewater treatment system. Natural gas for the site is supplied by Cascade Natural Gas. Electricity for the site is provided by Grant County Public Utility District (GCPUD). Lakeside Disposal and Recycling is under contract with the City of

Moses Lake and provides garbage/refuse service for the site; Consolidated Disposal Services also operates a refuse transfer station approximately seven miles from the site. Fiber optic services have also been extended to the site by Vyve Broadband to provide high-speed internet service. Table 9 summarizes the existing utilities at the site.

Table 9. Existing Utilities Summary

Utility	Provider	Existing Infrastructure
Electricity	Grant County Public Utility District	Two 13.2 kilovolt (kV) feeders
Natural gas	Cascade Natural Gas	One 4" steel pipe
Potable water	City of Moses Lake	Two feeders a 2" and 4" PVC pipes
Sanitary sewer	City of Moses Lake	One 4" forced main
Internet	Vyve Broadband	Fiber optic cable

GCPUD provides electrical service to the project site through two 13.2 kV feeders. One feeder is currently in service and provides 10 megavolt amperes (MVA) capacity to the site. The second feeder is in place and GCPUD installed switchgear **on Sila's property** in mid-2023 that energized the second feeder and brought the site capacity to 20 MVA**. Sila would only need to connect to this switchgear via trenching and adding conduit with wire to access this power.**

Natural gas is provided by Cascade Natural Gas as described above in Table 9. The existing 4" steel pipe runs to metering facilities that connect to the southwest side of the existing building. The capacity of the existing system is approximately 90,000 standard cubic feet per hour (SCFH).

The Moses Lake Public Works Water Division is responsible for the operation, maintenance, and repair of the City's water system, which is monitored and tested on a regular basis to maintain high quality and purity. The City's water system includes 9 reservoirs, 19 deep wells, 160 miles of water mainline, 1,200 fire hydrants, 1,600 water main valves, and 7,500 water services.

The City of Moses Lake's sanitary sewer system provides wastewater collection, treatment, and disposal for areas within the City Limits and the UGA boundary. The City's wastewater system consists of two wastewater treatment plants, a network of tributaries, a collection of Lift Stations and pressurized mains, and a Central Operations Facility (COF). The two Wastewater Treatment Plants (WWTP) are owned and operated by the City of Moses Lake. The Dunes WWTP is a 4.4 million gallon per day Biolac Activated Sludge Plant which presently serves a population of approximately 22,720. The Larson WWTP is a 0.75 million gallon per day Biolac Activated Sludge Plant which serves an estimated population of 3,000.

3.2.13.2 Environmental Consequences

3.2.13.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance.

3.2.13.2.2 Proposed Project

3.2.13.2.2.1 Construction

Construction of the Proposed Project would have short-term, negligible adverse impacts on utilities, including electricity, water, gas, and sewer. Electrical service used during construction would be provided by tie-ins to the existing electrical facilities at the site. The existing potable water supply at the site would be utilized during construction. Temporary water storage tanks may be placed on site for use during construction. Temporary, portable restroom facilities would be used at the site during construction in addition to the existing restroom facilities.

The Cascade Natural Gas metering facilities installed at the site have never been placed into service. There would be no impact to this system as natural gas is not required during construction. Use of natural gas at the site would commence as construction is completed and new facilities are being commissioned.

3.2.13.2.2.2 Operations

Proposed Project operations would have minor direct impacts on local utilities and energy use, as the industrial processes involved would increase the demand for electricity, water, and gas at the Proposed Project site, and increase the amount of wastewater generated on the site. However, the estimated maximum utility demands for the project are all anticipated to be less than the capacities that are currently provided by the existing infrastructure.

The estimated maximum electrical demand for the Proposed Project when the plant is fully operational would be approximately **15** MVA. The two existing 13.2 kV feeders that are provided by Grant County PUD and serve the site have a capacity of approximately 20 MVA.

The proposed abatement systems for the site (flare, thermal oxidizers) utilize natural gas and have a maximum estimated demand of 100,000 SCFH. The existing Cascade Natural Gas metering facilities installed at the site have a capacity of approximately 90,000 SCFH. Minor modifications by Cascade Natural Gas could be required to the metering facilities (e.g., replace the existing regulator and meter) to provide the 100,000 SCFH capacity required for operations.

The Proposed Project is anticipated to require a maximum potable water usage of approximately **25,000** GPD**,** which would be provided by the existing 12" potable water line supplied by the

City of Moses Lake. The Proposed Project would upgrade the site firewater system to provide approximately 4,000 gpm that would be available during a fire event, if necessary. Firewater storage **tanks** would also be installed so the incoming water supply is not relied upon during the first two hours of a fire event.

The existing building restrooms, showers, floor drains, and sinks are discharged through a single 4" main connected to the wastewater system operated by the City of Moses Lake. While the Proposed Project layout is not finalized, it is expected to increase demand placed on the domestic wastewater system from approximately **35** plumbing fixture units currently to **approximately 70** plumbing fixture units in total.

3.2.13.3 Cumulative Impacts

The Proposed Project is anticipated to contribute incrementally to cumulative impacts affecting utility infrastructure and services. Consistent with Section 3.2.10.3 (Surface Water and Groundwater), the Proposed Project, in combination with potential future development in the area, would increase demand for electricity, the production of wastewater and the demand for treated water. However, any potential future development projects would need to analyze capacity and potential demand, and coordinate with respective utility purveyors.

Additionally, another battery-related project is planned for the same general area, but it would be subject to the same regulations (e.g., EPA, state-level zoning and permitting, etc.) as the Sila project, and thus would not contribute to significant cumulative impacts.

3.2.13.4 Proposed Mitigation Measures

No mitigation measures are currently planned for utilities or energy use, **but this project would not proceed as planned unless permitting requirements are met by Sila.**

As part of Sila plant design, Sila incorporated such improvements like a closed loop adiabatic process cooling water system that reduces water usage by over 20,000,000 gallons annually from the traditional system. Sila also installed an onsite fire water tank that reduces water loss from evaporation over traditional fire water ponds. Sila will continue to look at methods for recycling the water onsite for reuse in the plant systems, including the ability to recycle and reuse caustic scrubber wastewater.

3.2.14 Transportation and Traffic

3.2.14.1 Affected Environment

The Proposed Project site is located at 3741 Road N NE in Moses Lake, Washington. The primary access to the site is from Road N NE along the western boundary of the site. Road N NE connects with Road 4 NE and E Wheeler Road, which ultimately connects with State Highway 17 to the west. Interstate 90 is located approximately three miles to the south of the site and can be accessed from State Highway 17. An approximately 613,000-square foot

manufacturing building is currently located on the site, but has remained vacant for several years and therefore has not generated any existing vehicle traffic.

3.2.14.2 Environmental Consequences

3.2.14.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance.

3.2.14.2.2 Proposed Project

3.2.14.2.2.1 Construction

Short-term, but measurable minor adverse impacts to traffic and transportation are expected during the construction phase of the Proposed Project. Construction of the Facility is anticipated to occur in two phases with the first phase lasting for up to 15 - 18 months. The first phase would include improvements to the existing building, installation of equipment and storage vessels, and the addition of new access roads and other equipment and facilities that would be necessary for the manufacturing process. During the construction period, approximately 450-500 jobs would be generated, where construction vehicles and construction workers' vehicles would add to existing local traffic. For Phase 2 of the project, it is anticipated that construction would also take approximately 15 - 18 months to complete, and 800-900 temporary construction jobs being created. The roads most impacted would include Road N NE, E Wheeler Road, Road 4 NE, Road O NE, Road L NE, and State Highway 17.

3.2.14.2.2.2 Operations

A Traffic Analysis was prepared for the project by Western Pacific Engineering and Survey (Western Pacific Engineering and Survey, 2023). Once operational, the Proposed Project would generate a minor long-term increase to traffic and transportation from anticipated daily truck and personal-vehicle traffic into and out of the site. Sila intends to operate the facility with two, twelve-hour shifts per day with approximately 125 employees on each shift (total daily shift count of 250 employees). Anticipated shift change times would be 6:00 AM and 6:00 PM. In addition, approximately 10 truck trips to and from the site per day would be anticipated for the delivery of new materials and the shipment of finished goods.

Operation of the proposed Sila facility is anticipated to generate approximately 572 daily vehicle trips, including 258 trips during the AM Peak Hour and 258 trips during the PM Peak Hour. Traffic operations with these associated vehicle trips were analyzed as part of the Traffic Analysis. Five intersections in the vicinity of the project site were analyzed to determine any

potential level of service (LOS) impacts that could occur with operation of the proposed project, including:

- Wheeler Road and State Highway 17
- Wheeler Road and Road L NE
- Wheeler Road and Road N NE
- Road N NE and Road 4
- Wheeler Road and Road O NE

The City of Moses Lake identifies the minimum LOS for the City as LOS D; the Washington State Department of Transportation lists their minimum LOS for rural highways at LOS C and LOS D for urban highway segments. Based on the Traffic Analysis, operation of the proposed project is not anticipated to result in a LOS that would be below their minimum requirement. All intersections are anticipated to operate at or better than the City of Moses Lake's standard of LOS D. As a result, significant transportation impacts would not be anticipated.

While Sila does not plan to utilize rail at this time, it is possible that they might utilize rail in the future. This usage would be relatively minor and would be offset by decreased truck traffic on roadways in the site vicinity.

3.2.14.3 Cumulative Impacts

Construction and operations of the Proposed Project, combined with future development in the area (including potential future industrial/manufacturing development), would result in a cumulative increase in localized traffic volumes in the site vicinity, including Road N NE, Wheeler Road, Road L NE, and State Highway 17. To the extent that future development occurs in the area, it would be required to meet the traffic and transportation standards of the City of Moses Lake.

Additionally, another battery-related project is planned for the same general area, but it would be subject to the same regulations (e.g., EPA, state-level zoning and permitting, etc.) as the Sila project, and thus would not contribute to significant cumulative impacts.

3.2.14.4 Proposed Mitigation Measures

No mitigation measures would be required for transportation and traffic.

3.2.15 Public and Occupational Health and Safety

3.2.15.1 Affected Environment

The Proposed Project site contains a recently constructed industrial facility (constructed in 2010) and hazardous materials, such as lead and asbestos, are not anticipated to be present in the building. Based on the date of construction of the existing residence on the site (1950s), lead-based paint and/or asbestos could be present in that building. A Phase I Environmental Site Assessment (ESA) was also completed for the site and did not identify any current, historic, or controlled recognized environmental conditions on the property. The property was used for

agriculture prior to being developed for industrial uses in 2010. Agricultural uses can often be associated with herbicides and pesticides. The Phase I ESA included surface soil sampling from agricultural areas, stormwater basins and soil stockpiles. Based on the analytical results, surface soil and fill material at the site are not impacted by hazardous substances (Maul Foster Alongi, 2022). No other risks to public and occupational health and safety from the existing site have been identified.

3.2.15.2 Environmental Consequences

3.2.15.2.1 No Action Alternative

Sila has indicated that it is their intent to proceed in the absence of DOE funding. DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If the Proposed Project proceeds without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between potential impacts of the Proposed Project and the impacts of not proceeding with the project, for purposes of this environmental analysis, DOE assumes that the Proposed Project would likely not proceed without DOE assistance.

3.2.15.2.2 Proposed Project

3.2.15.2.2.1 Construction and Operations

Risks to public and occupational health and safety from Proposed Project construction and operations are expected to be minor, direct and indirect, and long-term. Numerous regulatory permitting requirements (Building, Fire, Hazmat, Occupancy, OSHA, Department of Ecology (Air & Water)) and planned mitigations governing construction of the Proposed Project and operations address factors relevant to public and occupational health and safety. These include land use (Section 3.2.5), air quality (Section 3.2.6), greenhouse gasses (Section 3.2.7), water quality (Section 3.2.10), regulated waste streams (Section 3.2.12), and transportation and traffic (Section 3.2.14). Existing corporate policies of Sila, or future updates thereof, further address relevant health and safety risk factors and would be followed throughout construction and operations. These mitigation measures are summarized below under Section 3.2.15.4.

Proposed Project operations would process certain hazardous materials on a regular basis including sodium hydroxide, sulfuric acid, silane and hydrocarbon gasses, nitrogen, oxygen and other cryogenic gasses. To reduce safety and logistic risk, these materials would be received by tankers within the facility area allowing for strictly controlled and consistent management. Prior to startup, Sila would prepare an Emergency Action/Crisis Management (EA/CM) Plan that would address unanticipated events (e.g., natural disaster, terrorism, accidents, spills) and Sila would build on EA/CM Plans from their other facilities with similar operations. **Currently, Sila plans to hire an internal full time Emergency Response Coordinator (ERC) person in mid-2024 whose job it will be to create the EA/CM plan by the end of 2024; the EA/CM will be reviewed and approved by the Moses Lake Fire Department.**

Onsite storage vessels of process gasses would be located in a secured fenced area, which would also contain caustic and acid storage tanks in containment basins with a berm area for unloading.

Sila would require all employees to participate in the Company's established health, safety, and security training, which includes specialized training for individuals handling hazardous materials and waste. Sila would implement their own Emergency Response team capable of responding to any type of emergency. In addition, their site fire protection system would be designed to mitigate the spread of fire and properly extinguish the fire. Additionally, Sila would have close coordination with local first responders (e.g., fire department and law enforcement), as necessary, and would maintain compliance with local, state, and federal regulatory requirements including the Emergency Planning and Community Right-to-Know Act (EPCRA), Occupational Safety and Health Administration (OSHA), Process Safety Management (PSM), EPA, Risk Management Program (RMP), and Resource Conservation and Recovery Act (RCRA).

3.2.15.2.2.2 Accidents and Intentional Destructive Acts

Prior to the start of operations, Sila would initiate security procedures to protect the site's personnel, environment, property, and infrastructure from reasonably foreseeable accidental and intentional destructive acts, which may be possible, but are considered very unlikely to occur. Procedures would focus on both prevention and emergency response, and would be based on environmental, health, safety, and security protocols established in their other manufacturing facility. Procedures and protocols would also include those discussed in Sections 3.2.6, 3.2.12, and 3.2.13 as part of operations and regulatory compliance. The Proposed Project site would be surrounded by a perimeter security fence and monitored by a dedicated 24-hour security staff and trained facility first responders. In addition, the facility would have closed-circuit cameras in each building with focus on critical ingress and egress routes. Security badges would regulate access to facility buildings through dedicated entrance and exit portals. Facility management would work in full and immediate cooperation with emergency responders and managers from outside the facility as appropriate.

3.2.15.3 Cumulative Impacts

Although additional industrial development could occur in the vicinity of the Proposed Project, no reasonably foreseeable actions have been identified that would interact with the Proposed Project to generate cumulative adverse public and occupational health and safety impacts. For example, another battery-related project is planned for the same general area, but it would be subject to the same regulations (e.g., EPA, state-level zoning and permitting, etc.) as the Sila project, and thus would not contribute to significant cumulative impacts.

Any changes to Sila's processes, chemical types/quantities or addition of new operations would require a review and potential changes to our operational plans and permits. As the site continues to expand, the site's Emergency Response program and security plan would be updated to ensure the safety of plant personnel, as well as the surrounding community.

3.2.15.4 Proposed Mitigation Measures

Risk mitigation for handling hazardous materials would be established through engineering controls and design features that were incorporated as a result of design Process Hazard Analysis

(PHA) as well as compliance with regulations and recognized and generally accepted engineering practices and safety standards like National Fire Protection Association (NFPA) and Compressed Gas Association (CGA) standards pertinent to Sila's operations. Defined operational procedures (e.g., Emergency Response, Start-up/Shut Down) would also be used including, maintenance and operation of equipment in compliance with federal, state, and local occupational health and safety requirements, environmental regulations, and manufacturer recommendations. Robust workplace safety procedures would be developed to ensure potentially hazardous activities (e.g., confined space entry, work at heights, hot work) are conducted by trained and competent individuals. Gas Life Safety Systems installed in building areas, on equipment and in storage locations would provide early warning of unsafe conditions and initiate system shutdowns and/or evacuations. Spill containment would be installed for storage tanks and loading/offloading locations. Further Proposed Project mitigations covered under Sila's corporate guidance include, but are not limited to, chemical handling procedures; waste management and handling procedures; and mechanical integrity maintenance programs.

4. References

American Community Survey (ACS), Demographic and Housing Estimates, 2021: 5-Year Estimates.

American Community Survey (ACS), Selected Economic Characteristics, 2021: 5-Year Estimates.

Business Wire. ***Sila battery plant forges educational partnership with Moses Lake schools during visit from U.S. Energy Secretary*****. 2.22.24. https://www.yoursourceone.com/columbia_basin/sila-battery-plant-forges-educational-partnership-with-moses-lake-schools-during-visit-from-u-s/article_fc9b8b78-d1f1-11ee-aded-df8b364b1202.html.**

City of Moses Lake. *Parks, Recreation & Open Space Plan.* 2022.

Climate Impacts Group. Accessed 01/7/2022. Climate Impacts in Brief. https://cig.uw.edu/learn/climate-impacts-in-brief/.

Construction Industry Best Management Practices. https://ops.fhwa.dot.gov/wz/workshops/accessible/schexnayder_paper.htm

Department of Energy (DOE). 2021. DOE Fact Sheet: The Bipartisan Infrastructure Deal Will Deliver for American Workers, Families and Usher in the Clean Energy Future (online). Available at: https://www.energy.gov/articles/doe-factsheet-bipartisan- infrastructure-deal-will-deliver-american-workers-families-and-0. Accessed 4-15-2023.

DOE. 2023. Disadvantaged Communities Reporter Mapping Tool, for Moses Lake, WA (online). Available at https://energyjustice.egs.anl.gov/. Accessed April 2023.

DOE. 2023. https://www.energy.gov/energysaver/cost-charge-electric-vehicle-explained

Ecosystems North West. *WPE (Rd. N) Critical Habitat Report*. March 2023.

Endangered Species Act Consultation Handbook - Procedures For Conducting Section 7 Consultations And Conferences. U.S. Fish and Wildlife Service and National Marine Fisheries Service. March 1998. Final.

EPA EJ Screen, ACS Summary Report. Census Tract 53025011002. Accessed April 2023.

EPA National Ambient Air Quality Standards. https://www.epa.gov/criteria-air-pollutants/naaqs-table. Accessed May 2023.

EPA. 2021. 40 CFR Part 98, Tables C-1 and C2, EPA eGRID data.

EPA. 2021. Emissions per kWh for Washington State. https://www.epa.gov/egrid/summary-data

EPA. 2021. https://www.epa.gov/newsreleases/epa-report-us-cars-achieve-record-high-fuel-economy-and-low-emission-levels-companies

EPA. 2023. https://www.epa.gov/egrid/summary-data.

FEMA Flood Map Service Center. https://msc.fema.gov/portal/search?AddressQuery=Moses%20Lake%2C%20WA#searchresultsanchor. Accessed June 2023.

Federal Consortium for Advanced Batteries. ***National Blueprint for Lithium Batteries (2021 – 2030).*** **June 2021. https://www.energy.gov/sites/default/files/2021-06/FCAB%20National%20Blueprint%20Lithium%20Batteries%200621_0.pdf**

FHWA. 2023. https://www.fhwa.dot.gov/ohim/onh00/bar8.htm

GeoEngineers. *Geotechnical Engineering Evaluation for Proposed Plant 2 Project*. August 2023.

GeoEngineers. *Geotechnical Report for Proposed Manufacturing and Warehouse Facility*. November 2005.

Grant County Economic Development Council. Community Information Moses Lake. https://www.grantedc.com/site-selection/community-information/moses-lake/. Access April 2023.

Interagency Working Group on Social Cost of Greenhouse Gases. https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf. 2021.

Inverse Square Law. www.acoustical.co.uk/distance-attenuation/how-sound-reduces-with-distance-from-a-point-source/

IPaC - Information for Planning and Consultation. Online Linkage: https://ecos.fws.gov/ipac/

Li-Bridge. ***Building a Robust and Resilient U.S. Lithium Battery Supply Chain.*** **February 2023. https://netl.doe.gov/sites/default/files/2023-03/Li-Bridge%20-%20Building%20a%20Robust%20and%20Resilient%20U.S.%20Lithium%20Battery%20Supply%20Chain.pdf**

Maul Foster Alongi. *Phase I Environmental Site Assessment*. 2022.

Moses Lake Municipal Code Title 18, Chapter 18.40.

National Emission Standards for Hazardous Air Pollutants (NESHAP); 40 CFR 63 Subpart VVVVVV.

Plateau Archaeological Investigations, LLC. *Cultural Resources Survey for the Road North NE Project, Grant County, WA.* April 2023.

Press Release: Cantwell, Energy Sec. Granholm Visit New Moses Lake Factories Primed to Make EVs More Practical and Affordable. Companies expect to add a combined 700+ jobs; new partnership announced with local schools to help train & skill needed workforce; Technology from Moses Lake factories can help make electric vehicles cost less and go further on each charge using domestically sourced materials. **2.22.24. https://www.cantwell.senate.gov/news/press-releases/cantwell-energy-sec-granholm-visit-new-moses-lake-factories-primed-to-make-evs-more-practical-and-affordable**

Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USAC 2010).

Sila Launches New Educational Programs in Moses Lake, Investing $2 Million in Local Workforce Development. **Accessed 3.25.24.**

https://www.businesswire.com/news/home/20240222999554/en/Sila-Launches-New-Educational-Programs-in-Moses-Lake-Investing-2-Million-in-Local-Workforce-Development (includes Big Bend quote)

Sila Moses Lake Phase 1 & 2 SEPA Environmental Checklist. 4.24.23.

Titan Silicon can completely replace graphite from battery anode: Sila Nanotechnologies - AutoTechInsight (ihsmarkit.com).

***Two companies help Moses Lake become hub for advanced battery manufacturing.* Accessed 3.25.24. https://www.krem.com/article/money/economy/boomtown-inland-northwest/two-companies-moses-lake-cutting-edge-battery-technology-sila-group14/293-ad92d25a-4e4b-4ca9-a6eb-8c041a59fb64 (includes quote from Big Bend President)**

U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987).

U.S. Department of the Interior, Fish and Wildlife Service. *List of Threatened and Endangered Species that may Occur in your Proposed Project Location*…Sila Nanotechnologies Moses Lake Facility. May 25, 2023.

U.S. Federal Emergency Management Agency. *National Flood Hazard Layer FIRM Map 53025C1100C*. Accessed May 2023.

United Nations Intergovernmental Panel on Climate Change (IPCC). Summary for Policymakers. https://www.ipcc.ch/report/sixth-assessment-report-cycle/. Accessed June 2023.

United States Bureau of Labor Statistics. 2023. *Beyond the Numbers*. Volume 12, Number 4. February 2023. https://www.bls.gov/opub/btn/volume-12/charging-into-the-future- the-transition-to-electric-vehicles.htm

United States Census Bureau. 2023. Data & Maps. https://data.census.gov/

United States Department of Energy. 2022. Secretary Granholm's Letter to Justice40 Stakeholders. https://www.energy.gov/diversity/articles/secretary-granholms-letter-justice40-stakeholders

United States of America (USA). 117th Congress. 2021. Infrastructure Investment and Jobs Act 2021 [online], November 15, 2021. Available at: https://www.congress.gov/bill/117th-congress/house-bill/3684

Washington Division of Geology and Earth Resources *Geologic Map of the Moses Lake* 1:100,000 Quadrangle.

Western Pacific Engineering and Survey. *Sila Moses Lake Production Facility Traffic Analysis*. April 2023.

5. List of Preparers

Department of Energy		
Mr. Fred Pozzuto	Director, NEPA Division	
Mr. Stephen Witmer	NEPA Compliance Officer/NEPA Document Manager	
Mr. Jesse Garcia	NEPA Compliance Officer	
Mr. Harry Taylor	NEPA Compliance Officer	
Sila Moses Lake		
Mr. Scott Fife	EHS&S Director	
Mr. Jim Dobrzynski	EHS&S Risk Manager	
Mr. Mark Patterson	Capital Projects Manager	
NEPA Contractor: EA Engineering, Science, and Technology, Inc., PBC		
Analyst	**Responsibilities**	**Degrees and Experience**
Rich Schipanski.	QA/QC, Wetlands and Floodplains, Surface and Groundwater, and Land Use sections	M.C.P./City Planning B.A./Landscape Architecture 31 years' experience, 20 years NEPA experience
Michele Sarlitto	Project Manager, senior reviewer, Noise and Vibration, Greenhouse Gas Emissions, Air Quality, Geology, Topography, and Soils sections	M.S., Physical Geography B.S., Physical Geography 32 years' experience, 20 years NEPA experience
Jeff Ding	Regulated Waste (Solid and Hazardous Waste), Utilities and Energy Use, Transportation and Traffic, and Public and Occupational Health and Safety sections	B.A./Geography 22 years' experience, 10 years NEPA experience
Kristy Hollinger	Socioeconomics, Environmental Justice, Vegetation and Wildlife, and Cultural Resources sections	M.A./Political Science: Environmental Politics and Policy B.A./Anthropology 18 years' experience, 18 years NEPA experience
NEPA Contractor: Landau Associates		
Mark Brunner	Air Quality and GHG/Social Cost of Carbon Technical Analyses	B.A., Community, Environment, and Planning 16 years of experience, 16 years NEPA experience
Amy Maule	Noise, GHG/Social Cost of Carbon Technical Analyses	BS, Biology MS, Library and Information Management 20 years of experience, 7 years NEPA experience
Eri Ottersburg	GHG Technical Analysis	Bachelor of Science in Biomedical Engineering 22 years of experience, 15 years NEPA experience
NEPA Contractor: Plateau CRM		
Justin Fitzpatrick	Cultural Resources Technical Analysis	M.S., Cultural and Environmental Resource Management B.S., Anthropology 7 years of experience, 6 years NEPA experience

NEPA Contractor: Ecosystems North West		
Dennis Beich	Critical Habitat Technical Analysis	B.S. Forest Resources 40 years of experience, 29 years NEPA experience
NEPA Contractor: Western Pacific Engineering & Survey (WPE)		
Nathan Nofziger	Transportation Technical Analysis	Bachelor of Science in Civil Engineering 29 years of experience, 15 years NEPA experience
NEPA Contractor: GeoEngineers		
David Lauder	Geotechnical Analysis	M.S. Civil Engineering 20 Years of experience

6. Distribution List

DOE coordinated with the following agencies, tribal nations, and stakeholders through consultation letters and/or notification of the availability of this EA.

State and Local Offices

Office of the Governor – The Honorable Jay Inslee
Post Office Box 40002
Olympia, WA 98504-0002
360-902-4111

Don Myers
Mayor – Moses Lake, WA
Post Office Box 1579
Moses Lake, WA 98837
509-764-3766
dmyers@cityofml.com

Moses Lake Public Library
418 East 5th Avenue
Moses Lake, WA 98837
509-765-3489
moseslake@ncwlibraries.org

Fran Sant
SEPA Unit
Washington Department of Ecology
Post Office Box 47703
Olympia, WA 98504-7703
360-407-6922
separegister@ecy.wa.gov

Dr. Robert Whitlam and the Washington Department of Archaeology and Historic Preservation
Post Office Box 48343
Olympia, WA 98504-8343
360-890-2615
Rob.Whitlam@dahp.wa.gov
106@dahp.va.gov

Federal Offices

Brad Thompson
State Supervisor
Washington Fish and Wildlife Office
U.S. Fish and Wildlife Service
510 Desmond Drive Southeast
Suite 102
Lacey, WA 98503-1263

Jess Jordan
Project Manager
U.S. Army Corps of Engineers – Regulatory Branch
4735 E. Marginal Way
S. Building 1202
Seattle, WA 98134-2388
206-316-3976
dale.j.jordan@usace.army.mil

Dave Moore
U.S. Army Corps of Engineers – Regulatory Branch
4735 E. Marginal Way
S. Building 1202
Seattle, WA 98134-2388
206-316-3166
david.j.moore@usace.army.mil

Rebecca Chu
Manager, Policy and Environmental Review Branch
Environmental Protection Agency, Region 10
1200 Sixth Avenue
Seattle, WA 98101
206-553-1774
chu.rebecca@epa.gov

Tribal Nations and Contacts

Confederated Tribes of the Colville Reservation

Chairman Jared-Michael Erickson **and the Colville Business Council**
21 Colville Street
Nespelem, WA 99155-0150
509-634-2200
jarred.erickson.cbc@colvilletribes.com

Guy Moura
Tribal Historic Preservation Officer
Post Office Box 150
Nespelem, WA 99155-0150
506-634-2695
guy.moura@colvilletribes.com

Robert Sloma
21 Colville Street
Nespelem, WA 99155-0150
robert.sloma@colvilletribes.com

Spokane Tribe of Indians

Randy Abrahamson
Tribal Historic Preservation Officer
Post Office Box 100
Wellpinit, WA 99040
509-258-4222
Randya@spokanetribe.com

Confederated Tribes and Bands of the Yakama Nation

Kate Valdez
Tribal Historic Preservation Officer
Post Office Box 151
Toppenish, WA 98948
509-865-5121, Ext. 4041
kate_valdez@yakama.com

Jessica Lally
Yakama Nation Archaeologist
Post Office Box 151
Toppenish, WA 98948
Jessica_lally@yakama.com

Confederated Tribes of the Warm Springs Reservation of Oregon

Chairman Jonathan Smith
Tribal Council Chairperson
1233 Veterans Street
Post Office Box C
Warm Springs, OR 97761
541-553-1161
jonathanwsmith@wstribes.org

Robert Brunoe
1233 Veterans Street
Post Office Box C
Warm Springs, OR 97761
541-553-1161
Robert.Brunoe@ctwsbnr.org

Mars Galloway
Cultural Resource Manager
1233 Veterans Street
Post Office Box C
Warm Springs, OR 97761
mars.galloway@ctwsbnr.org

Appendices

Appendix 1

Environmental Synopsis

ENVIRONMENTAL SYNOPSIS
Bipartisan Infrastructure Law Battery (BIL) Materials Processing and Battery Manufacturing
DE-FOA-0002678

April 2023

National Energy Technology Laboratory
U.S. Department of Energy
Pittsburgh, PA
Morgantown, WV
Albany, OR

INTENTIONALLY LEFT BLANK

CONTENTS

INTENTIONALLY LEFT BLANK

INTRODUCTION

The United States Department of Energy (DOE or the Department) prepared this Environmental Synopsis pursuant to the Department's responsibilities under Section 216 of the DOE's National Environmental Policy Act (NEPA) Implementing Procedures set forth in 10 CFR Part 1021. This synopsis summarizes the consideration given to environmental factors and records that the relevant environmental consequences of reasonable alternatives were evaluated in the process of selecting awardees seeking financial assistance under The Office of Manufacturing and Energy Supply Chains and the Office of Energy Efficiency and Renewable Energy, which jointly issued the Funding Opportunity Announcement (FOA) DE-FOA-0002678 Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing. Projects awarded under FOA-0002678 to be funded, in whole or in part, with funds appropriated by the Infrastructure Investment and Jobs Act[1], also more commonly known as the BIL. The BIL is a once-in-a-generation investment in infrastructure, which will grow a more sustainable, resilient, and equitable economy through enhancing U.S. competitiveness in the world, creating good jobs, and ensuring stronger access to these economic benefits for disadvantaged communities (DACs). The BIL appropriates more than $62 billion to the DOE[2] to deliver a more equitable clean energy future for the American people by investing in American manufacturing and workers; expanding access to energy efficiency and clean energy for families, communities, and businesses; delivering reliable, clean, and affordable power to more Americans; and building the technologies of tomorrow through clean energy demonstrations.

The BIL will invest more than $7 billion in the batteries supply chain over the five-year period encompassing fiscal years (FYs) 2022 through 2026. This includes sustainable sourcing of critical minerals from secondary and unconventional sources, reducing the need for new extraction and mining; sustainable processing of critical minerals; and end-of-life battery collection and recycling. The activities to be funded under this FOA support BIL Sections 40207 (b) & (c) and the broader government-wide approach to upgrading and modernizing infrastructure, including by strengthening critical domestic manufacturing and supply chains to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis and advance environmental justice. These BIL Sections are focused on:

- Creating and retaining good-paying jobs, where workers are properly classified as employees, free from discrimination and harassment, with a free and fair choice to join, form, or assist a union;
- Supporting inclusive and supportive workforce development efforts to strengthen America's competitive advantage based on innovation, efficiency, and a skilled and diverse workforce up and down the supply chain;
- Ensuring that the U.S. has a viable battery materials processing industry to supply the North American battery supply chain;

1. Infrastructure Investment and Jobs Act, Public Law 117-58 (November 15, 2021).

2. U.S. Department of Energy. November 2021. "DOE Fact Sheet: The Bipartisan Infrastructure Deal Will Deliver For American Workers, Families and Usher in the Clean Energy Future." https://www.energy.gov/articles/doe-fact-sheet-bipartisan-infrastructure-deal-will-deliver-american-workers-families-and-0

- Expanding the capabilities of the U.S. in advanced battery manufacturing;
- Enhancing national security by reducing the reliance of the U.S. on foreign competitors for critical materials and technologies;
- Enhancing the domestic processing capacity of minerals necessary for battery materials and advanced batteries; and
- Ensuring that the U.S. has a viable domestic manufacturing and recycling capability to support and sustain a North American battery supply chain.

The DOE initially selected 21 projects under twelve topic areas of interest (AOIs) and provided cost-shared funding for project definition activities; all of the projects are subject to the completion of project-specific NEPA reviews. FOA-0002678 supports new, retrofitted, and expanded commercial-scale domestic facilities to produce battery materials, processing, and battery recycling and manufacturing demonstrations. As required by section 216, this synopsis does not contain business sensitive, confidential, trade secret or other information that statues or regulations would prohibit the DOE from disclosing. It also does not contain data or other information that may reveal the identity of the offerors.

BACKGROUND

The projects that will result from this FOA are cost-shared collaborations between the government and industry to increase investment in battery materials processing and battery manufacturing projects. In contrast to other federally funded activities, these projects are not federal projects; instead, they are private projects seeking federal financial assistance. Under the FOA, industry proposes projects that meet their needs and those of their customers while furthering the national goals and objectives of DOE. The successful development of battery materials processing and battery manufacturing projects is a key objective of the nation's effort to help mitigate the effects of climate change, gain energy independence, and bolster the domestic supply chain.

Awardees under this FOA would receive assistance using funds appropriated by the Infrastructure Investment and Jobs Act, Public Law 117-58 (November 15, 2021) also known as the Bipartisan Infrastructure Law (BIL). The activities to be funded under this FOA support BIL Sections 40207(b) & (c) and the broader government-wide approach to upgrading and modernizing infrastructure, including by strengthening critical domestic manufacturing and supply chains to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis and advance environmental justice.

The applications reviewed under this FOA were selected for negotiations in October 2022. Twelve topic areas of interest (AOIs) were included in the FOA and each AOI outlined project objectives that were specific to that AOI. The twelve AOIs were separated according to the BIL sections 40207(b)(3)(A) and 40207(c)(3)(A):

Areas of Interest	Title
Battery Material Processing Grants pursuant to Section 40207(b)(3)(A)	
1	Commercial-scale Production Plants for Domestic Separation of Critical Cathode Battery Materials from Domestic Feedstocks
2	Commercial-scale Domestic Production of Battery-Grade Graphite from Synthetic and Natural Feedstocks
3	Commercial-scale Domestic Separation and Production of Battery-grade Precursor Materials (Open Topic)
4	Demonstrations of Domestic Separation and Production of Battery-grade Materials from Unconventional Domestic Sources
5	Demonstrations of Innovative Separation Processing of Battery Materials Open Topic
Battery Component Manufacturing and Recycling Grants pursuant to Section 40207(c)(3)(A)	
6	Commercial-scale Domestic Battery Cell Manufacturing
7	Commercial-scale Domestic Battery Cathode Manufacturing
8	Commercial-scale Domestic Battery Separator Manufacturing
9	Commercial-scale Domestic Next Generation Silicon Anode Active Materials and Electrodes
10	Commercial-scale Domestic Battery Component Manufacturing Open Topic
11	Commercial-scale Domestic Battery Recycling and End-of Life Infrastructure
12	Domestic Battery Cell and Component Manufacturing Demonstration Topic

AOIs 1–3 and 6–11 were directed to commercial level projects. AOIs 4, 5, and 12 were directed to demonstration level projects. Each level had different evaluation criteria and each application was evaluated against the criteria as outlined below:

A. Technical Review Criteria AOIs 1–3, 6–11 (commercial)

Criterion 1: Technical Merit, Project Management, and Impact (30%)

Criterion 2: Commercialization and Market Acceptance (30%)

Criterion 3: Cost Share (10%)

Criterion 4: Qualifications and Resources (10%)

Criterion 5: Equity Plan: Quality Jobs & Community Benefits (20%)

B. Technical Review Criteria AOIs 4, 5, and 12 (demonstration)

Criterion 1: Technical Merit, Project Management, and Impact (40%)

Criterion 2: Commercialization and Market Acceptance (20%)

Criterion 3: Cost Share (10%)

Criterion 4: Qualifications and Resources (10%)

Criterion 5: Equity Plan: Quality Jobs & Community Benefits (20%)

These criteria represented the total evaluation scoring. However, the selection official also considered program policy factors, in making final selections.

As a federal agency, DOE must comply with NEPA (42 U.S.C. §§ 4321 *et seq.)* by considering potential environmental issues associated with its actions prior to deciding whether to undertake these actions. The environmental review of applications received in response to FOA-0002678 was conducted pursuant to Council on Environmental Quality Regulations (40 Code of Federal Regulations (CFR) Parts 1500–1508) and DOE's NEPA Implementing Procedures (10 CFR Part 1021), which provide directions specific to NEPA in the context of procurement and financial assistance actions.

PURPOSE AND NEED

The overall purpose and need for DOE action pursuant to the Office of Manufacturing and Energy Supply Chains in collaboration with the Office of Energy Efficiency and Renewable Energy program and the funding opportunity under the BIL is to accelerate the development of a resilient supply chain for high-capacity batteries by increasing investments in battery materials processing and battery manufacturing projects. The BIL investments in the battery supply chain will include five main steps including: (1) raw material production, (2) materials processing including material refinement and processing, (3) battery material /component manufacturing and cell fabrication, (4) battery pack and end use product manufacturing, and (5) battery end-of-life and recycling. Projects selected are needed to meet the focus of the BIL sections: a) creating and retaining good-paying jobs; b) supporting inclusive and supportive workforce development efforts to strengthen America's competitive advantage; c) ensuring that the United States has a viable battery materials processing industry to supply the North American battery supply chain; d) expanding the capabilities of the United States in advanced battery manufacturing; e) enhancing national security by reducing the reliance of the United States on foreign competitors for critical materials and technologies; f) enhancing the domestic processing capacity of minerals necessary for battery materials and advanced batteries; and g) ensuring that the United States has a viable domestic manufacturing and recycling capability to support and sustain a North American battery supply chain.

DOE intends to further this purpose and satisfy this need by providing financial assistance under cost-sharing arrangements to this project and the other 20 projects selected under this FOA. This project and the other selected projects are needed to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis. These projects would meet the objective.

ALTERNATIVES

The DOE received numerous eligible applications in twelve AOIs. AOIs 1 through 5 are under Battery Material Processing Grants pursuant to Section 40207(b)(3)(A); AOIs 6 through 12 are under Battery Component Manufacturing and Recycling Grants pursuant to Section 40207(c)(3)(A).

Detailed requirements for each AOI are listed in the FOA. Applications were accepted, reviewed, and initial selections were made; all of the projects are subject to the completion of project specific NEPA reviews. AOIs and number of initial selections are listed in the table below:

AOI	AOI Title	Number of Initial Selections
1	Commercial-scale Production Plants for Domestic Separation of Critical Cathode Battery Materials from Domestic Feedstocks	4
2	Commercial-scale Domestic Production of Battery-Grade Graphite from Synthetic and Natural Feedstocks	3
3	Commercial-scale Domestic Separation and Production of Battery-grade Precursor Materials (Open Topic)	2
4	Demonstrations of Domestic Separation and Production of Battery-grade Materials from Unconventional Domestic Sources	1
5	Demonstrations of Innovative Separation Processing of Battery Materials Open Topic	1
6	Commercial-scale Domestic Battery Cell Manufacturing	0
7	Commercial-scale Domestic Battery Cathode Manufacturing	2
8	Commercial-scale Domestic Battery Separator Manufacturing	2
9	Commercial-scale Domestic Next Generation Silicon Anode Active Materials and Electrodes	2
10	Commercial-scale Domestic Battery Component Manufacturing Open Topic	1
11	Commercial-scale Domestic Battery Recycling and End-of Life Infrastructure	1
12	Domestic Battery Cell and Component Manufacturing Demonstration Topic	2

ENVIRONMENTAL REVIEW

DOE assembled environmental review teams to assess all applications that met the mandatory requirements. The review teams considered 20 resource areas that could potentially be impacted by the technologies and sites proposed for each project that was selected for negotiations. These resource areas consisted of:

- Aesthetics
- Air Quality
- Biological Resources
- Climate
- Community Services
- Cultural Resources
- Environmental Justice
- Floodplains
- Geology
- Ground Water
- Human Health and Safety
- Land Use
- Noise
- Socioeconomics
- Soils
- Surface Water
- Transportation and Traffic
- Utilities
- Wastes and Materials
- Wetlands

The review teams were composed of environmental professionals having expertise in the resource areas considered by the DOE and with experience evaluating the impacts of industrial facilities and energy-related projects. The review teams considered the information provided as part of each application, which included narrative text, worksheets, and the environmental information volumes for the sites proposed by the applicant. Reviewers conducted preliminary analyses to identify the potential range of impacts that would be associated with each application. In addition, reviewers identified both direct and indirect potential impacts to the resource areas mentioned above, as well as short-term impacts that might occur during construction and start-up, and long-term impacts that might occur over the expected operational life of the proposed project and beyond. The reviewers also considered any mitigation measures proposed by the applicant, and any reasonably available mitigation measures that may not have been proposed.

Reviewers assessed the potential for environmental issues and impacts using the following characterizations:

- **Beneficial** – Expected to have a net beneficial effect on the resource in comparison to baseline conditions.
- **None (negligible)** – Immeasurable or negligible in consequence (not expected to change baseline conditions).
- **Low** – Measurable or noticeable but of minimal consequence (barely discernable change in baseline conditions).
- **Moderate** – Adverse and considerable in consequence but moderate and not expected to reach a level of significance (discernable, but not drastic, alteration of baseline conditions).
- **High** – Adverse and potentially significant in severity (anticipated substantial changes or effects on baseline conditions that might not be mitigable).

For cases in which an application failed to provide sufficient information to support a determination among the above characterizations, the reviewers assigned one of the following characterizations:

- **Limited Concern** – The potential for substantial adverse impacts would be negligible to low based on background information about the resource area with respect to the geographic location of the project.
- **Elevated Concern** – The potential for substantial adverse impacts would be moderate to high based on background information about the resource area with respect to the geographic location of the project.

Applications in Response to the FOA

Based on the technologies and sites proposed, the applications for the FOA were preliminarily evaluated and reviewed by the NEPA compliance team. There were several applications that were deemed to not have sufficient information for assessment, and also site selections for some projects have not been finalized. Therefore, the summary in the below section is based on the information that was available. The following impacts by resource area were considered in the selection of candidates for award:

Aesthetics – Low to moderate impact would be expected as construction would primarily be conducted on existing industrial sites. Five projects were assessed to have a visual resource impact. Visual viewpoint changes are expected to occur at the sites as a result of project implementation and construction of the facilities. One project has overhead transmission lines.

Air Quality – Moderate impact would be expected as many facilities would have air controls and permitting in place, and new facilities will be putting controls in place as required by any obtained air permits. Fifteen projects had impacts, with several pollutants listed including: greenhouse gases (GHGs), particulate matter (PM), hazardous air pollutants (HAPs), volatile organic compounds (VOCs), nitrogen oxides (NOx), cadmium, nickel, lead, and combustion products. One project mentioned that BACT (best available control technology) would be installed, and one project mentioned MACT (maximum achievable control technology) to be installed (an iron-pellet gas purification and polishing system). One project stated that a Synthetic Minor Construction and Operations Air Permit would be required. Other impacts may be expected from transportation-related emissions or fugitive dust from construction activities.

