Midnite Mine Superfund Site

100~~90~~ Percent Design

Appendix O – Remedial Action Master Stormwater Management Plan

~~*Note: This Stormwater Management Plan has been prepared to a 90-percent level. Minor edits to this plan are anticipated as the Midnite Mine Remedial Design is finalized.*~~

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ATTACHMENTS

LIST OF ACRONYMS

BODR	Basis of Design Report
BMP	Best Management Practice
CD	Consent Decree
CSWPPP	Construction Stormwater Pollution Prevention Plan
EPA	U.S. Environmental Protection Agency
ERTS	Ecology Eastern Region Environmental Report Tracking System
MCL	maximum contaminant levels
NPDES	National Pollutant Discharge Elimination System
~~NRCS~~	~~Natural Resource Conservation Service~~
NTU	nephelometric turbidity units
OM&M	Operations, Maintenance and Monitoring
PSWCP	Permanent Stormwater Control Plan
RA	Remedial Action
RAWP	Remedial Action Work Plan
RD	Remedial Design
Site	Midnite Mine Superfund Site
SMMEW	Stormwater Management Manual for Eastern Washington
SMP	Site-wide Monitoring Plan
SPCC	Spill Prevention, Control, and Countermeasures
SSP	Stormwater Site Plan
SWMP	Stormwater Management Plan
WDOE	Washington Department of Ecology
WTP	Water Treatment Plant

O1.0 INTRODUCTION

This Master Stormwater Management Plan (SWMP) has been prepared to describe the over-arching framework for how stormwater and surface water will be managed to limit the release of sediment, pollutants, and deleterious debris to downstream areas during and following remedial actions (RAs) at the Midnite Mine Superfund Site (Site). This SWMP aligns with the strategy for managing stormwater as described in the technical memorandum titled *Midnite Mine – Management of Stormwater Runoff from Remediated Areas – Revision 1* (WME, 2013), which is included in Attachment O-1.

This Master SWMP is the foundation document that provides the catalog of Best Management Practices (BMPs) that will be applied to reduce the adverse impacts of stormwater. The construction contractor will be required to prepare a Construction Stormwater Pollution Prevention Plan (CSWPPP) that presents the stormwater management protocol and procedures that are specific to the phased construction activities. The construction contractor's CSWPPP will reference this Master SWMP for general stormwater management practices and will identify the BMPs that are applicable to the scheduled construction activities.

The RAs at the Site will be performed in phases over several construction seasons. Each construction phase will include excavating, consolidating, and capping the mine wastes on Site. Due to the nature of the Site contaminants, all surface water and stormwater that has the potential to contact mine wastes will be captured and treated at an on-Site water treatment plant (WTP). Therefore, there will be no discharges of untreated surface water or stormwater from the "active" RA construction areas where mine wastes are being excavated and consolidated. As the RAs progress, surface water and stormwater in the remediated areas will be allowed to shed to natural drainages. The active construction areas and the remediated areas will be managed in accordance with a Construction Stormwater Pollution Prevention Plan (CSWPPP) that will be prepared by the construction contractor prior to each construction season. The CSWPPP will be updated annually. The CWSPPP will be updated more frequently if necessary as site conditions change during the phased RA activities, or if revisions are required to more effectively manage stormwater runoff. A Master CSWPPP is included in Section O5.0, which provides the foundation information to support preparation of the construction contractor's CSWPPP. Management of the remediated areas will transfer from the construction contractor's CSWPPP to a Permanent Stormwater Control Plan (PSWCP) after the soils have stabilized and a permanent vegetative cover is established. The PSWCP comprises the permanent

Stormwater and Sediment Controls that were designed for the Selected Remedy. The PSWCP is included in Section O4.0.

