WORK PLAN AND BUDGET
and
Site Specific Plans

for

Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
December 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

9525726

Work Plan and Budget

Quapaw Tribe of Oklahoma
CERCLA, Section 104

Grant Application for

Remedial Response Cooperative Agreement
10/1/2012 through 9/30/2014

(Revised 10/8/13)

Submitted to the

U.S. Environmental Protection Agency, Region VI
Dallas, Texas

Prepared by the

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I. INTRODUCTION

A. Request for Funding

The Quapaw Tribe Environmental Office (QTEO) is requesting financial assistance from the U.S. Environmental Protection Agency (EPA) to fund the remediation of a parcel of tribal trust land (commonly known as the Catholic 40) for a two (2) year period between October 1, 2012 and September 20, 2014 in Federal Fiscal Years (FFY) 2012 through FFY2014 (FFY12/14). This request is made pursuant to the provisions of the Comprehensive Environmental Response, Compensation and Liability Acts as amended, 42 United States Code (U.S.C.) §9601 to 9675 (CERCLA). This cooperative agreement contributes to the attainment of environmental results under Compass Program Results Code (PRC) 303DD2 as noted in EPA's Strategic Plan, Goal 3, Objective 3.2, Subjective 3.3.3, Annual Performance Goal 3.3: Assess and Clean Up Contaminated Land, by enabling Tribes to lead or participate in Superfund cleanups, and to consult with EPA before, during, or after Superfund Cleanup activities as provided in CERCLA §121(f).

The QTEO funding request for $2,635,882 will allow for the remediation of the Catholic 40 in a manner consistent with EPA's Record of Decision (ROD) for Operable Unit No. 4 (OU4) at the Tar Creek Superfund Site. This funding request has been prepared in accordance with 40 CFR Part 35 Subpart O, Sections 36.6100 through 36.6120.

B. Background

Through the EPA Region VI General Assistance Program (GAP), the Quapaw Tribe Environmental Office was established on October 1, 1997. In June of 1998, the Quapaw Tribal Chairman and the EPA Region VI Administrator signed a Tribal Environmental Agreement (TEA), which established a formal agreement between the Tribe and the EPA to address the issues raised regarding the environmental protection of the Quapaw Tribal land including without limitation land known as the Catholic 40. As a result of that process, the Tribal Environmental Office is working toward the remediation of Tribal land on the Tar Creek Superfund Site in such a manner which protects human health, the environment, and the cultural heritage of the Quapaw people.

The Quapaw Tribe is currently administering an EPA Superfund management assistance grant under an existing Superfund support agency cooperative agreement. The Tribe entered into this support agency cooperative agreement with EPA Region 6 in 2001. This management assistance grant has enabled the Tribe to provide 'meaningful and substantial involvement" in the decisions related to the development and implementation of the OU4 ROD. Working together with EPA and other stakeholders on Tar Creek issues over the past 12 years has enabled the QTEO to develop the technical capacity required to administer a remedial response cooperative agreement.

The following personnel are employed by the QTEO (see Organizational Chart in Appendix A):

- Environmental Director – Tim Kent, PG
- Environmental Engineer – Craig Kreman

- Environmental Grants Manager – Ardie Blair
- Environmental Specialist – Susie Attocknie
- Environmental Technician- Cathy Sloan

II. PROJECT NARRATIVE

A. Site Description

The Tar Creek Superfund Site is a former lead and zinc mining area in Ottawa County, Oklahoma, located within the Oklahoma portion of the Tri-State Mining District, which covers parts of Oklahoma, Kansas, and Missouri. The Tar Creek Superfund Site includes an area (approximately 40 square miles) in northern Ottawa County where lead and zinc mining operations were conducted and any area where a hazardous substance from mining or milling in Ottawa County has been stored or disposed. The Tar Creek Superfund Site also includes all suitable areas in close proximity to the contamination necessary for implementation of the response action. The Tar Creek Superfund Site is bound on the north by the Kansas state line and includes the communities of Cardin, Commerce, North Miami, Picher, and Quapaw, Oklahoma.