Biological Resources – Low to moderate impact would be expected for three projects, with one project being located on the eastern edge of Great Salt Lake, and two projects being sited on greenfield sites. An additional three projects mention sites that were previously used for agriculture or grazing lands. The project located on one of the greenfield sites mentions that the site is pastureland, strands of forest, and wetlands/streams. The other greenfield site is located on farmland. Projects will be assessed for agricultural or natural habitat concerns, if any are identified.

Climate – Beneficial impacts would occur for all projects as batteries are critical to decarbonizing the economy through grid storage, resilience for powering homes and businesses, and electrification of the transportation sector, as noted in the FOA. GHG emissions from the projects would be minimal compared to these decarbonization efforts.

Community Services – Low impacts would be expected for the projects, though no impacts were specified in the review. Generally, projects anticipating a larger temporary workforce during construction would be expected to place a higher demand on community services – particularly in smaller, more rural communities where currently existing community services are more limited.

Cultural Resources – Moderate impacts would be expected for five projects, with several being sited next to railways or on greenfield sites. One project noted that Tribal Nations, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers consultations will all be needed. It is expected that Section 106 regulations will be followed on all projects. Bureau of Land Management (BLM) and Department of Defense (DOD) cooperating agencies will be needed for one other project. One project is in proximity to an airport, and another project is located near a major railyard. BLM permitting is expected for two projects.

Environmental Justice (EJ) – The EJ impacts should be beneficial for the projects. Through the Administration's Justice40 Initiative, 40 percent of the overall benefits of this FOA should flow to DACs, as listed in the Justice40 guidance document and the FOA[3]. EJ impacts were expected for four of the projects, yet EJ benefits will be considered for all projects under the Juctice40 initiative. Under Justice40 the benefits include (but are not limited to) measurable direct or indirect investments or positive project outcomes that achieve or contribute to the following in DACs: (1) a decrease in energy burden; (2) a decrease in environmental exposure and burdens; (3) an increase in access to low-cost capital; (4) an increase in job creation, the clean energy job pipeline, and job training for individuals; (5) increases in clean energy enterprise creation and contracting (e.g., minority-owned or diverse business enterprises); (6) increases in energy democracy, including community ownership; (7) increased parity in clean energy technology access and adoption; and (8) an increase in energy resilience. Environmental and human health of the DACs will be considered under Executive Order 12898 — Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, as required for projects.

Floodplains – Floodplains impact for the projects are low. There are four projects with Floodplains concerns, with one of the projects below the 500 Year Flood Plain (0.2-percent-annual-chance).

Geology – Geology impacts would be low to moderate for the projects. The possibility of extraction of economic minerals for battery manufacturer should be considered for relevant projects. One project has backfilled coal mine pits and spoil piles. One project is located on an old mine site. If geology is undisturbed, no additional impacts would be expected.

Ground Water – Ground Water impacts for the projects would be low. One project has a groundwater concern. Ground water impact from metals/chemicals or wastes could be of note for the projects, though containment measures would be in place as required for permitting. It is unknown if projects own any groundwater supply wells. Stormwater runoff will be managed in accordance with all relevant requirements, if required by projects.

Human Health and Safety – Impacts will be moderate. Five projects cited a concern. One project has a sensitive receptor (daycare) 2,500 feet from the corner of the lot. One project is upgrading its fire safety equipment, and fire safety and coordination with local fire departments is likely to be considered for all projects. Low to moderate impacts may also be considered during both construction and operations of the facilities. The level of risk is generally related to the size and

[3] The Justice40 initiative, created by E.O. 14008, establishes a goal that 40percent of the overall benefits of certain federal investments flow to (DACs). The Justice40 Interim Guidance provides a broad definition of DACs (Page 2): https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf. The DOE, Office of Management and Budget (OMB), and/or the Federal Council for Environmental Quality (CEQ) may issue additional and subsequent guidance regarding the designation of DACs and recognized benefits under the Justice40 Initiative.

complexity of the planned construction. Of note would be any concerns for handling of chemicals and metals, including minimizing exposure and prevention of spills. Safe operating practices will be implemented for all projects, and compliance with federal, state, and local regulations and standards as well.

Land Use – Low to moderate impacts would be expected for all projects due to construction within existing facilities or on a compatible nearby site. Two sites are greenfield sites, but many are already existing industrial sites. Three sites have not yet been selected. BLM permits are needed for two projects (three sites), with one BLM site also consulting with the DOD. One project is consulting with Tribal Nations, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers. Clearance of land, stormwater runoff best management practices, utility line installations, and rail lines will be considered as needed.

Noise – Noise impacts would be low to moderate. One project specifically cited noise impact. During the project construction phases, noise levels will increase, but would be temporary and ending after construction. All project facilities conducting manufacturing and/or recycling activities may have noise, but much will occur within closed buildings. Any projects located near neighboring buildings may have noise impacts to consider for those near the site if outdoor noise continues past construction phases.

Socioeconomics – Beneficial impacts would be expected for all projects. Seven projects cited socioeconomic and/or EJ concerns. All projects would provide some additional employment during construction and operations, with most opportunities occurring within the local area DACs. Tax revenue generation and direct and indirect spending in the local economy is expected for the projects.

Soils – Low impacts would be expected for projects requiring land disturbance, including two greenfield sites. Five projects have sites that are adjacent to agricultural activity, with one converting existing pastureland, and one possibly converting farmland. Construction activities could result in a potential for soil erosion, but appropriate mitigation would be implemented as necessary, such as run-off control, silt fences, and stormwater detention facilities.

Surface Water – Impacts would be low to moderate. Battery Manufacturing and recycling facilities would potentially have water influent and wastewater effluent requirements to minimize the impacts with municipalities treating water. One project noted an effluent line along an existing roadway with a connect to the Mississippi River levee and River. Stormwater controls could be used during construction and operation. Controls could be used on hazardous liquids, if any, to minimize impacts.

Transportation and Traffic – Moderate impacts are expected with eight projects citing impacts. Five projects noted that they are cited near railways, railway right of way, or may need to recommission/use railway. Transportation of construction workforce to the site would be temporary. Construction access roads may be considered for projects. Transportation of operations workforce would be considered. Recycling and manufacturing facilities would also require trucking or railcar transport of materials and wastes in and out of the facility.

Utilities – Moderate impacts would be expected for greenfield sited projects resulting from the need for new energy infrastructure for manufacturing and recycling. Recycling and manufacturing facilities may have need for water, electricity, steam, wastewater, industrial gases and/or natural

gas, or other for the processes and facilities. Availability and capacity of utilities and anticipated infrastructure needs will be evaluated for projects.

Wastes and Materials – Impacts would be moderate to high. Sixteen projects have waste streams impact and hazardous material storage and use impacts. Three projects have a Resource Conservation and Recovery Act (RCRA) designation, and several others have hazardous chemicals. One project is a large quantity generator (LQG). The nature of the manufacturing and/or recycling for Batteries Materials and Processing Manufacturing and Recycling will require diligence in hazardous/non-hazardous waste management practices and applicable permitting. Transportation of waste to landfills to be considered, if applicable, to projects.

Wetlands – Wetlands impacts would be low to moderate. Four projects noted wetlands concerns, which could be avoided, or controls used to minimize impacts resulting from project construction. The extent and the conditions of the wetlands on each site will be addressed during construction and/or operations as required. One project noted that wetlands will be avoided. One project has wetlands and streams on site. Appropriate wetland mitigation measures will be implemented for unavoidable impacts.

CONCLUSION

The alternatives available to DOE from applications received in response to the FOA provided reasonable alternatives for accomplishing the Department's purpose and need to satisfy the responsibility imposed on the Department to carry out a program to bolster the nation's battery material production and battery production.

An environmental review was part of the evaluation process of these applications. DOE prepared a critique containing information from this environmental review. That critique, summarized here, contained summary as well as project-specific environmental information. The critique was made available to, and considered by, the selection official before selections for financial assistance were made.

DOE determined that selecting twenty-one applications in response to the FOA would meet the Department’s purpose and need. DOE selected twenty-one projects for awards of financial assistance:

- Project Recipient (City, State) project located in City, State. Construct a new, commercial-scale U.S.-based lithium materials processing plant, sited next to existing facility, that uses sustainably extracted spodumene minerals from the site’s lithium mine to produce battery grade lithium hydroxide for domestic manufacturing of lithium-ion batteries for 750,000 vehicles in the U.S. market. The DOE has determined that an environmental assessment (EA) is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Construct a battery minerals processing facility to process nickel ore in concentrate (nickel/iron and copper) from economically viable sources in support of a new domestic cathode supply chain. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;

- Project Recipient (City, State) project located in City, State. Plan, design, and construct a cathode active materials (CAM) plant including a manufacturing building and the processing equipment necessary to convert precursor materials into CAM, the highest value component in a lithium-ion battery. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Design a sustainable lithium hydroxide facility to produce 30,000 metric tons per year of lithium hydroxide for the domestic battery and electric vehicle (EV) market, doubling the lithium hydroxide production capacity currently available in the U.S. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Design, construct and commission a graphite anode powder plant over a five-year period. Testing of a pilot manufacturing plant will occur site I in City, State, and graphitization at site II City, State, during the first 3 years of the project. Approximately 35,000 tons per annum of new synthetic graphite anode material capacity for lithium-ion batteries will be used in electric vehicles and critical energy storage applications. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Expand the production capacity of the integrated milling, purification, coating, and surface treatment operation producing on-specification active anode material (AAM), using natural graphite from an overseas graphite operation. Construction of a new 11,250 metric tons per annum (tpa) AAM facility is underway to serve as the only vertically integrated and large-scale natural graphite AAM producer outside China and the first large-scale natural graphite AAM producer in the U.S. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Building its first mass production site in the U.S., which will produce 10,000 metric tons per year of battery grade synthetic graphite. The project will build a new plant near City to produce 30,000 metric tons per year of graphite targeted at the EV industry. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Will build a new battery-grade polyvinylidene fluoride (PVDF) facility in City, State, to supply the needs of the North American EV and stationary energy storage market. Potential to provide enough PVDF to supply more than 5 million EV batteries per year at full capacity. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to build the first U.S. manufacturing plant for lithium hexafluorophosphate (LiPF6) on the grounds of the company's existing fluorochemical production site and produce up to 10,000 metric tonnes (MT) of LiPF6 per year, which is sufficient to support domestic production of more than a million full EVs. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to build and operate a commercial-scale facility to implement its novel process for manufacturing battery

cathode grade lithium hydroxide (LiOH) (5,000 MT (metric tonnes) LiOH/year, with capacity for 30,000 MT LiOH/year) commercial processing plant from unconventional Nevada-based lithium-bearing sedimentary resources (10,000 acres). The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;

- Project Recipient (City, State) project located in City, State. Proposes to demonstrate production of lithium at commercially relevant scales using a proprietary technology (using ion-exchange beads) for lithium extraction from domestic brine resources at commercially relevant scales. The project would include 4 pilot units in State and State. Each site would require 5–7 acres for demonstrations lasting 10 months to 3 years before demobilization. Additional work would be manufacturing ceramic beads at 2 existing facilities, one of which will require modification and equipment to support the new production. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to establish industrial scale U.S. production capacity of sustainable, low-cost precursor cathode materials by integrating the separation of critical cathode materials from spent lithium-ion batteries (LIBs) with the production of both precursor cathode active materials (pCAM) and metal salts to support domestic production of cathode active material (CAM). CAM can then be used in new LIBs for EVs and energy storage systems (ESS). It will produce enough material to supply over 250,000 EVs annually. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to build a plant to produce high quality lithium iron phosphate (LFP) cathode powder for the global lithium battery industry using primarily a domestic supply chain. Using its own process technology and by acquiring licenses for certain other commercially proven processes, the plant will have two production lines built in dual phases, with each line capable of producing 15,000 tonnes per year of LFP powder. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project
- Project Recipient (City, State) project located in City, State. Proposes to build a separator facility capable of supplying 19 gigawatt-hour (GWh) of electrovoltaic batteries, including their existing 2 GWh battery plant. The project would construct new buildings, tanks, and associated equipment. The area is a greenfield site that was previously used for agriculture and is currently being developed as an industrial park. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. The proposed project would construct new separator plants with capacity of 1-1.8 billion m^2 per year, enough material for ~1.4 million EVs. The separator plants would include the installation of high-capacity battery separator lines. Finalized site selection is still underway. The DOE has not determined the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Build-out of a 600,000-square-foot factory that will produce breakthrough lithium-ion anode materials. The project is expected to begin production of Recipient's proprietary silicon anode material in

2025, with full production of 20 GWh equivalent of material at the project's conclusion in 2026. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;

- Project Recipient (City, State) project located in City, State. Proposes to design and construct two 2,000 tonnes/year silicon-carbon anode material factories, also known as "modules." The proposed project plans to construct these modules as part of an expansion of a previously planned project. The proposed project will involve design and construction of two modules. The proposed project will also involve the construction of support facilities for all modules. These two modules and support facilities will be constructed on a planned, but undeveloped portion of the proposed project site. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to set up an advanced prelithiation and lithium anode manufacturing facility to accelerate the transition to next-generation lithium-ion (Li-ion) batteries and enable the development of a robust U.S. battery component supply chain. The proposed facility will support industrial-scale production of advanced lithiated anodes for multiple battery cell makers and automobile manufacturers. Finalized site selection is still underway. The DOE has not determined the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to expand and upgrade recipient's existing lithium-ion recycling facility. Collect, disassemble, shred, and upgrade the critical minerals present from tens-of-thousands of tons of lithium-ion batteries for reuse in new lithium-ion batteries. The project requires the physical modification of existing buildings, new construction, and ground-disturbing activities on a portion of the project site. The DOE has determined that an EA is the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to demonstrate the manufacturing of silicon nanowire anode technology at the component and cell level on multi-megawatt-hour-scale manufacturing lines that are comparable to those used in multi-GWh factories. Plans are to construct a new facility of about 120,000 square feet. Finalized site selection is still underway. The DOE has not determined the appropriate level of environmental review for the proposed project;
- Project Recipient (City, State) project located in City, State. Proposes to demonstrate the ability to domestically produce multiple battery chemistries namely NMC811 and LFP in a plant with the capacity of 3,000 tpa ready for production in 2025 scaling to 10,000 tpa in 2026. The demonstration plant will produce NMC811 generating zero waste and 70 percent less GHGs by using only 10 percent of the water and 30 percent of the energy versus traditional battery material production methods. The proposed new facility will be approximately 120,000 square feet in a zoned industrial park. Finalized site selection is still underway. The DOE has not determined the appropriate level of environmental review for the proposed project.

Appendix 2

Permits and Approvals

PMC-ND
(1.08.09.13)

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION

RECIPIENT: Sila Nanotechnologies, Inc. **STATE:** WA

PROJECT TITLE : Sila Nanotechnologies Auto Scale Silicon Anode Plant

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002678	DE-MS0000017	001	

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:
Description:

A9 Information gathering, analysis, and dissemination	Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)
B2.1 Workplace enhancements	Modifications within or contiguous to an existing structure, in a previously disturbed or developed area, to enhance workplace habitability (including, but not limited to, installation or improvements to lighting, radiation shielding, or heating/ventilating/air conditioning and its instrumentation, and noise reduction).
B2.2 Building and equipment instrumentation	Installation of, or improvements to, building and equipment instrumentation (including, but not limited to, remote control panels, remote monitoring capability, alarm and surveillance systems, control systems to provide automatic shutdown, fire detection and protection systems, water consumption monitors and flow control systems, announcement and emergency warning systems, criticality and radiation monitors and alarms, and safeguards and security equipment).
B2.3 Personnel safety and health equipment	Installation of, or improvements to, equipment for personnel safety and health (including, but not limited to, eye washes, safety showers, radiation monitoring devices, fumehoods, and associated collection and exhaust systems), provided that the covered actions would not have the potential to cause a significant increase in emissions.
B3.6 Small-scale research and development, laboratory operations, and pilot projects	Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

Rationale for determination:

NEPA PROVISION

DOE has made a conditional NEPA determination.

The NEPA Determination applies to the following Topic Areas, Budget Periods, and/or tasks:

Task 0.0 (Project Management and Planning), Task 0.1 (Kick-Off Meeting), Budget Period 1 (Engineering and Base Build)

The NEPA Determination does not apply to the following Topic Area, Budget Periods, and/or tasks:

Budget Periods 2, 3, and 4 are not covered under this NEPA determination.

Include the following condition in the financial assistance agreement:

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

Notes:

CX for Budget Period One was originally issued in August 2023. This CX is being re-issued in light of changes to the project scope and SOPO as of October 2023. This new CX is still limited to the tasks noted above.

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

DOE has determined that work to be carried out outside of the United States, its territories and possessions is exempt from further review pursuant to Section 5.1.1 of the DOE Final Guidelines for Implementation of Executive Order 12114; “Environmental Effects Abroad of Major Federal Actions.”

A portion of the proposed action is categorically excluded from further NEPA review. The NEPA Provision identifies Topic Areas, Budget Periods, tasks, and/or subtasks that are subject to additional NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Stephen Witmer Date: 10/30/2023

NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

- [x] Field Office Manager review not required
- [ ] Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____

Field Office Manager

Appendix 3

Consultation with Agencies and Tribal Nations

May 31, 2023

Mr. Brad Thompson
State Supervisor
U.S. Fish and Wildlife Service
Washington Fish and Wildlife Office
510 Desmond Drive SE
Suite 102
Lacey, WA 98503-1263

Subject: Section 7 Consultation for the Sila Nanotechnologies Moses Lake Facility Project (DOE/EA-2214D)

Dear Mr. Thompson,

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant (DOE's Proposed Action) to Sila Nanotechnologies, Inc. (Sila Nanotechnologies) as part of the funding opportunity announcement titled "Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing," with funds appropriated by the Infrastructure Investment and Jobs Act, also more commonly known as the Bipartisan Infrastructure Law.

The proposed project would involve the construction of a 4,000 ton/yr (20 GWh/yr equivalent) silicon anode manufacturing facility in Moses Lake, Washington. Sila Nanotechnologies had previously acquired a 162-acre site with an existing 613,000 sq. ft. building for this project. The purpose of the proposed project is to scale Sila Nanotechnologies' product output in order to enter the electric vehicle market in a timely and cost-efficient manner. The project would provide U.S.-based manufacturing capacity for these and similar vital industrial components.

Modifications would be required to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space. Installation of equipment and storage vessels outdoors would require ground movement activities to grade previously disturbed areas (currently agricultural land that has already been rezoned for heavy industrial). These areas would be to the north, east, south and west of the existing building, and activities would include new access roads, installation of concrete slab service yards or pads for gas storage vessels, abatement unit systems, cooling water systems, wastewater treatment, and other equipment. The site would undergo preparation and grading to achieve proper slopes for drainage and earthwork for construction of equipment and pipe rack foundations on the south side of the existing building. The total limit of the work area is estimated at approximately 1,200,000 square feet. The total excavation quantity is 100,000 cubic yards. Additional land or disturbance of natural resources beyond the existing site is not required for the project.

626 Cochran Mill Road, Pittsburgh, PA 15236
stephen.witmer@netl.doe.gov Phone (412) 386-7589 www.netl.doe.gov

The project would take place in Moses Lake, Washington within Section 16 of Township 19 north and Range 29 east of the Willamette Meridian. The project site consists of four parcels (parcel numbers 110069400, 120175300, 120175300 and 110077090) comprising approximately 162 acres. The project site is bound by Road N NE to the west, an unnamed stream to the north, railroad tracks to the east and industrially zoned land to the south.

The proposed project site was historically farmed and is presently either farmed or has been mowed repeatedly over the past several years. The south, east, and north borders of the site are large acreage irrigated agriculture. The site has no shrub component, and the existing grasses/herbaceous layer of vegetation is dominated by weedy, non-native species. The plant vegetative cover of the site is dominated by crested wheat grass (Agropyron cristatum), bulbous blue grass (Poa bulbosa) and cheat grass (Bromus), with a cover ranging between 70 to 90 percent. Tumble weed is also present at ten to 20 percent cover. Less than one percent native bunch grass is present which appears to be Sherman bunch grass (Poa secunda). Immediately west of the existing building is four to five acres of very low-quality shrub steppe, which is considered low-quality priority habitat. Species observed on the site during a prior habitat survey included raven, magpie, meadow lark, starling, robin pheasant, red wing blackbird, and mourning dove. Moderate fossorial activity was observed throughout the site. Wetland habitat with the proposed project site exists along the north property line and in the southeast corner of the property and consists of emergent wetland vegetation dominated by cattail, common reed grass, and various and invasive grasses. However, the proposed project would not disturb any of these wetlands. Impacts to vegetation from construction of the proposed project are anticipated to be minor, affecting primarily weedy, nonnative vegetation and four to five acres of low-quality priority shrub steppe habitat. This habitat is small, isolated, and its proximity to the existing building renders it of minimal value to wildlife species associated with shrub steppe habitat.

The U.S. Fish & Wildlife Service's Information for Planning and Consultation website identified one threatened species (the Yellow-billed Cuckoo) and one candidate species (the Monarch Butterfly) that could be impacted by a project located at the proposed project site. The proposed project site contains no critical habitat.

As part of DOE's coordination and consultation responsibilities and to comply with both Section 7 of the Endangered Species Act of 1973, as amended, and provisions of the Fish & Wildlife Coordination Act, we would appreciate receiving any additional information you have on important wildlife resources, including endangered and threatened species or critical habitat in the project area. I have included additional project details, including the official IPaC species list, site plan, and shrub steppe habitat and wetlands delineation reports previously completed for the proposed project area. If your initial review of the proposed project details concludes that no endangered or threatened species (or their habitat) are present in the project area and that neither protected species nor their habitat would be affected by the proposed action, a written acknowledgment of that conclusion would be appreciated.

Based on the scope of the proposed Sila Nanotechnologies project, DOE plans to prepare an Environmental Assessment (EA) (DOE/EA-2214D) in accordance with requirements

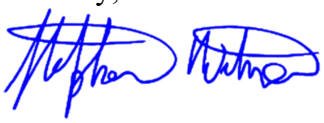
of the National Environmental Policy Act to analyze, document, and disseminate information on the potential environmental and cultural consequences of the project. Information that you provide will be incorporated and appropriately addressed in the EA. Moreover, when the Draft EA is circulated for public comment, the Washington Fish and Wildlife Office will be sent an electronic and hard copy where you may provide additional comments.

If you have any questions concerning this proposed project, please contact me at the following address, phone or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with you.

Sincerely,



Stephen Witmer
NEPA Compliance Officer

Attachments:

1. IPaC Official Species List – IPaC Official Species List – Washington FWS Office
2. Sila Nanotechnologies Project – Site Map and Plan
3. Sila Nanotechnologies Project – Shrub Steppe Habitat Report
4. Sila Nanotechnologies Project – Wetlands Delineation Report

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
Phone: (360) 753-9440 Fax: (360) 753-9405

In Reply Refer To: May 25, 2023
Project Code: 2023-0086084
Project Name: Sila Nanotechnologies Moses Lake Facility (DOE/EA-2214D)

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
(360) 753-9440

PROJECT SUMMARY

Project Code: 2023-0086084

Project Name: Sila Nanotechnologies Moses Lake Facility (DOE/EA-2214D)

Project Type: Federal Grant / Loan Related

Project Description: The proposed project would involve the construction of a 4,000 ton/yr (20 GWh/yr equivalent) silicon anode manufacturing facility in Moses Lake, Washington. Sila had previously acquired a 162-acre site with an existing 613,000 sq. ft. building for this project. The purpose of the proposed project is to scale Sila's product output in order to enter the electric vehicle market in a timely and cost-efficient manner. The project would provide U.S.-based manufacturing capacity for these and similar vital industrial components.

Modifications would be required to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space. Installation of equipment and storage vessels outdoors would require ground movement activities to grade previously disturbed areas (currently agricultural land that has already been rezoned for heavy industrial). These areas would be to the north, east, south and west of the existing building, and activities would include new access roads, installation of concrete slab service yards or pads for gas storage vessels, abatement unit systems, cooling water systems, wastewater treatment, and other equipment. Additional land or disturbance of natural resources beyond the existing site is not required for the project.

The project will take place in Moses Lake, Washington within Section 16 of Township 19 north and Range 29 east of the Willamette Meridian. The project site consists of four parcels (parcel numbers 110069400, 120175300, 120175300 and 110077090) comprising approximately 162 acres. The project site is bound by Road N NE to the west, an unnamed stream to the north, railroad tracks to the east and industrially zoned land to the south.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@47.14176625,-119.187840607839,14z

Counties: Grant County, Washington

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	Department of Energy
Name:	Stephen Witmer
Address:	626 Cochran Mill Road
Address Line 2:	Mailstop 921-227
City:	Pittsburgh
State:	PA
Zip:	15236
Email	stephen.witmer@netl.doe.gov
Phone:	4123867589

June 8, 2023

Jess Jordan
Project Manager
U.S. Army Corps of Engineers
Regulatory Branch
4735 E. Marginal Way
S. Bldg. 1202
Seattle, WA 98134-2388

Subject: Consultation for the Sila Nanotechnologies Moses Lake Facility Project (DOE/EA-2214D)

Dear Jess Jordan,

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant (DOE's Proposed Action) to Sila Nanotechnologies, Inc. (Sila Nanotechnologies) as part of the funding opportunity announcement titled "Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing," with funds appropriated by the Infrastructure Investment and Jobs Act, also more commonly known as the Bipartisan Infrastructure Law.

The proposed project would involve the construction of a 4,000 ton/yr (20 GWh/yr equivalent) silicon anode manufacturing facility in Moses Lake (Grant County), Washington. Sila Nanotechnologies had previously acquired a 162-acre site with an existing 613,000 sq. ft. building for this project. The purpose of the proposed project is to scale Sila Nanotechnologies' product output in order to enter the electric vehicle market in a timely and cost-efficient manner. The project would provide U.S.-based manufacturing capacity for these and similar vital industrial components.

Modifications would be required to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space. Installation of equipment and storage vessels outdoors would require ground movement activities to grade previously disturbed areas (currently agricultural land that has already been rezoned for heavy industrial). These areas would be to the north, east, south and west of the existing building, and activities would include new access roads, installation of concrete slab service yards or pads for gas storage vessels, abatement unit systems, cooling water systems, wastewater treatment, and other equipment. The site would undergo preparation and grading to achieve proper slopes for drainage and earthwork for construction of equipment and pipe rack foundations on the south side of the existing building. The total limit of the work area is estimated at approximately 1,200,000 square feet. The total excavation quantity is 100,000 cubic yards. Additional land or disturbance of natural resources beyond the existing site is not required for the project.

626 Cochran Mill Road, Pittsburgh, PA 15236
stephen.witmer@netl.doe.gov Phone (412) 386-7589 www.netl.doe.gov

The project would take place in Moses Lake, Washington within Section 16 of Township 19 north and Range 29 east of the Willamette Meridian. The project site consists of four parcels (parcel numbers 110069400, 120175300, 120175300 and 110077090) comprising approximately 162 acres. The project site is bound by Road N NE to the west, an unnamed stream to the north, railroad tracks to the east and industrially zoned land to the south.

Wetland habitat within the proposed project site exists along the north property line and in the southeast corner of the property and consists of emergent wetland vegetation dominated by cattail, common reed grass, and various native and invasive grasses. The proposed project would not disturb any of these wetlands, but I was interested in making you aware of this proposed project and to see if the Seattle District of the U.S. Army Corps of Engineers has any opinions or additional information for DOE to consider regarding the proposed project. I have provided the project site plan and map (including the area of potential effect), and a wetlands and stream delineation report previously completed within the Sila Nanotechnologies property for your review and comment. If your review of the proposed project details concludes that wetlands and streams on the Sila Nanotechnologies property will not be impacted by the proposed project, a written acknowledgment of that conclusion would be appreciated.

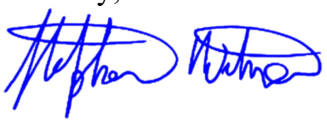
Based on the scope of the proposed Sila Nanotechnologies project, DOE plans to prepare an Environmental Assessment (EA) (DOE/EA-2214D) in accordance with requirements of the National Environmental Policy Act to analyze, document, and disseminate information on the potential environmental and cultural consequences of the project. Information that you provide will be incorporated and appropriately addressed in the EA. Moreover, when the Draft EA is circulated for public comment, the Seattle District of the U.S. Army Corps of Engineers will be sent an electronic and hard copy where you may provide additional comments.

If you have any questions concerning this proposed project, please contact me at the following address, phone or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with you.

Sincerely,



Stephen Witmer
NEPA Compliance Officer

Attachments:

1. Sila Nanotechnologies Project – Site Map and Plan
2. Sila Nanotechnologies Project – Wetlands Delineation Report

cc:
Dave Moore, Project Manager, U.S. Army Corps of Engineers

May 11, 2023

Dr. Allyson Brooks, Ph.D
State Historic Preservation Officer
Department of Archaeology and Historic Preservation
Post Office Box 48343
Olympia, WA 98504-8343

Subject: Tribal consultation and Section 106 compliance for the Sila Nanotechnologies Moses Lake Facility Project (DOE/EA-2214D)

Dear Ms. Brooks,

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant (DOE's Proposed Action) to Sila Nanotechnologies, Inc. (Sila) as part of the funding opportunity announcement titled "Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing," with funds appropriated by the Infrastructure Investment and Jobs Act, also more commonly known as the Bipartisan Infrastructure Law.

The proposed project would involve the construction of a 4,000 ton/yr (20 GWh/yr equivalent) silicon anode manufacturing facility in Moses Lake, Washington. Sila had previously acquired a 162-acre site with an existing 613,000 sq. ft. building for this project. The purpose of the proposed project is to scale Sila's product output in order to enter the electric vehicle market in a timely and cost-efficient manner. The project would provide U.S.-based manufacturing capacity for these and similar vital industrial components.

Modifications would be required to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space. Installation of equipment and storage vessels outdoors would require ground movement activities to grade previously disturbed areas (currently agricultural land that has already been rezoned for heavy industrial). These areas would be to the north, east, south and west of the existing building, and activities would include new access roads, installation of concrete slab service yards or pads for gas storage vessels, abatement unit systems, cooling water systems, wastewater treatment, and other equipment. Additional land or disturbance of natural resources beyond the existing site is not required for the project.

The project will take place in Moses Lake, Washington within Section 16 of Township 19 north and Range 29 east of the Willamette Meridian. The project site consists of four parcels (parcel numbers 110069400, 120175300, 120175300 and 110077090) comprising approximately 162 acres. The project site is bound by Road N NE to the west, an

626 Cochran Mill Road, Pittsburgh, PA 15236
stephen.witmer@netl.doe.gov Phone (412) 386-7589 www.netl.doe.gov

unnamed stream to the north, railroad tracks to the east and industrially zoned land to the south.

I have provided attachments that contain additional details regarding the proposed project, including the project site plan, area of potential effect, and a cultural resource survey report encompassing the proposed project area for review by the Washington Department of Archeology and Historic Preservation. If your review concludes that no historic or cultural properties are present in the project area and that neither historic nor cultural properties would be affected by the proposed project, a written acknowledgment of that conclusion would be appreciated.

DOE is also consulting with Native American tribal nations with possible interests in the project area. DOE is consulting with the Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Colville Reservation, Confederated Tribes of the Warm Springs Reservation of Oregon, and the Spokane Tribe of Indians regarding this proposed project. DOE has provided details of this proposed project to tribal representatives and Tribal Historic Preservation Officers of these tribes for review and consultation, and all will receive copies of the Draft Environmental Assessment (EA) being prepared for this project for their review and comment, when completed. DOE will also be consulting with the U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers regarding the proposed project. These agencies will receive project details and the Draft EA for review and consultation.

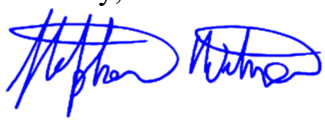
Based on the scope of the proposed Sila project, DOE plans to prepare an EA (DOE/EA-2214D) in accordance with requirements of the National Environmental Policy Act to analyze, document, and disseminate information on the potential environmental and cultural consequences of the project. Information that you provide will be incorporated and appropriately addressed in the EA. Moreover, when the Draft EA is circulated for public comment, the Washington Department of Archaeology and Historic Preservation will be sent an electronic and hard copy where you may provide additional comments.

If you have any questions concerning the project, please contact me at the following address, phone, or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with you.

Sincerely,

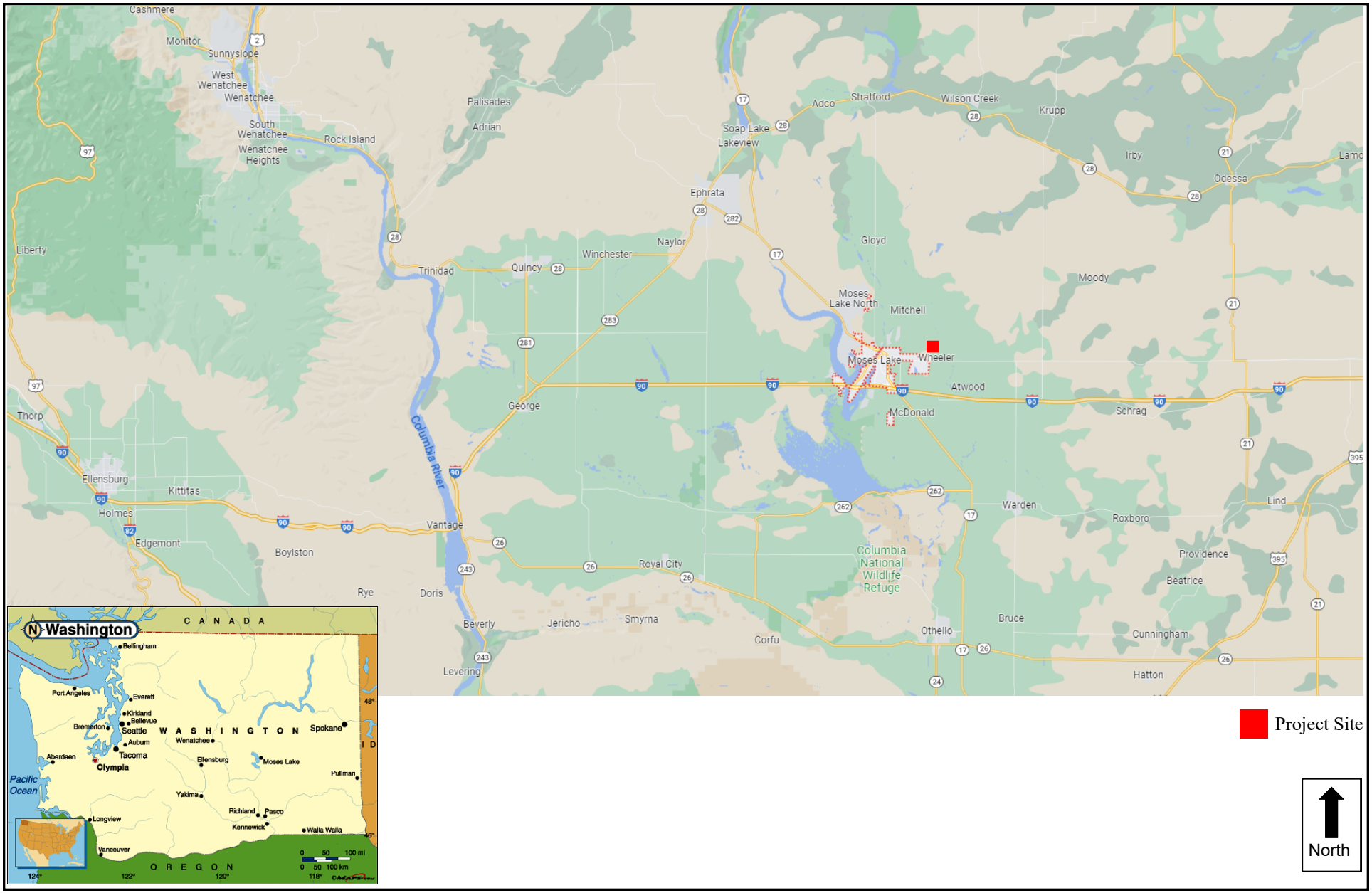


Stephen Witmer
NEPA Compliance Officer

Attachments:

1. Sila Nanotechnologies Project – Site Map and Plan
2. Sila Nanotechnologies Project – Moses Lake Cultural Resource Survey Report

Sila Moses Lake
NEPA EA



Source: EA, Google Earth, 2023; netstate.com

EA Engineering, Science, and Technology, Inc.

Figure 1

Vicinity Map

Figure 2 - Site Plan

REV	DATE	REVISION DESCRIPTION	DRAWN	DRAFT CHK	DESIGNED	ENG CHK	APPROVED	CUSTOMER	REF DRAWING No	REFERENCE DRAWING TITLE
A	4/24/2023	ISSUED FOR INFORMATION	CL		CL	N/A				

D SHEET SCALE NTS

WORLEY PROJECT No.
318001-00007

ENGINEERING AND PERMIT STAMPS (As Required)

CUSTOMER

Sila Proprietary & Confidential

DRG TITLE

SILA NANOTECHNOLOGIES INC
MOSES LAKE, WA
PLANT 2
PERMIT PLAN OVERLAY

DRG No 200-000-DSK-1003

REV A

LOCATION: C:\USERS\COLIN.JLENDRUM\WORLEY\WORK-IN-PROGRESS - PIPING - DESIGN\PIPING DESIGN\CAD FILES\BORDER FILES\WORLEY_D.DWG
USER NAME: colin.jlendrum
PLOT DATE & TIME: 11/4/2023 3:33:42 PM
SAVE DATE & TIME: 27/3/2023 5:52:02 PM

Worley_D

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

May 11, 2023

Stephen M. Witmer
NEPA Compliance Officer
National Energy Technology Laboratory
Department of Energy
626 Cochran Mill Road
Pittsburgh, PA 15236

RE: Sila Nanotechnologies Moses Lake Facility Project
DOE/EA-2214D
Log No: 2023-04-02558-DOE

Dear Stephen M. Witmer;

Thank you for contacting our department. We have reviewed the materials you provided for the proposed *Sila Nanotechnologies Moses Lake Facility Project* in Moses Lake, Grant County, Washington.

We concur with your determination of the Area of Potential Effect (APE) as described and presented in your figures and text. We look forward to receiving the results of the finalized professional cultural resources survey, consultations with concerned tribes, and your finalized Determination of Effect.

We would also appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in compliance with the Section 106 of the National Historic Preservation Act, as amended, and the implementing regulations 36CFR800.4. Should additional information become available, our assessment may be revised. Thank you for the opportunity to comment and we look forward to receiving the results of your consultation efforts, and further consultations.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist
(360) 890-2615
email: *rob.whitlam@dahp.wa.gov*

May 9, 2023

Chairman Jarred-Michael Erickson
Chairman of the Colville Business Council
Confederated Tribes of the Colville Reservation
21 Colville Street
Nespelem, WA 99155-0150

Subject: Tribal consultation and Section 106 compliance for the Sila Nanotechnologies Moses Lake Facility Project (DOE/EA-2214D)

Dear Chairman Erickson,

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant (DOE's Proposed Action) to Sila Nanotechnologies, Inc. (Sila) as part of the funding opportunity announcement titled "Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing," with funds appropriated by the Infrastructure Investment and Jobs Act, also more commonly known as the Bipartisan Infrastructure Law.

The proposed project would involve the construction of a 4,000 ton/yr (20 GWh/yr equivalent) silicon anode manufacturing facility in Moses Lake, Washington. Sila had previously acquired a 162-acre site with an existing 613,000 sq. ft. building for this project. The purpose of the proposed project is to scale Sila's product output in order to enter the electric vehicle market in a timely and cost-efficient manner. The project would provide U.S.-based manufacturing capacity for these and similar vital industrial components.

Modifications would be required to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space. Installation of equipment and storage vessels outdoors would require ground movement activities to grade previously disturbed areas (currently agricultural land that has already been rezoned for heavy industrial). These areas would be to the north, east, south and west of the existing building, and activities would include new access roads, installation of concrete slab service yards or pads for gas storage vessels, abatement unit systems, cooling water systems, wastewater treatment, and other equipment. Additional land or disturbance of natural resources beyond the existing site is not required for the project.

The project will take place in Moses Lake, Washington within Section 16 of Township 19 north and Range 29 east of the Willamette Meridian. The project site consists of four parcels (parcel numbers 110069400, 120175300, 120175300 and 110077090) comprising approximately 162 acres. The project site is bound by Road N NE to the west, an

626 Cochran Mill Road, Pittsburgh, PA 15236
stephen.witmer@netl.doe.gov Phone (412) 386-7589 www.netl.doe.gov

unnamed stream to the north, railroad tracks to the east and industrially zoned land to the south.

I have provided attachments that contain additional details pertaining to the proposed project, including the project site plan and a cultural resource survey report encompassing the proposed project area. DOE is also consulting with the Washington Department of Archaeology and Historical Preservation regarding this proposed project.

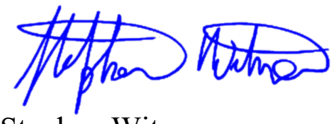
Based on the scope of the proposed Sila project, DOE plans to prepare an Environmental Assessment (EA) (DOE/EA-2214D) in accordance with requirements of the National Environmental Policy Act to analyze, document, and disseminate information on the potential environmental and cultural consequences of the project. Information that you provide will be incorporated and appropriately addressed in the EA. Moreover, when the Draft EA is circulated for public comment, the Confederated Tribes of the Colville Reservation will be sent the website containing the Draft EA where you may provide additional comments.

If you have any questions or concerns regarding this project, please contact me at the following address, phone, or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with your Tribal Nation.

Sincerely,



Stephen Witmer
NEPA Compliance Officer

Attachments:

1. Sila Nanotechnologies Project – Site Map and Plan
2. Sila Nanotechnologies Project – Moses Lake Cultural Resource Survey Report

cc:
Mr. Guy Moura
Mr. Robert Sloma

From:	Robert Sloma
To:	Witmer, Stephen M.
Cc:	Hanson, Sydney (DAHP); Guy Moura (HSY)
Subject:	[EXTERNAL] Re: Section 106 consultation request for proposed DOE-funded project - Sila Nanotechnologies - Moses Lake, WA
Date:	Wednesday, May 17, 2023 3:15:07 PM
Attachments:	image001.png

Dear Mr. Witmer,

The Confederated Tribes of the Colville Reservation (aka, Confederated Colville Tribes, CCT) concur that the proposed Sila Nanotechnologies project is an undertaking under Section 106.

Furthermore, the CCT considers the entire parcel as the Area of Potential Effect. The level of effort to address cultural resources is considered adequate, and the CCT concurs with the findings, determination, and recommendations presented in the accompanying cultural resource survey report (Espen et al 2023).

Please be sure that the proposed work proceeds with caution and that the recommendations are adhered to. Thank you.

On Tue, May 9, 2023 at 7:20 AM Witmer, Stephen M. <Stephen.Witmer@netl.doe.gov> wrote:

> Good morning, Chairman Erickson. My name is Stephen Witmer, and I am a NEPA Compliance Officer for the Department of Energy – National Energy Technology Laboratory. The Department of Energy is proposing to provide federal funding for a project ("Sila Nanotechnologies Moses Lake Facility") in Moses Lake, WA. My colleague, Jesse Garcia, has previously contacted the Confederated Tribes of the Colville Reservation by phone regarding this project, and DOE would like to officially initiate a Section 106 consultation request with the Confederated Tribes of the Colville Reservation as part of our development of an Environmental Assessment for this proposed project.
>
> I have attached the following:
>
> 1. Letter describing the project
> 2. Two attachments containing the project site plan, location, area of potential effect (APE), and a prior cultural resource survey completed in the APE.