This Master SWMP is an appendix to the *Midnite Mine Superfund Site Basis of Design Report* (BODR), which presents the background and supporting information relevant to the Site and the planned RAs. The BODR also contains the engineering drawings, plans, and specifications for the RA. This Master SWMP was prepared to substantively comply with the *Stormwater Management Manual for Eastern Washington* (SMMEW; Washington Department of Ecology [WDOE], 2004). In accordance with the SMMEW, this Master SWMP follows the steps for developing a Stormwater Site Plan (SSP), which include:

Step 1 - Collect and analyze information on existing conditions

Step 2 – Determine the applicable Core Elements for stormwater management

Step 3 – Prepare a Permanent Stormwater Control Plan (PSWCP)

Step 4 – Prepare a Construction Stormwater Pollution Prevention Plan (CSWPPP)

Steps 1 and 2 are qualitative in nature, while Steps 3 and 4 synthesize the information gathered in Steps 1 and 2 into practical designs.

O2.0 STEP 1 - EXISTING CONDITIONS AND RELEVANT DESIGN INFORMATION

Much of the existing conditions and relevant design information is presented in other places in the BODR. This information is not repeated here to limit repetitiveness in the overall BODR and to prevent potential inconsistencies within the document. The existing conditions and relevant design information - and where that information can be found in the BODR - is summarized in Table O-1.

The existing conditions and design information referenced in Table O-1 provides the required information for a "Drainage Report" as described in Section 3.2 of the SMMEW, and is used to support the ~~Permanent Stormwater Control Plan (~~PSWCP~~)~~ and ~~Construction Stormwater Pollution Prevention Plan (~~CSWPPP~~)~~ included later in this SWMP.

O3.0 STEP 2 - APPLICABLE CORE ELEMENTS

Table O-2 presents a summary of the eight core elements of stormwater management as defined in the SMMEW, and how they are addressed by this SWMP and the RD.

O4.0 STEP 3 - PERMANENT STORMWATER CONTROL PLAN

This PSWCP describes the permanent site features that are intended to control stormwater in the remediated areas after soils have stabilized and a permanent vegetative cover is established. In the interim period, temporary sediment- and erosion-control BMPs will be employed, and the remediated areas will be managed and monitored under the CSWPPP described in the next section. The CSWPPP will remain in effect until the Project Engineer demonstrates that the temporary BMPs are no longer necessary to prevent erosion and excess sediment transport. The transition from CSWPPP to PSWCP is likely to occur in phases and at different times across the remediated areas. This is because the RA will occur over several construction seasons, and the vegetative cover is likely to mature at different rates across the Site.

The permanent stormwater controls in the remediated areas are based on the erosional stability information contained in BODR Appendix D and the hydraulic calculations contained in BODR Appendix F. The SMMEW identifies BMP performance standards for treatment of runoff from at least 90 percent of the annual runoff volume and nearly all of the first-flush runoff volume from the tributary drainage area. To comply with the requirements of the Consent Decree (CD; EPA, 2011), permanent drainage controls presented in Appendix F have been designed to limit peak discharge to approximate pre-mining conditions downstream for the 100-year return event. This permanent control system would exceed the treatment BMP performance standards presented in the SMMEW. The permanent stormwater controls will be constructed on the completed covers and will include:

- Drainage benches will be constructed across critical slopes (i.e., along contour) as shown on Drawing 6-2 (contained in Volume II of the BODR). The typical construction details for the drainage benches are shown on Drawings 4-81 and 4-82. The spacing of the drainage benches will act to reduce the slope lengths and the benches will capture and divert runoff and sediment to downdrain channels.
- Downdrain channels will be constructed in critical drainages as shown on Drawing 6-2. The construction details for the diversion channels are shown on Drawing 6-26, which includes a summary of the channel geometries and armoring requirements. The channels will convey stormwater to the natural drainages that lead away from the mined area.

Permanent erosion control in the remediated surfaces will be accomplished by a combination of vegetating the disturbed surfaces and placement of riprap on steeper slopes (refer to BODR Appendix D; Section D10.3). In addition, permanent drainage benches will be constructed as described above to reduce critical slope lengths where erosion is likely to occur.

The long-term operation and maintenance of the permanent stormwater and erosion controls will be performed in accordance with the Remedy OMO&M plan as described in Appendix P of the BODR.