Jesse and I look forward to working with the Confederated Tribes of the Colville Reservation regarding this project, and please feel free to contact us if you have questions, or would like additional project details. Thank you!

Stephen M. Witmer

NEPA Compliance Officer

Department of Energy – National Energy Technology Laboratory

626 Cochrans Mill Road, Pittsburgh, PA 15236

M/S 921-227

stephen.witmer@netl.doe.gov

Office: 412-386-7589

Office days: Tuesday, Wednesday

--

Robert A. Sloma

Archaeologist

History/Archaeology Program

Confederated Tribes of the Colville Reservation

PO Box 150

Nespelem, WA 99155

Tel: (509) 634-2692

Cell: (509) 557-2273

robert.sloma@colvilletribes.com

March 8, 2024

Chairman Jarred-Michael Erickson
Chairman, Colville Business Council
Confederated Tribes of the Colville Reservation
21 Colville Street
Nespelem, WA 99155-0150

Subject: DOE NEPA Consultation with the Colville Business Council for the Proposed Sila Nanotechnologies and Group14 Technologies Projects – Moses Lake, WA

Dear Chairman Erickson:

The Department of Energy (DOE) – National Energy Technology Laboratory (NETL) and DOE Office of Manufacturing Energy Supply Chains (MESC) would like to thank the Colville Business Council for the opportunity to meet on March 4, 2024 to discuss DOE's proposed financial assistance grants to Sila Nanotechnologies and Group14 Technologies and the NEPA/Environmental Assessment (EA) process for both proposed projects. DOE is preparing separate EAs specific to each project and appreciates all questions and comments provided at this meeting. DOE representatives recorded all comments during the meeting that pertain to the proposed projects and will be addressing these comments within their respective EAs.

The Sila Nanotechnologies Draft EA (DOE/EA-2214D) was made available for public comment on February 20, 2024. The comment period for this Draft EA ends on March 20, 2024, but DOE will consider late comments to the extent practicable. If any member of the Colville Business Council would like a hard copy of this Draft EA, please submit this request (including the physical address where it should be sent) using the contact information below. Please note that this version of the Draft EA has not yet been updated to account for comments received from the Colville Business Council.

DOE would like to provide an electronic link to the current Draft EA for the proposed Sila Nanotechnologies project so that all members of the Colville Business Council can have the opportunity to review and provide additional comments. The links to the Draft EA and Dear Reader Letter containing instructions for comment can be found under the "DOE/EA-2214D Sila Nanotechnologies – Moses Lake Auto-Scale Silicon Anode Plant" heading on this website: https://netl.doe.gov/node/6939. Requests for hard copies of this Draft EA should be submitted using the contact information below.

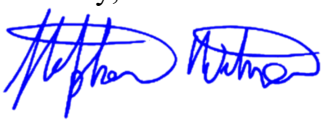
DOE is also developing a separate Draft EA (DOE/EA-2220D) for the proposed Group14 Technologies project. DOE will address comments received in this Draft EA, and the Colville Business Council will receive copies of this Draft EA for further review and comment at the start of the 30-day public comment period. DOE is estimating the public

626 Cochran Mill Road, Pittsburgh, PA 15236
stephen.witmer@netl.doe.gov Phone (412) 386-7589 www.netl.doe.gov

comment period for the Group 14 project to begin in late March 2024 and end in late April 2024.

If you have any further questions or concerns, please contact me directly or Corey Carmack, Tribal Affairs Liaison for DOE MESC at (301) 366-9378 or corey.carmack@hq.doe.gov.

Sincerely,



Stephen Witmer
NEPA Compliance Officer
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

cc:
Alison Ball, Colville Business Council
Dustin Best, Colville Business Council
Steven Carson, Colville Business Council
Rodney Cawston, Colville Business Council
Karen Condon, Colville Business Council
Roger Finley, Colville Business Council
Rebecca Hunt, Colville Business Council
Andrew Joseph Jr, Colville Business Council
Cindy Marchand, Colville Business Council
Guy Moura, Colville Business Council
Norma Sanchez, Colville Business Council
Joseph Somday, Colville Business Council
Neeka Somday, Legislative Assistant/Policy Analyst
Patrick Tonasket, Colville Business Council
Mel Tonasket, Colville Business Council
Debra Wulff, Colville Business Council
Sharlene Zacherle, Colville Business Council
Corey Carmack, Tribal Affairs Liaison, Office of Manufacturing and Energy Supply Chains, U.S. Department of Energy
Hank Hinkle, Program Director, Office of Manufacturing and Energy Supply Chains, U.S. Department of Energy
Kristle Krichbaum, Technical Project Officer, Office of Manufacturing and Energy Supply Chains, U.S. Department of Energy

Susan Miltenberger, Contracting Officer, National Energy Technology Laboratory, U.S. Department of Energy
Jesse Garcia, NEPA Compliance Officer, National Energy Technology Laboratory, U.S. Department of Energy
Fred Pozzuto, Director – NEPA Division, National Energy Technology Laboratory, U.S. Department of Energy

May 9, 2023

Mr. Randy Abrahamson
Tribal Historic Preservation Officer
Spokane Tribe of Indians
Post Office Box 100
Wellpinit, WA 99040

Subject: Tribal consultation and Section 106 compliance for the Sila Nanotechnologies Moses Lake Facility Project (DOE/EA-2214D)

Dear Mr. Abrahamson,

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant (DOE's Proposed Action) to Sila Nanotechnologies, Inc. (Sila) as part of the funding opportunity announcement titled "Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing," with funds appropriated by the Infrastructure Investment and Jobs Act, also more commonly known as the Bipartisan Infrastructure Law.

The proposed project would involve the construction of a 4,000 ton/yr (20 GWh/yr equivalent) silicon anode manufacturing facility in Moses Lake, Washington. Sila had previously acquired a 162-acre site with an existing 613,000 sq. ft. building for this project. The purpose of the proposed project is to scale Sila's product output in order to enter the electric vehicle market in a timely and cost-efficient manner. The project would provide U.S.-based manufacturing capacity for these and similar vital industrial components.

Modifications would be required to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space. Installation of equipment and storage vessels outdoors would require ground movement activities to grade previously disturbed areas (currently agricultural land that has already been rezoned for heavy industrial). These areas would be to the north, east, south and west of the existing building, and activities would include new access roads, installation of concrete slab service yards or pads for gas storage vessels, abatement unit systems, cooling water systems, wastewater treatment, and other equipment. Additional land or disturbance of natural resources beyond the existing site is not required for the project.

The project will take place in Moses Lake, Washington within Section 16 of Township 19 north and Range 29 east of the Willamette Meridian. The project site consists of four parcels (parcel numbers 110069400, 120175300, 120175300 and 110077090) comprising approximately 162 acres. The project site is bound by Road N NE to the west, an

626 Cochran Mill Road, Pittsburgh, PA 15236
stephen.witmer@netl.doe.gov Phone (412) 386-7589 www.netl.doe.gov

unnamed stream to the north, railroad tracks to the east and industrially zoned land to the south.

I have provided attachments that contain additional details pertaining to the proposed project, including the project site plan and a cultural resource survey report encompassing the proposed project area. DOE is also consulting with the Washington Department of Archaeology and Historic Preservation regarding this proposed project.

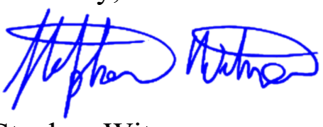
Based on the scope of the proposed Sila project, DOE plans to prepare an Environmental Assessment (EA) (DOE/EA-2214D) in accordance with requirements of the National Environmental Policy Act to analyze, document, and disseminate information on the potential environmental and cultural consequences of the project. Information that you provide will be incorporated and appropriately addressed in the EA. Moreover, when the Draft EA is circulated for public comment, the Spokane Tribe of Indians will be sent a hard copy where you may provide additional comments.

If you have any questions or concerns regarding this project, please contact me at the following address, phone, or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with your Tribal Nation.

Sincerely,



Stephen Witmer
NEPA Compliance Officer

Attachments:

1. Sila Nanotechnologies Project – Site Map and Plan
2. Sila Nanotechnologies Project – Moses Lake Cultural Resource Survey Report

Spokane Tribe of Indians
Tribal Historic Preservation Officer

P.O. Box 100 Wellpinit WA 99040

May 22, 2023

To: Stephen Witmer

Re: Sila Nanotechnologies project, Moses Lake

Mr. Witmer,

Thank you for contacting the Tribe ‘s Historic Preservation Office. We appreciate the opportunity to provide a cultural consult for your project, the intent of this process is to preserve and protect all cultural resources whenever protection is feasible.

Pursuant to compliance with the 54 U.S.C. 306108 we are hereby in consultation for this project.

After archive research and cultural survey completed, the Spokane Tribe will concur with “*no historic properties affected”*.

RE: An Inadvertent discovery plan implemented in the Scope of work.

With this letter this project may proceed with the respect of cultural resources.

However, if any artifacts or human remains are found upon inadvertent discovery, this office should be notified immediately and the work in the area cease. Should additional information become available, or scope of work change our assessment may be revised.

And consider this a positive action that will assist us in protecting our shared heritage.

Sincerely,

Randy Abrahamson
Tribal Historic Preservation Officer.
509-258-4222

Spokane Tribe of Indians
Tribal Historic Preservation Officer
PO Box 100 Wellpinit WA 99040

January 31, 2024

To: Stephen Witmer, NEPA Compliance Officer

RE: Sila Nanotechnologies Environmental Assessment update

Mr. Witmer,

Thank you for contacting the Spokane Tribe's Historic Preservation Office. We appreciate the opportunity to provide a cultural consult for your project.

Pursuant to compliance with 54 U.S.C. we are hereby in consultation for this project.

This project has been determined to be in the Colville Tribe area, therefore I will defer this project to Colville Tribe, and have no further concerns on the project.

Again, thank you for the opportunity to comment, if questions arise contact me at 509-258-4222.

Sincerely,

Randy Abrahamson
THPO for the Spokane Tribe

May 9, 2023

Mr. Robert Brunoe
Tribal Historic Preservation Officer
Confederated Tribes of the Warm Springs Reservation of Oregon
Post Office Box C
Warm Springs, OR 97761

Subject: Tribal consultation and Section 106 compliance for the Sila Nanotechnologies Moses Lake Facility Project (DOE/EA-2214D)

Dear Mr. Brunoe,

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant (DOE's Proposed Action) to Sila Nanotechnologies, Inc. (Sila) as part of the funding opportunity announcement titled "Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing," with funds appropriated by the Infrastructure Investment and Jobs Act, also more commonly known as the Bipartisan Infrastructure Law.

The proposed project would involve the construction of a 4,000 ton/yr (20 GWh/yr equivalent) silicon anode manufacturing facility in Moses Lake, Washington. Sila had previously acquired a 162-acre site with an existing 613,000 sq. ft. building for this project. The purpose of the proposed project is to scale Sila's product output in order to enter the electric vehicle market in a timely and cost-efficient manner. The project would provide U.S.-based manufacturing capacity for these and similar vital industrial components.

Modifications would be required to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space. Installation of equipment and storage vessels outdoors would require ground movement activities to grade previously disturbed areas (currently agricultural land that has already been rezoned for heavy industrial). These areas would be to the north, east, south and west of the existing building, and activities would include new access roads, installation of concrete slab service yards or pads for gas storage vessels, abatement unit systems, cooling water systems, wastewater treatment, and other equipment. Additional land or disturbance of natural resources beyond the existing site is not required for the project.

The project will take place in Moses Lake, Washington within Section 16 of Township 19 north and Range 29 east of the Willamette Meridian. The project site consists of four parcels (parcel numbers 110069400, 120175300, 120175300 and 110077090) comprising approximately 162 acres. The project site is bound by Road N NE to the west, an

626 Cochran Mill Road, Pittsburgh, PA 15236
stephen.witmer@netl.doe.gov Phone (412) 386-7589 www.netl.doe.gov

unnamed stream to the north, railroad tracks to the east and industrially zoned land to the south.

I have provided attachments that contain additional details pertaining to the proposed project, including the project site plan and a cultural resource survey report encompassing the proposed project area. DOE is also consulting with the Washington Department of Archaeology and Historic Preservation regarding this proposed project.

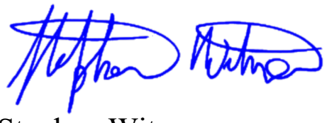
Based on the scope of the proposed Sila project, DOE plans to prepare an Environmental Assessment (EA) (DOE/EA-2214D) in accordance with requirements of the National Environmental Policy Act to analyze, document, and disseminate information on the potential environmental and cultural consequences of the project. Information that you provide will be incorporated and appropriately addressed in the EA. Moreover, when the Draft EA is circulated for public comment, the Confederated Tribes of the Warm Springs Reservation of Oregon will be sent an electronic and hard copy where you may provide additional comments.

If you have any questions or concerns regarding this project, please contact me at the following address, phone, or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with your Tribal Nation.

Sincerely,



Stephen Witmer
NEPA Compliance Officer

Attachments:

1. Sila Nanotechnologies Project – Site Map and Plan
2. Sila Nanotechnologies Project – Moses Lake Cultural Resource Survey Report

May 31, 2023

Mr. Jonathan Smith, Sr.
Tribal Council Chairperson
Confederated Tribes of the Warm Springs Reservation of Oregon
1233 Veterans Street
Post Office Box C
Warm Springs, OR 97761

Subject: Tribal consultation and Section 106 compliance for the Sila Nanotechnologies Moses Lake Facility Project (DOE/EA-2214D)

Dear Chairperson Smith,

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant (DOE's Proposed Action) to Sila Nanotechnologies, Inc. (Sila) as part of the funding opportunity announcement titled "Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing," with funds appropriated by the Infrastructure Investment and Jobs Act, also more commonly known as the Bipartisan Infrastructure Law.

The proposed project would involve the construction of a 4,000 ton/yr (20 GWh/yr equivalent) silicon anode manufacturing facility in Moses Lake, Washington. Sila had previously acquired a 162-acre site with an existing 613,000 sq. ft. building for this project. The purpose of the proposed project is to scale Sila's product output in order to enter the electric vehicle market in a timely and cost-efficient manner. The project would provide U.S.-based manufacturing capacity for these and similar vital industrial components.

Modifications would be required to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space. Installation of equipment and storage vessels outdoors would require ground movement activities to grade previously disturbed areas (currently agricultural land that has already been rezoned for heavy industrial). These areas would be to the north, east, south and west of the existing building, and activities would include new access roads, installation of concrete slab service yards or pads for gas storage vessels, abatement unit systems, cooling water systems, wastewater treatment, and other equipment. Additional land or disturbance of natural resources beyond the existing site is not required for the project.

The project will take place in Moses Lake, Washington within Section 16 of Township 19 north and Range 29 east of the Willamette Meridian. The project site consists of four parcels (parcel numbers 110069400, 120175300, 120175300 and 110077090) comprising approximately 162 acres. The project site is bound by Road N NE to the west, an

unnamed stream to the north, railroad tracks to the east and industrially zoned land to the south.

I have provided attachments that contain additional details pertaining to the proposed project, including the project site plan and a cultural resource survey report encompassing the proposed project area. DOE is also consulting with the Washington Department of Archaeology and Historic Preservation regarding this proposed project.

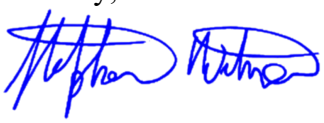
Based on the scope of the proposed Sila project, DOE plans to prepare an Environmental Assessment (EA) (DOE/EA-2214D) in accordance with requirements of the National Environmental Policy Act to analyze, document, and disseminate information on the potential environmental and cultural consequences of the project. Information that you provide will be incorporated and appropriately addressed in the EA. Moreover, when the Draft EA is circulated for public comment, the Confederated Tribes of the Warm Springs Reservation of Oregon will be sent an electronic and hard copy where you may provide additional comments.

If you have any questions or concerns regarding this project, please contact me at the following address, phone, or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with your Tribal Nation.

Sincerely,



Stephen Witmer
NEPA Compliance Officer

Attachments:

1. Sila Nanotechnologies Project – Site Map and Plan
2. Sila Nanotechnologies Project – Moses Lake Cultural Resource Survey Report

E-mail cc:

Robert Brunoe, Tribal Historic Preservation Officer
Mars Galloway, Cultural Resource Manager

May 9, 2023

Ms. Jessica Lally
Yakama Nation Archaeologist
Confederated Tribes and Bands of the Yakama Nation
Post Office Box 151
Toppenish, WA 98948

Subject: Tribal consultation and Section 106 compliance for the Sila Nanotechnologies Moses Lake Facility Project (DOE/EA-2214D)

Dear Ms. Lally,

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant (DOE's Proposed Action) to Sila Nanotechnologies, Inc. (Sila) as part of the funding opportunity announcement titled "Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing," with funds appropriated by the Infrastructure Investment and Jobs Act, also more commonly known as the Bipartisan Infrastructure Law.

The proposed project would involve the construction of a 4,000 ton/yr (20 GWh/yr equivalent) silicon anode manufacturing facility in Moses Lake, Washington. Sila had previously acquired a 162-acre site with an existing 613,000 sq. ft. building for this project. The purpose of the proposed project is to scale Sila's product output in order to enter the electric vehicle market in a timely and cost-efficient manner. The project would provide U.S.-based manufacturing capacity for these and similar vital industrial components.

Modifications would be required to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space. Installation of equipment and storage vessels outdoors would require ground movement activities to grade previously disturbed areas (currently agricultural land that has already been rezoned for heavy industrial). These areas would be to the north, east, south and west of the existing building, and activities would include new access roads, installation of concrete slab service yards or pads for gas storage vessels, abatement unit systems, cooling water systems, wastewater treatment, and other equipment. Additional land or disturbance of natural resources beyond the existing site is not required for the project.

The project will take place in Moses Lake, Washington within Section 16 of Township 19 north and Range 29 east of the Willamette Meridian. The project site consists of four parcels (parcel numbers 110069400, 120175300, 120175300 and 110077090) comprising approximately 162 acres. The project site is bound by Road N NE to the west, an

626 Cochran Mill Road, Pittsburgh, PA 15236
stephen.witmer@netl.doe.gov Phone (412) 386-7589 www.netl.doe.gov

unnamed stream to the north, railroad tracks to the east and industrially zoned land to the south.

I have provided attachments that contain additional details pertaining to the proposed project, including the project site plan and a cultural resource survey report encompassing the proposed project area. DOE is also consulting with the Washington Department of Archaeology and Historic Preservation regarding this proposed project.

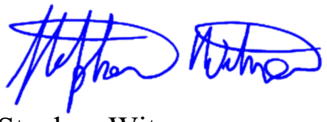
Based on the scope of the proposed Sila project, DOE plans to prepare an Environmental Assessment (EA) (DOE/EA-2214D) in accordance with requirements of the National Environmental Policy Act to analyze, document, and disseminate information on the potential environmental and cultural consequences of the project. Information that you provide will be incorporated and appropriately addressed in the EA. Moreover, when the Draft EA is circulated for public comment, the Confederated Tribes and Bands of the Yakama Nation will be sent an electronic and hard copy where you may provide additional comments.

If you have any questions or concerns regarding this project, please contact me at the following address, phone, or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with your Tribal Nation.

Sincerely,



Stephen Witmer
NEPA Compliance Officer

Attachments:

1. Sila Nanotechnologies Project – Site Map and Plan
2. Sila Nanotechnologies Project – Moses Lake Cultural Resource Survey Report

May 9, 2023

Ms. Kate Valdez
Tribal Historic Preservation Officer
Confederated Tribes and Bands of the Yakama Nation
Post Office Box 151
Toppenish, WA 98948

Subject: Tribal consultation and Section 106 compliance for the Sila Nanotechnologies Moses Lake Facility Project (DOE/EA-2214D)

Dear Ms. Valdez,

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant (DOE's Proposed Action) to Sila Nanotechnologies, Inc. (Sila) as part of the funding opportunity announcement titled "Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing," with funds appropriated by the Infrastructure Investment and Jobs Act, also more commonly known as the Bipartisan Infrastructure Law.

The proposed project would involve the construction of a 4,000 ton/yr (20 GWh/yr equivalent) silicon anode manufacturing facility in Moses Lake, Washington. Sila had previously acquired a 162-acre site with an existing 613,000 sq. ft. building for this project. The purpose of the proposed project is to scale Sila's product output in order to enter the electric vehicle market in a timely and cost-efficient manner. The project would provide U.S.-based manufacturing capacity for these and similar vital industrial components.

Modifications would be required to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space. Installation of equipment and storage vessels outdoors would require ground movement activities to grade previously disturbed areas (currently agricultural land that has already been rezoned for heavy industrial). These areas would be to the north, east, south and west of the existing building, and activities would include new access roads, installation of concrete slab service yards or pads for gas storage vessels, abatement unit systems, cooling water systems, wastewater treatment, and other equipment. Additional land or disturbance of natural resources beyond the existing site is not required for the project.

The project will take place in Moses Lake, Washington within Section 16 of Township 19 north and Range 29 east of the Willamette Meridian. The project site consists of four parcels (parcel numbers 110069400, 120175300, 120175300 and 110077090) comprising approximately 162 acres. The project site is bound by Road N NE to the west, an

626 Cochran Mill Road, Pittsburgh, PA 15236
stephen.witmer@netl.doe.gov Phone (412) 386-7589 www.netl.doe.gov

unnamed stream to the north, railroad tracks to the east and industrially zoned land to the south.

I have provided attachments that contain additional details pertaining to the proposed project, including the project site plan and a cultural resource survey report encompassing the proposed project area. DOE is also consulting with the Washington Department of Archaeology and Historic Preservation regarding this proposed project.

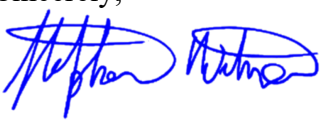
Based on the scope of the proposed Sila project, DOE plans to prepare an Environmental Assessment (EA) (DOE/EA-2214D) in accordance with requirements of the National Environmental Policy Act to analyze, document, and disseminate information on the potential environmental and cultural consequences of the project. Information that you provide will be incorporated and appropriately addressed in the EA. Moreover, when the Draft EA is circulated for public comment, the Confederated Tribes and Bands of the Yakama Nation will be sent an electronic and hard copy where you may provide additional comments.

If you have any questions or concerns regarding this project, please contact me at the following address, phone, or email below:

U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Thank you for your attention to this request, and I look forward to working with your Tribal Nation.

Sincerely,



Stephen Witmer
NEPA Compliance Officer

Attachments:

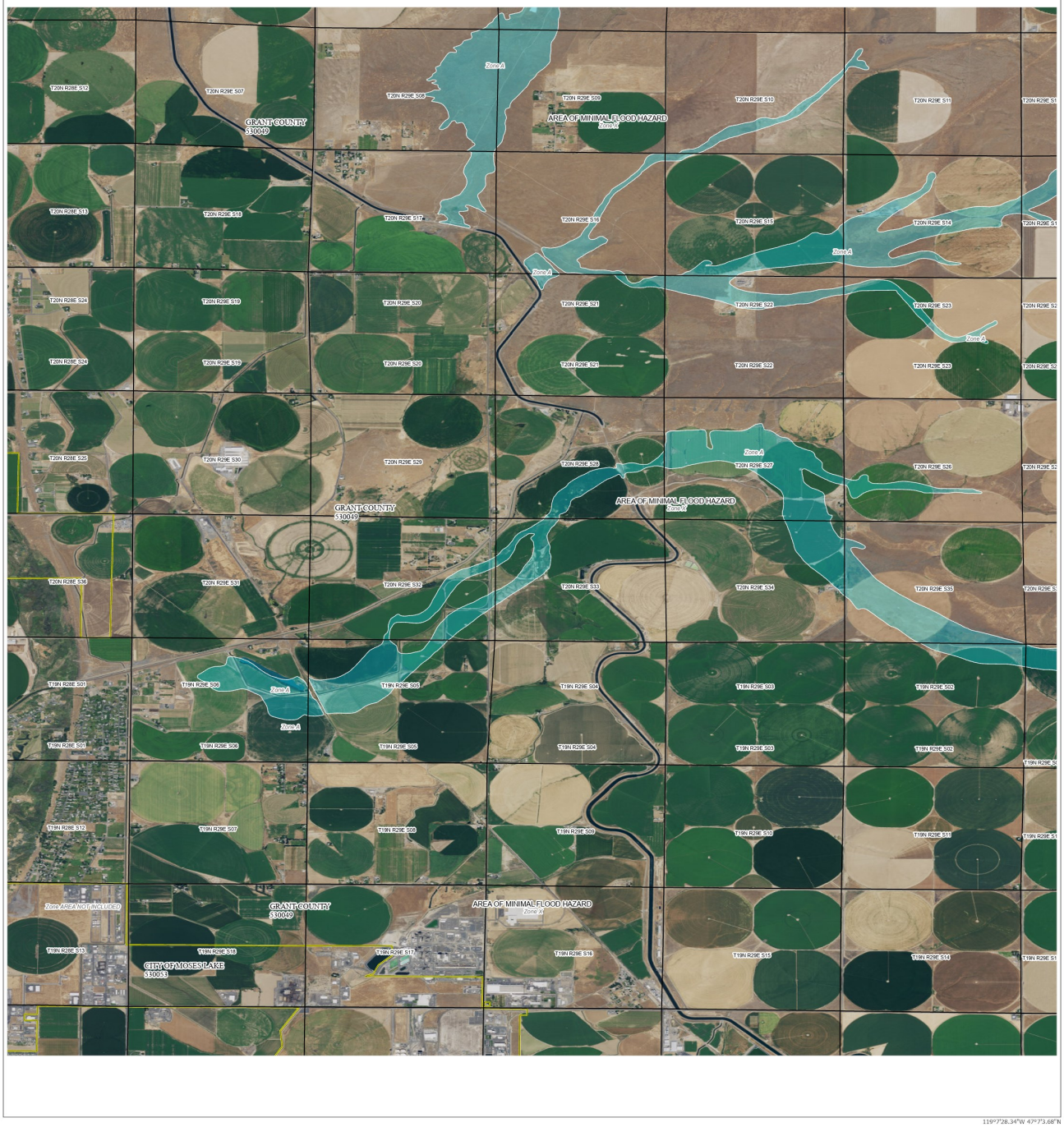
1. Sila Nanotechnologies Project – Site Map and Plan
2. Sila Nanotechnologies Project – Moses Lake Cultural Resource Survey Report

Appendix 4

Relevant Technical Studies

FEMA Flood Hazard Map - FIRM

119°15'1.76"W 47°15'26.39"N



119°7'28.34"W 47°7'3.68"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee See Notes Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October, 2020.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on 6/22/2023 1:49 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: No elevation features on this FIRM
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

1 inch = 2,000 feet 1:24,000

0 1,000 2,000 4,000 6,000 8,000 Feet

N 0 210 420 840 1,260 1,680 Meters

FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

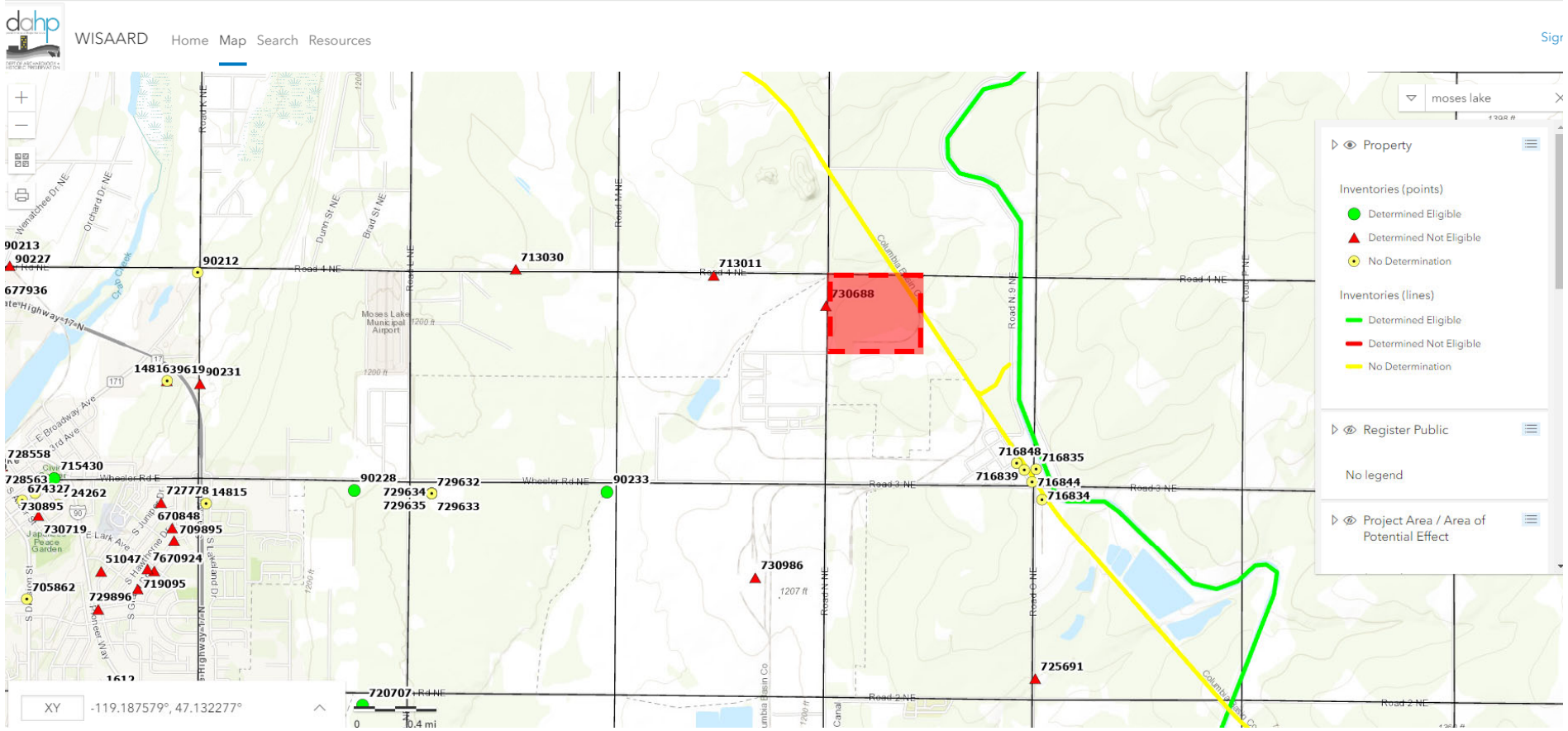
PANEL 1100 OF 1925

Panel Contains:

COMMUNITY	NUMBER	PANEL
CITY OF MOSES LAKE	530053	1100
GRANT COUNTY	530049	1100
GLOYD SEEPS WILDLIFE AREA	535T	1100

MAP NUMBER
53025C1100C
EFFECTIVE DATE
February 18, 2009

WISSARD Database Search Results



Project Site

Source: DAHP WISAARD Map, 2023

EA Engineering, Science, and Technology, Inc.

Figure 1

DAHP WISAARD – Property Inventories in Site Vicinity

Inadvertent Discovery Plan

Road North NE Project, Grant County, Washington

Inadvertent Discovery Plan

Treatment of Archaeological Materials Discovered During Project Implementation

By:

Justin Fitzpatrick

PLATEAU

ARCHAEOLOGICAL INVESTIGATIONS, LLC

P.O. Box 714, Pullman, Washington 99163

April 2023

Road North NE Project, Grant County, Washington
Inadvertent Discovery Plan and Treatment of Archaeological Materials

Western Pacific Engineering & Survey is assisting a client with plans and permitting to develop three parcels along Road North NE. The parcels are identified as 12-0175-300, 11-0069-400, and 11-0077-090. While a portion of the three parcels have been developed, the remaining accessible areas will be investigated with pedestrian survey and subsurface probing. The probes will be placed in a manner to investigate the anticipated impacts of future development.

Western Pacific Engineering & Survey retained Plateau Archaeological Investigations, LLC (Plateau) to complete the cultural resource survey and identify potential impacts to cultural and historical resources. The area of potential effect, referred to as the Project Area, covers approximately 156 acres and lies in Section 16 of Township 19 North, Range 29 East, Willamette Meridian (Figure 2). The survey was subsequently reported in *Cultural Resource Survey for the Road North NE Project, Grant County, Washington* (Espen et al. 2023), and recorded with the Washington State Department of Archaeology and Historic Preservation (DAHP) under Project Number 2023-04-02558.

Pre-field research consisted of a file review completed through the Washington Information System for Architectural and Archaeological Records Data (WISAARD) on March 15, 2023. The review covered Sections 08, 08, 10, 15, 16, 17, 20, 21, and 22 in Township 19 North, Range 29 East. This review revealed no cultural resources and seven previously conducted cultural resource surveys within 1.0 mile (mi) (1.6 kilometer [km]) of the Project Area. This database includes recorded archaeological resources, historic property inventories (HPIs), National Register of Historic Properties (NRHP) and Washington Heritage Register (WHR) properties, identified cemeteries, and previously conducted cultural resource surveys found throughout the state of Washington. Additionally, a review of Bureau of Land Management (BLM) records, both General Land Office (GLO) online records and land patent information, was completed. Topographic maps and aerial photos were reviewed to identify additional indicators of past land use.

Plateau CRM archaeologists conducted a pedestrian survey and excavated 88 subsurface probes. The pedestrian survey covered the portion of the area of potential impact not covered by the intersecting industrial building and subsurface probes were dispersed throughout. No Native American or historic-era cultural materials or features were observed during the pedestrian survey or excavations. A Plateau CRM architectural historian inventoried one property (Property ID: 730688). Plateau CRM recommends that the proposed undertaking will result in **No Historic Properties Affected** and no further archaeological investigations are recommended prior to, or during, execution of this project.

Road North NE Project, Grant County, Washington
Inadvertent Discovery Plan and Treatment of Archaeological Materials

Laws and Regulations Regarding Archaeological and Cultural Resources
Several laws and regulations, set forth on both federal and state levels, address concerns for burials, rock cairns, archaeological sites, historic structures, and other cultural resources. Those pertinent to this project are The State Environmental Policy Act and several chapters of the Revised Code of Washington.

The State Environmental Policy Act (SEPA) requires state agencies to consider the effects of undertakings on historic properties and consult with the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO) as appropriate to help identify the area of potential effect (APE) and the level of effort necessary to comply. This is intended to be done prior to the expenditure of funds or issuance of a license or permit, although it is recognized that some properties may not be identified, recognized, or discovered until the project begins.

Chapter 27.44 of the Revised Code of Washington offers protection for Indian burials, cairns, glyptic markings, and historic graves on private and public property. This regulation provides civil and criminal penalties for the intentional disturbance or removal of these types of properties.

Chapter 27.53 of the Revised Code of Washington requires that a permit be acquired through the Washington State Department of Archaeology and Historic Preservation (DAHP) prior to the intentional disturbance, excavation, removal, or alteration of any known historic or archaeological resource through any means.

Chapter 68.50 of the Revised Code of Washington describes the investigations, treatment, scientific study, and final disposition of human remains. This chapter includes very little information that pertains to the inadvertent discovery of archaeological materials.

Chapter 68.60 of the Revised Code of Washington outlines protections for cemeteries, historic graves, and other human remains. This chapter further outlines procedures pertaining to the inadvertent discovery of human remains.

Inadvertent Discovery Plan

Proper application and management of this IDP requires that a professional archaeologist be contacted if ground-disturbing activities reveal potential Native American or historic-era cultural materials or features (Figure 3, Figure 4, and Figure 5). The archaeologist shall meet the Secretary of the Interior's standards for a professional archaeologist as defined at 36CFR61 Appendix A. Construction within 200 ft (60 m) of the discovery will stop, and the area will be secured to protect the find from additional damage. The archaeologist will document the find, prepare a brief written statement, and take photographs of the find for submission to the lead agency and the SHPO at the DAHP. The find will also be reported to the THPO of the Confederated Tribes of the Colville Reservation, the Cultural Resource Program Manager of the Confederated Tribes and Bands of the Yakama Nation the THPO of the Spokane tribe of Indians, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Department of Energy. It is the responsibility of the lead agency, City of Moses Lake Community Development Department, to contact the affected Tribes. This consultation process will take place even if the pre-contact or historic-era cultural materials appear to have lost their depositional integrity. Work within 200 ft (60 m) of the find will not resume until a plan for management or preservation of the materials has been approved. Following the project, the archaeologist will provide a report detailing the procedures and results of the investigation.

During the investigation, the archaeologist will observe rules of safety and will comply with any safety requirements of the excavation contractor and project engineers. Entry into any excavation will only be done under the direct supervision and approval of the construction foreman (or his or her agent) and verification that entry and exit is safe.

Road North NE Project, Grant County, Washington
Inadvertent Discovery Plan and Treatment of Archaeological Materials

Discovery of Human Remains

If ground-disturbing activities encounter human skeletal remains during the course of construction, then all activity ***will*** cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance to those remains. The area of the find will be secured and protected from further disturbance until the State provides notice to proceed. The finding of human skeletal remains ***will*** be reported to the county medical examiner/coroner ***and*** local law enforcement in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the Department of Archaeology and Historic Preservation (DAHP) who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

Road North NE Project, Grant County, Washington
Inadvertent Discovery Plan and Treatment of Archaeological Materials

Protocol to Follow When No Archaeologist is Present

If an archaeologist is not on-site when cultural materials (e.g., pre-contact artifacts and/or features, historic-era artifacts and/or features) are uncovered, the following steps shall be followed:

Suspend work within 200 ft (60 m) of the find.
Take a photo of the artifact(s) or feature(s). Include a common object such as a quarter, a tape measure, a person, or a pickup as a scale to show the size of the find.
Take photos of the location of the find from several angles and distances.
Record a GPS point if possible.
Contact Plateau by telephone to notify us of the find.
Provide an email with photos and any additional information you are able to gather.

Precontact Artifacts Precontact artifacts can include stone, wood, or bone tools. Stone tools are the most common artifact encountered since they do not deteriorate over time.

Precontact Features Precontact features can include fire pits, hearths, burn deposits, ash, rock alignments, rock mounds, and midden deposits.

Historic-Era Artifacts Historic-era artifacts may include various items manufactured from metal, glass, or wood. If an individual identifiable historic artifact is encountered, the above protocol should be followed. "Historic-era artifacts" does not include "recent" items such as chip bags, styrofoam, modern beverage cans and bottles, or other typical roadside debris.

Historic-Era Features Any identifiable remains of buildings, foundations, rock alignments, or rock mounds might be historic-era features.

Human Remains Human remains, suspected human remains, burials, funerary objects, sacred objects, or items of cultural patrimony are to be treated in the manner outlined above. **Additionally, Plateau is to be notified by phone immediately**.

Road North NE Project, Grant County, Washington
Inadvertent Discovery Plan and Treatment of Archaeological Materials

Emergency Dispatch in Grant County

Emergency Dispatch	911
Moses Lake Police Department	509-764-3887
Sheriff, non-emergency	509-762-1160
Grant County Coroner	509-765-7601
	509-766-8318 (fax)

Confederated Tribes of the Colville Reservation

Guy Moura, Tribal Historic	509-634-2695
Preservation Officer	509-634-2694 (fax)
	guy.moura@colvilletribes.com
	P.O. Box 150, Nespelem, Washington 99155
Chairman Jared-Michael Erickson	509-634-2200
Chairman of the Colville Business	jarred.erickson.cbc@colvilletribes.com
Council	21 Colville Street, Nespelem, WA 99155-0150
Robert Sloma	robert.sloma@colvilletribes.com
	21 Colville Street, Nespelem, WA 99155-0150

Confederated Tribes and Bands of the Yakama Nation

Casey Barney, Cultural Resource Program Manager
509-865-5121, ext. 4378
casey@yakama.com

Jessica Lally, Yakama Nation Archaeologist, Cultural Resources Program
509-865-5121, ext. 4766
Jessica_Lally@Yakama.com
P.O. Box 151, Toppenish, Washington 98948

Department of Archaeology and Historic Preservation

DAHP Reception	360-586-3065
DAHP fax	360-586-3067
Guy Tasa, State Physical Anthropologist	360-586-3534 Guy.Tasa@dahp.wa.gov
Rob Whitlam, State Archaeologist	360-586-3080 Rob.Whitlam@dahp.wa.gov
	P.O. Box 48343, Olympia, Washington 98504

Plateau Archaeological Investigations

Main Office/Fax	509-332-3830
David Harder, Archaeologist	509-336-1525 (cell) dharder@plateau-crm.com
	P.O. Box 714, Pullman, Washington, 99163

Spokane Tribe of Indians

Randy Abrahamson, THPO
509-258-4315
509-258-6965 (fax)
randya@spokanetribe.com
P.O. Box 100, Wellpinit, Washington 99040

Confederated Tribes of Warm Springs Reservation of Oregon

Mars Galloway
mars.galloway@ctwsbnr.org
1233 Veterans Street, P.O. Box C, Warm Springs, Oregon 97761

Robert Brunoe
541-553-1161
Robert.Brunoe@ctwsbnr.org
1233 Veterans Street, P.O. Box C, Warm Springs, Oregon 97761

Department of Energy – National Energy Technology Laboratory

Stephen Witmer, NEPA Compliance Officer
Stephen.witmer@netl.doe.gov
626 Cochran Mill Road, M/S 921-227, Pittsburgh, Pennsylvania 15236

WORKS CITED

Andrefsky, William A., Jr.
1998 *Lithics: Macroscopic Approaches to Analysis*. Cambridge Manuals in Archaeology, University Printing House, Cambridge, United Kingdom.

Department of Archaeology and Historic Preservation
2023 WISAARD. Electronic document accessed at dahp.wa.gov on March 15, 2023.

Espen, Josh L, Justin Fitzpatrick, and David A. Harder
2023 *Cultural Resource Survey for theRoad North NE Project, Grant County,Washington*. Plateau Archaeological Investigations, Pullman, Washington.

Lyon, Joshua
2015 *The Collector's Ultimate Guide to Canning Jars*. Electronic document, countryliving.com, accessed February 7, 2017.

Sappington, Robert Lee
1994 *The Prehistory of the Clearwater River Region, North Central Idaho*. University of Anthropological Reports, No. 95. Alfred W. Bowers Laboratory of Anthropology, University of Idaho, Moscow.