O5.0 STEP 4 – MASTER CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN

As described in the introduction, the construction contractor will prepare a CSWPPP to describe how surface water and stormwater will be managed in the active construction areas and in the remediated areas before they transition to the PSWCP. This section provides a Master CSWPPP that includes the minimum requirements and the foundation information to support preparation of the construction contractor's CSWPPP. The construction contractor's CSWPPP will be updated prior to each construction season, or more frequently if necessary as site conditions change or if revisions are required to more effectively manage stormwater runoff. Attachment O-2 contains conceptual BMP plans corresponding to the end of each construction phase. These plans are conceptual and are intended to convey the types of BMPs and construction storm water controls that will be applied. The actual BMP implemented will need to be determined as construction progresses and be included in the annual updates to the construction contractor's CSWPPP.

This Master CSWPPP describes the general procedures and physical structures that are suitable for preventing discharges of turbid water to the receiving drainage features and terrain down gradient of the Site during construction activities, and to minimize damage to reclaimed areas caused by erosion. The following sub-sections provide a narrative of the 12 CSWPPP elements as described in the SMMEW, and describe the anticipated stormwater-control procedures and appropriate BMPs. The BMP catalog is included in Attachment O-3. The construction contractor's CSWPPP prepared prior to each construction season will draw from this Master CSWPPP to identify the stormwater-control procedures and BMPs that are specific to the phased construction activities.

The CSWPPP elements are applicable to the remediated areas during the interim period when soils are stabilizing and before the permanent vegetative cover is established, and are generally applicable to the active construction areas (i.e., areas where mine wastes are being excavated and consolidated). In the active RA construction areas, some CSWPPP requirements do not apply because all surface water and stormwater (and associated sediments) will be captured and no untreated water or contaminated sediments will be allowed to flow off-Site. However, some CSWPPP protocols do apply (e.g., dust control) and others will be implemented at the Project Engineer's discretion. For example, the Project Engineer may require the construction contractor to implement BMPs within the active construction areas to control erosion on excavated slopes. These discretionary BMPs within the active construction areas would be implemented in addition to the Surface Water and Sediment Control design features that are described in Appendix F of the BODR.

O5.1 ELEMENT #1: PRESERVE VEGETATION/MARK CLEARING LIMITS

All clearing limits, sensitive areas and their buffers within the construction area will be clearly marked before beginning land-disturbing activities to protect adjacent lands and to reduce the area of soil exposed during construction. However, it is recognized that sensitive areas if they exist within the active construction areas will require remediation (i.e., excavation) and therefore cannot be preserved. To the extent practicable, the duff layer, native top soil, and natural vegetation will be left in an undisturbed state in areas outside the marked disturbance zones.

During each construction season, construction areas will be marked. These areas are delineated on the engineering design drawings contained in BODR Volume II (Section 4 - Mine Waste Excavation and Containment), and will be further delineated in the construction contractor's CSWPPP. Only areas to be excavated or otherwise disturbed during the particular construction season will be cleared of vegetation. It should be noted that the exact extent of contaminated area excavation will be determined during excavation and therefore the limits of construction in the cleanup areas must be flexible.

O5.2 ELEMENT #2: ESTABLISH CONSTRUCTION ACCESS

Construction access will be limited during the RA to prevent tracking sediments and soils off Site. A new permanent access road will be built extending from the West-End~~McCoy Lake~~ Road to the west access point of the Site and traversing the east side of the Rhoads property as shown on Drawing 2-1 (located in Volume II of the BODR). This new road will provide access to

the construction support facilities and the new Water Treatment Plant (WTP) on the west side of the Site. Additional details regarding construction access is presented in BODR Appendix B – Construction Support Facilities.

Vehicles will be surveyed and decontaminated as necessary before leaving the Site to prevent site contaminants from migrating off Site and to prevent the spread of soils and sediments, which could eventually migrate to off-Site waterways. The vehicle surveying and decontamination procedures will be described in the RAWP.

O5.3 ELEMENT #3: CONTROL FLOW RATES

All surface water within the active construction areas (i.e., areas where mine wastes are being excavated and consolidated) will be captured and routed to the operating WTP, and discharged in accordance with the National Pollutant Discharge Elimination System (NPDES) permit. As a result, there will be no increase in mine-affected surface-water flow to off-Site waterways from the active construction areas during the RA. The engineering controls designed to capture and route surface water and stormwater flow within the active construction areas are shown in Attachment O-2, and the design of temporary storm water channels for the construction phases are also described in BODR Appendix F (Surface Water and Sediment Controls).