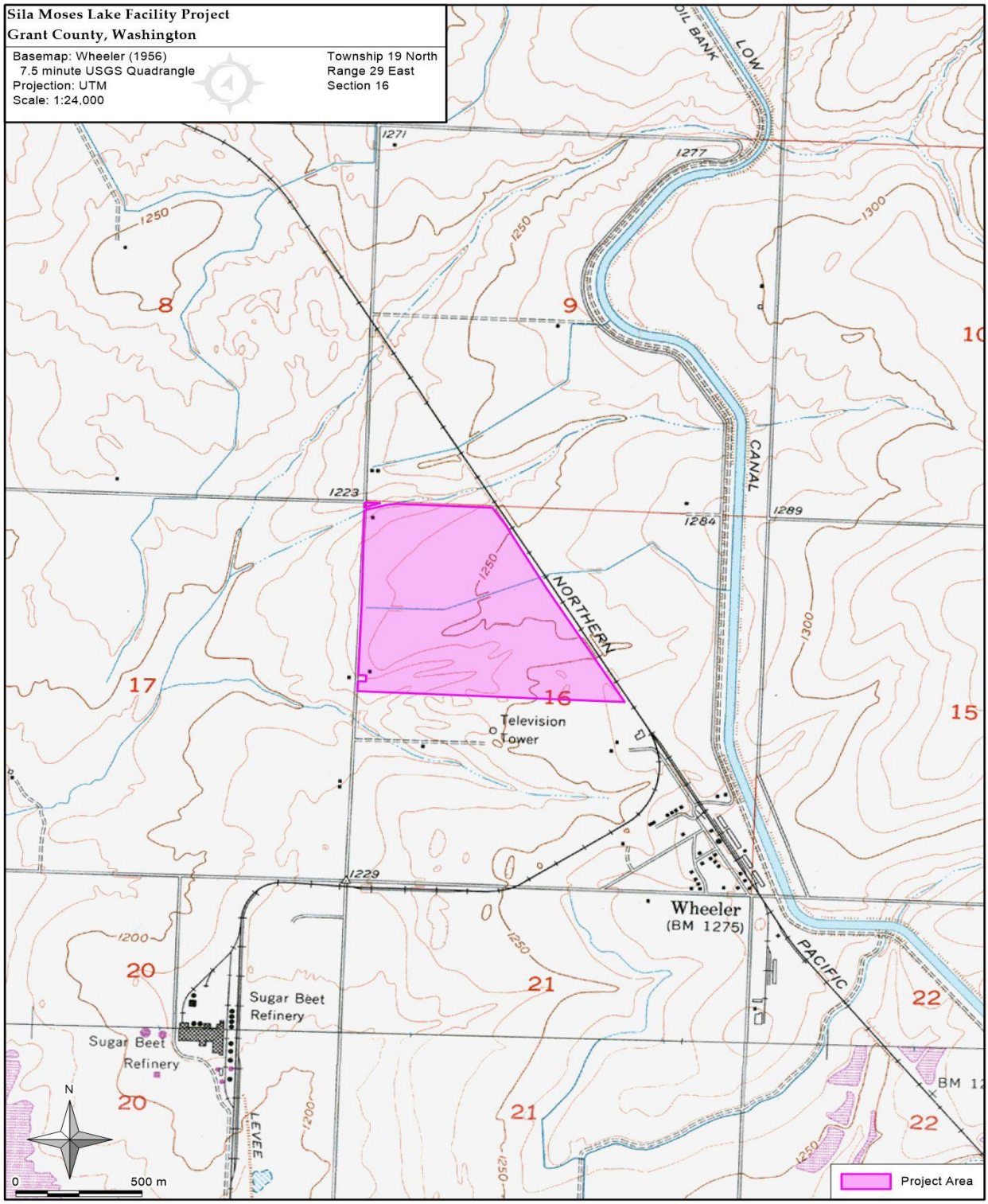


Figure 1. The Project Area on a portion of the Wheeler USGS topographic map.

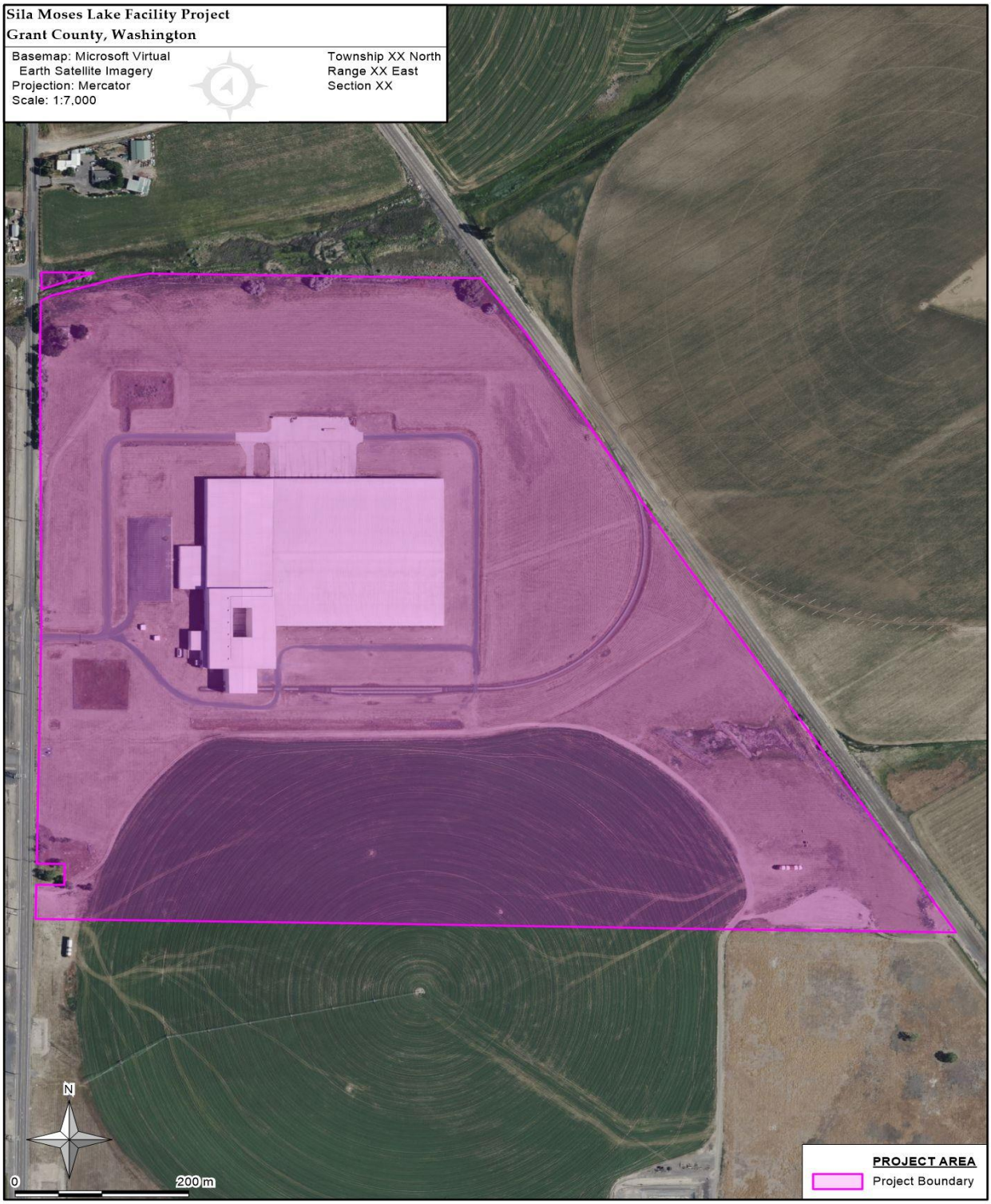


Figure 2. The Project Area on an aerial photograph.

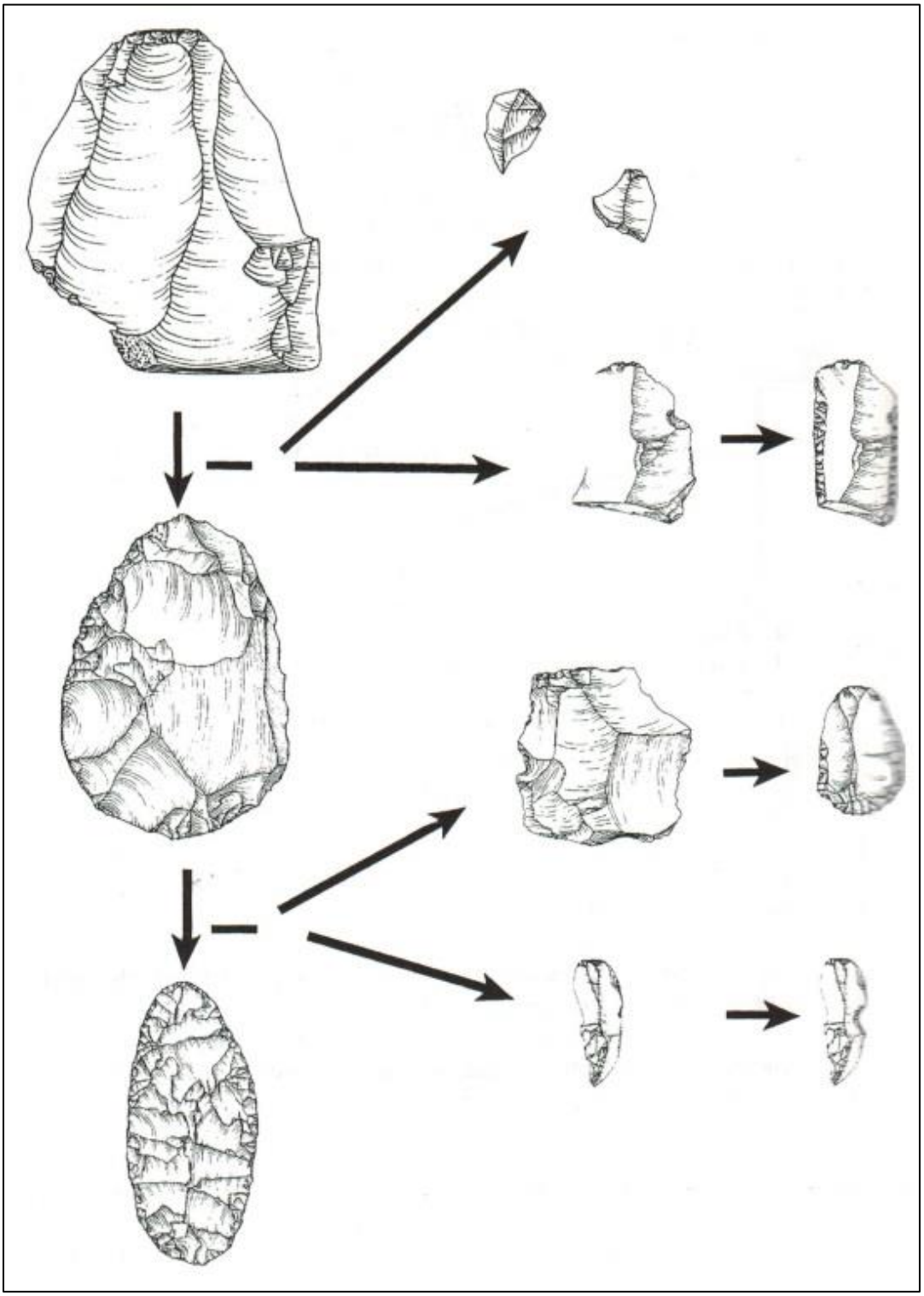


Figure 3. Reduction of a lithic blank to a tool (Andrefsky 1998:158).

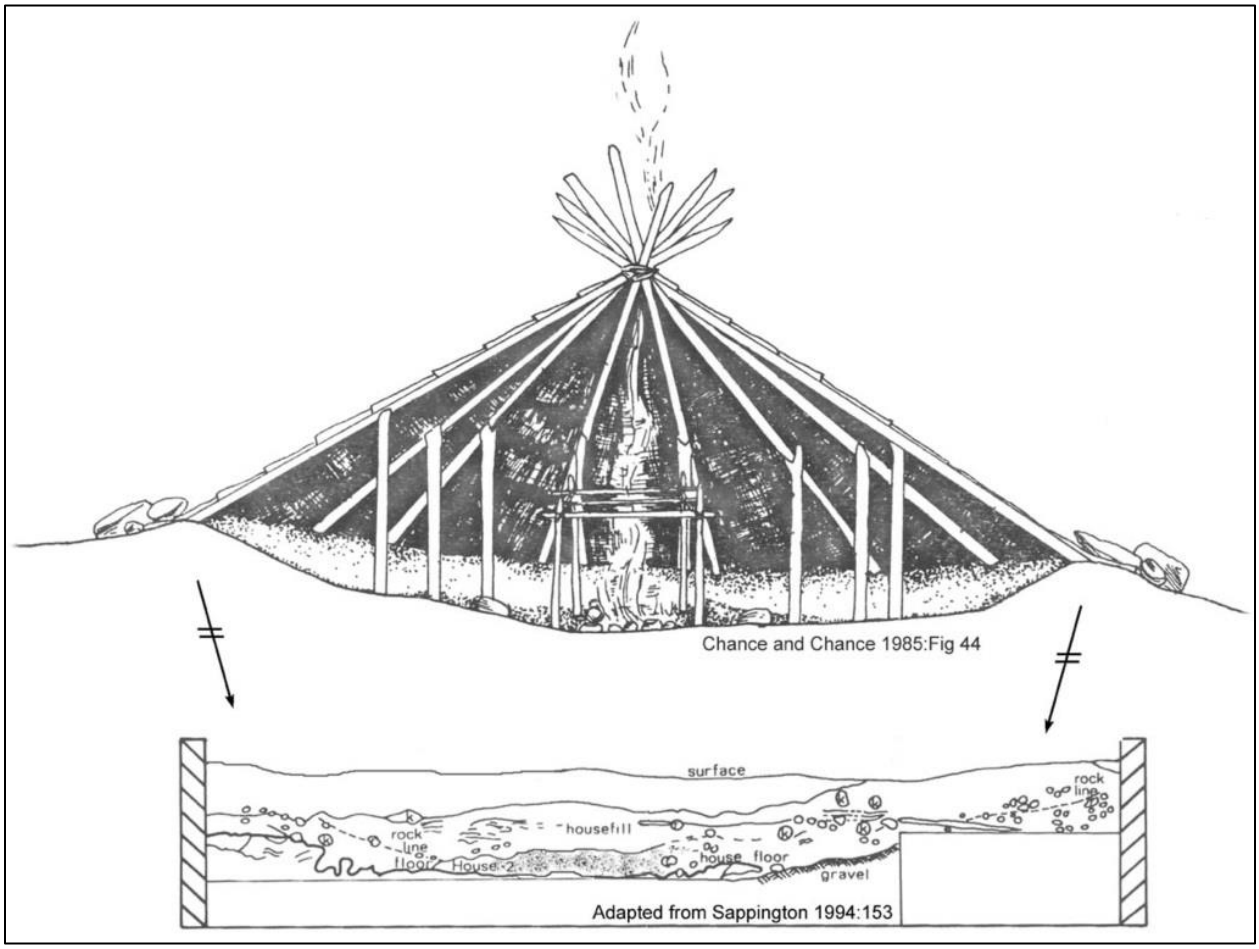


Figure 4. An illustration of a house pit and the resulting archaeological feature (Sappington 1994:153).

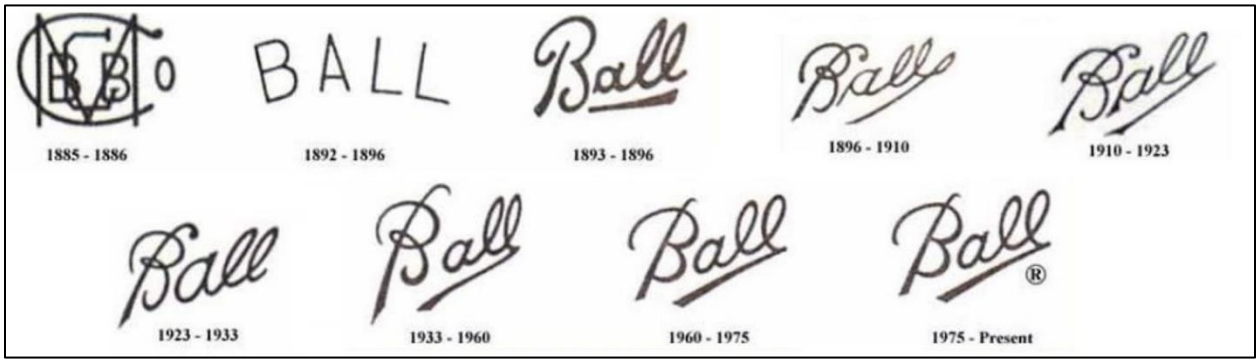


Figure 5. An example of logo changes over time, which can aid in determining the date of historic artifacts.

GHG and Social Cost of Carbon Calculation Tables

Electricity

120,000,000	kWh/yr Process
0.202954	lb CO2e/kWh
24,354,480	lb CO2e/yr
11,047	**metric tons CO2e/yr**

Natural Gas

87,600	MMBtu/yr TO assist
200	scf/hr flare pilot
~~503~~	kg/hr assist gas <- emergency operation only, normal operation would only include nat. gas combustion in the pilots.
1,026	Btu/scf
1,798	MMBtu/yr flare pilot
117.1	lb CO2e/MMBtu
4,748	**metric tonnes/yr**

Generators

2	Gens
30	hours
136	gal/hr
138,000	Btu/hr
163.6	lb CO2e/MMBtu
84	**metric tonnes/yr**

Conversion Factors

2,205	lbs/metric ton
1.61	km/mi
0.00220	lb/g
1,000,000	Btu/MMBtu

Annual CO2e Emissions

Source	Metric Tonnes CO2e	
Electricity Use	11,100	at WA rate.
Natural Gas Use (flare, thermal oxidizer)	4,800	
Waste Gas Control (thermal oxidizer)	29,600	
Emergency Generators	84	
Direct CO2e Emissions	34,484	
Total	**45,584**	

Embodied Carbon (buildcarbonneutral.com)

1000 sq ft new buildings		
1 story above ground, 0 below		
Steel construction		
Ecoregion: NW forested mountains		
Existing vegetation: short grass or lawn		
Installed vegetation: Forest	(only option with trees)	
Landscape disturbed: 26 acres	1,154,525	sq ft
Landscape installed: 20 ft x 2000 ft	40000	
Embodied CO2	1450	metric tons

Electricity @ national average

120,000,000	kWh/yr
0.857019	lb CO2e/kWh
102,842,280	lb CO2e/yr
46,648	**metric tons CO2e/yr**
35,601	diffrence between WA and avg

Stream	CAS	Heating Value	Heating Value (Btu/ft3)	Heating Value (Btu/lb)	Heating Value (Btu/kg)	Table C-1 Category	Default CO2 Emission Factor (kg CO_2/mmBtu)	Default CH_4 emission factor (kg CH_4/mmBtu)	Default N_2O emission factor (kg N_2O/mmBtu)	Chemical Formula	Carbon Content	MW (g/mol)
Use Part 98 combustion EFs for petroleum related components (CO2 and CH4 only). Use mass-balance based on carbon count for all other components assuming all C is oxidized to CO2 (in accordance with Part 98 methods for calculated CO2 emissions from waste gas streams in other industries). Assume the N2O emission factor for "All Petroleum Products" is applicable to the entire waste gas stream on a Btu basis. There is nitrogen present in the waste gas (N2, NH3, and HCN) and combustion readily forms N2O even when fuel-bound N is not present. Furthermore, most of the waste gas is composed of heavier hydrocarbons (therefore, the natural gas N2O factor is less appropriate).												
Waste Gas Heat Release (MMBtu/hr)						Petroleum Products (All fuel types in Table C–1)			6.00E-04			
Waste Gas Component												
Hydrogen												
Nitrogen	7727-37-9									N2		28.014
Ammonia	7664-41-7	382.8 kJ/mol (gas)								H3N		17.031
H2O												
HCN (Hydrogen cyanide)	74-90-8	642 kJ/mol								HCN	1	27.025
CO			323	4368	9629.841928					CO	1	28.01
CO2										CO2	1	44.009
Oxygen												
Silane												
H2S												
COS (Carbonyl sulfide)	463-58-1									COS	1	60.08
SO2												
CS2 (Carbon disulfide)	75-15-0									CS2	1	76.15
2-propanethiol	75-33-2									C3H8S	3	76.16
propanethiol	107-03-9	-15,990 Btu/lb= -8,890 cal/		15,990	35252.09991					C3H8S	3	76.16
2-Methyl-2-propanethiol	75-66-1									C4H10S	4	90.19
Methane		-890.8 kJ/r	1011	23811	52494.54353	Natural Gas	53.06	1.00E-03				
Ethylene			1631	21884	48246.21354	Ethylene	65.96	3.00E-03				
Ethane			1783	22198	48938.46866	Ethane	59.6	3.00E-03				
Acetylene	74-86-2		1498	21569	47551.75379					C2H2	2	26.04
Propene			2332	20990	46275.27062	Propylene	67.77	3.00E-03				
Propane			2572	21564	47540.73062	Propane Gas	61.46	3.00E-03				
i-Butane			3225	21640	47708.28281	isoButane	64.94	3.00E-03				
1-Butene			3077	20780	45812.29745	Butylene	68.72	3.00E-03				
13-Butadiene (1,3-Butadiene)	106-99-0	-2541.5 kJ/mol (gas)								C4H6	4	54.09
n-Butane			3225	21640	47708.28281	Butane	64.77	3.00E-03				
i-Pentane			3981	20908	46094.49062	Pentanes Plus	70.02	3.00E-03				
n-Pentane			3981	20908	46094.49062	Pentanes Plus	70.02	3.00E-03				
n-Hexane			4667	20526	45252.32038	Pentanes Plus	70.02	3.00E-03				
Benzene	71-43-2		3741	18150	40014.10966					C6H6	6	78.11
Toluene	108-88-3	3910.3 KJ/	4408	18291	40324.96307					C7H8	7	92.14
E-Benzene (Ethylbenzene)	100-41-4	-17,780 BTU/lb = -9877 cal		17780	39198.39503					C8H10	8	106.16
m-Xylene	108-38-3	-17,554 Bt	5155	18410	40587.31454					C8H10	8	106.16
Styrene	100-42-5	4,395.63 kJ/mol at 25 °C								C8H8	8	104.15
DTRM-HT												
Total (kg/ hr)												
Supplemental Natural Gas Heat Release (MMBtu/hr)							53.06	1.00E-03	1.00E-04			
						AP42 Table 1.4-2 Natural Gas Combustion						
							lb/MMscf	2.3	0.64			
							lb/MMBtu	2.25E-03	6.27E-04			
							kg/MMBtu	1.02E-03	2.85E-04			
						AP42 Table 1.5 Industrial Butane and Propane						
							lb/Mgal	2.00E-01	0.9			
							lb/MMBtu	1.96E-03	8.82E-03			
							kg/MMBtu	8.89E-04	4.00E-03			

Stream	Ph1 Max Flow High Btu	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/	CO2e (kg/
Temp (°C)	329					
Press (barg)	0.008					
Molar Flow (kgmole/hr)	102.51					
Mass Flow (kg/hr)	2209.28					
Lower Heating Value (Btu/SCF)	512.3					
Heat Release (MMBtu/hr)	43.947				2.64E-02	7.85772
Component Mass Flow (kg / hr)						
Hydrogen	77.8484	3.52%				0
Nitrogen	923.8952	41.82%				0
Ammonia	0	0.00%				0
H2O	24.2729	1.10%				0
HCN	0.0373	0.00%	0.06074			0.06074
CO	107.8673	4.88%	169.48			169.48
CO2	290.6552	13.16%	290.655			290.655
Oxygen	1.2072	0.05%				0
Silane	0.0158	0.00%				0
H2S	0.0004	0.00%				0
COS	0	0.00%	0			0
SO2	0	0.00%				0
CS2	0	0.00%	0			0
2-propanethiol		0.00%	0			0
propanethiol		0.00%	0			0
2-Methyl-2-propanethiol		0.00%	0			0
Methane	9.3935	0.43%	26.1643	4.93E-04		26.1766
Ethylene	10.0085	0.45%	31.8503	1.45E-03		31.8865
Ethane	1.9043	0.09%	5.55433	2.80E-04		5.56132
Acetylene		0.00%	0			0
Propene	756.905	34.26%	2373.71	1.05E-01		2376.34
Propane	0.0064	0.00%	0.0187	9.13E-07		0.01872
i-Butane		0.00%	0	0.00E+00		0
1-Butene	1.5643	0.07%	4.92476	2.15E-04		4.93014
13-Butadiene	0.7428	0.03%	0.60436			0.60436
n-Butane		0.00%	0	0.00E+00		0
i-Pentane		0.00%	0	0.00E+00		0
n-Pentane		0.00%	0	0.00E+00		0
n-Hexane		0.00%	0	0.00E+00		0
Benzene	2.7384	0.12%	1.54288			1.54288
Toluene	0.2139	0.01%	0.10217			0.10217
E-Benzene		0.00%	0			0
m-Xylene		0.00%	0			0
Styrene		0.00%	0			0
DTRM-HT		0.00%				0
Total (kg/ hr)	**2209.28**	100.00%				
Supplemental Natural Gas Heat Release (MMBtu/hr)	3		159.18	3.00E-03	3.00E-04	159.344
Total (kg/ hr)			**2904.67**	**0.10751516**	**0.02637**	**2915.21**
Total (ton/yr)						**28,150**
Total (T/yr)						**25,537**

Ph1 Max Flow Low Btu	% of Total	CO2 (kg/l	CH4 (kg/hr)	N2O (kg/	CO2e (kg/
449					
0.008					
21.98					
614.9					
0.7					
0.013				7.8E-06	0.00232
0.0711	0.01%				0
613.7164	99.81%				0
0	0.00%				0
	0.00%				0
0.1145	0.02%	0.18646			0.18646
0.2599	0.04%	0.40835			0.40835
	0.00%	0			0
0.7313	0.12%				0
	0.00%				0
0.0003	0.00%				0
0	0.00%	0			0
0	0.00%				0
0	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
0.0039	0.00%	0.0114	5.56E-07		0.01141
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
614.9	100.00%				
13		689.78	0.013	0.0013	690.492
		0.60621	**5.562E-07**	**7.8E-06**	**0.60854 6 5**

Minimum 1	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/h	CO2e (kg/
170					
0.008					
0.3					
7.91					
26.9					
0.007				4.20E-06	0.00125
0.0429	0.01%				0
7.2462	1.18%				0
0	0.00%				0
	0.00%				0
0.0138	0.00%	0.02247			0.02247
0.1569	0.03%	0.24652			0.24652
	0.00%	0			0
0.4442	0.07%				0
	0.00%				0
0.0002	0.00%				0
0	0.00%	0			0
0	0.00%				0
0	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
0.0024	0.00%	0.00701	3.42E-07		0.00702
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
7.91	1.29%				
13		689.78	1.30E-02	1.30E-03	690.492
		0.276	**3.423E-07**	**4.2E-06**	**0.27726 3 2**

Minimum 2	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/h	CO2e (kg/
290					
0.07					
2.06					
70.19					
199.1					
0.343				2.06E-04	0.06133
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
35.839	5.83%	56.3098			56.3098
34.3511	5.59%	34.3511			34.3511
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
70.19	11.41%				
12.5		663.25	1.25E-02	1.25E-03	663.935
		90.6609	**0**	**0.00021**	**90.7223**
					876
					795

Minimum 3	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/	CO2e (kg/
500					
0.19					
6.46					
170.56					
334.7					
1.809				1.09E-03	0.32345
1.6793	0.27%				0
131.6945	21.42%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
0.8709	0.14%	2.42577	4.57E-05		2.42691
0.9279	0.15%	2.95287	1.34E-04		2.95623
0.1766	0.03%	0.5151	2.59E-05		0.51574
	0.00%	0			0
34.7276	5.65%	108.908	4.82E-03		109.029
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
0.145	0.02%	0.45649	1.99E-05		0.45699
0.0688	0.01%	0.05598			0.05598
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
0.2538	0.04%	0.143			0.143
0.0196	0.00%	0.00936			0.00936
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
170.56	27.74%				
11		583.66	1.10E-02	1.10E-03	584.263
		115.467	**0.00504696**	**0.00109**	**115.917**
					1,119
					1,015

Minimum 4	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/h	CO2e (kg/
350					
0.19					
1.52					
41.18					
350.5					
0.446				2.68E-04	0.07974
0.3338	0.05%				0
31.4644	5.12%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
0.1731	0.03%	0.48215	9.09E-06		0.48237
0.1844	0.03%	0.58682	2.67E-05		0.58749
0.0351	0.01%	0.10238	5.15E-06		0.10251
	0.00%	0			0
8.8884	1.45%	27.8747	1.23E-03		27.9055
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
0.0288	0.00%	0.09067	3.96E-06		0.09077
0.0136	0.00%	0.01107			0.01107
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
0.0505	0.01%	0.02845			0.02845
0.0039	0.00%	0.00186			0.00186
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
41.18	6.70%				
12.5		663.25	1.25E-02	1.25E-03	663.935
		29.1781	**0.0012788**	**0.00027**	**29.2898**
					283
					257

Alternate 1	% of Total	CO2 (kg/l	CH4 (kg/hr)	N2O (kg/l	CO2e (kg/
500					
0.19					
13					
365.72					
0					
0				########	0
	0.00%				0
353.2439	57.45%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
12.48	2.03%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
365.72	59.48%				
13		689.78	1.30E-02	1.30E-03	690.492
		0	**0**	**0**	**0**
					0
					0

Alternate 2	% of Total	CO2 (kg/l	CH4 (kg/hr)	N2O (kg/	CO2e (kg/hr)	
35						
0.29						
20.22						
55.81						
262.7						
4.444				2.67E-03	0.79459	
38.887	6.32%				0	
	0.00%				0	
	0.00%				0	
16.4455	2.67%				0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%				0	
0.4814	0.08%				0	
	0.00%				0	
	0.00%	0			0	
	0.00%				0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0			0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0			0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%				0	
55.81	9.08%					
8.5		451.01	8.50E-03	8.50E-04	451.476	
		0	**0**	**0.00267**	**0.79459**	
					8	
					7	

Stream	DESIGN CASE 1 MAX	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/h	CO2e (kg/hr)
Temp (°C)	182					
Press (barg)	0.013					
Molar Flow (kgmole/hr)	111.15					
Mass Flow (kg/hr)	1656.19					
Lower Heating Value (Btu/SCF)	266					
Heat Release (MMBtu/hr)	24.736				1.48E-02	4.4227968
Component Mass Flow (kg / hr)						
Hydrogen	119.076	7.19%				0
Nitrogen	866.7141	52.33%				0
Ammonia	0.0011	0.00%				0
H2O	45.065	2.72%				0
HCN	0.9403	0.06%	1.53124			1.531236363
CO	299.2518	18.07%	470.181			470.1810948
CO2	120.4065	7.27%	120.407			120.4065
Oxygen	13.86	0.84%				0
Silane	0.0296	0.00%				0
H2S	0.0315	0.00%				0
COS		0.00%	0			0
SO2	0.0086	0.00%				0
CS2	0.013	0.00%	0.00751			0.007513027
2-propanethiol		0.00%	0			0
propanethiol		0.00%	0			0
2-Methyl-2-propanethiol		0.00%	0			0
Methane	4.4633	0.27%	12.4319	2.34E-04		12.4377569
Ethylene	4.755	0.29%	15.1319	6.88E-04		15.14913857
Ethane	0.9049	0.05%	2.63935	1.33E-04		2.642672781
Acetylene	0.0006	0.00%	0.00101			0.001014032
Propene	177.9586	10.75%	558.092	2.47E-02		558.7091637
Propane	0.2129	0.01%	0.62206	3.04E-05		0.622821675
i-Butane		0.00%	0	0.00E+00		0
1-Butene	0.7438	0.04%	2.34165	1.02E-04		2.344202479
13-Butadiene	0.3528	0.02%	0.28705			0.287047055
n-Butane		0.00%	0	0.00E+00		0
i-Pentane		0.00%	0	0.00E+00		0
n-Pentane		0.00%	0	0.00E+00		0
n-Hexane		0.00%	0	0.00E+00		0
Benzene	1.3007	0.08%	0.73284			0.732844787
Toluene	0.1014	0.01%	0.04843			0.048431871
E-Benzene		0.00%	0			0
m-Xylene		0.00%	0			0
Styrene		0.00%	0			0
DTRM-HT		0.00%				0
Total (kg/ hr)	**1656.19**	100.00%				
Supplemental Natural Gas Heat Release (MMBtu/hr)	3		159.18	3.00E-03	3.00E-04	159.3444
Total (kg/ hr)			**1184.45**	**0.025893221**	**0.01484**	**1189.524235**
Total (ton/yr)						**11,486**
Total (T/yr)						**10,420**

DESIGN CASE 1 MINIMUM	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/l	CO2e (kg/
170					
0.013					
6.5					
179.82					
7.9					
0.043				2.6E-05	0.00769
0.2097	0.12%				0
174.7954	97.21%				0
0.0002	0.00%				0
	0.00%				0
0.5621	0.31%	0.91535			0.91535
0.6554	0.36%	1.02976			1.02976
0.02	0.01%	0.02			0.02
3.5359	1.97%				0
	0.00%				0
0.0042	0.00%				0
	0.00%	0			0
0.0012	0.00%				0
0.002	0.00%	0.00116			0.00116
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
0.0001	0.00%	0.00028	5.25E-09		0.00028
0.0002	0.00%	0.00064	2.89E-08		0.00064
	0.00%	0	0.00E+00		0
0.0005	0.00%	0.00085			0.00085
	0.00%	0	0.00E+00		0
0.0373	0.02%	0.10899	5.32E-06		0.10912
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
179.82	100.00%				
13		689.78	0.013	0.0013	690.492
		2.07701	**5.354E-06**	**2.6E-05**	**2.08484**
					20
					18

DESIGN CASE 1	% of				
ALTERNATE 1	Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/hr)	CO2e (kg/
350					
0.19					
26.13					
731.98					
0					
0				0.00E+00	0
	0.00%				0
731.9797	407.06%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
731.98	407.06%				
13		689.78	1.30E-02	1.30E-03	690.492
		0	**0**	**0**	**0**
					0
					0

DESIGN CASE 1	% of				
ALTERNATE 2	Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/l	CO2e (kg/
230					
0.02					
8					
250.33					
254.9					
1.706				1.02E-03	0.30503
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
178.1493	99.07%	279.906			279.906
72.1759	40.14%	72.1759			72.1759
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
250.33	139.21%				
11.294		599.26	1.13E-02	1.13E-03	599.879
		352.082	**0**	**0.00102**	**352.387**
					3,403
					3,087

DESIGN CASE 2 MAX	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/l	CO2e (kg/
84					
0.013					
77.46					
765.73					
238.6					
15.464				9.28E-03	2.76496
110.4706	61.43%				0
175.433	97.56%				0
0.0011	0.00%				0
45.065	25.06%				0
0.9403	0.52%	1.53124			1.53124
299.2518	166.42%	470.181			470.181
120.4065	66.96%	120.407			120.407
13.86	7.71%				0
0.0296	0.02%				0
0.0315	0.02%				0
	0.00%	0			0
0.0086	0.00%				0
0.013	0.01%	0.00751			0.00751
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
0.0008	0.00%	0.00223	4.20E-08		0.00223
0.0002	0.00%	0.00064	2.89E-08		0.00064
	0.00%	0	0.00E+00		0
0.0006	0.00%	0.00101			0.00101
	0.00%	0	0.00E+00		0
0.2129	0.12%	0.62206	3.04E-05		0.62282
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
765.73	425.83%				
3		159.18	3.00E-03	3.00E-04	159.344
		592.752	**3.04352E-05**	**0.00928**	**595.518**
					5,750
					5,217

DESIGN CASE 2 MINIMUM	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/l	CO2e (kg/
170					
0.013					
6.5					
179.82					
7.9					
0.043				2.58E-05	0.00769
0.2097	0.12%				0
174.7954	97.21%				0
0.0002	0.00%				0
	0.00%				0
0.5621	0.31%	0.91535			0.91535
0.6554	0.36%	1.02976			1.02976
0.02	0.01%	0.02			0.02
3.5359	1.97%				0
	0.00%				0
0.0042	0.00%				0
	0.00%	0			0
0.0012	0.00%				0
0.002	0.00%	0.00116			0.00116
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
0.0001	0.00%	0.00028	5.25E-09		0.00028
0.0002	0.00%	0.00064	2.89E-08		0.00064
	0.00%	0	0.00E+00		0
0.0005	0.00%	0.00085			0.00085
	0.00%	0	0.00E+00		0
0.0373	0.02%	0.10899	5.32E-06		0.10912
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
179.82	100.00%				
13		689.78	1.30E-02	1.30E-03	690.492
		2.07701	**5.354E-06**	**2.6E-05**	**2.08484**
					20
					18

DESIGN CASE 2 ALTERNATE 1	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/l	CO2e (kg/
230					
0.02					
6.67					
257.9					
107.1					
0.598				3.59E-04	0.10692
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
62.4021	34.70%	98.0455			98.0455
195.5008	108.72%	195.501			195.501
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
257.9	143.42%				
12.402		658.05	1.24E-02	1.24E-03	658.73
		293.546	**0**	**0.00036**	**293.653**
					2,836
					2,572

DESIGN CASE 2	% of				
ALTERNATE 2	Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/l	CO2e (kg/
230					
0.02					
8					
352.08					
0					
0				0.00E+00	0
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
352.0776	195.79%	352.078			352.078
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
352.08	195.80%				
13		689.78	1.30E-02	1.30E-03	690.492
		352.078	**0**	**0**	**352.078**
					3,400
					3,084

DESIGN CASE 2 ALTERNATE 3	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/l	CO2e (kg/
35					
0.29					
37.23					
102.17					
263					
8.193				4.92E-03	1.46491
71.6829	39.86%				0
	0.00%				0
	0.00%				0
29.6022	16.46%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
0.8864	0.49%				0
	0.00%				0
	0.00%	0			0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
102.17	56.82%				
4.807		255.059	4.81E-03	4.81E-04	255.323
		0	**0**	**0.00492**	**1.46491**
					14
					13

DESIGN CASE 3 MAX	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/h	CO2e (kg/
175					
0.19					
90.71					
1045.46					
286.9					
21.776				1.31E-02	3.89355
118.5034	65.90%				0
691.2811	384.43%				0
	0.00%				0
45.065	25.06%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
0.0296	0.02%				0
	0.00%				0
	0.00%	0			0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
4.4625	2.48%	12.4297	2.34E-04		12.4355
4.7548	2.64%	15.1313	6.88E-04		15.1485
0.9049	0.50%	2.63935	1.33E-04		2.64267
	0.00%	0			0
177.9586	98.96%	558.092	2.47E-02		558.709
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
0.7438	0.41%	2.34165	1.02E-04		2.3442
0.3528	0.20%	0.28705			0.28705
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
1.3007	0.72%	0.73284			0.73284
0.1014	0.06%	0.04843			0.04843
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
1045.46	581.39%				
3		159.18	3.00E-03	3.00E-04	159.344
		591.702	**0.025862786**	**0.01307**	**596.242**
					5,757
					5,223

DESIGN CASE 3 MINIMUM	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/l	CO2e (kg/
350					
0.19					
1.26					
33.74					
256.8					
0.271				1.63E-04	0.04845
0.2513	0.14%				0
27.9225	15.53%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
0.1303	0.07%	0.36293	6.84E-06		0.3631
0.1389	0.08%	0.44202	2.01E-05		0.44253
0.0264	0.01%	0.077	3.88E-06		0.0771
	0.00%	0			0
5.1975	2.89%	16.2998	7.22E-04		16.3178
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
0.0217	0.01%	0.06832	2.98E-06		0.06839
0.0103	0.01%	0.00838			0.00838
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
0.038	0.02%	0.02141			0.02141
0.003	0.00%	0.00143			0.00143
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
33.74	18.76%				
13		689.78	1.30E-02	1.30E-03	690.492
		17.2812	**0.00075535**	**0.00016**	**17.3486**
					168
					152

DESIGN CASE 3 ALTERNATE 1	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/l	CO2e (kg/
350					
0.19					
26.13					
731.98					
0					
0				0.00E+00	0
	0.00%				0
731.9797	407.06%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
	0.00%				0
	0.00%				0
	0.00%	0			0
	0.00%				0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0	0.00E+00		0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%	0			0
	0.00%				0
731.98	407.06%				
13		689.78	1.30E-02	1.30E-03	690.492
		0	**0**	**0**	**0**
					0
					0

DESIGN CASE 3 ALTERNATE 2	% of Total	CO2 (kg/h	CH4 (kg/hr)	N2O (kg/l	CO2e (kg/hr)	
35						
0.29						
37.23						
102.17						
263						
8.193				4.92E-03	1.46491	
71.6829	39.86%				0	
	0.00%				0	
	0.00%				0	
29.6022	16.46%				0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%				0	
0.8864	0.49%				0	
	0.00%				0	
	0.00%	0			0	
	0.00%				0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0			0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0			0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0	0.00E+00		0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%	0			0	
	0.00%				0	
102.17	56.82%					
4.807		255.059	4.81E-03	4.81E-04	255.323	
		0	**0**	**0.00492**	**1.46491**	
					14	
					13	

Design Case	CO_2e (kg/hr)	CO_2e (T/yr)
Phase I		
Max Flow High Btu	2,915	25,537
Max Flow Low Btu	1	5
Minimum 1	0	2
Minimum 2	91	795
Minimum 3	116	1,015
Minimum 4	29	257
Alternate 1	0	0
Alternate 2	1	7
Phase I Worst-Case (80% Max)	**2,355**	**20,633**
Phase II		
Design Case 1 Max	1,190	10,420
Design Case 1 Minimum	2	18
Design Case 1 Alternate 1	0	0
Design Case 1 Alternate 2	352	3,087
Design Case 2 Max	596	5,217
Design Case 2 Minimum	2	18
Design Case 2 Alternate 1	294	2,572
Design Case 2 Alternate 2	352	3,084
Design Case 2 Alternate 3	1	13
Design Case 3 Max	596	5,223
Design Case 3 Minimum	17	152
Design Case 3 Alternate 1	0	0
Design Case 3 Alternate 2	1	13
Phase II Worst-Case (80% Max)	**1,022**	**8,954**
Total Worst-Case (80% Max)	**3,377**	**29,586**

Max Nat Gas from TO supplement:
87,600 MMBtu/yr

SOCIAL COST OF CARBON DIOXIDE (CO_2) ESTIMATING TOOL

Base Year: 2023 (Enter the base year on the instructions tab, step 2.)

	Enter CO_2 emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-CO_2 by emissions year (2020$)[1]				of Es
Year of Emissions	Phase 1	Phase 2	Phase 3	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average
2020				N/A	N/A	N/A	N/A	N/A
2021				N/A	N/A	N/A	N/A	N/A
2022				N/A	N/A	N/A	N/A	N/A
2023	100			$1,594	$5,429	$8,034	$16,214	$0
2024	650			$10,172	$34,933	$51,775	$104,536	$0
2025	27,060	200		$415,264	$1,439,161	$2,136,494	$4,314,704	$3,069
2026	27,060	500		$406,920	$1,423,692	$2,117,201	$4,275,954	$7,519
2027	27,060	74,340		$398,429	$1,407,926	$2,097,579	$4,235,825	$1,094,575
2028	27,060	74,340		$389,824	$1,391,848	$2,077,654	$4,194,382	$1,070,936
2029	27,060	74,340		$381,115	$1,375,512	$2,057,454	$4,151,760	$1,047,010
2030	27,060	74,340		$372,371	$1,358,947	$2,037,003	$4,108,085	$1,022,987
2031	27,060	74,340		$365,335	$1,343,804	$2,017,591	$4,070,097	$1,003,658
2032	27,060	74,340		$358,107	$1,328,390	$1,997,914	$4,030,857	$983,802
2033	27,060	74,340		$350,756	$1,312,733	$1,977,998	$3,990,451	$963,607
2034	27,060	74,340		$343,277	$1,296,862	$1,957,884	$3,948,959	$943,061
2035	27,060	74,340		$335,731	$1,280,802	$1,937,556	$3,906,517	$922,329
2036	27,060	74,340		$328,110	$1,264,577	$1,917,054	$3,863,199	$901,392
2037	27,060	74,340		$320,467	$1,248,210	$1,896,399	$3,819,071	$880,396
2038	27,060	74,340		$312,795	$1,231,725	$1,875,631	$3,774,254	$859,320
2039	27,060	74,340		$305,140	$1,215,140	$1,854,729	$3,728,791	$838,289
2040	27,060	74,340		$297,504	$1,198,477	$1,833,730	$3,682,791	$817,312
2041	27,060	74,340		$290,601	$1,181,786	$1,812,185	$3,631,158	$798,347
2042	27,060	74,340		$283,680	$1,165,050	$1,790,599	$3,579,392	$779,335
2043	27,060	74,340		$276,760	$1,148,286	$1,768,972	$3,527,577	$760,323
2044	27,060	74,340		$269,856	$1,131,511	$1,747,351	$3,475,743	$741,355
2045		74,340		$0	$0	$0	$0	$722,470
2046		74,340		$0	$0	$0	$0	$703,726
2047				$0	$0	$0	$0	$0
2048				$0	$0	$0	$0	$0
2049				$0	$0	$0	$0	$0
2050				$0	$0	$0	$0	$0
2051				$0	$0	$0	$0	$0
2052				$0	$0	$0	$0	$0
2053				$0	$0	$0	$0	$0
2054				$0	$0	$0	$0	$0
2055				$0	$0	$0	$0	$0
2056				$0	$0	$0	$0	$0
2057				$0	$0	$0	$0	$0
2058				$0	$0	$0	$0	$0
2059				$0	$0	$0	$0	$0
2060				$0	$0	$0	$0	$0
2061				$0	$0	$0	$0	$0
2062				$0	$0	$0	$0	$0
2063				$0	$0	$0	$0	$0
2064				$0	$0	$0	$0	$0
2065				$0	$0	$0	$0	$0
2066				$0	$0	$0	$0	$0
2067				$0	$0	$0	$0	$0
2068				$0	$0	$0	$0	$0
2069				$0	$0	$0	$0	$0
2070				$0	$0	$0	$0	$0
TOTALS:	541,950	1,487,500	0	$6,813,807	$25,784,802	$38,968,787	$78,430,318	$17,864,818

Present Value (in Base Year) of Estimated SC-CO_2 for all CO_2 emissions (2020$)

	5% Average	3% Average	2.5% Average	3% 95th Percentile
Phase 1	$6,813,807	$25,784,802	$38,968,787	$78,430,318
Phase 2	$17,864,818	$68,976,663	$104,683,499	$210,315,162
Phase 3	$0	$0	$0	$0
Total	$24,678,625	$94,761,465	$143,652,287	$288,745,480

[1] The social cost estimates from the IWG represent the present value of damages from that year's emissions discounted back to the year of emissions. These columns discou

[2] Values from 2020–2050 are from *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide, Interim Estimates under E.O. 13990.* Interagency Worki

[3] Values from 2051–2070 are from *Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Consumer Fur*

Phase 2 Present Value (in Base Year) of Estimated SC-CO_2 by emissions year (2020$)[1]			Phase 3 Present Value (in Base Year) of Estimated SC-CO_2 by emissions year (2020$)[1]				Per t
3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average	
N/A	N/A	N/A	N/A	N/A	N/A	N/A		14
N/A	N/A	N/A	N/A	N/A	N/A	N/A		15
N/A	N/A	N/A	N/A	N/A	N/A	N/A		15
$0	$0	$0	$0	$0	$0	$0		16
$0	$0	$0	$0	$0	$0	$0		16
$10,637	$15,791	$31,890	$0	$0	$0	$0		17
$26,306	$39,121	$79,009	$0	$0	$0	$0		17
$3,867,895	$5,762,529	$11,636,777	$0	$0	$0	$0		18
$3,823,725	$5,707,791	$11,522,926	$0	$0	$0	$0		18
$3,778,847	$5,652,295	$11,405,834	$0	$0	$0	$0		19
$3,733,339	$5,596,111	$11,285,848	$0	$0	$0	$0		19
$3,691,736	$5,542,783	$11,181,486	$0	$0	$0	$0		20
$3,649,390	$5,488,727	$11,073,686	$0	$0	$0	$0		21
$3,606,378	$5,434,011	$10,962,679	$0	$0	$0	$0		21
$3,562,776	$5,378,756	$10,848,691	$0	$0	$0	$0		22
$3,518,655	$5,322,908	$10,732,096	$0	$0	$0	$0		22
$3,474,081	$5,266,584	$10,613,089	$0	$0	$0	$0		23
$3,429,119	$5,209,842	$10,491,860	$0	$0	$0	$0		23
$3,383,829	$5,152,785	$10,368,738	$0	$0	$0	$0		24
$3,338,268	$5,095,363	$10,243,841	$0	$0	$0	$0		25
$3,292,491	$5,037,676	$10,117,469	$0	$0	$0	$0		25
$3,246,635	$4,978,486	$9,975,619	$0	$0	$0	$0		26
$3,200,658	$4,919,186	$9,833,408	$0	$0	$0	$0		26
$3,154,604	$4,859,771	$9,691,059	$0	$0	$0	$0		27
$3,108,518	$4,800,373	$9,548,660	$0	$0	$0	$0		28
$3,062,402	$4,740,981	$9,406,335	$0	$0	$0	$0		28
$3,016,373	$4,681,631	$9,264,162	$0	$0	$0	$0		29
$0	$0	$0	$0	$0	$0	$0		30
$0	$0	$0	$0	$0	$0	$0		30
$0	$0	$0	$0	$0	$0	$0		31
$0	$0	$0	$0	$0	$0	$0		32
$0	$0	$0	$0	$0	$0	$0		32
$0	$0	$0	$0	$0	$0	$0		33
$0	$0	$0	$0	$0	$0	$0		34
$0	$0	$0	$0	$0	$0	$0		34
$0	$0	$0	$0	$0	$0	$0		35
$0	$0	$0	$0	$0	$0	$0		35
$0	$0	$0	$0	$0	$0	$0		36
$0	$0	$0	$0	$0	$0	$0		37
$0	$0	$0	$0	$0	$0	$0		37
$0	$0	$0	$0	$0	$0	$0		38
$0	$0	$0	$0	$0	$0	$0		39
$0	$0	$0	$0	$0	$0	$0		40
$0	$0	$0	$0	$0	$0	$0		41
$0	$0	$0	$0	$0	$0	$0		42
$0	$0	$0	$0	$0	$0	$0		44
$0	$0	$0	$0	$0	$0	$0		45
$0	$0	$0	$0	$0	$0	$0		46
$0	$0	$0	$0	$0	$0	$0		47
$0	$0	$0	$0	$0	$0	$0		48
$0	$0	$0	$0	$0	$0	$0		49
$68,976,663	$104,683,499	$210,315,162	$0	$0	$0	$0		

ınt that value to the base year in order to calculate the total net present value

ng Group on Social Cost of Carbon, United States Government. February 2021.

naces, Appendix 14A. U.S. Department of Energy. June 2022.

:on SC-CO_2 Value (2020$/metric ton CO_2)[2, 3]

3% Average	2.5% Average	3% 95th Percentile
51	76	152
52	78	155
53	79	159
54	80	162
55	82	166
56	83	169
57	84	173
59	86	176
60	87	180
61	88	183
62	89	187
63	91	191
64	92	194
65	94	198
66	95	202
67	96	206
69	98	210
70	99	213
71	100	217
72	102	221
73	103	225
74	104	228
75	106	232
77	107	235
78	108	239
79	110	242
80	111	246
81	112	249
82	114	253
84	115	256
85	116	260
85	118	260
86	119	261
87	120	262
88	121	263
89	122	265
90	123	267
91	124	269
92	125	271
92	127	273
93	128	275
95	129	280
96	131	285
98	132	290
99	134	295
100	135	300
102	137	305
103	138	311
105	140	316
106	141	321
108	143	326

SOCIAL COST OF METHANE (CH_4) ESTIMATING TOOL

Base Year: 2023 (Enter the base year on the instructions tab, step 2.)

	Enter CH_4 emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-CH_4 by emissions year (2020$)[1]				of Es
Year of Emissions	Phase 1	Phase 2	Phase 3	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average
2020				N/A	N/A	N/A	N/A	N/A
2021				N/A	N/A	N/A	N/A	N/A
2022				N/A	N/A	N/A	N/A	N/A
2023				$0	$0	$0	$0	$0
2024				$0	$0	$0	$0	$0
2025	3			$1,956	$4,361	$5,711	$11,533	$0
2026	3			$1,927	$4,349	$5,710	$11,513	$0
2027	3	11		$1,895	$4,335	$5,706	$11,485	$7,827
2028	3	11		$1,862	$4,317	$5,698	$11,448	$7,691
2029	3	11		$1,828	$4,297	$5,688	$11,404	$7,551
2030	3	11		$1,793	$4,275	$5,675	$11,353	$7,406
2031	3	11		$1,770	$4,268	$5,677	$11,349	$7,312
2032	3	11		$1,746	$4,258	$5,677	$11,335	$7,210
2033	3	11		$1,719	$4,245	$5,672	$11,313	$7,101
2034	3	11		$1,692	$4,229	$5,665	$11,282	$6,986
2035	3	11		$1,662	$4,210	$5,655	$11,244	$6,866
2036	3	11		$1,632	$4,189	$5,641	$11,198	$6,742
2037	3	11		$1,601	$4,165	$5,625	$11,145	$6,614
2038	3	11		$1,570	$4,139	$5,607	$11,086	$6,482
2039	3	11		$1,537	$4,112	$5,586	$11,021	$6,349
2040	3	11		$1,504	$4,082	$5,563	$10,950	$6,213
2041	3	11		$1,475	$4,052	$5,536	$10,860	$6,090
2042	3	11		$1,444	$4,019	$5,507	$10,766	$5,965
2043	3	11		$1,414	$3,985	$5,476	$10,667	$5,838
2044	3	11		$1,382	$3,950	$5,443	$10,566	$5,710
2045		11		$0	$0	$0	$0	$5,580
2046		11		$0	$0	$0	$0	$5,450
2047				$0	$0	$0	$0	$0
2048				$0	$0	$0	$0	$0
2049				$0	$0	$0	$0	$0
2050				$0	$0	$0	$0	$0
2051				$0	$0	$0	$0	$0
2052				$0	$0	$0	$0	$0
2053				$0	$0	$0	$0	$0
2054				$0	$0	$0	$0	$0
2055				$0	$0	$0	$0	$0
2056				$0	$0	$0	$0	$0
2057				$0	$0	$0	$0	$0
2058				$0	$0	$0	$0	$0
2059				$0	$0	$0	$0	$0
2060				$0	$0	$0	$0	$0
2061				$0	$0	$0	$0	$0
2062				$0	$0	$0	$0	$0
2063				$0	$0	$0	$0	$0
2064				$0	$0	$0	$0	$0
2065				$0	$0	$0	$0	$0
2066				$0	$0	$0	$0	$0
2067				$0	$0	$0	$0	$0
2068				$0	$0	$0	$0	$0
2069				$0	$0	$0	$0	$0
2070				$0	$0	$0	$0	$0
TOTALS:	54	222	0	$33,410	$83,836	$112,517	$223,515	$132,981

Present Value (in Base Year) of Estimated SC-CH_4 for all CH_4 emissions (2020$)

	5% Average	3% Average	2.5% Average	3% 95th Percentile
Phase 1	$33,410	$83,836	$112,517	$223,515
Phase 2	$132,981	$342,452	$462,068	$913,931
Phase 3	$0	$0	$0	$0
Total	$166,391	$426,288	$574,584	$1,137,447

[1] The social cost estimates from the IWG represent the present value of damages from that year's emissions discounted back to the year of emissions. These columns discou

[2] Values from 2020–2050 are from *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide, Interim Estimates under E.O. 13990.* Interagency Worki

[3] Values from 2051–2070 are from *Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Consumer Fur*

Phase 2 Present Value (in Base Year) of Estimated SC-CH_4 by emissions year (2020$)[1]			Phase 3 Present Value (in Base Year) of Estimated SC-CH_4 by emissions year (2020$)[1]				Per t
3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average
N/A	N/A	N/A	N/A	N/A	N/A	N/A	666
N/A	N/A	N/A	N/A	N/A	N/A	N/A	693
N/A	N/A	N/A	N/A	N/A	N/A	N/A	720
$0	$0	$0	$0	$0	$0	$0	747
$0	$0	$0	$0	$0	$0	$0	775
$0	$0	$0	$0	$0	$0	$0	802
$0	$0	$0	$0	$0	$0	$0	829
$17,903	$23,565	$47,433	$0	$0	$0	$0	856
$17,831	$23,535	$47,282	$0	$0	$0	$0	884
$17,748	$23,492	$47,100	$0	$0	$0	$0	911
$17,655	$23,437	$46,888	$0	$0	$0	$0	938
$17,627	$23,448	$46,871	$0	$0	$0	$0	972
$17,585	$23,445	$46,815	$0	$0	$0	$0	1,007
$17,531	$23,428	$46,723	$0	$0	$0	$0	1,041
$17,464	$23,397	$46,596	$0	$0	$0	$0	1,075
$17,387	$23,354	$46,437	$0	$0	$0	$0	1,110
$17,300	$23,300	$46,248	$0	$0	$0	$0	1,144
$17,203	$23,234	$46,030	$0	$0	$0	$0	1,179
$17,096	$23,157	$45,786	$0	$0	$0	$0	1,213
$16,982	$23,071	$45,517	$0	$0	$0	$0	1,247
$16,859	$22,974	$45,225	$0	$0	$0	$0	1,282
$16,733	$22,863	$44,852	$0	$0	$0	$0	1,319
$16,600	$22,743	$44,463	$0	$0	$0	$0	1,357
$16,461	$22,615	$44,058	$0	$0	$0	$0	1,394
$16,315	$22,480	$43,639	$0	$0	$0	$0	1,432
$16,164	$22,338	$43,207	$0	$0	$0	$0	1,469
$16,008	$22,190	$42,763	$0	$0	$0	$0	1,507
$0	$0	$0	$0	$0	$0	$0	1,544
$0	$0	$0	$0	$0	$0	$0	1,582
$0	$0	$0	$0	$0	$0	$0	1,619
$0	$0	$0	$0	$0	$0	$0	1,657
$0	$0	$0	$0	$0	$0	$0	1,680
$0	$0	$0	$0	$0	$0	$0	1,703
$0	$0	$0	$0	$0	$0	$0	1,726
$0	$0	$0	$0	$0	$0	$0	1,749
$0	$0	$0	$0	$0	$0	$0	1,772
$0	$0	$0	$0	$0	$0	$0	1,797
$0	$0	$0	$0	$0	$0	$0	1,823
$0	$0	$0	$0	$0	$0	$0	1,848
$0	$0	$0	$0	$0	$0	$0	1,873
$0	$0	$0	$0	$0	$0	$0	1,899
$0	$0	$0	$0	$0	$0	$0	2,021
$0	$0	$0	$0	$0	$0	$0	2,143
$0	$0	$0	$0	$0	$0	$0	2,264
$0	$0	$0	$0	$0	$0	$0	2,386
$0	$0	$0	$0	$0	$0	$0	2,508
$0	$0	$0	$0	$0	$0	$0	2,632
$0	$0	$0	$0	$0	$0	$0	2,757
$0	$0	$0	$0	$0	$0	$0	2,881
$0	$0	$0	$0	$0	$0	$0	3,006
$0	$0	$0	$0	$0	$0	$0	3,130
$342,452	$462,068	$913,931	$0	$0	$0	$0	

ınt that value to the base year in order to calculate the total net present value

ng Group on Social Cost of Carbon, United States Government. February 2021.

naces, Appendix 14A. U.S. Department of Energy. June 2022.

:on SC-CH_4 Value (2020$/metric ton CH_4)[2, 3]

3% Average	2.5% Average	3% 95th Percentile
1,485	1,953	3,906
1,532	2,009	4,035
1,579	2,064	4,163
1,626	2,120	4,292
1,673	2,175	4,420
1,720	2,230	4,548
1,767	2,286	4,677
1,814	2,341	4,805
1,861	2,397	4,934
1,908	2,452	5,062
1,954	2,508	5,190
2,010	2,572	5,344
2,065	2,635	5,498
2,121	2,699	5,652
2,176	2,763	5,806
2,231	2,827	5,959
2,287	2,891	6,113
2,342	2,955	6,267
2,397	3,019	6,421
2,453	3,083	6,574
2,508	3,147	6,728
2,564	3,210	6,873
2,620	3,273	7,018
2,676	3,336	7,162
2,732	3,399	7,307
2,788	3,462	7,452
2,844	3,524	7,596
2,900	3,587	7,741
2,955	3,650	7,886
3,011	3,713	8,031
3,067	3,776	8,175
3,096	3,807	8,193
3,128	3,841	8,228
3,159	3,874	8,263
3,190	3,908	8,297
3,221	3,942	8,332
3,256	3,979	8,373
3,291	4,017	8,415
3,326	4,055	8,456
3,360	4,092	8,497
3,395	4,130	8,539
3,548	4,296	9,067
3,702	4,462	9,594
3,856	4,628	10,122
4,009	4,794	10,650
4,163	4,960	11,177
4,325	5,141	11,758
4,488	5,323	12,338
4,651	5,504	12,919
4,814	5,686	13,499
4,976	5,867	14,079

SOCIAL COST OF NITROUS OXIDE (N_2O) ESTIMATING TOOL

Base Year: 2023 (Enter the base year on the instructions tab, step 2.)

	Enter N_2O emissions (metric tons) (Use negative numbers for emission reductions)			Phase 1 Present Value (in Base Year) of Estimated SC-N_2O by emissions year (2020$)[1]				of Es
Year of Emissions	Phase 1	Phase 2	Phase 3	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average
2020				N/A	N/A	N/A	N/A	N/A
2021				N/A	N/A	N/A	N/A	N/A
2022				N/A	N/A	N/A	N/A	N/A
2023				$0	$0	$0	$0	$0
2024				$0	$0	$0	$0	$0
2025	0			$1,287	$4,056	$5,951	$10,696	$0
2026	0			$1,262	$4,022	$5,914	$10,616	$0
2027	0	1		$1,237	$3,986	$5,875	$10,531	$3,539
2028	0	1		$1,211	$3,949	$5,834	$10,442	$3,465
2029	0	1		$1,185	$3,910	$5,793	$10,349	$3,390
2030	0	1		$1,158	$3,870	$5,749	$10,253	$3,315
2031	0	1		$1,138	$3,839	$5,714	$10,178	$3,257
2032	0	1		$1,117	$3,806	$5,677	$10,100	$3,197
2033	0	1		$1,096	$3,772	$5,638	$10,017	$3,136
2034	0	1		$1,074	$3,736	$5,598	$9,930	$3,073
2035	0	1		$1,052	$3,699	$5,556	$9,840	$3,009
2036	0	1		$1,029	$3,662	$5,514	$9,747	$2,945
2037	0	1		$1,006	$3,623	$5,470	$9,651	$2,879
2038	0	1		$983	$3,583	$5,424	$9,552	$2,813
2039	0	1		$960	$3,543	$5,378	$9,451	$2,747
2040	0	1		$937	$3,502	$5,331	$9,348	$2,681
2041	0	1		$918	$3,465	$5,287	$9,250	$2,626
2042	0	1		$898	$3,427	$5,243	$9,151	$2,569
2043	0	1		$878	$3,389	$5,197	$9,049	$2,512
2044	0	1		$858	$3,349	$5,150	$8,945	$2,455
2045		1		$0	$0	$0	$0	$2,397
2046		1		$0	$0	$0	$0	$2,340
2047				$0	$0	$0	$0	$0
2048				$0	$0	$0	$0	$0
2049				$0	$0	$0	$0	$0
2050				$0	$0	$0	$0	$0
2051				$0	$0	$0	$0	$0
2052				$0	$0	$0	$0	$0
2053				$0	$0	$0	$0	$0
2054				$0	$0	$0	$0	$0
2055				$0	$0	$0	$0	$0
2056				$0	$0	$0	$0	$0
2057				$0	$0	$0	$0	$0
2058				$0	$0	$0	$0	$0
2059				$0	$0	$0	$0	$0
2060				$0	$0	$0	$0	$0
2061				$0	$0	$0	$0	$0
2062				$0	$0	$0	$0	$0
2063				$0	$0	$0	$0	$0
2064				$0	$0	$0	$0	$0
2065				$0	$0	$0	$0	$0
2066				$0	$0	$0	$0	$0
2067				$0	$0	$0	$0	$0
2068				$0	$0	$0	$0	$0
2069				$0	$0	$0	$0	$0
2070				$0	$0	$0	$0	$0
TOTALS:	4	12	0	$21,286	$74,188	$111,292	$197,095	$58,347

Present Value (in Base Year) of Estimated SC-N_2O for all N_2O emissions (2020$)

	5% Average	3% Average	2.5% Average	3% 95th Percentile
Phase 1	$21,286	$74,188	$111,292	$197,095
Phase 2	$58,347	$207,979	$313,550	$553,241
Phase 3	$0	$0	$0	$0
Total	$79,633	$282,167	$424,842	$750,336

[1] The social cost estimates from the IWG represent the present value of damages from that year's emissions discounted back to the year of emissions. These columns discou

[2] Values from 2020–2050 are from *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide, Interim Estimates under E.O. 13990.* Interagency Worki

[3] Values from 2051–2070 are from *Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Consumer Fur*

Phase 2 Present Value (in Base Year) of Estimated SC-N_2O by emissions year (2020$)[1]			Phase 3 Present Value (in Base Year) of Estimated SC-N_2O by emissions year (2020$)[1]				Per
3% Average	2.5% Average	3% 95th Percentile	5% Average	3% Average	2.5% Average	3% 95th Percentile	5% Average
N/A	N/A	N/A	N/A	N/A	N/A	N/A	5,779
N/A	N/A	N/A	N/A	N/A	N/A	N/A	5,981
N/A	N/A	N/A	N/A	N/A	N/A	N/A	6,183
$0	$0	$0	$0	$0	$0	$0	6,385
$0	$0	$0	$0	$0	$0	$0	6,587
$0	$0	$0	$0	$0	$0	$0	6,789
$0	$0	$0	$0	$0	$0	$0	6,991
$11,405	$16,810	$30,131	$0	$0	$0	$0	7,193
$11,298	$16,694	$29,876	$0	$0	$0	$0	7,395
$11,188	$16,574	$29,611	$0	$0	$0	$0	7,597
$11,074	$16,450	$29,336	$0	$0	$0	$0	7,799
$10,984	$16,348	$29,123	$0	$0	$0	$0	8,047
$10,890	$16,243	$28,898	$0	$0	$0	$0	8,295
$10,791	$16,132	$28,661	$0	$0	$0	$0	8,542
$10,689	$16,017	$28,413	$0	$0	$0	$0	8,790
$10,584	$15,898	$28,155	$0	$0	$0	$0	9,038
$10,476	$15,776	$27,889	$0	$0	$0	$0	9,285
$10,366	$15,650	$27,614	$0	$0	$0	$0	9,533
$10,253	$15,521	$27,331	$0	$0	$0	$0	9,781
$10,137	$15,388	$27,042	$0	$0	$0	$0	10,029
$10,020	$15,253	$26,746	$0	$0	$0	$0	10,276
$9,914	$15,128	$26,467	$0	$0	$0	$0	10,567
$9,806	$15,000	$26,182	$0	$0	$0	$0	10,857
$9,696	$14,869	$25,891	$0	$0	$0	$0	11,147
$9,583	$14,736	$25,595	$0	$0	$0	$0	11,437
$9,470	$14,600	$25,294	$0	$0	$0	$0	11,727
$9,354	$14,463	$24,988	$0	$0	$0	$0	12,018
$0	$0	$0	$0	$0	$0	$0	12,308
$0	$0	$0	$0	$0	$0	$0	12,598
$0	$0	$0	$0	$0	$0	$0	12,888
$0	$0	$0	$0	$0	$0	$0	13,179
$0	$0	$0	$0	$0	$0	$0	13,479
$0	$0	$0	$0	$0	$0	$0	13,798
$0	$0	$0	$0	$0	$0	$0	14,118
$0	$0	$0	$0	$0	$0	$0	14,438
$0	$0	$0	$0	$0	$0	$0	14,758
$0	$0	$0	$0	$0	$0	$0	15,091
$0	$0	$0	$0	$0	$0	$0	15,425
$0	$0	$0	$0	$0	$0	$0	15,758
$0	$0	$0	$0	$0	$0	$0	16,091
$0	$0	$0	$0	$0	$0	$0	16,424
$0	$0	$0	$0	$0	$0	$0	17,077
$0	$0	$0	$0	$0	$0	$0	17,730
$0	$0	$0	$0	$0	$0	$0	18,382
$0	$0	$0	$0	$0	$0	$0	19,035
$0	$0	$0	$0	$0	$0	$0	19,687
$0	$0	$0	$0	$0	$0	$0	20,354
$0	$0	$0	$0	$0	$0	$0	21,020
$0	$0	$0	$0	$0	$0	$0	21,686
$0	$0	$0	$0	$0	$0	$0	22,352
$0	$0	$0	$0	$0	$0	$0	23,018
$207,979	$313,550	$553,241	$0	$0	$0	$0	

ınt that value to the base year in order to calculate the total net present value

ng Group on Social Cost of Carbon, United States Government. February 2021.

naces, Appendix 14A. U.S. Department of Energy. June 2022.

ton SC-N_2O Value (2020$/metric ton N_2O)[2]

3% Average	2.5% Average	3% 95th Percentile
18,405	27,131	48,256
18,842	27,688	49,464
19,279	28,244	50,671
19,717	28,801	51,879
20,154	29,358	53,087
20,591	29,914	54,295
21,028	30,471	55,502
21,465	31,028	56,710
21,902	31,585	57,918
22,339	32,141	59,125
22,776	32,698	60,333
23,268	33,309	61,692
23,760	33,921	63,051
24,252	34,532	64,410
24,744	35,144	65,770
25,236	35,755	67,129
25,728	36,366	68,488
26,219	36,978	69,847
26,711	37,589	71,206
27,203	38,201	72,565
27,695	38,812	73,924
28,225	39,456	75,349
28,754	40,100	76,773
29,283	40,745	78,197
29,813	41,389	79,621
30,342	42,033	81,045
30,872	42,677	82,470
31,401	43,321	83,894
31,930	43,965	85,318
32,460	44,610	86,742
32,989	45,254	88,166
33,426	45,727	88,606
33,954	46,354	89,984
34,483	46,981	91,362
35,011	47,609	92,739
35,539	48,236	94,117
36,092	48,890	95,463
36,644	49,544	96,808
37,196	50,199	98,154
37,748	50,853	99,499
38,300	51,507	100,845
39,165	52,485	103,794
40,030	53,463	106,743
40,895	54,441	109,692
41,760	55,419	112,641
42,625	56,397	115,590
43,515	57,403	118,657
44,404	58,409	121,725
45,293	59,416	124,793
46,183	60,422	127,860
47,072	61,428	130,928

Electric Vehicles		
Phase I		
EVs	27,200	per year
Electricity use per car	3,369	kwh/yr
Total	91,637	MWh/yr
CO2	78,102,045	lb/yr
N2O	916	lb/yr
CH4	6,506	lb/yr
Phase II		
EVs	209,000	per year
Electricity use per car	3,369	kwh/yr
Total	704,121	MWh/yr
CO2	600,122,328	lb/yr
N2O	7,041	lb/yr
CH4	49,993	lb/yr

Gas Vehicles		
Phase I		
Gas vehicles	27,200	per year
Fuel use per car	531	gal/yr
Total	14,430,992	gal/yr
CO2	126,668,033	kg/yr
N2O	1,082	kg/yr
CH4	5,412	kg/yr
Phase II		
Gas vehicles	209,000	per year
Fuel use per car	531	gal/yr
Total	110,885,197	gal/yr
CO2	973,294,815	kg/yr
N2O	8,316	kg/yr
CH4	41,582	kg/yr

eGRID 2021 for

State
USA

Fuel Economy
https://www.e
25.4

Miles per year
https://www.fh
13,476

EV electricity u
https://www.e
4

1.25E-01

Motor Gasoline
70.22
6.00E-04
3.00E-03

4.54E-04
1.00E-03

In Metric Tons					
Phase I			**Phase I**		
CO2	35,426	tpy	CO2	126,668	tpy
N2O	0.4	tpy	N2O	1.08	tpy
CH4	2.95	tpy	CH4	5.41	tpy
Phase II			**Phase II**		
CO2	272,211	tpy	CO2	973,295	tpy
N2O	3	tpy	N2O	8	tpy
CH4	22.7	tpy	CH4	41.6	tpy

EV Savings		
Phase I		
CO2	91,242	tpy
N2O	0.67	tpy
CH4	2.46	tpy
Phase II		
CO2	701,084	tpy
N2O	5.1	tpy
CH4	18.9	tpy

· US. https://www.epa.gov/egrid/summary-data

Total output emission rates			
(lb/MWh)			
CO_2	CH_4	N_2O	CO_2e
852.3	0.071	0.010	857.0

pa.gov/newsreleases/epa-report-us-cars-achieve-record-high-fuel-economy-and-low-emission-levels-companies
miles per gallon (model year 2020)

per driver - average US, all ages and genders
ıwa.dot.gov/ohim/onh00/bar8.htm
miles per year

se
nergy.gov/energysaver/cost-charge-electric-vehicle-explained

miles per kwh	Used high end of the range because Sila's product increases vehicle range
mmBtu/gallon	Automotive gasoline (https://www.bts.gov/content/energy-consumption-mode-transportation)
e emission factors	https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-98/subpart-C/
kg CO_2/mmBtu	Table C-1
kg N2O/mmBtu	Table C-2
kg CH4/mmBtu	Table C-2

lb to metric tons
kg to metric tons

Critical Habitat Report

ECOSYSTEMS NORTH WEST

Phone (509) 670-9918
Rriver2b@hotmail.com

03/28/2023

To: WPE (Rd. N) critical habitat report

RE: Parcel's 12-0175300, 11-0069400, 11-0077090, Grant County

INTRODUCTION

Ecosystems North West conducted a Shrub Steppe analysis on the above referenced parcels located in within the city of Moses Lake, WA. The purpose of the survey was to determine the presence/absence of Priority Habitats on the site in compliance with the Moses Lake Critical Area Ordinance (CAO) chapter 19.03.

Shrub Steppe habitat is an identified priority habitat by Washington State and identified in the Moses Lake Critical Area Ordinance (CAO) chapter 19.03 and defined as Fish and Wildlife Habitat Conservation Areas (HCAs) as "Areas within which State and Federal endangered and threatened species exist, or state sensitive, candidate and monitor species have a primary association Both Priority Species and Shrub Steppe Habitat have restrictions associated with any impacts resulting from any proposed development. This report addresses the findings of the survey that was conducted on March 20 and 27, 2023. The survey covered the area contained in the parcels listed above (figure 1 and 2).

Background

The area surveyed is approximately 160 acres within Section 16 of Township 19 North, Range 29 East Grant County Washington. The Southern, Eastern and Northern borders of the property are large acreage irrigated agriculture. The Western border is County Road NE and west of that is commercial industry. The site is relatively flat with a southwest aspect. The property has historically been farmed and currently either farmed or mowed repeatedly over the past several years. The site has no shrub component, and the grasses/herbaceous layer of vegetation is dominated by weedy nonnative species. Except for an approximately 4-to-5-acre portion of the property located along the west and northwest side of the existing building this site would not be considered priority

habitat. The 4 to 5 acres that could be considered priority habitat is very low quality, is small and isolated and its proximity to the building renders it of minimal value to wildlife species associated with shrub steppe habitat.

There are several structures on site including the large manufacturing building, paved parking area and railroad spur (figure 1 and 2).

The proposal for this site is the expansion of the existing manufacturing facility.

The WDFW PHS data base shows shrub steppe and emergent freshwater wetlands as the two Priority Habitat types for this parcel (figure 3). The PHS data base does not call out any specific species associated with this site however during the onsite survey those species typically associated with shrub steppe habitat were looked for. This assessment only addresses the shrub steppe priority habitat.

The Shrub Steppe analysis is based on criteria found in the attached Table 2 and where appropriate recommendations found in "Management recommendations for Washington's priority habitats: managing shrubsteppe in developing landscapes".

Discussion

Shrub Steppe Habitat analysis

The shrub steppe analysis was conducted using aerial photos (Google and Grant County Web) and onsite informal transects across the landscape to verify photos and plant composition. The on site assessment was conducted on March 20, 2023 between 9:30 and 11:30 AM and March 27, 2023 by Dennis Beich. During the course of the survey there were 4 burrows located along the south facing slope of a ditch 100 yds south of the existing building, (see figure 2). One of the burrows appeared to be actively used by a badger. Fossorial activity over the entire site was moderate and there was no biological crust observed on the site. The soils on the site are classified as Royal very sandy loam by the USDA soil survey (see figure 4 USDA Soils map).

Species observed during the survey were:

Raven (Corvus c.)

Magpie (Pica h.)

Meadow lark (*Sturnella neglecta)*

Starlings

Robin

Pheasant

Red wing blackbird

Morning dove (Zenaida Macroura)

The only area that comes close to being priority habitat on this site is located immediately west of the existing building and is only 4 to 5 acres it is very low quality shrub steppe. The remainder of the site is dominated by nonnative vegetation having less then 1% native bunch grass (appeared to be Sherman bunch grass (Poa secunda)) and would not be considered priority habitat. The site has been farmed in the recent past and mowed repeatedly after that.

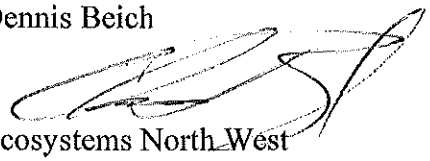
The plant vegetative cover of the site was dominated by crested wheat grass (Agropyron cristatum), bulbous blue grass (Poa bulbosa) and cheat grass (Bromus) with a cover ranging between 70 to 90%. Also of note was tumble weed (Salsola kali) at 10 to 20% cover.

There was moderate fossorial activity throughout the site and due to recent farming activity, no biological crust.

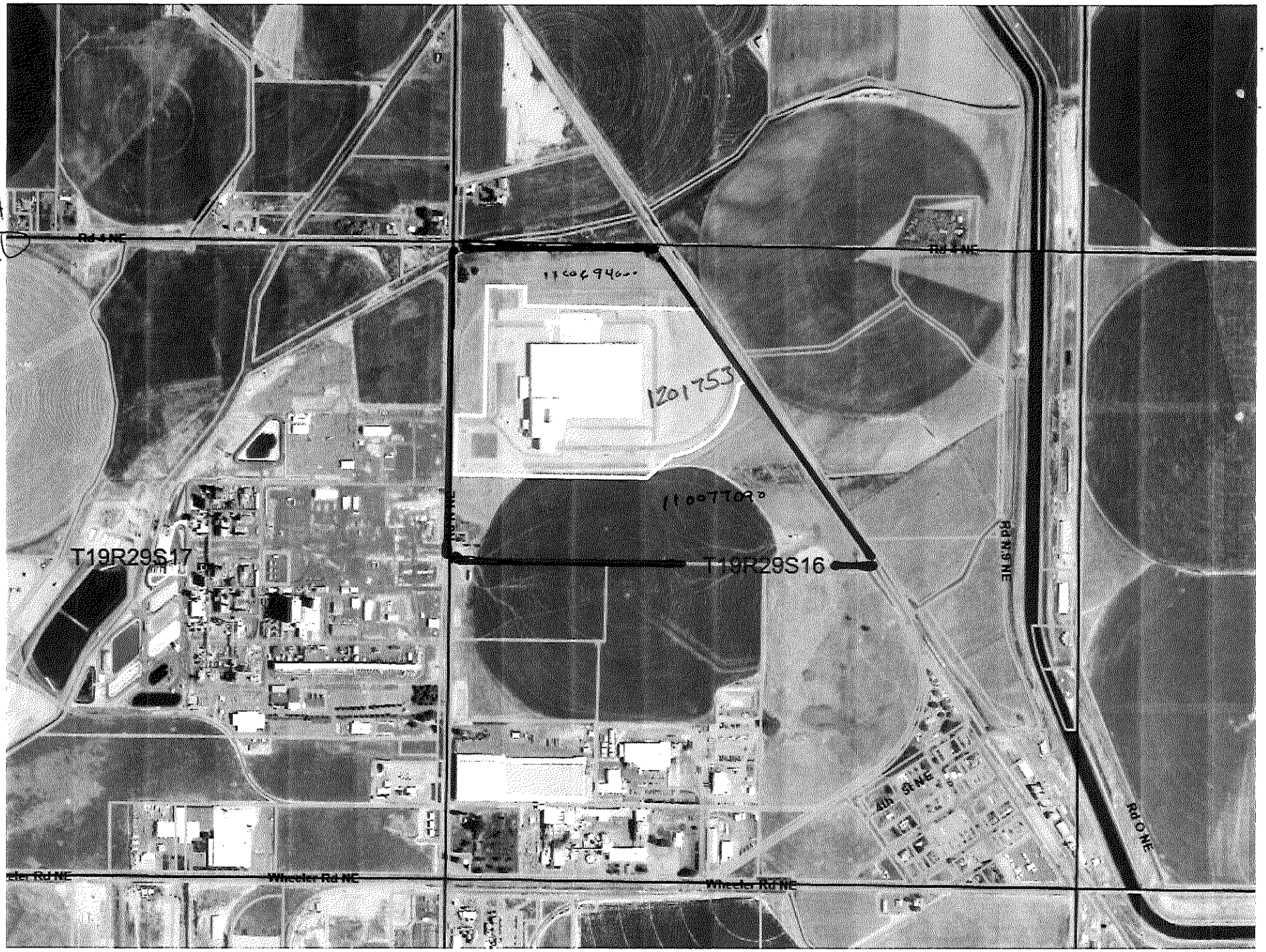
Conclusion and Habitat Management Plan Recommendations

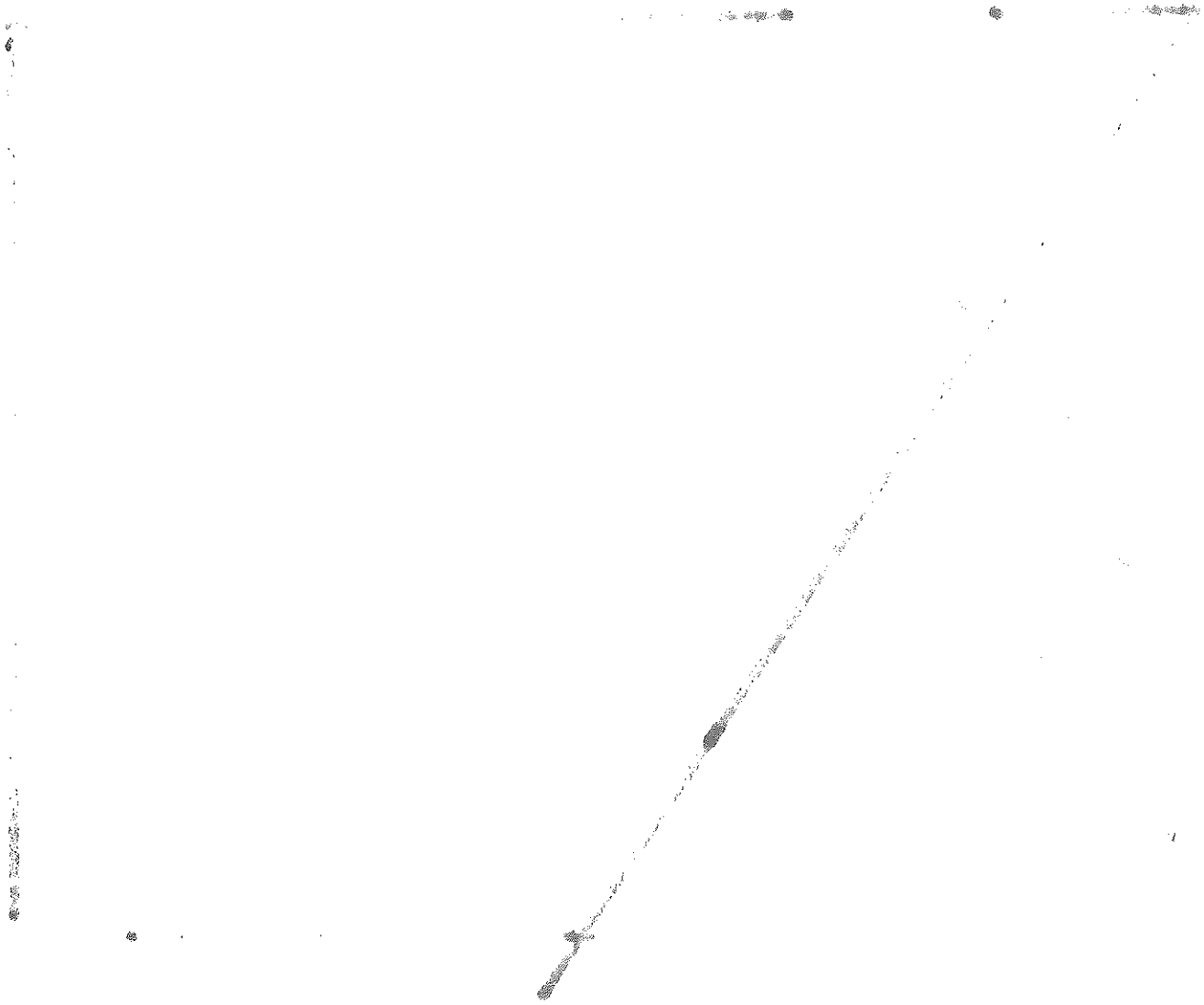
This site has been disturbed in the past through both farming activity as well as the presence of a manufacturing facility. The site has a small, isolated area that is 4 to 5 acres of shrub steppe but is in close proximity to the existing building and parking lot and thus provides limited wildlife benefit. Due to the disturbed nature of the stie, its location within the City of Moses Lake and its isolation from other habitat connection opportunities my recommendation is no mitigation for shrub steppe habitat impacts is necessary for this development proposal.

Dennis Beich



Ecosystems North West


T19R29S17
T19R29S16
Rd 4 NE
Rd 5 NE
Rd N 5 NE
Rd O NE
4th St NE
Wheeler Rd NE
Wheeler Rd NE



Priority Habitats and Species on the Web

PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Freshwater Emergent Wetland	N/A	N/A	No
Shrubsteppe	N/A	N/A	No

Search

Map Unit Legend

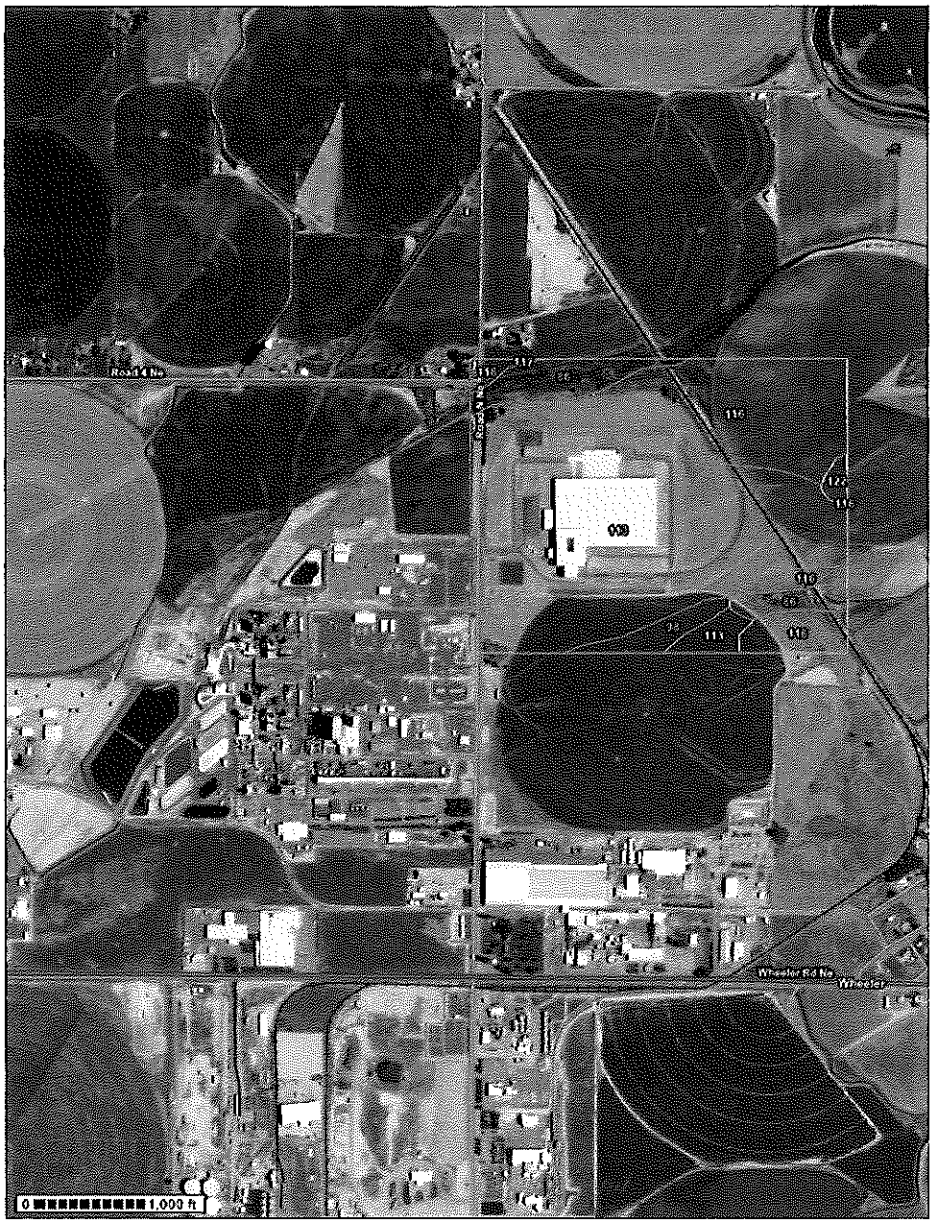
Grant County, Washington (WA025)

Grant County, Washington (WA025)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
86	Outlook very fine sandy loam	15.7	7.7%
98	Quincy loamy fine sand, 0 to 15 percent slopes	5.7	2.8%
113	Royal loamy fine sand, 0 to 10 percent slopes	123.4	60.3%
116	Royal very fine sandy loam, 2 to 5 percent slopes	58.1	28.4%
117	Royal very fine sandy loam, 5 to 10 percent slopes	0.2	0.1%
122	Sagehill very fine sandy	1.7	0.8%

Soil Map

Scale (not to scale)



Warning: Soil Map may not be valid at this scale.