The flow of surface water that sheds from remediated areas will be controlled by permanent stormwater controls as described in the PSWCP contained in Section O4.0 of this SWMP. During the interim period when soils are stabilizing and before the vegetative cover is established, temporary BMPs for controlling flows in the remediated areas will be constructed as determined by the Project Engineer and identified in the RAWP-CSWPPP. The BMP catalog is included in Attachment O-3.

O5.4 ELEMENT #4: INSTALL SEDIMENT CONTROLS

Sediment controls within the active construction areas will be installed at the Project Engineer's discretion, but may not be required as untreated water will not be allowed to flow off of the active construction areas. Sediments originating from contaminated areas of the Site will be captured to prevent off-Site migration during the RA construction. The sediment control BMPs that are appropriate for use during RA construction are depicted in Attachments O-2 and O-3. Accumulated sediments will be removed and consolidated with the mining wastes as described in BODR Appendix D – Mine Waste Excavation and Containment.

Sediment controls will be constructed at locations where stormwater from disturbed areas has the potential to flow off of remediated areas. Examples of applicable BMPs include silt fencing, sediment detention ponds, and straw bale barriers.

O5.5 ELEMENT #5: STABILIZE SOILS

Areas disturbed during RA construction will be permanently stabilized as soon as practicable by placement of a clean, vegetated soil cover as described in BODR Appendix D - Mine Waste Excavation and Containment. Pending placement of the soil cover, soils in disturbed areas will be stabilized by reducing slope lengths with terracing and diversions, and by roughening the slope surface. More aggressive BMPs to temporarily stabilize soils (e.g., mulching) will be avoided to limit potential interference with verification sampling of surface soils to demonstrate that cleanup levels have been achieved.

A primary soil stabilization goal in the active RA construction areas is to control fugitive dust. General The general dust control measures to suppress fugitive dust will include:

- Enforcing a 20 mph speed limit on haul roads. Lower speed limits may be necessary to control dust depending on actual day-to-day site conditions. Site supervisory personnel will enforce speed limits. Should equipment operators be observed operating equipment at excessive speeds, appropriate corrective actions will be implemented.
- Applying water and/or biodegradable dust suppressants directly onto soils, work areas, and dirt roads. Water or dust suppressants will be applied in sufficient quantity to control dust, but not generate free liquids. Water which meets the Clean Water Act primary and secondary drinking water maximum contaminant levels (MCLs) will be used for dust suppression in uncontaminated areas. Treated water from the WTP can be used for dust control on contaminated materials. Dust suppressant chemical treatments (e.g. lignosulfonate; see Attachment O-4 for product information) will be used only if necessary and then only after approval of the EPA.
- The permanent site access road will be paved and other temporary haul roads may be surfaced with imported durable aggregate running course should reduction of dust be required in heavier traffic areas.
- Supervisory personnel will be trained and certified to use air opacity observation methods.

Dust-suppressant water will be applied directly onto the disturbed areas and work areas with the use of a water truck or other methods of conveyance. Soil-Sement® (polymer emulsion dust suppressant; see Attachment O-4 for product information) and/or hydro-mulch/seed will be applied to inactive topsoil and cover clean soil stockpiles to control fugitive dust (subject to EPA approval). During active stockpile construction, water will be applied directly to the stockpiles by spraying with monitor-equipped hoses and water truck sprays. If water application is insufficient to control dust generation, wind-fencing will be installed to reduce the wind velocity in these areas and suppress dust generation.

Dust levels will be monitored qualitatively by supervisory personnel certified to evaluate visible emissions in accordance with EPA Reference *Method 9 -Visual Determination of Opacity of Emissions from Stationary Sources* and *Method 22 – Visual Determination of Fugitive Emissions From Material Sources and Smoke Emissions From Flares*. A certified individual will be on site any time excavating and haulage activities are occurring to monitor for visible dust. The project goal is for no visible dust to be generated other than within a few feet of an excavator bucket/grader blade or vehicle tire, and for no visible dust to leave the site. The certified individual has the authority to direct site operations to rectify the dust-generating activity (e.g., reduce vehicle speeds, apply water or dust suppressant), and has the responsibility to recommend that the construction contractor stop work.

Other general BMPs related to soil controlsdust control include:

- Limit dust generation by clearing only those areas where immediate activity will take place, leaving the remaining area(s) in the original condition, if stable. Maintain the original ground cover as long as practical.
- Construct natural or artificial windbreaks or windscreens. These may be designed as enclosures for small dust sources.
- Restrict use by tracked vehicles and heavy trucks to prevent damage to road surface and base.
- Limit soil disturbing activitiesdust-causing work on windy days.

O5.6 ELEMENT #6: PROTECT SLOPES

Slopes will be protected in order to minimize erosion during RA construction. This will include:

- Reducing slope lengths with terracing and diversions, and by roughening the slope surface.
- Diverting upslope drainage and run-on waters with interceptors at top of slopes. When feasible, this water will be diverted around the disturbed areas to vegetated areas.

O5.7 ELEMENT #7: PROTECT DRAIN INLETS

Storm drain or culvert inlets installed along the access and haul roads will be protected to prevent coarse sediment from entering the drainage systems. Drain inlets will be temporarily protected using straw bales. Long-term protection of drain inlets in the remediated areas will include designing the crossings to function as sediment detention basins.

O5.8 ELEMENT #8: STABILIZE CHANNELS AND OUTLETS

Channels constructed along the haul road and access road will be designed, constructed, and stabilized to prevent erosion from the expected peak flow velocity of the 6-month, 3-hour storm. The channels and outlets will be stabilized with armoring material (e.g., riprap or erosion blankets).

O5.9 ELEMENT #9: CONTROL POLLUTANTS

Potential pollutants will as discussed below be handled and disposed of in a manner that does not cause contamination of stormwater. Good housekeeping and preventative measures will be taken to keep the site clean, well-organized, and free of debris. BMPs to control specific sources of pollutants are discussed below.

Vehicles, construction equipment, and/or petroleum product storage/dispensing:

- Vehicles, equipment, and petroleum product storage/dispensing areas will be inspected regularly to detect any leaks or spills, and to identify maintenance needs to prevent leaks or spills.
- On-site fueling tanks and petroleum product storage containers shall include secondary containment.

- Spill prevention measures, such as drip pans, will be used when conducting maintenance and repair of vehicles or equipment.
- In order to perform emergency repairs onsite, temporary plastic will be placed beneath and, if raining, over the vehicle.
- Contaminated surfaces shall be cleaned immediately following any discharge or spill incident.
- The Project Engineer will record the location of all discharge or spill incidents on a site map and will perform or direct follow-up inspection and/or confirmation sampling to verify that cleanup has been completed. All spills will be managed in accordance with the Spill Prevention, Control, and Countermeasures Plan (SPCC) included in the RAWP.

Excavation dewatering waste:

- Dewatering BMPs are discussed under Element 10.

Concrete and grout:

- Concrete truck chutes, pumps, and internals shall be washed out only into formed areas awaiting installation of concrete or asphalt.
- Unused concrete remaining in the truck and pump shall be returned to the originating batch plant for recycling.
- Hand tools including, but not limited to, screeds, shovels, rakes, floats, and trowels shall be washed off only into formed areas awaiting installation of concrete or asphalt.
- Equipment that cannot be easily moved, such as concrete pavers, shall only be washed in areas that do not directly drain to natural or constructed stormwater conveyances.
- Washdown from areas such as concrete aggregate driveways shall not drain directly to natural or constructed stormwater conveyances.
- When no formed areas are available, washwater and leftover product shall be contained in a lined container. Contained concrete shall be disposed of in a manner that does not violate groundwater or surface water quality standards.

O5.10 ELEMENT #10: CONTROL DEWATERING

If dewatering is required during RA construction activities, the water will be transferred via controlled conveyance systems to the operating surface-water storage facilities (e.g., Pit 3

during Phase 1 construction, the South Pond during Phase 2 construction, the West Pond during Phase 3 construction). Examples of controlled conveyance systems include pipes, vacuum trucks, and stabilized channels. Water stored in the surface water storage facilities will be transferred to the operating WTP and discharged in accordance with the NPDES permit.