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Map design of map units and the level of detail shown in the resulting soil map are dependent on that ma

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapp been shown at a more detailed scale.


2006 Fig 5
Write a description for your map.
Legend
Google Earth
Image USDA/FPAC/GEO
1000 ft
N


2020 Fig 6
Write a description for your map.
Legend
Google Earth
800 ft
N

Table 2

Table A4. Ecological integrity index measures to be evaluated for ranking the ecological quality of shrubsteppe habitat AAs found within a parcel.

Metric	Justification	Rank A (5pts)	B (4pts)	C (3pts)	D (1pt)
RANK FACTOR: LANDSCAPE CONTEXT					
Key Ecological Attribute: Buffer					
Buffer Length	The buffer can be important to biotic and abiotic aspects of the site.	Buffer is > 75 – 100% of occurrence perimeter.	Buffer is > 50 – 74% of occurrence perimeter.	Buffer is 25 – 49% of occurrence perimeter	Buffer is < 25% of occurrence perimeter.
Buffer Width		Average buffer width of occurrence is >200 m (650ft), adjusted for slope.	Average buffer width is 100–199m (330-650ft), after adjusting for slope.	Average buffer width is 50–99m (165-330ft), after adjusting for slope.	Average buffer width is <49m (165ft), after adjusting for slope.
Buffer Condition		Abundant (>95%) cover native vegetation, little or no (<5%) cover of non-native plants, intact soils, AND little or no trash or refuse.	Substantial (75–95%) cover of native vegetation, low (5-25%) cover of nonnative plants, intact or moderately disrupted soils; minor intensity of human visitation or recreation.	Moderate (25–50%) cover of nonnative plants, moderate or extensive soil disruption; moderate intensity of human visitation or recreation.	Dominant (>50%) cover of non-native plants, barren ground, highly compacted or otherwise disrupted soils, moderate or greater intensity of human visitation or recreation, no buffer at all.
Key Ecological Attribute: Landscape Structure					
Connectivity	Intact areas have a continuous corridor of natural or semi-natural vegetation between shrub steppe areas	Intact: Embedded in 90–100% natural habitat; connectivity is expected to be high.	Variegated: Embedded in 50-70% natural or semi-habitat; habitat connectivity is generally high, but lower for species sensitive to habitat modifications;	Fragmented: Embedded in 20-60% natural or semi-natural habitat; connectivity is generally low but varies with mobility of species and arrangement on landscape.	Relict: Embedded in < 20% natural or semi-natural habitat; connectivity is essentially absent
Landscape Condition Model Index (LCMI) (see bottom of Page 71)	The intensity and types of land uses in the surrounding landscape can affect ecological integrity.	LCMI > 0.8		LCMI 0.65 – 0.79 (for Columbia Plateau Low Sagebrush Steppe only)	LCMI < 0.65 (for Columbia Plateau Low Sagebrush Steppe only)
				LCMI 0.5 – 0.79 (for all other shrubsteppe systems)	LCMI < 0.5 (for all other shrubsteppe systems)
RANK FACTOR: CONDITION					
Key Ecological Attribute: Vegetation Composition					
Native Plant Species Cover	Native species dominate this system; non-natives increase with human impacts.	Relative cover of native plants ~ 95-100%.	Relative cover of native plants 80-95%.	Relative cover of native plants 50 to <85%.	Relative cover of native plants <50%.
Native Bunchgrass Cover	Native bunchgrass dominance; high cover is related to community resistance to invasion	Relative cover of perennial bunchgrass > 80% or near site potential (for all other ecological systems)	Relative cover of perennial bunchgrass 50-80% or reduced from site potential (for all other ecological systems)	Relative cover of perennial bunchgrass 30-49% or reduced from site potential (for all other ecological systems)	Relative cover of perennial bunchgrass < 30% and much reduced from site potential (for all other ecological systems)
Cover of Native Increasers (absent in all systems except Columbia Plateau Scablands)	Some stressors such as grazing can shift or homogenize native composition toward species tolerant of stressors.	Absent or incidental	<10% relative cover	10-20% relative cover	>20% relative cover
Invasive Species Cover	Invasive species can inflict a wide range of ecological impacts. Early detection is critical.	None present.	Invasive species present, but sporadic (<1% absolute cover)	Invasive species prevalent (1–10% absolute cover)	Invasive species abundant (>10% absolute cover).
Key Ecological Attribute: Vegetation Structure					
Biological Soil Crust (absent in all systems except Columbia Plateau Low Sagebrush Steppe)	Crust cover and diversity is greatest where not impacted by trampling, other soil surface disturbance and fragmentation (Belnap et al. 2001; Rosentreter and Eldridge 2002; Tyler 2006; Hardman 2007)	Largely intact biological soil crust that nearly matches the site capability where natural site characteristics are not limiting.	Biological soil crust is evident throughout the site but its continuity is broken.	Biological soil crust is present in protected areas and with a minor component elsewhere	Biological soil crust, if present, is found only in protected areas
Fire-sensitive Shrubs (Columbia Plateau Low Sagebrush Steppe only)	Shrubs are part of the historic range of variation	Fire-sensitive shrubs mature and recovered from past fires; shrubs generally <25% cover	Fire-sensitive shrubs common yet not fully recovered from past fires	Fire-sensitive shrubs present (but not common) recovering from past fires	Fire-sensitive shrubs absent or rare due to past fires
Fire-sensitive Shrubs (Columbia Plateau Scablands only)	Fire, naturally rare, eliminates or reduces *Artemisia rigida* or woody *Eriogonum* cover	Fire-sensitive shrubs mature and recovered from past fires	Fire-sensitive shrubs common yet not fully recovered from past fires	Fire-sensitive shrubs present (but not common) recovering from past fires	Fire-sensitive shrubs absent or rare due to past fires
Fire-sensitive Shrubs (Intermountain Basins Big Sagebrush Steppe only)	Natural fire regime Promotes patchy low cover big sagebrush or bitterbrush cover	Fire-sensitive shrubs mature and recovered from past fires; shrubs generally 3-10% cover	Fire-sensitive shrubs not recovered from past fires; represented mostly as seedlings less than height of bunchgrasses, shrubs generally <20% cover	Shrub >20% cover beginning to affect bunchgrass layer	Shrubs >20% cover reducing bunchgrass layer or sagebrush or bitterbrush only scattered individuals or seedlings
Fire-sensitive Shrubs (Intermountain Basins Montane Big Sagebrush Steppe only)	Natural fire regime promotes patchy low cover mountain big sagebrush cover (Johnson and Swanson 2005)	Fire-sensitive shrubs mature and recovered from past fires; shrubs generally 3-20% cover	Fire-sensitive shrubs not recovered from past fires; represented mostly as seedlings less than height of bunchgrasses, shrubs generally <30% cover	Shrub >30% cover beginning to affect bunchgrass layer	Shrubs >30% cover reducing bunchgrass layer or sagebrush or bitterbrush only scattered individuals or seedlings
Fire-sensitive Shrubs (Intermountain Basins Semidesert Shrubsteppe only)	Natural fire regime promotes patchy low shrub cover	Fire-sensitive shrubs mature and recovered from past fires; shrubs generally 3-10% cover	Fire-sensitive shrubs not recovered from past fires; represented mostly as seedlings less than height of bunchgrasses, shrubs generally <20% cover	Shrub >20% cover beginning to affect bunchgrass layer	Shrubs >20% cover reducing bunchgrass layer
RANK FACTOR: CONDITION					
Key Ecological Attribute: Vegetation Composition					
Soil Surface Condition	Soil disturbance can result in erosion thereby negatively affecting many ecological processes; the amount of bare ground varies naturally with site type.	Bare soil areas are limited to naturally caused disturbances such as burrowing or game trails	Some bare soil due to human causes but the extent and impact is minimal. The depth of disturbance is limited to only a few inches	Bare soil areas due to human causes are common. There may be disturbance to several inches. Outdoor recreational vehicles (ORV) or other machinery may have left some shallow ruts.	Bare soil areas substantial and contributing to long-lasting impacts. Deep ruts from ORVs or machinery may be present, or livestock and/or trails are widespread.

USFWS IPaC Data Report

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
Phone: (360) 753-9440 Fax: (360) 753-9405

In Reply Refer To: May 25, 2023
Project Code: 2023-0086084
Project Name: Sila Nanotechnologies Moses Lake Facility (DOE/EA-2214D)

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
(360) 753-9440

PROJECT SUMMARY

Project Code: 2023-0086084

Project Name: Sila Nanotechnologies Moses Lake Facility (DOE/EA-2214D)

Project Type: Federal Grant / Loan Related

Project Description: The proposed project would involve the construction of a 4,000 ton/yr (20 GWh/yr equivalent) silicon anode manufacturing facility in Moses Lake, Washington. Sila had previously acquired a 162-acre site with an existing 613,000 sq. ft. building for this project. The purpose of the proposed project is to scale Sila's product output in order to enter the electric vehicle market in a timely and cost-efficient manner. The project would provide U.S.-based manufacturing capacity for these and similar vital industrial components.

Modifications would be required to the existing facility's interior walls, floors, ceilings, and other architectural features to accommodate new equipment and refresh the existing office space. Installation of equipment and storage vessels outdoors would require ground movement activities to grade previously disturbed areas (currently agricultural land that has already been rezoned for heavy industrial). These areas would be to the north, east, south and west of the existing building, and activities would include new access roads, installation of concrete slab service yards or pads for gas storage vessels, abatement unit systems, cooling water systems, wastewater treatment, and other equipment. Additional land or disturbance of natural resources beyond the existing site is not required for the project.

The project will take place in Moses Lake, Washington within Section 16 of Township 19 north and Range 29 east of the Willamette Meridian. The project site consists of four parcels (parcel numbers 110069400, 120175300, 120175300 and 110077090) comprising approximately 162 acres. The project site is bound by Road N NE to the west, an unnamed stream to the north, railroad tracks to the east and industrially zoned land to the south.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@47.14176625,-119.187840607839,14z

Counties: Grant County, Washington

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	Department of Energy
Name:	Stephen Witmer
Address:	626 Cochran Mill Road
Address Line 2:	Mailstop 921-227
City:	Pittsburgh
State:	PA
Zip:	15236
Email	stephen.witmer@netl.doe.gov
Phone:	4123867589

Appendix 5

Public Comments Received

From:	Guy Moura
To:	Witmer, Stephen M.
Cc:	Guy Moura; Robert Sloma (HSY); Rebecca Hunt; NEEKA Somday; JARRED Erickson
Subject:	[EXTERNAL] DEA Sila Nano technologies Moses Lake
Date:	Monday, February 26, 2024 1:49:57 PM

Steve,

When speaking of cultural resources, on page 32, the DEA starts with: "The Proposed Project site lies within the traditional territories of the Sinkayuse tribe, currently represented by the Confederated Tribes of the Colville Reservation and the Yakama Nation."

The precontact and ethnohistoric sinkayuse group later came to be referred to as the Moses-Columbia, based on the following briefest of explanations. 1.) Several bands/tribes are referred to as the Middle Columbia Salish, which includes the sinkayuse. 2.) Through the family of leaders for this group, Chief Moses rose to prominence during the 1856-1858 war between the United states and several tribal groups as a consequence of events related to the 1855 Treaty with the Yakama Nation. 3.) Not all tribal groups involved in the war were signatory to the Yakama Treaty nor part of the Yakama Nation. 4.) During and after the wars, some people from several of the Middle Columbia salish bands became affiliated with Moses and were located at the Moses Reserve in 1879. When that reservation returned to the public domain, Moses and other chiefs signed the Moses Agreement, relocating Moses and his people to the Colville Reservation.

The Moses-Columbia are a member tribe of the Colville Confederacy. No sinkayuse or Moses-Columbia signed the Yakama Treaty. They are not a member of the Yakama Nation. The Moses Columbia never ceded any territory or rights. The Yakama Nation does not represent them. All of the preceding information is verifiable fact.

Please make the appropriate corrections and inform the appropriate persons within your organization. It will be beneficial for DOE to be aware prior to the upcoming Government-to-Government meeting with the Confederated Tribes of the Colville Reservation.

lim ləmt, qeʔciéw̓yew̓, thank you

Guy Moura

Manager, History/Archaeology Program

Tribal Historic Preservation Officer

Confederated Tribes of the Colville Reservation

(509) 634-2695

REGION 10
SEATTLE, WA 98101

March 18, 2024

Stephen Witmer
U.S. DOE - NETL
626 Cochran Mill Road
Pittsburgh, Pennsylvania 15236

Dear Stephen Witmer:

The U.S. Environmental Protection Agency has reviewed the U.S. Department of Energy - National Energy Technology Laboratory (NETL)'s Draft Environmental Assessment for the Sila Nanotechnologies – Moses Lake Auto-Scale Silicon Anode Plant (EPA Project Number 24-0010-DOE). EPA has conducted its review pursuant to the National Environmental Policy Act and our review authority under Section 309 of the Clean Air Act. The CAA Section 309 role is unique to EPA and requires EPA to review and comment publicly on any proposed federal action subject to NEPA's environmental impact statement requirement.

The DEA evaluates the potential environmental impacts associated with constructing a silicon anode manufacturing facility in Moses Lake, Washington. Project activities include new facility construction, facility operation, and upgrades to existing infrastructure. The project site is located approximately five miles northeast of downtown Moses Lake. The DEA identifies and evaluates a No Action Alternative and the Proposed Action.

EPA did not identify significant public health, welfare, or environmental quality concerns to be addressed and is providing recommendations related to air quality, wastewater, and stormwater to improve the analysis in the Final EA.

Air Quality
The DEA states that there are "net-positive impacts to local socioeconomic conditions and supporting the decarbonization of transportation."[1] EPA recognizes and appreciates that the project's purpose to supply silicon anode batteries supports clean energy transportation, which contributes to better air quality conditions.

[1] DEA pg. 3.

EJScreen,[2] EPA's nationally consistent environmental justice (EJ) screening and mapping tool, offers a variety of powerful data and mapping capabilities that enable users to understand details about the population of an area and the environmental conditions in which they live. EPA considers a project to be in an area of potential EJ concern when an EJScreen analysis for the project area shows one or more of the twelve EJ Indices at or above the 80th percentile in the nation and/or state. We note that according to EJScreen, Moses Lake exceeds the 80th percentile for several air quality indices when comparing to the state of Washington – particulate matter at 93, ozone at 89, and toxic releases to air at 93.

The DEA states that "To reduce carbon monoxide and particulate emissions from gasoline and diesel engines, construction equipment would have the best available emission control devices generally available to the contractor…Emissions from the Project operations would be controlled using the control devices listed above."[3] EPA appreciates the commitment to utilize emission control devices during construction and operation of the project. EPA recommends that the FEA include the use of EJScreen to identify areas disproportionately impacted by air quality issues (and wastewater issues, see next section) and to develop appropriate mitigation and monitoring for communities with EJ concerns. Given the EJ concerns related to air quality, EPA further recommends that the FEA include emissions monitoring to ensure mitigation practices are sufficient. EPA recommends the FEA also consider the cumulative impacts on local air quality and to communities with EJ concerns to account for several EJScreen air quality indicators are already exceeding the 80th percentile.

Wastewater

EPA recommends the FEA include a description of changes (both quantity and quality) to contributions to the Moses Lake Sand Dunes wastewater treatment plant (WWTP). With the expansion and new activities proposed in the DEA, there will be more wastewater and process water generated that will flow to the wastewater treatment plant. We recommend working with Washington State Department of Ecology to confirm that the new operations do not exceed the permitted capacity. Exceeding the WWTP capacity can lead to operational failures such as overflows and permitted effluent limit exceedances due to inadequate treatment. We note that according to EJScreen, the Wastewater Discharge indicator, which quantifies a group's relative risk of exposure to pollutants in downstream water bodies,[4] for the city of Moses Lake is in the 84th percentile compared the state. Therefore, there may already be disproportionate impacts related to wastewater discharge to communities residing in the area. EPA recommends the FEA consider the cumulative impacts on wastewater and its impacts to communities with EJ concerns.

Stormwater

EPA encourages considerations for zero or low impact development techniques in project design to reduce stormwater volumes and mimic natural conditions. Example techniques include:

- Minimizing creation of new impervious surface.
- Maximizing use of pervious pavement.
- Avoiding building over groundwater recharge areas.

[2] https://ejscreen.epa.gov/mapper/. Accessed 2/27/2024.
[3] DEA pg. 39.
[4] https://www.epa.gov/system/files/documents/2023-06/ejscreen-tech-doc-version-2-2.pdf. Accessed 3/11/2024.

- De-paving areas as mitigation for any new impervious surfaces needed for the project, to achieve no net increase in pollution generating impervious surface.

These techniques can lessen the impacts of stormwater runoff from impervious surfaces and can provide energy and other utility savings. Under Section 438 of the Energy Independence and Security Act (EISA), federal agencies are required to reduce stormwater runoff from federal development projects in order to protect water resources. The EPA Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of EISA can be accessed online.[5]

Thank you for the opportunity to review the DEA for this project. If you have questions about this review, please contact Caitlin Roesler of my staff at 206-553-6518 and roesler.caitlin@epa.gov, or me, at (206) 553-1774 or at chu.rebecca@epa.gov.

Sincerely,

Rebecca Chu, Manager
Policy and Environmental Review Branch

[5] https://www.epa.gov/greeningepa/technical-guidance-implementing-stormwater-runoff-requirements-federal-projects. Accessed 3/8/2024.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Eastern Region Office
4601 North Monroe St., Spokane, WA 99205-1295 • 509-329-3400

March 19, 2024

Stephen Witmer
NEPA Compliance Officer
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236

Re: Sila Nanotechnologies' silicon anode Manufacturing Facility in Moses Lake

Dear Stephen Witmer:

Thank you for the opportunity to comment on the Scoping Notice for the National Environmental Policy Act (NEPA) document regarding the Sila Nanotechnologies' silicon anode Manufacturing Facility in Moses Lake (Proponent: Sila Nanotechnologies). After reviewing the documents, the Department of Ecology (Ecology) submits the following comments:

Hazardous Waste and Toxics Reduction Program

Please keep in mind that during the construction activities associated with the Sila Nanotechnologies' silicon anode Manufacturing Facility in Moses Lake Project, some construction-related wastes produced may qualify as dangerous wastes in Washington State. Some of these wastes include:

- Absorbent material
- Aerosol cans
- Asbestos-containing materials
- Lead-containing materials
- PCB-containing light ballasts
- Waste paint
- Waste paint thinner
- Sanding dust
- Treated wood

The Construction and demolition website has a more comprehensive list and a link to help identifying and designating your wastes. Please visit https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Dangerous-waste-guidance/Common-dangerous-waste/Construction-and-demolition.

The applicant, as the facility generating the waste, bears the responsibility for all construction waste. The waste generator is the person who owns the site. Even if you hire a contractor to conduct the demolition or a waste service provider to designate your waste, the site owner is ultimately liable. This is why it is important to research reputable and reliable contractors.

In order to adequately identify some of your construction and remodel debris, you may need to sample and test the wastes generated to determine whether they are dangerous waste.

For more information and technical assistance, contact Alex Bergh at (509) 385-5539 or Alexandria.Bergh@ecy.wa.gov.

Water Resources Program

Under RCW 90.03.350, a Dam Safety construction permit is required for those dams or ponds that can impound a volume of 10 acre-feet or more of water or other liquids above ground level. The Sila Nanotechnologies project references the construction of a detention pond, if this impoundment meets or exceeds the above referenced criteria, you will need to apply for a dam construction permit. To determine if a Dam Safety construction permit is required for your project, the applicant must submit a set of construction plans to:

WA Department of Ecology
Dam Safety Office
P.O. Box 47600
Olympia, WA 98504-7600

The construction permit application can be found by entering the following link into your search engine:

https://apps.ecology.wa.gov/publications/summarypages/ecy07038.html

For additional information, please contact Charlotte Lattimore by e-mail at Charlotte.Lattimore@ecy.wa.gov or by telephone at (360) 407-6066.

State Environmental Policy Act (SEPA)

Ecology bases comments upon information submitted for review. As such, comments made do not constitute an exhaustive list of the various authorizations you may need to obtain, nor legal requirements you may need to fulfill in order to carry out the proposed action. Applicants should remain in touch with their Local Responsible Officials or Planners for additional guidance.

For information on the SEPA Process, please contact Cindy Anderson at (509) 655-1541 or via email at Cindy.Anderson@ecy.wa.gov.

For more guidance on, or to respond to the comments made by a specific Ecology staff member, please contact the appropriate program staff listed above at the phone number or email provided.

Department of Ecology
Eastern Regional Office
(Ecology File: 202400961)

From:	Whitlam, Rob (DAHP)
To:	Witmer, Stephen M.
Subject:	[EXTERNAL] RE: Draft Environmental Assessment for the Sila Nanotechnologies – Moses Lake Auto-Scale Silicon Anode Plant Project (DOE/EA-2214D)
Date:	Tuesday, February 20, 2024 2:42:46 PM
Attachments:	image001.png

Stephen;

Thank you for this email and materials. We concur with your determination of No Historic Properties Affected with the stipulation for an IFP.

Regards,

Rob

From: Witmer, Stephen M. <Stephen.Witmer@NETL.DOE.GOV>
Sent: Tuesday, February 20, 2024 10:30 AM
To: DAHP 106 <106@dahp.wa.gov>; Whitlam, Rob (DAHP) <Rob.Whitlam@dahp.wa.gov>; Hanson, Sydney (DAHP) <Sydney.Hanson@dahp.wa.gov>
Subject: Draft Environmental Assessment for the Sila Nanotechnologies – Moses Lake Auto-Scale Silicon Anode Plant Project (DOE/EA-2214D)

External Email

Good afternoon, all. The Department of Energy (DOE) – National Energy Technology Laboratory (NETL) NEPA Division previously initiated consultation with the Washington Department of Archaeology and Historic Preservation in May 2023 for the Sila Nanotechnologies – Moses Lake Auto-Scale Silicon Anode Plant Project. DOE has completed a Draft Environmental Assessment (Draft EA – DOE/EA-2214D) for this proposed project, and is providing this Draft EA to your Department for review as part of the 30-day public comment period that begins today.

DOE's determination is that no historic properties will be affected by this proposed project, and this Draft EA (particularly Chapter 3.2.4) describes efforts taken to identify historic properties and request consultation from other agencies and tribal nations related to the proposed project. Any responses received by agencies and tribal nations to date are described in Chapter 3.2.4.

DOE may need to contact your Department within the 30-day public comment period to obtain advice on non-responsive tribal nations and how that may impact the final determination of effect from your Department (to date, the Colville Reservation and Spokane Tribe have provided responses, while the Yakama Nation and Warm Springs Reservation have not provided responses). All four of these tribal nations are being provided with electronic and hard copies of this Draft EA.

Please let me know if you have any objections, or would like additional information, regarding DOE's determination of effect or the Draft EA as a whole. **Specific information related to the location of**

the Draft EA, details of the public comment period, and instructions for comment are noted below.

The U.S. Department of Energy (DOE) - National Energy Technology Laboratory (NETL) invites comments on the Draft Environmental Assessment (Draft EA) for the Sila Nanotechnologies – Moses Lake Auto-Scale Silicon Anode Plant Project. The Draft EA can also be found on DOE's NETL EA website at https://netl.doe.gov/node/6939.

The Draft EA has been prepared in accordance with the Council on Environmental Quality's National Environmental Policy Act (NEPA) implementing regulations (40 CFR Parts 1500-1508) and DOE's NEPA implementing procedures (10 CFR Part 1021). DOE prepared the Draft EA to analyze the potential environmental, cultural, and social impacts of partially funding the construction of Sila Nanotechnologies' silicon anode manufacturing facility in Moses Lake, Washington and evaluated resource areas commonly addressed in EAs. The proposed project would consist of two phases of facility construction and operation, including modifications to an existing 613,000 square foot industrial building, plus site improvements, new sheds/buildings, new equipment installation, and other infrastructure upgrades. All ground disturbances beyond the footprint of the existing 613,000 square foot building would cover approximately 26 acres of the 162 acres of land owned by Sila Nanotechnologies. Phase 1 includes installation of facility infrastructure and equipment to support up to 300 tons/year (tpy) of production capacity, while Phase 2 includes installation of additional equipment to expand production capacity up to 2,300 tpy. The two phases will run concurrently once both are constructed. The proposed project would create more than approximately 150 – 300 full-time equivalent jobs that would offer benefits such as workforce training and education initiatives to raise equity levels in the greater Moses Lake community. Together, these efforts would engage the local workforce and make a positive contribution to the local economy of Moses Lake while significantly strengthening the U.S. lithium-ion battery industry.

A notice of availability will be published in the Columbia Basin Herald newspaper for three days starting on February 20, 2024, to announce the beginning of the 30-day public review and comment period. A hard copy of the Draft EA will be available for review at the Moses Lake Public Library at 418 East 5th Avenue, Moses Lake, WA 98837.

Comments will be accepted on the Draft EA through close of business on March 20, 2024. All comments received during the public comment period will be addressed. Comments received after the end of the comment period will be addressed to the extent practicable. Comments should be marked "Sila Nanotechnologies Draft EA Comments" and should include your name, address, and organization (if applicable). Individual names and addresses, including email addresses, received as part of the public comment period normally are considered part of the public record. Persons wishing to withhold names, addresses, or other identifying information from the public record must state this request prominently at the beginning of their comments. DOE will honor this request to the extent allowed by law. All submissions from organizations, businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses will be included in the public record and open to public inspection in their entirety.

Comments should be sent to Stephen Witmer via email (stephen.witmer@netl.doe.gov) or letter addressed to:

Stephen Witmer
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236

For additional information, please contact Stephen Witmer using the contact information above, or at 412-386-7589.

Sincerely,

Stephen M. Witmer
NEPA Compliance Officer
Department of Energy – National Energy Technology Laboratory
626 Cochran Mill Road, Pittsburgh, PA 15236
M/S 921-227
stephen.witmer@netl.doe.gov
Office: 412-386-7589
Office days: Tuesday, Wednesday

May 3, 2024

Chairman Jarred-Michael Erickson
Chairman, Colville Business Council
Confederated Tribes of the Colville Reservation
21 Colville Street
Nespelem, WA 99155-0150

Subject: Revised Draft EA for the Proposed Sila Nanotechnologies Project – Moses Lake, WA

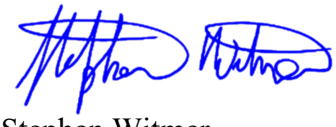
Dear Chairman Erickson:

The Department of Energy (DOE) – National Energy Technology Laboratory's (NETL) National Environmental Policy Act (NEPA) Division has revised the Draft Environmental Assessment (EA) for DOE's proposed financial assistance grant to Sila Nanotechnologies (Sila) for Sila's proposed project in Moses Lake, WA. This Draft EA was revised in response to comments and questions received during the government-to-government consultation between DOE and the Colville Business Council on March 4, 2024. New items added since the original publication of the Draft EA are noted in bold, and content that addresses specific comments received is noted in red.

Please note that a Draft EA for DOE's additional proposed financial assistance grant to Group14 Technologies (Group14) in Moses Lake, WA will be released for public review within the month. The Draft EA for Group14's proposed project will address questions and comments received from the Colville Business Council, and will be submitted to the Colville Business Council for further review as part of the 30-day public review and comment period for the Group14 EA.

If you have any further questions, comments, or concerns on this Draft EA, please contact me directly or Corey Carmack, Tribal Affairs Liaison for DOE MESC at (301) 366-9378 or corey.carmack@hq.doe.gov.

Sincerely,



Stephen Witmer
NEPA Compliance Officer
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236

Telephone: 412-386-7589
Email: stephen.witmer@netl.doe.gov

Attachment:

Sila Nanotechnologies_Revised Draft EA_05-03-2024.pdf

cc:
Alison Ball, Colville Business Council
Dustin Best, Colville Business Council
Steven Carson, Colville Business Council
Rodney Cawston, Colville Business Council
Karen Condon, Colville Business Council
Roger Finley, Colville Business Council
Rebecca Hunt, Colville Business Council
Andrew Joseph Jr, Colville Business Council
Cindy Marchand, Colville Business Council
Guy Moura, Colville Business Council
Norma Sanchez, Colville Business Council
Joseph Somday, Colville Business Council
Neeka Somday, Legislative Assistant/Policy Analyst
Patrick Tonasket, Colville Business Council
Mel Tonasket, Colville Business Council
Debra Wulff, Colville Business Council
Sharlene Zacherle, Colville Business Council
Corey Carmack, Tribal Affairs Liaison, Office of Manufacturing and Energy Supply Chains, U.S. Department of Energy
Kristle Krichbaum, Technical Project Officer, Office of Manufacturing and Energy Supply Chains, U.S. Department of Energy
Susan Miltenberger, Contracting Officer, National Energy Technology Laboratory, U.S. Department of Energy
John Hatfield, Contract Specialist, National Energy Technology Laboratory, U.S. Department of Energy
Jesse Garcia, NEPA Compliance Officer, National Energy Technology Laboratory, U.S. Department of Energy
Fred Pozzuto, Director – NEPA Division, National Energy Technology Laboratory, U.S. Department of Energy

Sila Nanotechnologies EA - Public Comment Matrix			
DOE received comments on the Sila Nanotechnologies (Sila) Draft EA during the 30-day public comment period from the Confederated Tribes of the Colville Reservation (Colville Reservation), Region 10 of the United States Environmental Protection Agency (EPA), and the State of Washington Department of Ecology (WA Ecology). DOE was also invited to participate in a government-to-government tribal consultation with members of the Colville Business Council on March 4, 2024. During this consultation, DOE received numerous questions and comments from the Colville Business Council concerning Sila's proposed project, along with an additional proposed project to Group14 Technologies (Group14). Both proposed projects are in the Moses Lake area. Comments specific to the Group14 project will be addressed in the Draft EA for that project. Comments received as part of the consultation with the Colville Business Council were based on notes taken during the meeting, and may not be transcribed verbatim. However, the general nature of, and core content, of each question was noted to the extent possible. Additions and revisions in response to all comments received were made to Sila's Draft EA and informed development of the Final EA.			
Comment Received	**Commenting Entity**	**Comment Method**	**DOE Response/EA Reference Point**
DOE was invited to participate in a government-to-government consultation with the Colville Reservation's Colville Business Council on March 4th, 2024 to receive comments and answer questions related to Sila's proposed project, along with another proposed project to Group14 Technologies also in the Moses Lake area.	**Colville Business Council**	**Verbal (3/4/2024 Colville Business Council consultation session with DOE)**	**DOE noted specific comments and questions received during this consultation session below, and also updated the Draft EA itself in response to questions and comments received. Comments specific to the proposed Group14 project will be provided in the separate Draft EA being prepared for that award.**
The Colville Reservation Tribal Historic Preservation Officer (Guy Moura) requested that revisions be made to DOE's discussion of the traditional tribal territories near the Sila project site.	Colville Business Council	E-mail	Colville's revisions to DOE's original statements have been made on page 35 (in the "Cultural Resouces" section). Guy Moura's email requesting revisions is also included in Appendix 5.
The incorrect representation of the traditional tribal history of the area was also noted during the 3/4 consultation session.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	Colville's revisions to DOE's original statements have been made on page 35 (in the "Cultural Resources" section). Guy Moura's email requesting revisions is also included in Appendix 5.
A number of questions were asked regarding why Sila's particular site was selected. In particular, one participant asked if it chosen because of the low cost of power?	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	Sila's project was chosen based on the merits of their application, and DOE clarified during the 3/4 consultation session that Sila, not DOE, selected the Moses Lake site. DOE does not direct applicants to select certain locations for projects. The EA includes a discussion of why Sila selected this site, particularly in Section 2.9 - "Alternatives Considered by Sila Nanotechnologies" on page 22. Sila's overall project is described in Section 2.2 ("Sila Nanotechnologies' Proposed Project") starting on page 16. The EA also contains general descriptions of DOE's application selection process starting on page 10 ("1.2 - Background," 1.3 - "Purpose and Need for Department of Energy Action"), and Appendix One - "Environmental Synopsis").
A question was asked about if expansions are planned for this project.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	Plans for expansion (currently conceptual and hypothetical, and not confirmed) are discussed on page 20 (in the "2.2 - General Description and Location" section) of the EA.
Several questions were asked about the source of raw silicon and materials for Sila's project, and if extraction of this raw material may impact other tribes or have broader environmental impacts.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	Sources of raw materials are discussed on page 17 of the EA. In particular, Sila has confirmed that raw materials will be domestically sourced, and in many cases come from the Pacific-Northwest region. Sila also clarified that a key component of the project is silane gas, and not raw silica. Confirmation was also provided that raw materials will not be sourced from "foreign entities of concern."
A comment was received that DOE should consider consulting with tribes potentially impacted by source materials.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	Sila is unable to identify vendors for source materials at this time, but have committed to using domestic sources of raw materials (particularly in the Pacific Northwest region), and materials will not be sourced from foreign entities of concern.
A question was asked about how waste materials would be generated/managed during the project.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	DOE responded during the 3/4 consultation session that the project would be subject to regulations and permits issued by Washington state regulations/regulators, along with federal (EPA) rules, regulations, and permits. Detailed discussions of solid, hazardous, and water waste management are included throughout the EA, including the Air Quality (starting on page 39), Regulated Waste (starting on page 59), and Utilities and Energy use (starting on page 61) sections.

Sila Nanotechnologies EA - Public Comment Matrix			
DOE received comments on the Sila Nanotechnologies (Sila) Draft EA during the 30-day public comment period from the Confederated Tribes of the Colville Reservation (Colville Reservation), Region 10 of the United States Environmental Protection Agency (EPA), and the State of Washington Department of Ecology (WA Ecology). DOE was also invited to participate in a government-to-government tribal consultation with members of the Colville Business Council on March 4, 2024. During this consultation, DOE received numerous questions and comments from the Colville Business Council concerning Sila's proposed project, along with an additional proposed project to Group14 Technologies (Group14). Both proposed projects are in the Moses Lake area. Comments specific to the Group14 project will be addressed in the Draft EA for that project. Comments received as part of the consultation with the Colville Business Council were based on notes taken during the meeting, and may not be transcribed verbatim. However, the general nature of, and core content, of each question was noted to the extent possible. Additions and revisions in response to all comments received were made to Sila's Draft EA and informed development of the Final EA.			
Comment Received	**Commenting Entity**	**Comment Method**	**DOE Response/EA Reference Point**
A comment was received expressing concerns about how projects (particularly solar, and others) can affect large swaths of land and impact water quality. This comment also noted how electric cars are suited for urban areas, not rural areas, with tribes taking on the brunt of these project impacts. These impacts should be covered in the EA.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	DOE updated the EA to include discussions of other projects, initiatives, and goals of the broader Office of Energy Efficiency and Renewable Energy that aim to improve access to EV infrastructure, improve electric vehicle technologies, and completing specific NEPA reviews for each project. Three Clean Cities Coalitions in the Washington/Oregon region were highlighted. This discussion begins on page 13 of the EA.
A comment was received noting negative impacts to wildlife, water, traditional territories, etc. and asked if DOE is in charge of those projects. It was requested that DOE should find out who is in charge of those projects and ensure tribal trust responsibilities are being adhered to.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	DOE updated the EA to include discussions of other projects, initiatives, and goals of the broader Office of Energy Efficiency and Renewable Energy that aim to improve access to EV infrastructure, improve electric vehicle technologies, while completing specific NEPA reviews for each award. Three Clean Cities Coalitions in the Washington/Oregon region were highlighted. This discussion begins on page 12 (in the "1.4 - Broader DOE Goals, Initiatives, and Crosscutting Programs for the Clean Energy and Transportation Transition section) of the EA.
A comment was received noting how questions were not being answered directly, and requested details on when the Draft EA was being released.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	DOE clarified during the 3/4 consultation session that the comment period for the Sila project was ongoing, and that the comment period for another Draft EA in the area (Group14 Technologies) would likely begin in April 2024. After the consultation session, DOE followed up with a letter to the Colville Business Council (included in the Sila EA appendices) noting the planned NEPA timelines for the Sila project. The overall NEPA/EA process is also discussed in the EA, particularly on page 14 ("National Environmental Policy Act and Related Procedures").
A comment was received expressing concerns about the water consumption for the project, and also concerned about how materials could be sourced from countries that violate human rights.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	Sources of raw materials are discussed on page 17 of the EA, including a confirmation that materials will not be sourced from "foreign entities of concern." Water use and recycling is discussed throughout the EA, particularly the "Surface Water and Groundwater" and "Utilities and Energy Use" sections, starting on pages 54 and 61, respectively. The EA discusses how groundwater will not be used for this project (only public water) on page 56, planned water consumption (25,000 gallons per day) on page 63, and discussions of water recycling methods on page 64.

Sila Nanotechnologies EA - Public Comment Matrix			
DOE received comments on the Sila Nanotechnologies (Sila) Draft EA during the 30-day public comment period from the Confederated Tribes of the Colville Reservation (Colville Reservation), Region 10 of the United States Environmental Protection Agency (EPA), and the State of Washington Department of Ecology (WA Ecology). DOE was also invited to participate in a government-to-government tribal consultation with members of the Colville Business Council on March 4, 2024. During this consultation, DOE received numerous questions and comments from the Colville Business Council concerning Sila's proposed project, along with an additional proposed project to Group14 Technologies (Group14). Both proposed projects are in the Moses Lake area. Comments specific to the Group14 project will be addressed in the Draft EA for that project. Comments received as part of the consultation with the Colville Business Council were based on notes taken during the meeting, and may not be transcribed verbatim. However, the general nature of, and core content, of each question was noted to the extent possible. Additions and revisions in response to all comments received were made to Sila's Draft EA and informed development of the Final EA.			
Comment Received	**Commenting Entity**	**Comment Method**	**DOE Response/EA Reference Point**
Numerous other comments were received expressing concerns about water consumption for the project, including considerations for human and animal (e.g. salmon popuations) usage of water.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	The EA contains numerous discussions of how water will be utilized and managed for Sila's project. In particular: - Page 63 (under the "Utilities and Energy Use" section), Sila's original estimates for water usage have been reduced from 75,000 gallons per day to 25,000 gallons per day, provided by an existing potable water line supplied by the City of Moses Lake. - Page 55 (under the "Surface Water and Groundwater" section) notes how original plans to use a Class 5 well for wastewater disposal have been removed from consideration. - Page 55 (under the "Surface Water and Groundwater" section) notes how all wastewater discharges would be discharged to Sand Dunes Watewater Treatment Plant, and would be subject to any Clean Water Act permits and authorizations. - Page 56 (under the "Surface Water and Groundwater" section) notes how water utilized for the project would be provided by the City of Moses Lake (Moses Lake Public Works Water Division), and no groundwater would be used. - Page 56 (under the "Surface Water and Groundwater" section) also notes how water permitting is under the purview of the Washington State Department of Ecology, and those permits would ensure mitigation of cumulative impacts. - Page 64 (under the "Utilities and Energy Use" section) notes how Sila has incorporated a closed loop adiabatic process cooling water system to reduce water usage by over 20 million gallons of water annually compared to traditional systems, installed an on-site fire water tank to reduce water loss from evaporation (as opposed to traditional fire water ponds), and will continue to explore methods to recycle water on-site for reuse in the plant system (including the ability to recycle and reuse caustic scrubber wastewater).
A comment was received noting how lots of energy is being used, but nobody could use the EV cars in the area, and how the grid cannot support EV vehicles. The same commenter asked how much power is used for the facility, and if the grid can support this and other projects.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	The planned power consumption for Sila was noted at 18 MVA at the consultation session, but this has since been revised to 15 MVA after discussion with Sila and updated in the EA. Sila's total capacity is 20 MVA. More details about planned power usage at Sila's facility can be found in the EA starting on page 61 ("Utilities and Energy Use"). In particular, Sila's planned operational power consumption is 15 MVA, which is under Sila's current total capacity of 20 MVA. Power consumption was also addressed starting on page 45 (in "3.2.7 - Greenhouse Gases"). The EA also notes how the estimated maximum utility demands for the proposed project are anticipated to be less than the capacities provided by existing site infrastructure (page 63).

Sila Nanotechnologies EA - Public Comment Matrix			
DOE received comments on the Sila Nanotechnologies (Sila) Draft EA during the 30-day public comment period from the Confederated Tribes of the Colville Reservation (Colville Reservation), Region 10 of the United States Environmental Protection Agency (EPA), and the State of Washington Department of Ecology (WA Ecology). DOE was also invited to participate in a government-to-government tribal consultation with members of the Colville Business Council on March 4, 2024. During this consultation, DOE received numerous questions and comments from the Colville Business Council concerning Sila's proposed project, along with an additional proposed project to Group14 Technologies (Group14). Both proposed projects are in the Moses Lake area. Comments specific to the Group14 project will be addressed in the Draft EA for that project. Comments received as part of the consultation with the Colville Business Council were based on notes taken during the meeting, and may not be transcribed verbatim. However, the general nature of, and core content, of each question was noted to the extent possible. Additions and revisions in response to all comments received were made to Sila's Draft EA and informed development of the Final EA.			
Comment Received	**Commenting Entity**	**Comment Method**	**DOE Response/EA Reference Point**
A comment was received with concerns about batteries, specifically from the broader impacts of building batteries, minerals sourced, and old batteries contributing to waste.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	DOE responded during the 3/4 consultation session that battery recycling is a large component of DOE's overall battery program. Clarification was also added to the EA that batteries would not be manufactured at the Sila facility (page 16, within the "Sila Nanotechnologies' Proposed Project" section). The EA also speaks to Sila's waste handling - particularly how the primary materials used (carbon and silicon) are not considered hazardous, and that except for caustic scrubbers used for treating wastewater, Sila's processes do not utilize hazardous liquids or solids (page 60). Sila's battery test laboratory may produce approximately 10 tons of hazardous waste, but those wastes would be disposed of subject to federal and state regulations (page 60). Sila has also noted how they are utilizing a variety of methods to reduce onsite waste generation (described on page 61). Broader discussions of Sila's waste management are discussed in the EA starting on page 59 (within the "Regulated Waste (Solid and Hazardous Waste" section). Broadly speaking, Sila is subject to all state, local, and federal permitting guidelines for waste and water management, and thus, this project would not proceed as planned unless permitting requirements are met by Sila. Section 1.4 (starting on page 12) also speaks to broader goals and initiatives being led by DOE to develop clean and sustainable domestic batteries, along with reuse and recycling initiatives.
A comment was received with concerns about how the poorest areas get the impacts and don't receive the benefits. Another comment followed-up on this stating that no matter where the projects are located, there will be negative impacts from green energy projects.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	The EA contains references to the Community Benefits Plan (also known as the Equity Plan), particularly on page 19 (2.2 - Sila Nanotechnologies Proposed Project). The EA contains specific details of community benefits for the Moses Lake area within the Socioeconomics (beginning on page 27) and Environmental Justice (beginning on page 29) sections, but pages 19, 29, and 31 highlight specific community benefits proposed for the Moses Lake area resulting from Sila's proposed project.
A comment was received asking about potential impacts to the local shrub steppe and animal species. This commenter also asked about why the area was chosen.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	The EA references a prior Shrub Steppe Habitat analysis and report that was previously completed as part of the SEPA process (beginning on page 57 - "Vegetation and Wildlife"), with the conclusion that due to the disturbed nature of the site, its location within Moses Lake, and isolation from other habitat connection opportunities, no mitigation for shrub steppe habitat impacts is necessary for the proposed project. DOE also made a conclusion that Sila's proposed project would have no effect on listed species, based on the results of a U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) report completed (beginning on page 58 - "Wildlife" subsection). The Draft EA was also provided to a U.S. Fish and Wildlife Service - Washington state regional office for review and comment on DOE's determination. No comments were received from this U.S. Fish and Wildlife Service regarding DOE's determination. Detailed discussions of DOE's efforts to identify potential impacts to vegetation and wildlife are contained within the EA starting on page 57 (as part of the "Vegetation and Wildlife) section. DOE also noted during the consultation session that Sila, not DOE, selected this site. The EA also discusses why the applicant selected this site, particularly starting on page 22, ("Alternatives Considered by Sila Nanotechnologies").