O5.11 ELEMENT #11: MAINTAIN BMPS

The Project Engineer will perform visual inspections of all areas disturbed by construction activities and all stormwater control features to monitor their effectiveness. The Project Engineer will also inspect Site-wide BMPs in inactive or reclaimed work areas. All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed to assure continued performance of their intended function. Maintenance and repair shall be conducted in accordance with each particular BMP's specifications.

Site inspections will be conducted at least once a week and within 24-hours after storms greater than 0.25 inches or greater of precipitation in 30 minutes, or a 24-hour total greater than 0.5 inches. During winter, when the Site may be inaccessible and typically covered in snow, it will not be practicable to observe Site BMPs or make repairs. As the Site becomes accessible during the spring melt season, inspections and maintenance will resume.

Temporary erosion and sediment control BMPs shall be removed within 30-days after the final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed and consolidated with the mine wastes if necessary. Disturbed soil or vegetation resulting from removal of BMPs shall be permanently stabilized.

Additional inspection and monitoring requirements are discussed in Section O6.0 below.

O5.12 ELEMENT #12: MANAGE THE PROJECT

RA Construction Phasing

The RA construction will be performed in phases to minimize areas of ground disturbance. The RA construction phasing is described in BODR Appendix D – Mine Waste Excavation and Containment, and is depicted in the Section 4 engineering design drawings contained in Volume II.

Project Management

The Project Engineer will be responsible for confirming that the construction contractor abides by this CSWPPP, and will have stop-work authority. The Project Engineer will be qualified to

evaluate erosion and sediment control, and may designate his/her roles and responsibilities to other persons under his/her direct supervision.

The Project Engineer will modify this CSWPPP whenever inspection and/or monitoring indicate that the BMPs are inadequate, due to the actual discharge of or potential to discharge a pollutant. Likewise, this CSWPPP will be modified whenever there is a change in the design, construction, operation, or maintenance of any BMP. This CSWPPP shall be retained on-Site or within reasonable access to the Site.

O6.0 INSPECTIONS AND MONITORING

The Project Engineer will perform periodic inspections and monitoring to confirm that the CSWPPP is adequate and that the BMPs are functioning as intended, or to determine if additional BMPs are necessary. At the active RA construction areas, the primary objective of the inspections is to confirm that no surface water or stormwater that potentially contacted mine-affected wastes is leaving the site. If surface water or stormwater is observed flowing off of the active RA construction areas, the Project Engineer will immediately initiate actions to identify and correct the engineering controls that are failing to contain the surface water/stormwater on Site.

For the remediated areas, the general inspection and monitoring activities are described below. These SWMP inspections and monitoring activities will be performed separately from the inspections and monitoring activities described in the *Midnite Mine Superfund Site Remedial Action Site Wide Monitoring Plan* (SMP; MWH, 2015~~2014~~). The surface water monitoring described in the SMP will complement the SWMP monitoring by providing chemical and radiological data in the drainages where stormwater from the remediated areas converges.

O6.1 INSPECTIONS

The Project Engineer will visually inspect all:

- Areas disturbed by construction activities
- BMPs
- Stormwater discharge points (where stormwater runs off or leaves the site, including points where stormwater runs off into surface waters within the property).

At these locations, the Project Engineer will look for signs of soil erosion and any discharging stormwater for the presence of:

- Suspended sediment
- Turbidity
- Discoloration
- Oil sheen

Based on the inspection results, the Project Engineer will initiate corrective actions by:

- Revising or updating the CSWPPP within 7 days of the inspection
- Implementing and maintaining appropriate source control and/or treatment BMPs, as soon as practicable.

O6.1.1 Inspection Frequency

Site inspections will be conducted at least once a week and within 24-hours of a snowmelt event or storms likely to cause a stormwater discharge from the Site (e.g., storms producing 0.25 inches or greater of precipitation in 30 minutes, or a 24-hour total greater than 0.5 inches). During winter, when the Site may be inaccessible and snow-covered, it will not be practicable to observe Site BMPs or make repairs. As the Site becomes accessible during the spring melt season, the Project Engineer will visit the Site, assess BMPs, and determine if corrective actions are needed and if they can be safely undertaken.

O6.1.2 Inspection Documentation

The results of each inspection shall be summarized on the Erosion and Sediment Control Checklist (Attachment O-45). A copy of the CSWPPP and the site inspection forms shall be kept onsite at all times during construction, and inspections shall be performed and documented as outlined below.

At a minimum, each inspection report or checklist shall include:

- Description of area inspected
- Inspection date/times
- Weather observations and approximate amount of precipitation within the last 24 hours.

- The status of all BMPs that have been implemented, including observations of all erosion/sediment control structures or practices.
- A description of stormwater discharging from the site. The presence of suspended sediment, turbid water, discoloration, and/or oil sheen shall be noted, as applicable.
- Corrective actions planned or completed
- Locations where additional or different BMPs are needed, and rationale
- General comments and notes, including a brief description of any BMP repairs, maintenance or installations made as a result of the inspection.
- A statement that, in the judgment of the person conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the CSWPPP.

When the site inspection indicates that the site is not in compliance with any terms and conditions of the CSWPPP, the Project Engineer shall take immediate action(s) to: stop, contain, and clean up the unauthorized discharges, or otherwise stop the noncompliance; correct the problem(s); implement appropriate ~~Best Management Practices (~~BMPs~~),~~ and/or conduct maintenance of existing BMPs; and achieve compliance with all applicable standards and permit conditions.

O6.2 MONITORING

O6.2.1 Turbidity and pH

The Project Engineer will monitor turbidity and pH at representative locations where stormwater runoff from the remediated areas discharges to a stream. Turbidity and pH measurements will be collected daily and the results will be documented on the Stormwater Monitoring Form included in Attachment O-~~4~~5.

Grab samples will be collected and screened in the field using portable meters or test strips in accordance with manufacturer's directions. If the measured turbidity is greater than 25 nephelometric turbidity units (NTUs) or the pH is less than 6.0 or greater than 8.5, then the Project Engineer will immediately follow the tiered response actions listed below.

If turbidity at a discharge monitoring location is between 26-249 NTU:

- Establish background turbidity by measuring turbidity in the receiving water upstream of the contributing stormwater. The Project Engineer will compare the measured

stormwater turbidity to the measured background turbidity to determine if additional response actions are required using the following criteria:

If background turbidity is 50 NTU or less, the measured stormwater cannot be greater than 5 NTU over background turbidity.

- If the background turbidity is greater than 50 NTU, the measured stormwater turbidity cannot be more than 10 percent over background turbidity.

If the background turbidity criteria listed above are exceeded (or if background cannot be determined), the Project Engineer will:

- Immediately initiate practical corrective actions (e.g., covering exposed soils, maintaining existing BMPs, adding BMPs from the BMP catalog).
- Review the CSWPPP to identify potential improvements and make appropriate CSWPPP revisions within 7 days of the date the discharge exceeded the benchmark. If the CSWPPP revisions require new or modified engineering designs, implement and maintain these source controls within 10 days of the date the discharge exceeded the benchmark.
- Continue to sample discharges daily until:
  - Turbidity is 25 NTU or lower; or
  - Stormwater turbidity does not exceed the background turbidity criteria listed above; or
  - The discharge stops.
- Document BMP implementation and maintenance in the site log book.

If turbidity is 250 NTU or greater at a discharge monitoring location, the same procedures as above will be implemented. In addition, the Project Engineer will notify the Ecology Eastern Region Environmental Report Tracking System (ERTS) at via telephone at 509.329.3400 within 24 hours of the measurement.

If pH at a discharge monitoring location is <6.0 or >8.5:

- Establish background pH by measuring pH in the receiving water upstream of the contributing stormwater.