Sila Nanotechnologies EA - Public Comment Matrix			
DOE received comments on the Sila Nanotechnologies (Sila) Draft EA during the 30-day public comment period from the Confederated Tribes of the Colville Reservation (Colville Reservation), Region 10 of the United States Environmental Protection Agency (EPA), and the State of Washington Department of Ecology (WA Ecology). DOE was also invited to participate in a government-to-government tribal consultation with members of the Colville Business Council on March 4, 2024. During this consultation, DOE received numerous questions and comments from the Colville Business Council concerning Sila's proposed project, along with an additional proposed project to Group14 Technologies (Group14). Both proposed projects are in the Moses Lake area. Comments specific to the Group14 project will be addressed in the Draft EA for that project. Comments received as part of the consultation with the Colville Business Council were based on notes taken during the meeting, and may not be transcribed verbatim. However, the general nature of, and core content, of each question was noted to the extent possible. Additions and revisions in response to all comments received were made to Sila's Draft EA and informed development of the Final EA.			
Comment Received	**Commenting Entity**	**Comment Method**	**DOE Response/EA Reference Point**
A comment was also received asking about how much water is used to make one battery.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	A number of factors go into the calculation of water usage (including variables like the materials a battery is composed of, the size of the battery, and type of of construction of a battery), but goals and initiatives DOE is undertaking to improve the domestic battery supply chain (including improvements and efficiencies for resource use and consumption) were highlighted in the EA in response to this comment beginning on page 12 ("1.4 - Broader DOE Goals, Initiatives, and Crosscutting Programs for the Clean Energy and Transportation Transition").
A question was asked about the selection process itself for this project.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	A general description of the FOA under which Sila's award was selected was provided within the EA starting on page 10 ("1.2 - Background"), and objectives of the FOA are described beginning on page 11 ("1.3 - Purpose and Need for Department of Energy Action"). A more-detailed overview of the selection process is also in Appendix One ("Environmental Synopsis").
A question was asked if DOE has sites identified in other locations.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	DOE has projects in multiple locations throughout the country amongst all of its programs, and all are subject to individual NEPA reviews (including consultations with tribal nations for EA/EIS-level actions, at a minimum). No other sites are currently being considered for the Sila project itself, and any changes in the project location proposed by Sila would require modifications (at a minimum) to the existing EA, or potentially a brand new NEPA determination depending on any new locations considered. Section 1.4 in the Draft EA describes in broader terms DOE's programs related to improving the clean energy and transportation sectors.
The meeting concluded with a comment from Colville Business Council chairperson Jarred-Michael Erickson stating that he is leaning towards opposing the project, mainly because of water use and impacts to traditional areas.	Colville Business Council	Verbal (3/4/2024 Colville Business Council consultation session with DOE)	DOE has taken all comments received for the proposed Sila project and incorporated revisions and responses within the Draft EA. A revised Draft EA was submitted to all members of the Colville Business Council for additional feedback/comment on May 3, 2024. No additional comments were received from the Colville Business Council on the revised Draft EA.
The U.S. Environmental Protection Agency (EPA - Rebecca Chu) received a copy of the Draft EA, and provided comments to DOE via email.	**EPA**	**E-mail**	**DOE noted comments from EPA and responses from DOE below. The Draft EA was also updated accordingly. A copy of the comments received from EPA is also included in Appendix 5 of the EA.**
The U.S. Environmental Protection Agency (EPA - Rebecca Chu) did not identify significant public health, welfare, or environmental quality concerns to be addressed, but provided recommendations related to air quality, wastewater, and stormwater.	EPA	E-mail	Comment acknowledged. The recommendations referenced are described in more detail below.
EPA commented that "The DEA states that there are "net-positive impacts to local socioeconomic conditions and supporting the decarbonization of transportation. EPA recognizes and appreciates that the project's purpose to supply silicon anode batteries supports clean energy transportation, which contributes to better air quality conditions."	EPA	E-mail	Comment acknowledged.

Sila Nanotechnologies EA - Public Comment Matrix			
DOE received comments on the Sila Nanotechnologies (Sila) Draft EA during the 30-day public comment period from the Confederated Tribes of the Colville Reservation (Colville Reservation), Region 10 of the United States Environmental Protection Agency (EPA), and the State of Washington Department of Ecology (WA Ecology). DOE was also invited to participate in a government-to-government tribal consultation with members of the Colville Business Council on March 4, 2024. During this consultation, DOE received numerous questions and comments from the Colville Business Council concerning Sila's proposed project, along with an additional proposed project to Group14 Technologies (Group14). Both proposed projects are in the Moses Lake area. Comments specific to the Group14 project will be addressed in the Draft EA for that project. Comments received as part of the consultation with the Colville Business Council were based on notes taken during the meeting, and may not be transcribed verbatim. However, the general nature of, and core content, of each question was noted to the extent possible. Additions and revisions in response to all comments received were made to Sila's Draft EA and informed development of the Final EA.			
Comment Received	**Commenting Entity**	**Comment Method**	**DOE Response/EA Reference Point**
EPA noted that according to EJScreen, "Moses Lake exceeds the 80th percentile for several air quality indices when comparing to the state of Washington – particulate matter at 93, ozone at 89, and toxic releases to air at 93."	EPA	E-mail	The EA was updated to confirm Sila's use of EJScreen to identify areas disproportionately impacted by air quality issues, and discusses applicability to the Moses Lake area. Discussions of EJScreen can be found throughout the EA, particularly on page 30, 31, and 41. Page 39 of the EA notes how EPA has delegated authority to the Washington State Department of Ecology for air quality enforcement, and that Sila has submitted a Notice of Construction application to the Department of Ecology. Sila has received an Approval Order for this project (included in Appendix 6 of the EA) from the Department of Ecology. Sila is responsible for working with the Department of Ecology to ensure air quality monitoring and compliance (including requirements to complete initial air emission monitoring, and annually thereafter - described on page 43 of the EA) in accordance with Department of Ecology permitting requirements to mitigate potential air quality impacts.
EPA also noted that "EPA appreciates the commitment to utilize emission control devices during onstruction and operation of the project."	EPA	E-mail	Comment acknowledged.
EPA commented that "EPA recommends that the FEA include the use of EJScreen to identify areas disproportionately impacted by air quality issues (and wastewater issues, see next section) and to develop appropriate mitigation and monitoring for communities with EJ concerns. Given the EJ concerns related to air quality, EPA further recommends that the FEA include emissions monitoring to ensure mitigation practices are sufficient. EPA recommends the FEA also consider the cumulative impacts on local air quality and to communities with EJ concerns to account for several EJScreen air quality indicators are already exceeding the 80th percentile."	EPA	E-mail	The Draft EA was updated to confirm Sila's use of EJScreen to identify areas disproportionately impacted by air quality issues, and discusses applicability to the Moses Lake area. Discussions of EJScreen can be found throughout the EA, particularly on page 30, 31, and 41. Page 39 of the EA notes how EPA has delegated authority to the Washington State Department of Ecology for air quality enforcement, and that Sila has submitted a Notice of Construction application to the Department of Ecology. Sila has received an Approval Order for this project (included in Appendix 6 of the EA) from the Department of Ecology. Sila is responsible for working with the Department of Ecology to ensure air quality monitoring and compliance (including requirements to complete initial air emission monitoring, and annually thereafter - described on page 43 of the EA) in accordance with Department of Ecology permitting requirements to mitigate potential air quality impacts.
EPA commented that "EPA recommends the FEA include a description of changes (both quantity and quality) to contributions to the Moses Lake Sand Dunes wastewater treatment plant (WWTP). With the expansion and new activities proposed in the DEA, there will be more wastewater and process water generated that will flow to the wastewater treatment plant. We recommend working with Washington State Department of Ecology to confirm that the new operations do not exceed the permitted capacity."	EPA	E-mail	The Draft EA was updated to discuss Sila's plans for wastewater disposal to the Moses Lake Sand Dunes wastewater treatment plant (starting on page 55). In particular, Sila plans to complete an All Known, Available, and Reasonable methods of prevention, control, and Treatment evaluation subject to the Washington State Department of Ecology. All wastewater discharges to the Mose Lake Sand Dunes Wastewater Treatment Plan would be subject to Department of Ecology regulations, and Sila is working with the Department of Ecology on obtaining a waste discharge permit.

Sila Nanotechnologies EA - Public Comment Matrix			
DOE received comments on the Sila Nanotechnologies (Sila) Draft EA during the 30-day public comment period from the Confederated Tribes of the Colville Reservation (Colville Reservation), Region 10 of the United States Environmental Protection Agency (EPA), and the State of Washington Department of Ecology (WA Ecology). DOE was also invited to participate in a government-to-government tribal consultation with members of the Colville Business Council on March 4, 2024. During this consultation, DOE received numerous questions and comments from the Colville Business Council concerning Sila's proposed project, along with an additional proposed project to Group14 Technologies (Group14). Both proposed projects are in the Moses Lake area. Comments specific to the Group14 project will be addressed in the Draft EA for that project. Comments received as part of the consultation with the Colville Business Council were based on notes taken during the meeting, and may not be transcribed verbatim. However, the general nature of, and core content, of each question was noted to the extent possible. Additions and revisions in response to all comments received were made to Sila's Draft EA and informed development of the Final EA.			
Comment Received	**Commenting Entity**	**Comment Method**	**DOE Response/EA Reference Point**
EPA commented that "according to EJScreen, the Wastewater Discharge indicator, which quantifies a group's relative risk of exposure to pollutants in downstream water bodies, 4 for the city of Moses Lake is in the 84th percentile compared the state. Therefore, there may already be disproportionate impacts related to wastewater discharge to communities residing in the area. EPA recommends the FEA consider the cumulative impacts on wastewater and its impacts to communities with EJ concerns."	EPA	E-mail	DOE's comment above speaks to Sila's work with the Washington Department of Ecology to ensure safe and legal disposal of wastewater to the Moses Lake Sand Dunes wastewater treatment plant. Page 64 (under the "Utilities and Energy Use" section) also notes how Sila has incorporated a closed loop adiabatic process cooling water system to reduce water usage by over 20 million gallons of water annually compared to traditional systems, installed an on-site fire water tank to reduce water loss from evaporation (as opposed to traditional fire water ponds), and will continue to explore methods to recycle water on-site for reuse in the plant system (including the ability to recycle and reuse caustic scrubber wastewater) to reduce wastewater from the proposed project activities. Page 56 also notes how activities associated with construction and operation of the proposed project are currently using BMP measures required by Ecology's Stormwater Management Manual for Eastern Washington, as well as the 'How to Meet Ecology's Construction Stormwater General Permit Requirements' handbook to reduce and minimize potential impacts to surface water or groundwater.
EPA encouraged consideration of zero or low-impact developments techniques in project design to reduce stormwater volumes and mimic natural conditions, including: • Minimizing creation of new impervious surface. • Maximizing use of pervious pavement. • Avoiding building over groundwater recharge areas. • De-paving areas as mitigation for any new impervious surfaces needed for the project, to achieve no net increase in pollution generating impervious surface.	EPA	E-mail	Language was added on page 56 of the EA to confirm Sila's construction and operation activities are using best management practices required by the Washington State Department of Ecology's Stormwater Management Manual for Eastern Washington, as well as the 'How to Meet Ecology's Construction Stormwater General Permit Requirements' handbook to reduce and minimize potential impacts to surface water or groundwater. Sila has obtained a Construction General Stormwater Permit (WAR312862) from the Washington State Department of Ecology for this project. These impacts would be minimized through implementation of BMPs required by Sila's stormwater permit, including installation of silt curtains and hay bales to slow and filter water runoff, reducing the time excavations are open to erosion, stabilized construction entrances and other measures. The Proposed Project includes a stormwater system including use of the existing stormwater retention and infiltration pond in the northwest portion of the site (which would continue to collect stormwater from the existing building roof), as well as a new stormwater retention and infiltration pond in the southwest portion of the site to control the remaining stormwater runoff generated on the site. The EA describes these measures starting on page 54 as part of the "Surface Water and Groundwater" section.
The State of Washington Department of Ecology (WA Department of Ecology) also received a copy of the Draft EA, and provided comments to DOE via email.	**WA Department of Ecology**	**E-mail**	**DOE noted specific comments received by WA Department of Ecology and responses from DOE below. The Draft EA was also updated accordingly. A copy of the comments received from EPA is also included in Appendix 5 of the EA..**

Sila Nanotechnologies EA - Public Comment Matrix			
DOE received comments on the Sila Nanotechnologies (Sila) Draft EA during the 30-day public comment period from the Confederated Tribes of the Colville Reservation (Colville Reservation), Region 10 of the United States Environmental Protection Agency (EPA), and the State of Washington Department of Ecology (WA Ecology). DOE was also invited to participate in a government-to-government tribal consultation with members of the Colville Business Council on March 4, 2024. During this consultation, DOE received numerous questions and comments from the Colville Business Council concerning Sila's proposed project, along with an additional proposed project to Group14 Technologies (Group14). Both proposed projects are in the Moses Lake area. Comments specific to the Group14 project will be addressed in the Draft EA for that project. Comments received as part of the consultation with the Colville Business Council were based on notes taken during the meeting, and may not be transcribed verbatim. However, the general nature of, and core content, of each question was noted to the extent possible. Additions and revisions in response to all comments received were made to Sila's Draft EA and informed development of the Final EA.			
Comment Received	**Commenting Entity**	**Comment Method**	**DOE Response/EA Reference Point**
The WA Department of Ecology noted how during construction activities, some construction-related wastes may qualify as dangerous wastes in Washington State. Several examples of wastes were also noted. It was noted that the applicant bears the responsibility for construction waste, and that sampling/testing of wastes may be required to determine if they are dangerous wastes.	WA Department of Ecology	E-mail	Comment acknowledged. Sila has confirmed that all project activities (including construction and operations waste management) are subject to permitting, approval, and compliance with Washington State Department of Ecology regulations. Required compliance activities are discussed throughout the EA.
The WA Department of Ecology noted that a Dam Safety construction permit is required for those dams or ponds that can impound a volume of 10 acre-feet or more of water or other liquids above ground level, and that if Sila's detention pond meets or exceeds this criteria, a dam construction permit will be required.	WA Department of Ecology	E-mail	The Draft EA was updated to note and confirm that the proposed project activities do not meet the requirements of a Dam Safety construction permit (page 56 - "Surface Water and Groundwater").
The WA Department of Ecology noted, speficially related to Washington state's State Environmental Policy Act (SEPA) process, that the comments submitted do not constitute an exhaustive list of various authorizations that Sila may need to obtain for the proposed project, and that Sila should remain in touch with Local Responsible Officials or Planners for additional guidance.	WA Department of Ecology	E-mail	DOE and Sila acknowledge this comment. In particular, Sila has completed the SEPA process and received a Mitigated Determination of Non-Significance from the City of Moses Lake. Descriptions of Sila's SEPA compliance can be found on page 20 of the EA.

Appendix 6

Approved Project Permits

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Eastern Region Office
4601 North Monroe St., Spokane, WA 99205-1295 • 509-329-3400

January 2, 2024

Jim Dobrzynski
EHS Risk Manager
Sila Nanotechnologies, Inc.
2470 Mariner Square Loop
Alameda, CA 94501

Re: **Notice of Construction** - Approval Order No. 24AQ-E005
AQPID No: A0250326

Dear Jim Dobrzynski:

The Department of Ecology Air Quality Program has reviewed the Notice of Construction application received on April 12, 2032, determined complete on November 11, 2023, for the construction and operation of the Battery Material Manufacturing Facility located at 3741 Road N, in Moses Lake, Washington, Grant County.

Enclosed is the Approval Order No. 24AQ-E005. The required Web Notice period completed on November 30, 2023. Ecology did not receive any comments or questions from the public.

All correspondence relating to this document should be directed to me at the Department of Ecology, Regional Air Quality Section, 4601 N. Monroe, Spokane, Washington 99205-1295. If you have any questions concerning the content of the document, please contact me at (509) 329-3528 or Andrew.kruse@ecy.wa.gov.

Sincerely,

Andy Kruse, P.E.
Commercial/Industrial Unit
Air Quality Program
Eastern Regional Office

AK:sg

Enclosures: Approval Order No. 24AQ-E005

Certified Mail: 7019 0140 0000 6498 1981

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Eastern Region Office
4601 North Monroe St., Spokane, WA 99205-1295 • 509-329-3400

January 2, 2024

Jim Dobrzynski
EHS Risk Manager
Sila Nanotechnologies, Inc.
2470 Mariner Square Loop
Alameda, CA 94501

Re: **Notice of Construction** - Approval Order No. 24AQ-E005
AQPID No: A0250326

Dear Jim Dobrzynski:

The Department of Ecology Air Quality Program has reviewed the Notice of Construction application received on April 12, 2032, determined complete on November 11, 2023, for the construction and operation of the Battery Material Manufacturing Facility located at 3741 Road N, in Moses Lake, Washington, Grant County.

Enclosed is the Approval Order No. 24AQ-E005. The required Web Notice period completed on November 30, 2023. Ecology did not receive any comments or questions from the public.

All correspondence relating to this document should be directed to me at the Department of Ecology, Regional Air Quality Section, 4601 N. Monroe, Spokane, Washington 99205-1295. If you have any questions concerning the content of the document, please contact me at (509) 329-3528 or Andrew.kruse@ecy.wa.gov.

Sincerely,

Andy Kruse, P.E.
Commercial/Industrial Unit
Air Quality Program
Eastern Regional Office

AK:sg

Enclosures: Approval Order No. 24AQ-E005

Certified Mail: 7019 0140 0000 6498 1981

State of Washington Department of Ecology
Notice of Construction Approval Order

In the matter of approving a new air contaminant source for Sila Nanotechnologies	)))	**Approval Order No. 24AQ-E005** **AQPID No. A0250326**

Project Summary

Sila Nanotechnologies, herein referred to as the Permittee, is a new battery parts manufacturer located at 3741 Road N, Moses Lake, Washington, in Grant County. The Permittee is classified as a natural minor. The project consists of installation and operation of equipment and processes associated with creating and manufacturing anode components for silicon batteries.

ID No.	Equipment / Emission Unit / Air Pollution Control Equipment	Control
1	Thermal Oxidizer (Model No. TBD, but must meet 99.99 percent destruction efficiency)	n/a
2	Baghouse (TBD, but must meet 0.005 gr/dscf grain loading and 99.5 percent capture efficiency)	n/a
3	Kohler Emergency Generator (No 2000REOZMD, 2MW)	Tier 2
4	Fire Water Pump (237HP)	Exempt
5	Silane Scrubber (Model No TBD)	n/a
6	Flare (Model No TBD)	Good Combustion Practices and Flame-out prevention
7	Lotus Reactor 10A	IBC Station Inlet - 1 filter to Atmosphere. IBC Station Inlet - 2 filters to Thermal Oxidizer(92) IBC Station Outlet - 2 filters to Atmosphere IBC Station Outlet - 1 filter to Thermal Oxidizer(92)
8	Lotus Reactor 10B	IBC Station Inlet - 1 filter to Atmosphere IBC Station Inlet - 2 filters to Thermal Oxidizer(92)

		IBC Station Outlet - 2 filters to Atmosphere IBC Station Outlet - 1 filter to Thermal Oxidizer(92)
9	Lotus Reactor 10C	IBC Station Inlet - 1 filter to Atmosphere IBC Station Inlet - 2 filters to Thermal Oxidizer(92) IBC Station Outlet - 2 filters to Atmosphere IBC Station Outlet - 1 filter to Thermal Oxidizer(92)
10	Regenerator Reactor 15	Regenerator inlet - 1 filter Reactor System Purge - 1 filter to Thermal Oxidizer(92)
11	Cayenne Reactor 20A	IBC Station Inlet - 2 filters to Atmosphere IBC Station Outlet - 3 filters to Atmosphere Reactor Outlet - 2 filters to Thermal Oxidizer(92)
12	Cayenne Reactor 20B	IBC Station Inlet - 2 filters to Atmosphere IBC Station Outlet - 3 filters to Atmosphere Reactor Outlet - 2 filters to Thermal Oxidizer(92)
13	Salt Reactor 30A	IBC Station Inlet - 1 filter to Atmosphere IBC Station Inlet - 1 filter to Caustic Scrubber(90) Reactor Outlet - 1 filter to Caustic Scrubber(90)
14	Salt Reactor 30B	IBC Station Inlet - 1 filter to Atmosphere IBC Station Inlet - 1 filter to Caustic Scrubber(90) Reactor Outlet - 1 filter to Caustic Scrubber(90)
15	Cacao 1 Reactor 40A	Reactor Outlet - 1 filter to Thermal Oxidizer(92)

		IBC Station Outlet - 2 filters to Atmosphere IBC Station Outlet - 1 filter to Thermal Oxidizer(92)
16	Cacao 1 Reactor 40B	Reactor Outlet - 1 filter to Thermal Oxidizer(92) IBC Station Outlet - 2 filters to Atmosphere IBC Station Outlet - 1 filter to Thermal Oxidizer(92)
17	Coffee 1 Material Handling 50A	IBC Station Inlet - 2 filters to Atmosphere Coffee Outlet - 1 Baghouse to Atmosphere
18	Coffee 1 Material Handling 50B	IBC Station Inlet - 2 filters to Atmosphere Coffee Outlet - 1 Baghouse to Atmosphere
19	Coffee 1 Material Handling 50C	IBC Station Inlet - 2 filters to Atmosphere Coffee Outlet - 1 Baghouse to Atmosphere
20	Coffee 1 Material Handling 50D	IBC Station Inlet - 2 filters to Atmosphere Coffee Outlet - 1 Baghouse to Atmosphere
21	Cacao Reactor 2 60A	Inlet Hopper - 1 filter to Thermal Oxidizer(92) Reactor outlet - 1 filter to Thermal Oxidizer(92) IBC Station Outlet - 2 filters to Atmosphere IBC Station Outlet - 1 filter to Thermal Oxidizer(92)
22	Cacao 2 Reactor 60B	Inlet Hopper - 1 filter to Thermal Oxidizer(92) Reactor outlet - 1 filter to Thermal Oxidizer(92) IBC Station Outlet - 2 filters to Atmosphere IBC Station Outlet - 1 filter to Thermal Oxidizer(92)

23	Cacao 2 Rector 60C	Inlet Hopper - 1 filter to Thermal Oxidizer(92) Reactor outlet - 1 filter to Thermal Oxidizer(92) IBC Station Outlet - 2 filters to Atmosphere IBC Station Outlet - 1 filter to Thermal Oxidizer(92)
24	Cacao 2 Reactor 60D	Inlet Hopper - 1 filter to Thermal Oxidizer(92) Reactor outlet - 1 filter to Thermal Oxidizer(92) IBC Station Outlet - 2 filters to Atmosphere IBC Station Outlet - 1 filter to Thermal Oxidizer(92)
25	Half Caf Material Handling 66A	IBC Station Inlet - 4 filters to Atmosphere Half Caf Outlet - Baghouse + 1 filter + 1 HEPA filter to Atmosphere IBC Waste Station - 1 filter to Atmosphere IBC Station Outlet - 2 filters to Atmosphere
26	Half Caf Material Handling 66B	IBC Station Inlet - 4 filters to Atmosphere Half Caf Outlet- Baghouse + 1 filter + 1 HEPA filter to Atmosphere IBC Waste Station - 1 filter to Atmosphere IBC Station Outlet - 2 filters to Atmosphere
27	Horseradish Material Handling 71	IBC Station Inlet - 1 filter to Atmosphere Processing Equipment - 4 filters to Atmosphere LB Outlet - 2 filters to Atmosphere SB Outlet - 1 filter to Atmosphere
28	Mint Material Handling OS 72	Processing Equipment - 1 filter to Atmosphere
29	Mint Material Handling BBU 73	Station A - 1 filter to Atmosphere

		Station B - 1 filter to Atmosphere
30	Mint Material Handling Mixer 74	Processing Equipment - 1 filter to Atmosphere
31	Mint Material Handling Cleaning 75	Processing Equipment - 1 baghouse to Atmosphere
32	Propylene Tank (30,000 gal)	n/a
33	Sodium Hydroxide Tank (35,000 gal)	n/a
34	Sodium Hydroxide Tank (105,000 gal)	n/a
35	Sulfuric Acid Tank (Size TBD)	n/a
36	N, O2, and CO2 Tanks (Sizes TBD)	n/a

Legal Authority

The emissions from the proposed project have been reviewed under the legal authority of RCW 70A.15.2210 and the applicable rules and regulations adopted thereunder. The proposed project, if operated as specified, will be in accordance with applicable rules and regulations, as set forth in Chapters 173-400 WAC and 173-460 WAC and the operation thereof, at the location proposed, will not result in ambient air quality standards being exceeded.

Therefore, it is ordered that the project as described in the Notice of Construction (NOC) application and more specifically detailed in plans, specifications, and other information submitted to the Washington State Department of Ecology (Ecology) is approved for construction and operation, provided the following conditions are satisfied:

Approval Conditions

1. Facility Wide Limitations

a. The facility production is limited to 600 tons of silicon battery anode material per calendar year.

b. The facility must not exceed the use of 110,956,000 standard cubic feet of pipeline quality natural gas per calendar year.

c. Opacity Limit - Visible emissions from any emission point must not exceed five percent opacity, as determined by 40 C.F.R. Part 60, Appendix A, Test Method 9.

d. There must be no visible emissions from the facility at the property boundary, as measured by 40 C.F.R. Part 60, Appendix A, Test Method 22.

e. All dust collecting equipment must have a differential pressure gauge (scaled in inches of water column) installed across the inlet and outlet of the exhaust. The range of pressure drop readings that indicate proper filter operation must be incorporated into the facility Operations and Maintenance (O&M) manual as well as procedures to follow in the event the gauge indicates operation is outside those ranges.

2. Operational Limitations

a. Material Handling

i. All materials transferred between process steps must be enclosed in integrated bulk containers, sealed bags, or containers.

ii. All transfers of material from incoming through each process step and then into final packaging must be done with dust collection and/or capturing that is built into each process step with appropriate dust collection.

b. Thermal Oxidizer

i. All waste gas must be exhausted through the Thermal Oxidizer (TO) to be destroyed. The TO must be operated and maintained in continuous operation at all times when waste gas is exhausted to the TO.

ii. The TO is limited to processing 48.3 MMBtu/hr of waste gas.

iii. Natural Gas can be a supplemental fuel source to the Thermal Oxidizer, but it must be limited to 13.0 MMBtu/hr of heat input.

iv. The Thermal Oxidizer must meet all of the following limits:

a. Must not cause a discharge of NOx into the Atmosphere in excess of 8.4 lb/hr, as determined using Method 25A or other test method approved in advance by Ecology.

b. Must not cause a discharge of CO into the Atmosphere in excess of 11.2 lb/hr, as determined using EPA Method 10 or other test method approved in advance by Ecology.

c. Must not cause a discharge of SO2 into the Atmosphere in excess of 5.1 lb/hr, as determined using EPA Method 6 or other test method approved in advance by Ecology.

v. The thermal oxidizer must be operated at or above the average temperature maintained during the latest source test but must not be operated at less than 1,400 degrees F. The average temperature during the latest source test for the source test must be identified at or near the temperature monitor.

vi. The owner or operator must install, calibrate, maintain, and operate a monitoring device for the continuous measurement and recording of the thermal oxidizer chamber temperature (or sampled at intervals no greater than 15 seconds and recorded as one minute averages).

vii. The owner or operator must annually test or replace the temperature monitoring system thermocouples or pyrometers. If performed, the test must consist of either a physical or electronically simulated comparison and must follow manufacturer specifications. The results of the test readings must be within +/- 14 degrees F. If the results of the test readings exceed +/- 14 degrees of the reference value, the thermocouple must be replaced or adjusted to read within +/- 14 degrees of the reference value.

c. Filters and Baghouses

i. Emissions from the baghouses must not exceed 0.005 gr/dry standard cubic foot (dscf) as measured by the average of three test runs using 40 C.F.R. Part 60, Appendix A, Test Method 5.

ii. All Cartridge, Ceramic, and Fabric Filters (including the baghouse filters) must be equipped with filters that meet BACT for 0.005 gr/dscf and a control efficiency of 99.5 percent efficiency.

iii. All filters must be in their correct location and operational while equipment is operating.

d. Silane Scrubber

i. The Scrubber must be operated and maintained in continuous operation at all times when exhaust is being routed to the Scrubber.

ii. The exhaust of the Inlet Material Hopper (as part of the Salt 30A and 30B line) must be routed to the Scrubber at all times.

iii. The exhaust of the Salt Reactor (as part of the Salt 30A and 30B line) must be routed to the Scrubber at all times.

e. Flare

i. Approved use of the Flare includes emergency upset conditions where waste gas must be sent to the Flare to bring equipment to a safe state, when vents and drains in the propylene gas system are routed to the flare (estimated to be once every 5-10 years), and when the propylene pressure storage vessel is drained for internal inspection (estimated to be once every 10 years).

ii. The flare must have an adequate enclosure to prevent flame out at all times.

iii. The flare must be operated with a flame present at all times.

iv. The continuous presence of a flame must be ensured thorough use of a supplemental fuel source. Supplemental fuel is limited to natural gas.

v. The natural gas usage of the Flare pilot is limited to 130 standard cubic feet per hour (scf/hr).

vi. The presence or absence of a pilot flame must be clearly indicated on an accessible control panel located at ground level or in a centralized control room.

The presence of a pilot flame must be verified prior to sending waste gas or propylene to the flare.

vii. The flare must be operated to prevent flame-out following the manufacturer's instructions, including but not limited to the auto re-start features and alarm features.

viii. A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself must be installed and operated to indicate the continuous presence of a flame.

ix. The minimum flare operating temperature must be documented in the O&M manual to achieve the designed destruction efficiency. The O&M manual must specify a monitoring plan for ensuring the flare continuously meets the minimum operating temperature.

f. Emergency Diesel Generator

i. The diesel engine-generator must be equipped with a properly operated and maintained non-resettable hour meter.

ii. All diesel-fueled compression ignition engines must be fueled by ultra-low sulfur diesel fuel with a sulfur content of no more than 0.0015 percent by weight. Records must be kept for each diesel-fueled compression ignition engine in accordance with Approval Condition 4.

iii. The generator must not be operated more than 72 hours for maintenance, reliability testing, and emergency use in any consecutive 12-month period.

iv. The generator must use no more than 160 gallons of ultra-low sulfur diesel per hour.

v. There must be no operation of diesel engine-generator to produce power for demand-response arrangements, peak shaving arrangements, nor to provide power as part of a financial arrangement with another entity, or to supply power to the grid.

vi. Replacement of these engines, if necessary, must be with emergency engines with EPA-approved emission levels for the date of installation of the replacement engine (the EPA Tiered Emission Levels for the date of installation).

3. Operation and Maintenance

a. The Permittee must follow all recommended installation, configuration, operation, and maintenance provisions supplied by emission unit and component manufacturers.

b. An operations and maintenance (O&M) manual must be developed by the Permittee for each emission unit. The manufacturer's instructions may be referenced in the O&M manual.

   i. The O&M manual must include the following, at a minimum:

      A. Normal operating parameters for emissions units.

      B. A maintenance schedule for each emissions unit.

      C. A description of the monitoring procedures.

      D. Monitoring and record keeping requirements.

      E. Actions for abnormal control system operation.

      F. Additional project-specific information, as needed.

   ii. The O&M manuals must be developed within 30 days of commencing operation of each emission unit.

c. Emission units must be operated and maintained in accordance with the O&M manual.

d. The Permittee must assess all valid complaints received. The Permittee must initiate corrective action in response to a complaint within three calendar days of receipt of the complaint.

4. Monitoring and Recordkeeping

a. The O&M manual and any other relevant operating plan or fugitive dust control program (FDCP) must be reviewed annually.

   i. The date of each review and the person performing each review must be documented in the O&M manual.

   ii. The O&M manual and FDCP/other relevant operating plan must be updated to reflect any modifications to emission units or operating procedures.

b. O&M records must be kept on premises in hard copy or readily available on-site electronically.

c. For all air-quality related complaints, the following records must be kept:

   i. A written record of the complaint received by the Permittee or forwarded to the Permittee.

   ii. The Permittee's action to investigate the validity of the complaint, any corrective action that was taken in response to the complaint, and the effectiveness of the remedial action.

d. The date, time, duration, and cause of any periods where control technology equipment is out of service must be documented and maintained.

e. All data required by this NOC Approval Order must be maintained in a readily retrievable manner for a period of five years and must be made available to authorized representatives of Ecology upon request.

f. The Permittee must complete any additional monitoring or recordkeeping necessary to determine compliance with the requirements of this NOC Approval Order, as determined by Ecology.

g. Operation tracking using annual hours of operation compiled monthly, on a rolling 12-month basis.

h. Weekly records of the pressure differential across dust collectors.

i. Annual records of natural gas usage and supplier certification sheets.

j. Annual records of the sulfur content for diesel usage and supplier certification sheets.

5. Testing

a. The Permittee must submit a test plan to Ecology for review and approval at least 30 days prior to source testing. Ecology may require a new protocol for re-test events conducted after a failed source test, when required, and Ecology may approve a shorter timeframe for submission for the re-test protocol. The test plan must include the following information, at a minimum.

   i. Identification of each emission unit to be tested.

   ii. The operating parameters to be monitored during the test.

   iii. A description of the activities/processes/emission units to be tested.

   iv. The time and date of the proposed source test.

   v. Identification and qualifications of the source test personnel.

   vi. A description of the test methods and procedures to be used.

b. Test reports must be submitted to Ecology within 60 days of completion of the source testing. Test reports must include the following information, at a minimum:

   i. The information described under Approval Condition 5(a).

   ii. The information described in the test plan and any subsequent test plan approval letters.

   iii. Field and analytical laboratory data.

   iv. Quality assurance/quality control procedures and documentation.

   v. Analyzer data recorded during the test.

   vi. A summary of results, reported in units and averaging periods consistent with the applicable emission limit.

vii. A summary of control system and equipment operating conditions.

viii. Copies of all field data.

ix. Chain of custody information.

x. Calibration documentation.

xi. Discussion of any abnormalities associated with the results.

xii. A statement signed by the senior management official of the testing firm certifying the validity of the source test report.

xiii. Emission calculations.

c. The Permittee must provide adequate sampling ports, safe sampling platforms, and access to platforms and utilities for sampling and testing, in accordance with 40 C.F.R. 60.8, 40 C.F.R. 63.7(d), and WAC 173-400-105(4). This includes, but is not limited to, every inlet and outlet of each control device.

d. When information obtained by Ecology indicates the need to quantify emissions, Ecology may require the Permittee to conduct material analysis or air emission testing under WAC 173-400-105. This testing requirement is in addition to any testing required by Ecology in this NOC Approval Order, other permits, or other state or federal requirements.

e. For initial and subsequential compliance testing, the equipment to be tested must be operated with a production rate of at least 90 percent of the highest operation loads achieved at the facility in the previous 12 months of operation.

f. Initial compliance for Waste Gas Thermal Oxidizer must be demonstrated by testing each tool's effluent in the inlet and exhaust of each thermal oxidizer, at 90 percent of production rate, within 270 days of commissioning the Thermal Oxidizer. Compliance testing for each emission must consist of at least three separate 60 minute test runs.

g. Continued compliance testing for the T.O. must be demonstrated by testing the inlet and outlet, simultaneously, of the TO every 12 months, starting 12 months after the initial compliance test. If three consecutive tests demonstrate compliance with the emission limits for a pollutant, the frequency of source testing for that pollutant will be reduced to once every three years. If any source test demonstrates noncompliance with an emission limit for a pollutant, the frequency of source testing for that pollutant returns to once every 12 months until three consecutive tests demonstrate compliance for that specific source/equipment, at which time the testing frequency returns to once every three years. Compliance testing for each compound must consist of at least three separate 60 minute test runs.

h. Initial compliance test for both baghouses (ID No. 2, except where the inlet contains pyrophoric dust) must be demonstrated by testing the inlet and outlet of each baghouse within 180 days of starting-up the baghouses. The test plan must detail the test methods used for each pollutant, the operational data that will be collected during the test, and any other relevant information about the test. Subsequent compliance testing

for each baghouse will be reduced to once every five years on the outlet grain loading after completion of a passing initial compliance test.

i. Initial compliance test for the Scrubber must be demonstrated by testing the outlet of the Scrubber within 270 days of starting-up the Scrubber. The test plan must detail the test methods used for each pollutant, the operational data that will be collected during the test, and any other relevant information about the test. Subsequent compliance testing for the Scrubber will be reduced to once every five years after completion of a passing initial compliance test.

j. Initial performance testing of the Emergency Diesel Generator is not required at this time. Future testing may be required if Ecology determines it is necessary (WAC 173-400-105(4)).

k. Alternate test methods and procedures may be proposed by the Permittee for Ecology review; a justification for the change must be included. Proposed alternates must not be utilized unless an approval is issued by Ecology, in writing, prior to the test.

6. Reporting

a. All notifications, plans, reports, and other submittals must be submitted in a manner approved by Ecology.

Washington State Department of Ecology
Eastern Regional Air Quality Program
4601 N. Monroe Street
Spokane, WA 99205-1295

Electronic Annual Report Submittals: ecyaqciero@ecy.wa.gov

OR AS DIRECTED.

b. The Permittee must notify Ecology within one business day of any valid air complaint.

c. The Permittee must notify Ecology of commissioning of emission units listed in the Equipment List above within seven days of commissioning each piece of emissions related equipment, unless otherwise specified by Ecology. The notice must include:

i. Make, model, serial number, etc.

d. The Permittee must submit results of all required monitoring, outlined in this approval order, to Ecology on an annual basis. Results must be submitted to Ecology by January 31.

e. The Permittee must notify Ecology within thirty days of the following events:

i. Commencement of construction of the project.

ii. Completion of the construction of the project.

iii. If construction or operation has been discontinued for more than 18 months.

7. General Conditions

a. **Activities Inconsistent with this Order** - Any activity undertaken by the Permittee, or others, in a manner that is inconsistent with the data and specifications submitted as part of the NOC application or this NOC Approval Order, must be subject to Ecology enforcement under applicable regulations.

b. **Availability of Order** - Legible copies of this NOC Approval Order and any O&M manual(s) must be available to employees in direct operation of the equipment described in the NOC application and must be available for review upon request by Ecology.

c. **Compliance Assurance Access** - Access to the source by representatives of Ecology or the United States Environmental Protection Agency (EPA) must be permitted upon request. Failure to allow access is grounds for enforcement action under the federal Clean Air Act or the Washington State Clean Air Act and may result in revocation of this NOC Approval Order.

d. **Discontinuing Construction** - Approval to construct or modify a stationary source becomes invalid if construction is not commenced within eighteen months after receipt of the approval, or if construction is discontinued for a period of eighteen months or more. The permitting authority may extend the 18-month period upon a satisfactory showing by the permittee that an extension is justified.

e. **Equipment Operation** - Operation of the facility must be conducted in compliance with all data and specifications submitted as part of the NOC application and in accordance with O&M manuals, unless otherwise approved in writing by Ecology.

f. **Registration** - Periodic emissions inventory and other information may be requested by Ecology. The requested information must be submitted within 30 days of receiving the request, unless otherwise specified. All fees must be paid by the date specified.

g. **Violation Duration** - If the Permittee violates an approval condition in this NOC Approval Order, testing, recordkeeping, monitoring, or credible evidence will be used to establish the starting date of the violation. The violation will be presumed to continue until testing, recordkeeping, monitoring, or other credible evidence indicates compliance. A violation of an approval condition includes, but is not limited to, failure of air pollution control equipment, failure of other equipment resulting in increased emissions, or a failed source test indicating an exceedance of an emission limit.

h. **Odor** - The Permittee must not cause or allow the generation of any odor which unreasonably interferes with any other property owner's use and enjoyment of their property. The Permittee must use recognized good practice and procedures to reduce odors to a reasonable minimum.

i. **Outdoor Burning** - There must be no outdoor burning.

j. **Obligations Under Other Laws or Regulations** - Nothing in this NOC Approval Order must be construed so as to relieve the Permittee of its obligations under any state, local, or federal laws or regulations.

k. **Maintaining Compliance** - It must not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the operations in order to maintain compliance with the conditions of this NOC Approval Order.

l. **Changes in Operations** - Changes in operation, discontinued operation, or inadequate maintenance plans or re-start plans (see "Reporting" requirements), may require a new or amended NOC Approval Order.

Authorization may be modified, suspended, or revoked in whole or part for cause, including, but not limited to, the following:

- Violation of any terms or conditions of this authorization.
- Obtaining this authorization by misrepresentation or failure to disclose all relevant facts.

The provisions of this authorization are severable and, if any provision of this authorization or application of any provision to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this authorization, must not be affected thereby.

Your Right to Appeal

You have a right to appeal this NOC Approval Order to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt of this NOC Approval Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this NOC Approval Order:

- File your appeal and a copy of this NOC Approval Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this NOC Approval Order on Ecology in paper form - by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Address and Location Information

Street Addresses:

Department of Ecology
Attn: Appeals Processing Desk
300 Desmond Drive SE
Lacey, WA 98503

Pollution Control Hearings Board
1111 Israel Rd SW
STE 301
Tumwater, WA 98501

Mailing Addresses:

Department of Ecology
Attn: Appeals Processing Desk
PO Box 47608
Olympia, WA 98504-7608

Pollution Control Hearings Board
PO Box 40903
Olympia, WA 98504-0903

E-mail Address:

Department of Ecology
Not currently available (see WAC 371-08)

Pollution Control Hearings Board
Pchb-shbappeals@eluho.wa.gov

Americans with Disabilities Act Information

Accommodation Requests
To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 360-407-7668 or visit https://ecology.wa.gov/accessibility. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

Dated on this 2nd Day of January 2024.

Prepared by:

Andy Kruse, PE
Air Quality Program
Department of Ecology
State of Washington

Approved by:

Karin Baldwin, Section Manager
Air Quality Program
Department of Ecology
State of Washington

Pollution Control Hearings Board
1111 Israel Rd SW
STE 301
Tumwater, WA 98501

Mailing Addresses:

Department of Ecology
Attn: Appeals Processing Desk
PO Box 47608
Olympia, WA 98504-7608

Pollution Control Hearings Board
PO Box 40903
Olympia, WA 98504-0903

E-mail Address:

Department of Ecology
Not currently available (see WAC 371-08)

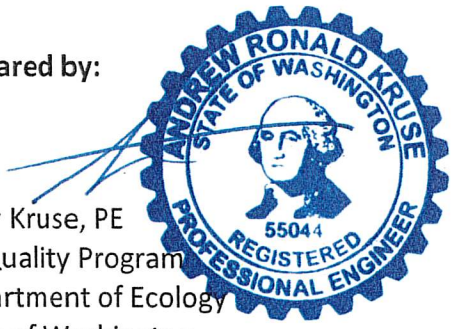
Pollution Control Hearings Board
Pchb-shbappeals@eluho.wa.gov

Americans with Disabilities Act Information

Accommodation Requests
To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 360-407-7668 or visit https://ecology.wa.gov/accessibility. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

Dated on this 2nd Day of January 2024.

Prepared by:



Andy Kruse, PE
Air Quality Program
Department of Ecology
State of Washington

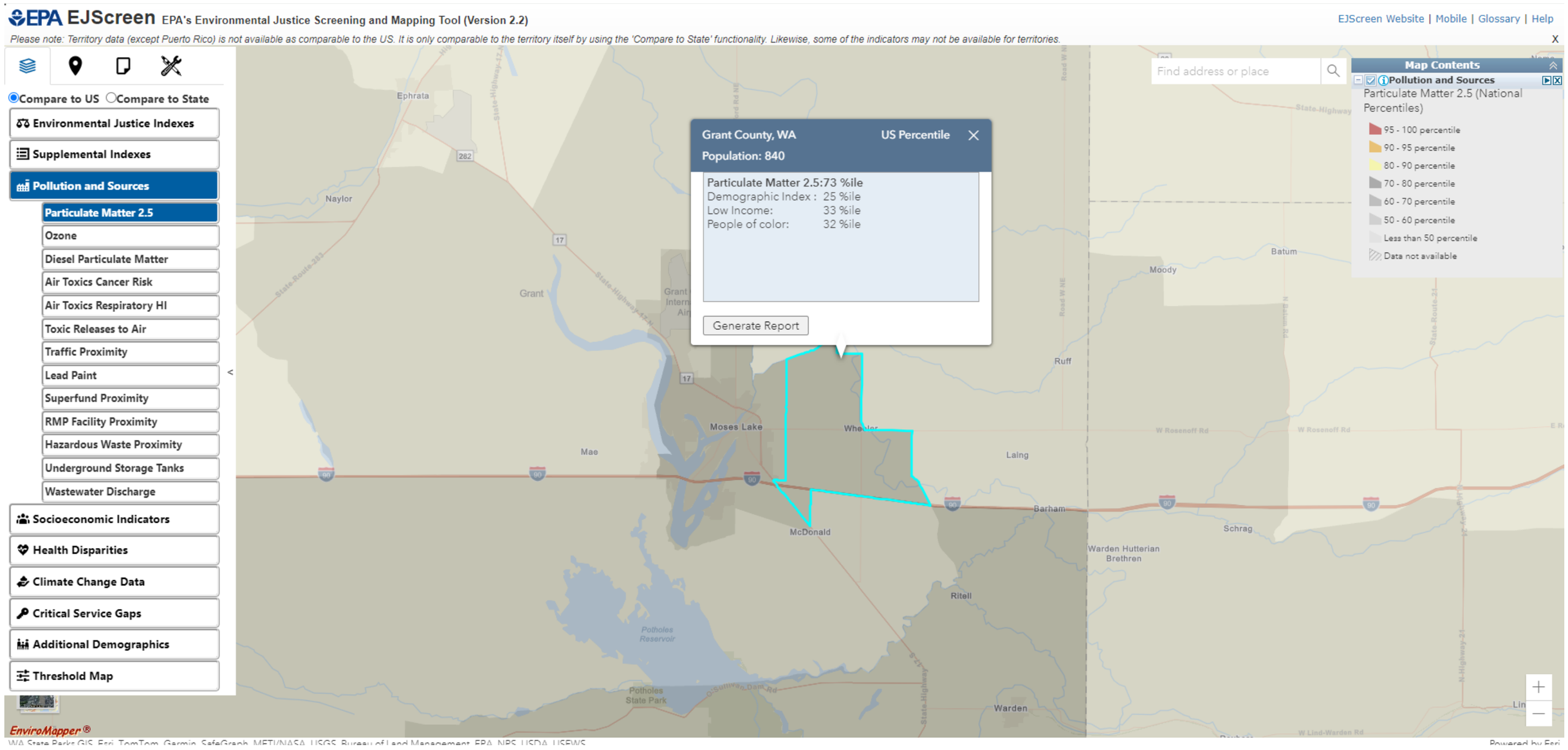
Approved by:

Karin Baldwin, Section Manager
Air Quality Program
Department of Ecology
State of Washington

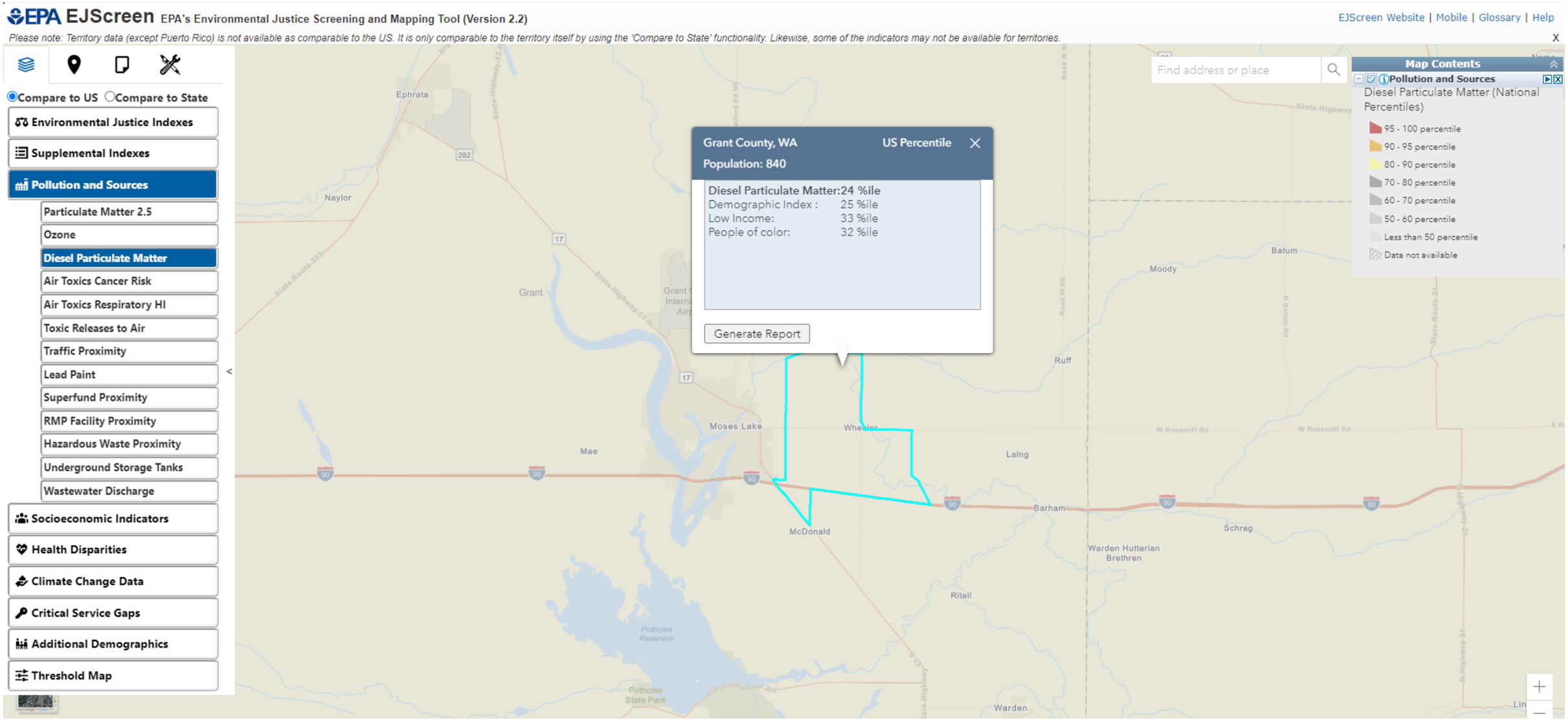
Appendix 7

EPA EJScreen Results

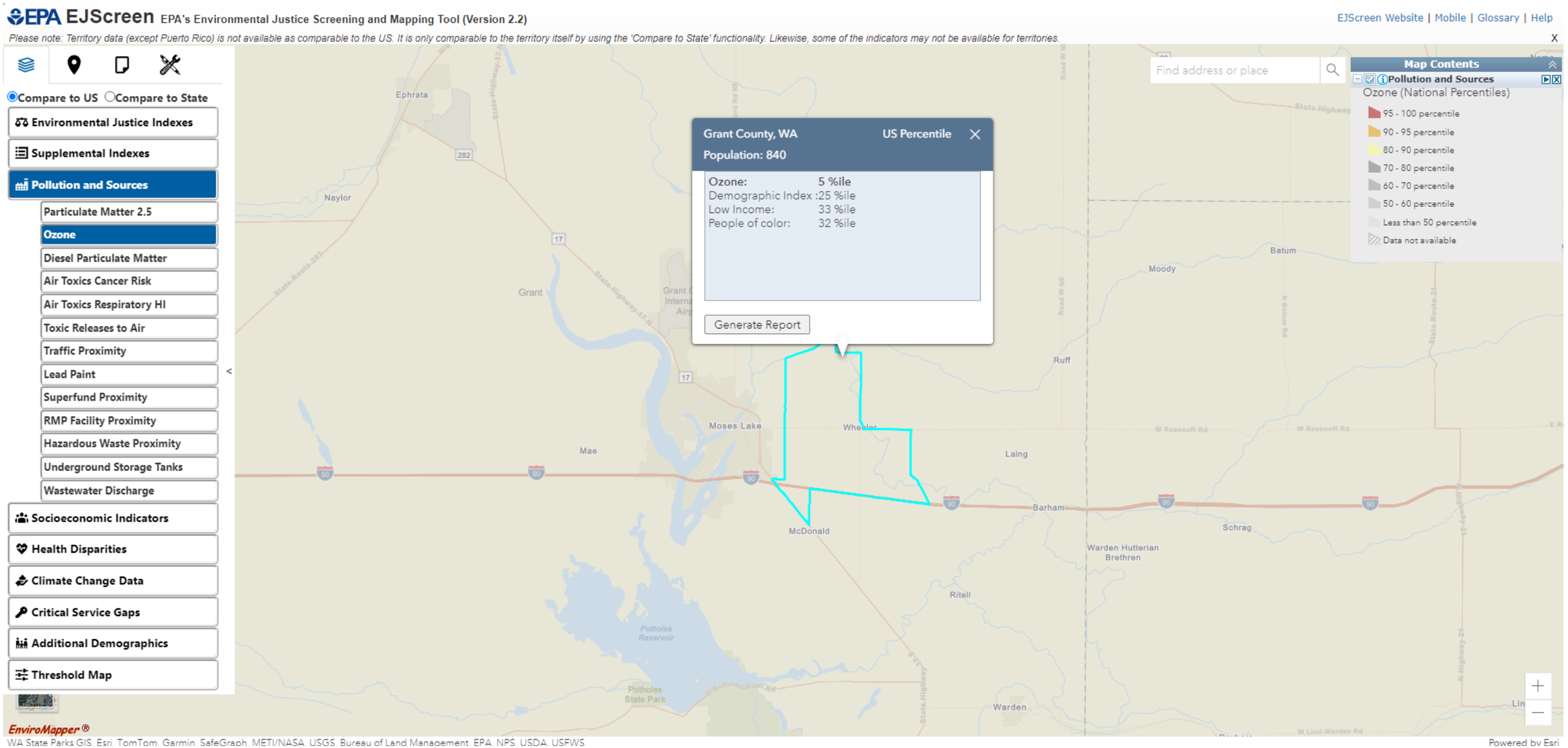
Particulate Matter 2.5



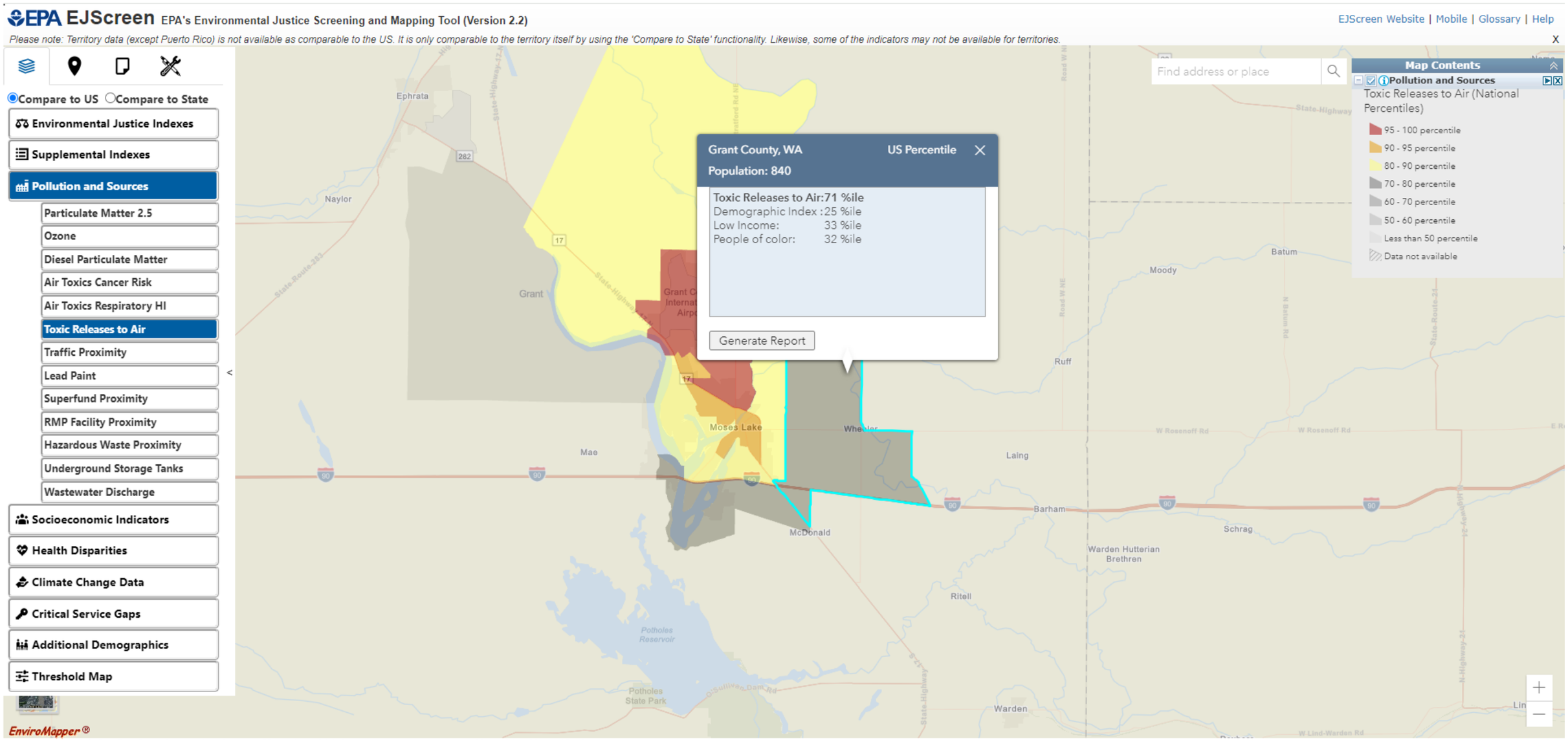
Diesel Particulate Matter



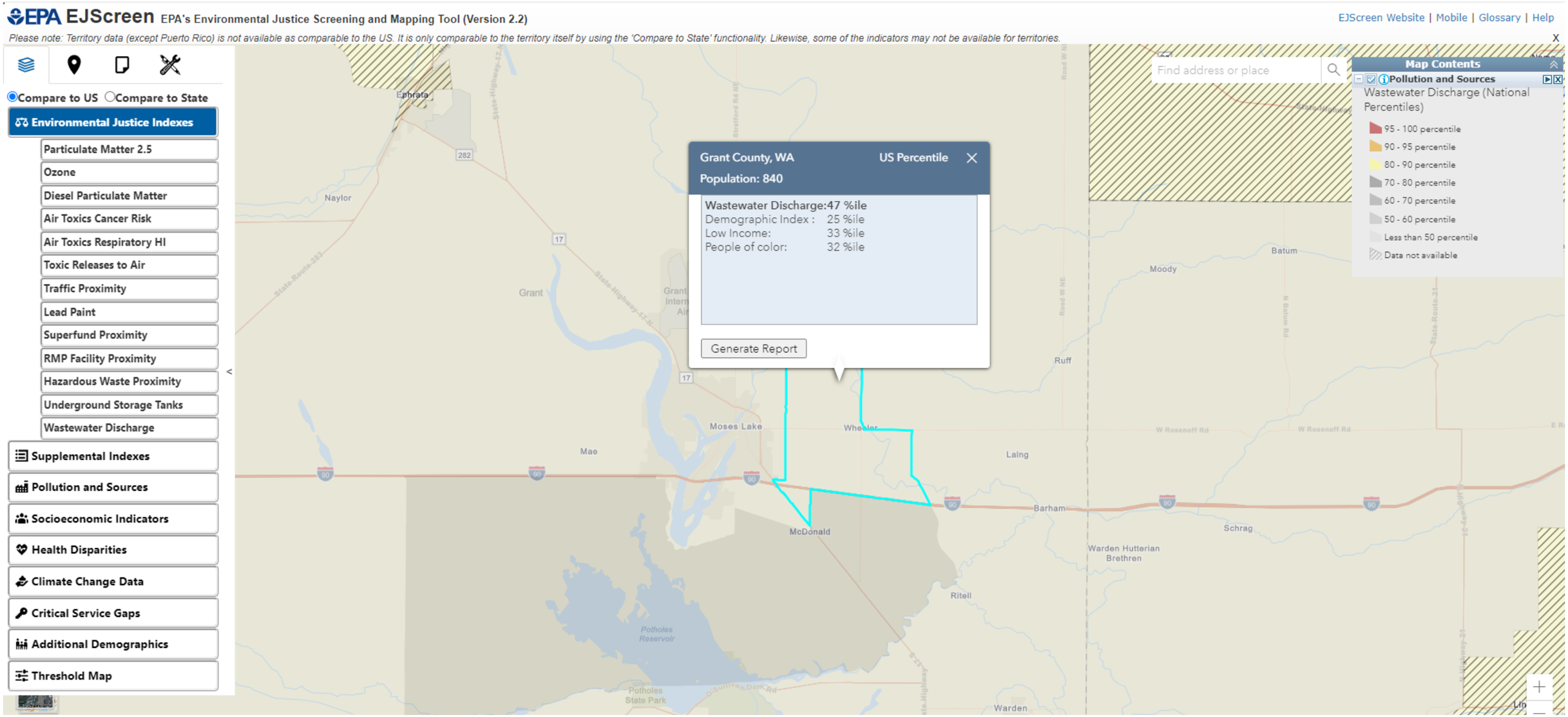
Ozone


EPA EJScreen EPA's Environmental Justice Screening and Mapping Tool (Version 2.2)
EJScreen Website | Mobile | Glossary | Help
Please note: Territory data (except Puerto Rico) is not available as comparable to the US. It is only comparable to the territory itself by using the 'Compare to State' functionality. Likewise, some of the indicators may not be available for territories.
Compare to US
Compare to State
Environmental Justice Indexes
Supplemental Indexes
Pollution and Sources
Particulate Matter 2.5
Ozone
Diesel Particulate Matter
Air Toxics Cancer Risk
Air Toxics Respiratory HI
Toxic Releases to Air
Traffic Proximity
Lead Paint
Superfund Proximity
RMP Facility Proximity
Hazardous Waste Proximity
Underground Storage Tanks
Wastewater Discharge
Socioeconomic Indicators
Health Disparities
Climate Change Data
Critical Service Gaps
Additional Demographics
Threshold Map
Grant County, WA
US Percentile
Population: 840
Ozone: 5 %ile
Demographic Index : 25 %ile
Low Income: 33 %ile
People of color: 32 %ile
Generate Report
Find address or place
Map Contents
Pollution and Sources
Ozone (National Percentiles)
95 - 100 percentile
90 - 95 percentile
80 - 90 percentile
70 - 80 percentile
60 - 70 percentile
50 - 60 percentile
Less than 50 percentile
Data not available
Ephrata
Naylor
Grant
Moses Lake
Mae
Wheeler
Laing
Batum
Moody
Barham
Schrag
McDonald
Warden Hutterian Brethren
Ritell
Warden
Potholes Reservoir
Potholes State Park
EnviroMapper®
WA State Parks GIS, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS
Powered by Esri

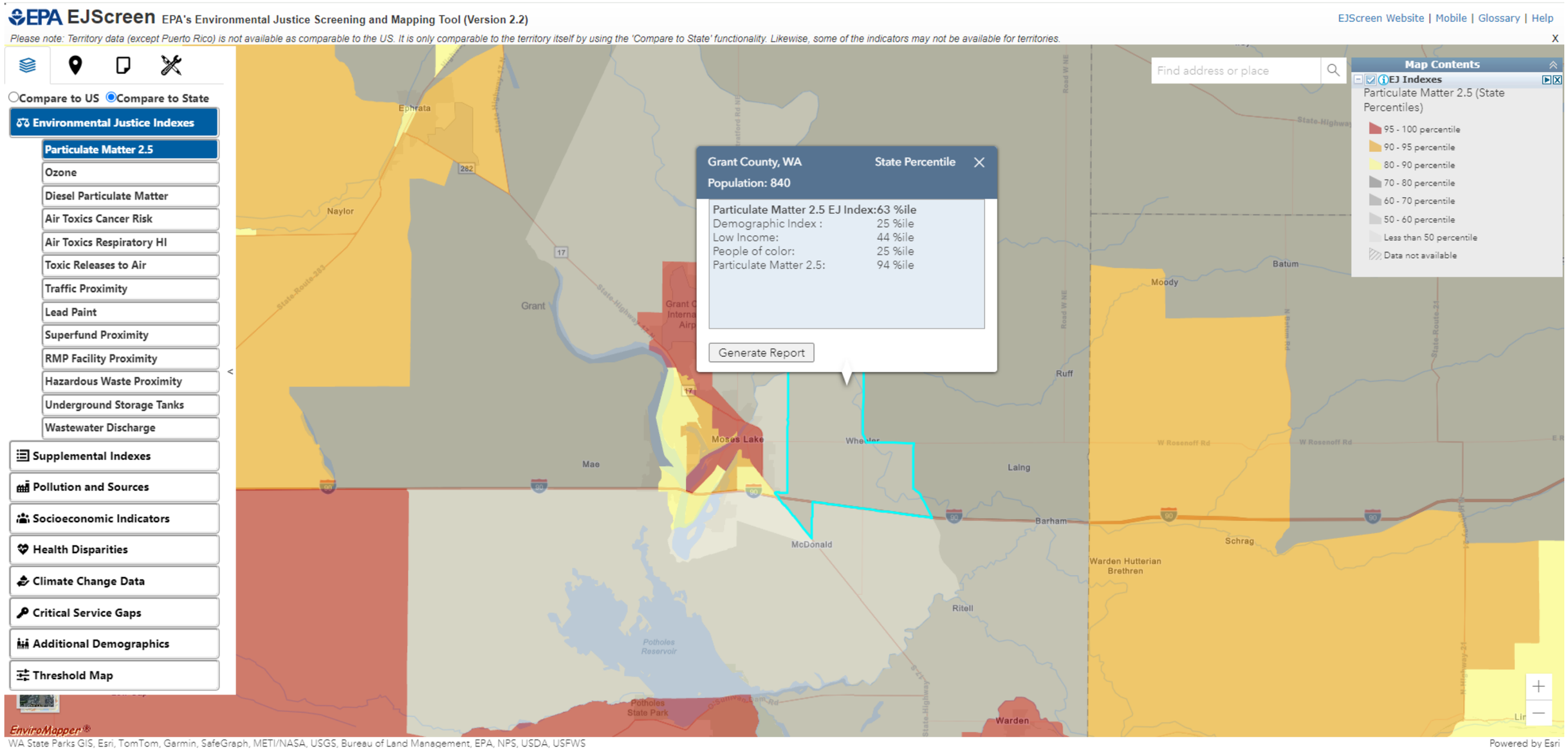
Toxic Releases to Air



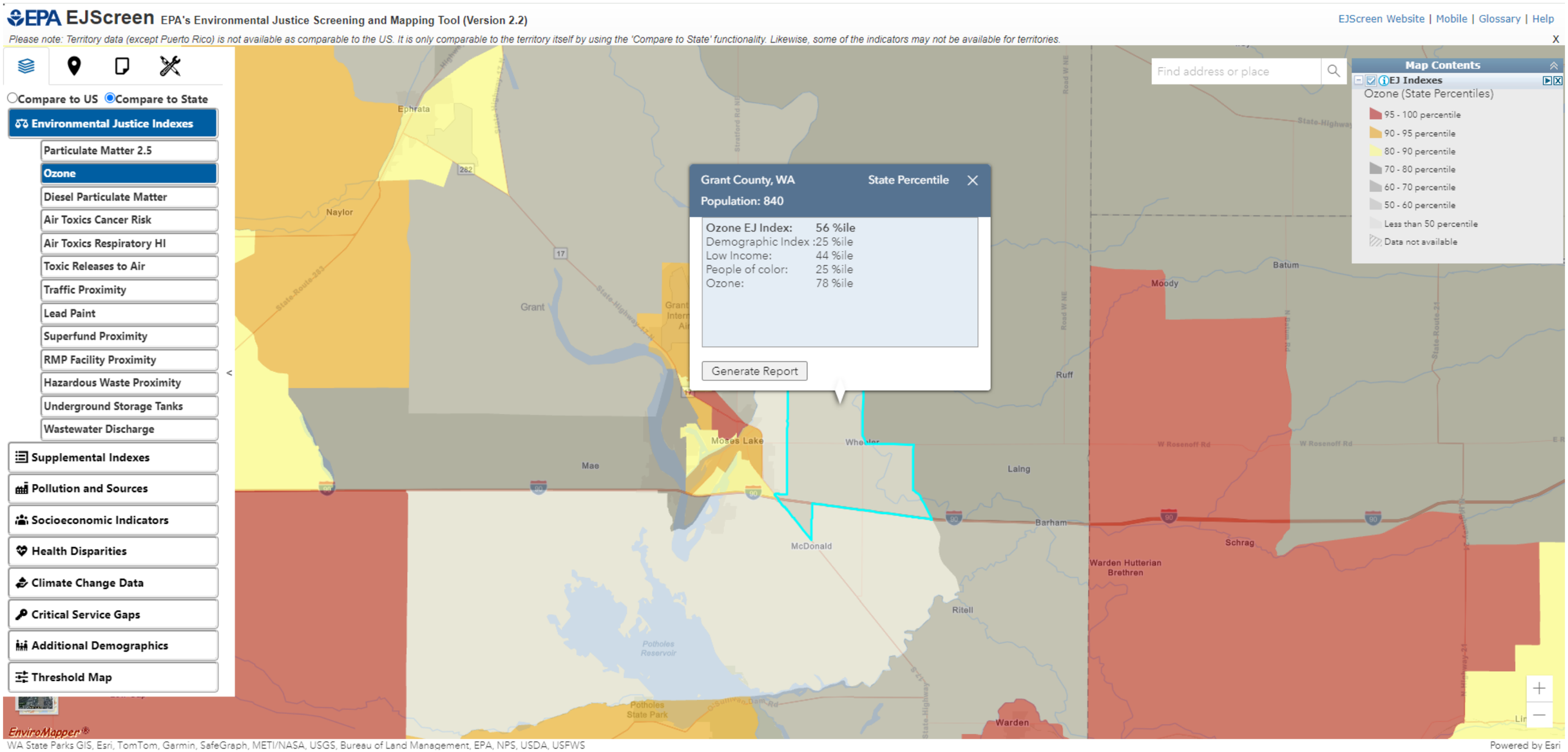
Wastewater


EPA EJScreen EPA's Environmental Justice Screening and Mapping Tool (Version 2.2)
EJScreen Website | Mobile | Glossary | Help
Please note: Territory data (except Puerto Rico) is not available as comparable to the US. It is only comparable to the territory itself by using the 'Compare to State' functionality. Likewise, some of the indicators may not be available for territories.
Compare to US
Compare to State
Environmental Justice Indexes
Particulate Matter 2.5
Ozone
Diesel Particulate Matter
Air Toxics Cancer Risk
Air Toxics Respiratory HI
Toxic Releases to Air
Traffic Proximity
Lead Paint
Superfund Proximity
RMP Facility Proximity
Hazardous Waste Proximity
Underground Storage Tanks
Wastewater Discharge
Supplemental Indexes
Pollution and Sources
Socioeconomic Indicators
Health Disparities
Climate Change Data
Critical Service Gaps
Additional Demographics
Threshold Map
Grant County, WA
US Percentile
Population: 840
Wastewater Discharge: 47 %ile
Demographic Index : 25 %ile
Low Income: 33 %ile
People of color: 32 %ile
Generate Report
Find address or place
Map Contents
Pollution and Sources
Wastewater Discharge (National Percentiles)
95 - 100 percentile
90 - 95 percentile
80 - 90 percentile
70 - 80 percentile
60 - 70 percentile
50 - 60 percentile
Less than 50 percentile
Data not available
Ephrata
Naylor
Grant
Moses Lake
Mae
McDonald
Wheeler
Ruff
Batum
Moody
Laing
Barham
Schrag
Warden Hutterian Brethren
Ritell
Warden
Potholes Reservoir
Potholes State Park

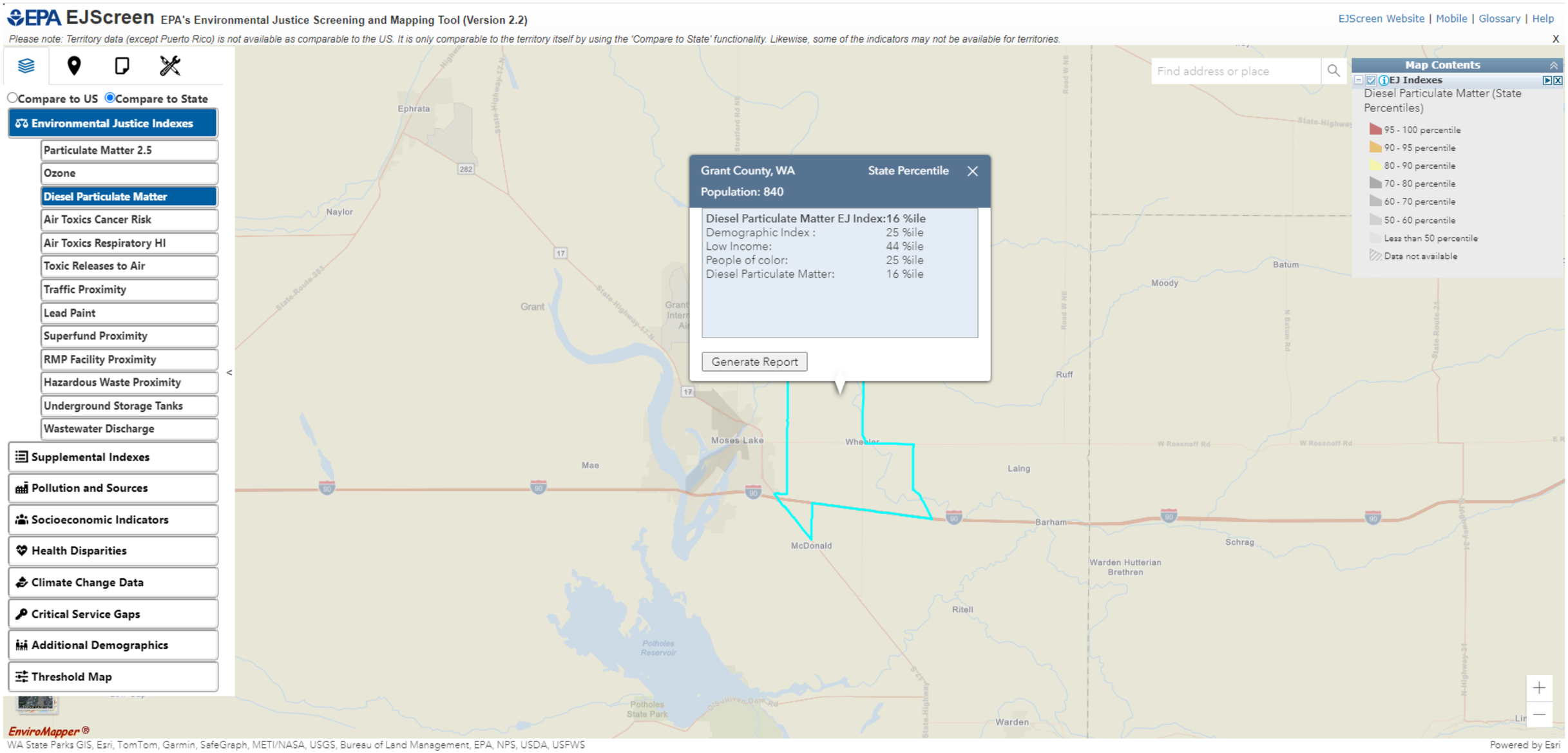
Particulate Matter



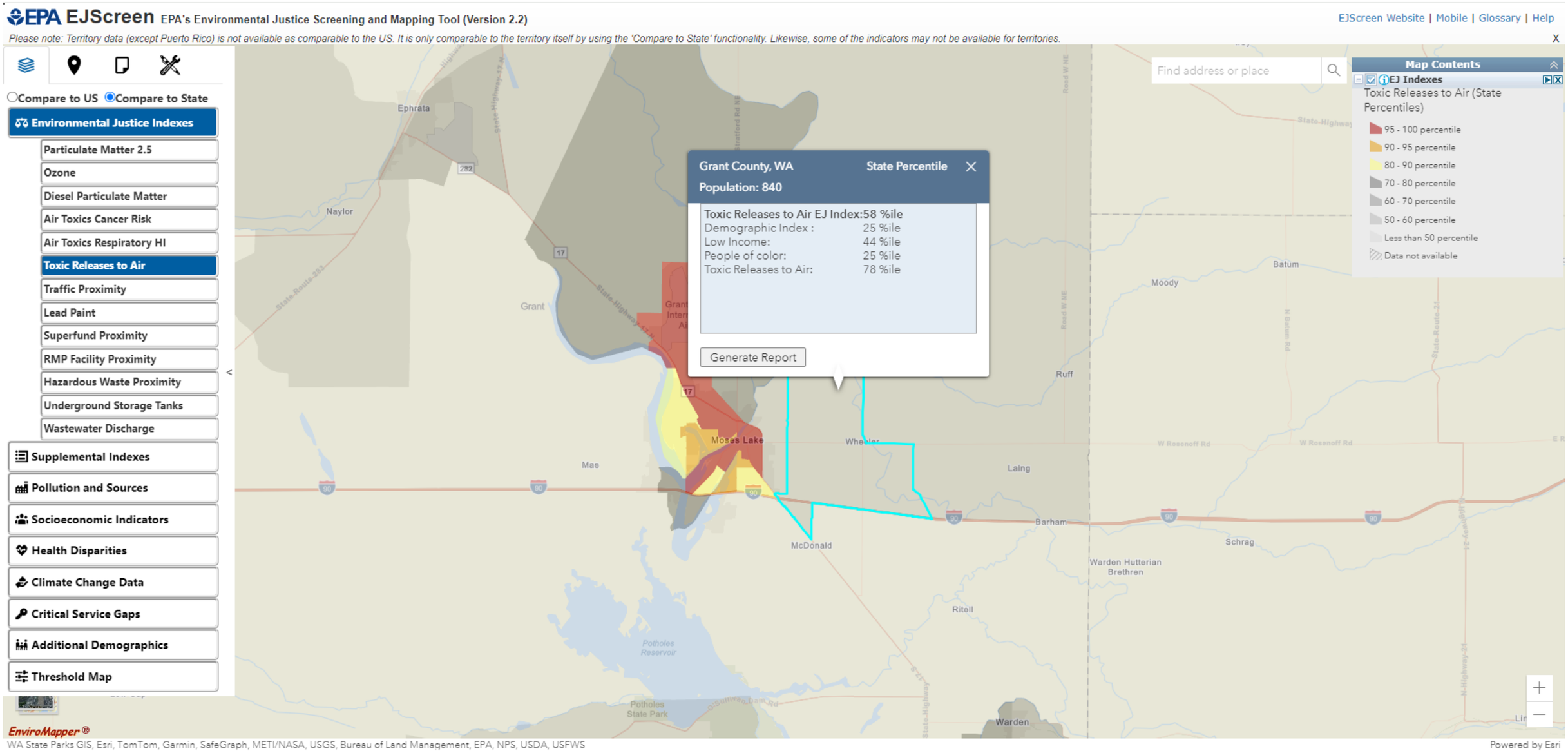
Ozone


EPA EJScreen EPA's Environmental Justice Screening and Mapping Tool (Version 2.2)
EJScreen Website | Mobile | Glossary | Help
Please note: Territory data (except Puerto Rico) is not available as comparable to the US. It is only comparable to the territory itself by using the 'Compare to State' functionality. Likewise, some of the indicators may not be available for territories.
Compare to US
Compare to State
Environmental Justice Indexes
Particulate Matter 2.5
Ozone
Diesel Particulate Matter
Air Toxics Cancer Risk
Air Toxics Respiratory HI
Toxic Releases to Air
Traffic Proximity
Lead Paint
Superfund Proximity
RMP Facility Proximity
Hazardous Waste Proximity
Underground Storage Tanks
Wastewater Discharge
Supplemental Indexes
Pollution and Sources
Socioeconomic Indicators
Health Disparities
Climate Change Data
Critical Service Gaps
Additional Demographics
Threshold Map
Grant County, WA
State Percentile
Population: 840
Ozone EJ Index: 56 %ile
Demographic Index: 25 %ile
Low Income: 44 %ile
People of color: 25 %ile
Ozone: 78 %ile
Generate Report
Find address or place
Map Contents
EJ Indexes
Ozone (State Percentiles)
95 - 100 percentile
90 - 95 percentile
80 - 90 percentile
70 - 80 percentile
60 - 70 percentile
50 - 60 percentile
Less than 50 percentile
Data not available
Ephrata
Naylor
Grant
Moses Lake
Mae
Wheeler
Ruff
Laing
Barham
McDonald
Ritell
Warden
Moody
Batum
Schrag
Warden Hutterian Brethren
Potholes Reservoir
Potholes State Park
EnviroMapper®
WA State Parks GIS, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS
Powered by Esri

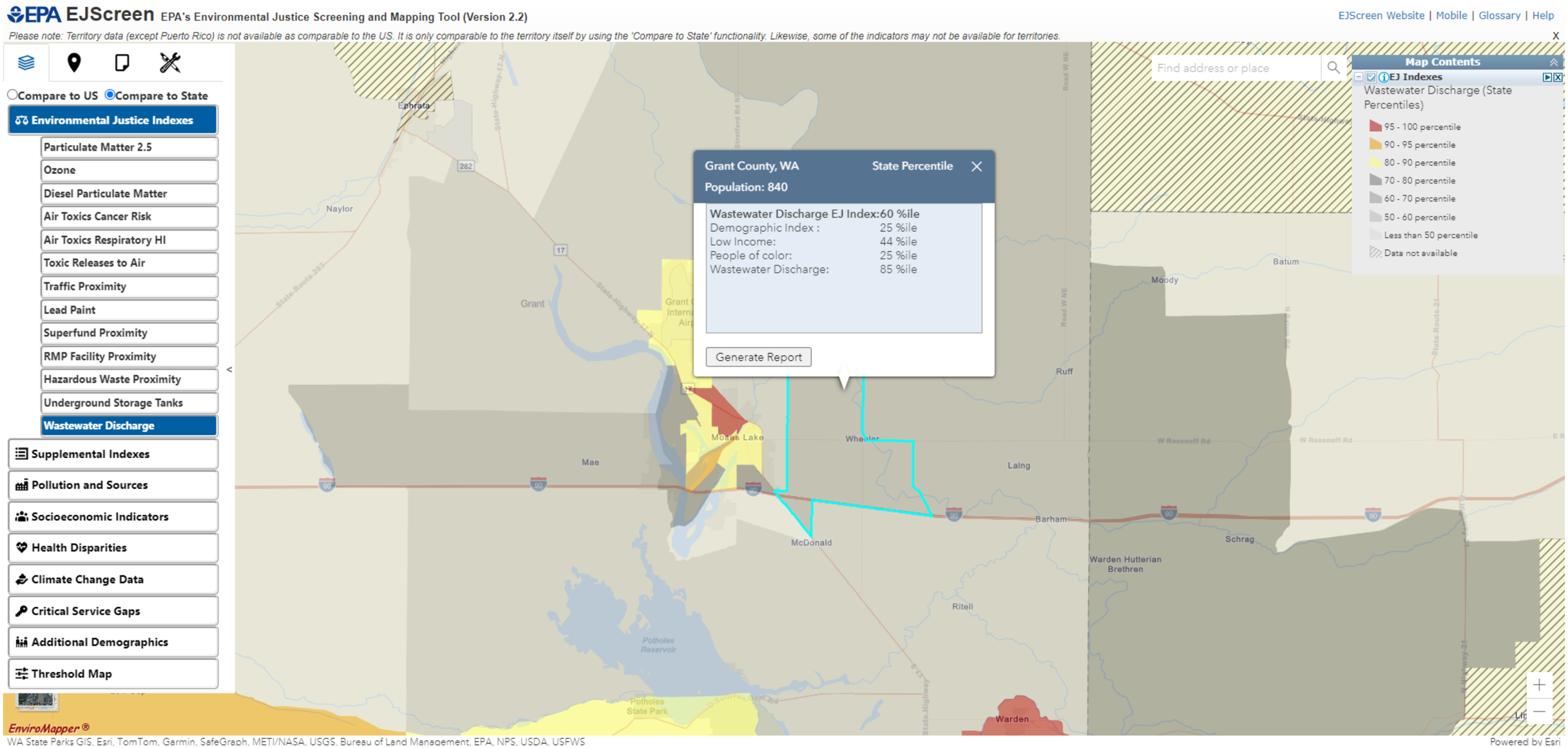
Diesel Particulate Matter



Toxic Releases to Air



Wastewater


EPA EJScreen EPA's Environmental Justice Screening and Mapping Tool (Version 2.2)
EJScreen Website | Mobile | Glossary | Help
Please note: Territory data (except Puerto Rico) is not available as comparable to the US. It is only comparable to the territory itself by using the 'Compare to State' functionality. Likewise, some of the indicators may not be available for territories.
Compare to US
Compare to State
Environmental Justice Indexes
Particulate Matter 2.5
Ozone
Diesel Particulate Matter
Air Toxics Cancer Risk
Air Toxics Respiratory HI
Toxic Releases to Air
Traffic Proximity
Lead Paint
Superfund Proximity
RMP Facility Proximity
Hazardous Waste Proximity
Underground Storage Tanks
Wastewater Discharge
Supplemental Indexes
Pollution and Sources
Socioeconomic Indicators
Health Disparities
Climate Change Data
Critical Service Gaps
Additional Demographics
Threshold Map
Grant County, WA
State Percentile
Population: 840
Wastewater Discharge EJ Index: 60 %ile
Demographic Index : 25 %ile
Low Income: 44 %ile
People of color: 25 %ile
Wastewater Discharge: 85 %ile
Generate Report
Find address or place
Map Contents
EJ Indexes
Wastewater Discharge (State Percentiles)
95 - 100 percentile
90 - 95 percentile
80 - 90 percentile
70 - 80 percentile
60 - 70 percentile
50 - 60 percentile
Less than 50 percentile
Data not available
Ephrata
Naylor
Grant
Moses Lake
Wheeler
Mae
Laing
Barham
McDonald
Ritell
Schrag
Warden Hutterian Brethren
Batum
Moody
Ruff
Warden
Potholes Reservoir
Potholes State Park
EnviroMapper®
WA State Parks GIS, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS
Powered by Esri