- If the stormwater pH is <6.0, but is greater than the background pH, then no further action is required. Likewise, if the stormwater pH is >8.5, but is less than the background pH, then no further action is required.
- If the stormwater pH is <6.0 and is less than the background pH, or if the stormwater pH is >8.5 and is greater than the background pH (or if background cannot be established), then:
    - Immediately initiate practical corrective actions (e.g., covering exposed soils, maintaining existing BMPs, adding BMPs from the BMP catalog).
    - Review the CSWPPP to identify potential improvements and make appropriate CSWPPP revisions within 7 days of the date the discharge exceeded the benchmark. If the CSWPPP revisions require new or modified engineering designs, implement and maintain these source controls within 10 days of the date the discharge exceeded the benchmark.
- Continue to sample discharges daily until:
    - pH is >6.0 or <8.5; or
    - Stormwater is within background pH levels; or
    - The discharge stops.
- Document BMP implementation and maintenance in the site log book.

Additional Considerations for Establishing Background Turbidity and pH. Because much of the RA activities will occur at the headwaters of the receiving streams, it may not be possible to establish background concentrations for use in the evaluations described above. Also, the upstream measurements to be used as background must not be affected by other sources of stormwater runoff from the Site. In instances where the background of the receiving stream cannot be established because there is no unaffected upstream reach, the Project Engineer will measure turbidity and pH in a representative side drainage to obtain background values (e.g., Whitetail Creek above the Rhoads Property borrow area or the Northern Drainage east of the MA).

O6.2.2 Petroleum Sheens and Odors

The Project Engineer also will observe the stormwater for petroleum sheen/petroleum odors. If any petroleum sheen or odor is observed, the Project Engineer will immediately take action to track the release upstream and stop or initiate cleanup of the source in accordance with the SPCC~~Spill Prevention, Control, and Countermeasures~~ Plan ~~(SPCC)~~ included in the RAWP. Petroleum sheen/petroleum odors observations will be documented on the Stormwater Monitoring Form included in Attachment O-~~45~~.

O7.0 REFERENCES

U.S. Environmental Protection Agency (EPA), 2011. Consent Decree Statement of Work for the Remedial Action for the Midnite Mine Superfund Site, Spokane Indian Reservation, Washington. Civil Action No. CV-05-020-JLQ. United States of America, Plaintiff v. Dawn Mining Company, LLC and Newmont USA Limited, Defendants. August.

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TABLES

Table O-1 – Existing Conditions and Relevant Design Information

Existing Conditions and Relevant Design Information	Location in the BODR
Site Physical Characteristics (including a summary of surface features, topography, meteorology, and surface water hydrology)	Front-end text Section 2.3
Storm Frequency and Distribution Analysis (description of how the design storm event was established for the site, which is used to determine the amount of run-off from a portion of the Site or the overall Site footprint)	Appendix F (Surface Water and Sediment Controls) – Section F4~~F6.4 and F6.5~~F4.0
Watershed Delineation (for use in estimating flow volumes at various locations)	Appendix F (Surface Water and Sediment Controls) – Section F2~~F6.3~~F2.1 and Attachment F-2
Hydrologic Modeling (using model developed by the U.S. Army Corps of Engineers and in accordance with recommendations in the SMMEW guidance manual)	Appendix F (Surface Water and Sediment Controls) – Section F4~~F6.0~~F4.0
Peak Flow Estimate Results (summarizes the results of the hydraulic modeling under pre-mine, current, and post RA conditions)	Appendix F (Surface Water and Sediment Controls) – Section F4~~F6.11 and F7.2~~F4.0
Hydraulic Design (describes the channel designs based on the calculated flow rates)	Appendix F (Surface Water and Sediment Controls) – Section F5~~F8.0~~F5.0
Stevens County Soil Survey for Stevens County, Washington (includes the Site soil types as determined by the Natural Resource Conservation Service [NRCS])	Appendix F (Surface Water and Sediment Controls) - Attachment F-2~~3~~2
Erosional Stability (describes the design criteria to minimize erosion of the completed soil covers)	Appendix D (Mine Waste Excavation and Containment) – Section D10.~~3~~ 4 and Attachment D-6

Attachment O-1

Technical Memorandum

Midnite Mine – Management of Stormwater Runoff from Remediated Areas – Revision 1

Attachment O-2

Conceptual BMP Plans for End of Construction Phases

Attachment O-3

Best Management Practice Catalog

~~Attachment O-4~~

~~Lignosulfonate and Soil Sement® Brochures and Materials Safety Data Sheets (MSDS)~~

Attachment O-45

Inspection Checklist and Stormwater Monitoring Log Form