The Catholic 40 is located in Distal Group 8 (Distal 8) of the Tar Creek Superfund Site. Distal 8 represents only a small portion of the overall Tar Creek Superfund Site. Distal 8 includes one (1) chat base (CB011) and one (1) known mine shaft. CB011 is located within the north half of Section 6 Township 28 North (T28N) Range 24 East (R24E), and more specifically, within Ottawa County Parcel 0000-06-028-024-0-001-00 (see Site Location Map in Appendix B). An east-west running property line divides CB011 into two sections: CB011 North on non-restricted fee land and CB011 South on tribal trust land owned by the Quapaw Tribe. CB011 North is not included within the scope of this proposed remedial response. Hereafter, CB011 is named to refer to the CB011 South portion of the chat base. Contaminated mine and mill wastes, also known as source material, in the form of chat, fine tailings, flotation tailings, and development rock, all in varying amounts, have affected both soil and water at the Catholic 40. This proposed remedial response will address only source material and affected transition zone (TZ) soils. The contaminants of concern (COCs) at the Catholic 40 are lead, zinc, and cadmium.

Mining at the Catholic 40 has also impacted surface water quality at the Catholic 40 (i.e. Beaver Creek). Chat-laden surface water runoff from the Catholic 40 has contributed to water quality impairment in Beaver Creek. While mine water discharges to the surface at multiple locations in the Beaver Creek watershed, no mine water discharges have been identified at the Catholic 40.

Ground water quality in the Beaver Creek watershed has also been impacted by mining. Of the two main aquifers in the region, the shallow Boone and the deeper Roubidoux, mining activities were confined to the overlying Boone. Thus, the Boone aquifer is the primary source of subsurface ground water contamination. Once the extensive network of mine workings filled with water, the water became acidic and laden with metals. The underlying Roubidoux aquifer is the principal source of drinking water or the region.

B. Culturally and Historically Significant Nature of the Catholic 40 Property

The Catholic 40 is a culturally and historically significant site to the Quapaw Tribe. Beaver Creek flows along the southwestern boundary of CB011 before flowing through the Tribal Powwow Grounds approximately 0.25 miles downstream of the Catholic 40. Due to the cultural significance of the water body, the Quapaw Tribal Business Committee has designated Beaver Creek as an Outstanding Resource Water (ORW).

The Catholic 40 also contains evidence of important events in the history of the Quapaw Tribe of Oklahoma. During recently undertaken reconnaissance efforts involving QTEO, the Quapaw Tribal Historic Preservation Officer (THPO) and the Bureau of Indian Affairs (BIA) Regional Cultural Preservation Office, several historic structures have been identified along the eastern portion of the site. These historical structures are associated with a Catholic church and school that provided educational opportunities to the Quapaw Tribe of Oklahoma, surrounding tribes, and the community. The church was established on the property in 1893 and the associated school house was constructed in 1894. Buildings were added to the property over a period of years as the number of students increased. The school had both resident and day students and dormitories were constructed to house the resident students. Outbuildings for farm animals and farming equipment also occupied portions of the property. Funding was discontinued and the school closed in 1927. After closure, some wood-frame buildings were removed, while others were allowed to fall into ruins. Mining began at the site in 1936 and mine waste may cover remnants of the historic buildings and other features associated with the church and school.

In order to protect and preserve the history of the Quapaw Tribe, extra precaution will be exercised during the remediation of CB011in order to protect water quality in Beaver Creek and mitigate the potential for accidental damage or removal of any structures or associated items which may help the Quapaw Tribe come to a better understanding of their history.

C. Proposed Site Specific Statement of Work (SOW)

In order to complete the remediation of the Catholic 40 property, the Tribe anticipates completing the following two major tasks.

Task 1: Site Remediation

The remediation of the Catholic 40 property shall consist of the following subtasks:

1. Preparation of site specific plans and pre-construction submittals.

2. Mobilization, including installation of decontamination facilities, waste containment facilities, scale house, construction trailers etc.

3. Site preparation, including pre-construction site survey, protection and marking of historic features, site clearing, work zone establishment, etc.

4. Repair of southern access road and associated water crossings (justification for repairing and utilizing southern access road is being submitted to EPA under separate cover).

5. Removal, transportation, and disposition of source material, waste materials, and TZ soils, including furnishing and maintaining weight scales and associated facilities.

6. Filling and capping of mine shafts, and cased borings, including cover construction over filled mine shafts.

7. Water management, including collection, containment, and disposal of decontamination water and streambank stabilization.

8. Site restoration, including grading and surveying for verification of grid excavation depth and aerial extent.

9. Decontamination and demobilization, including intermediate decontamination before exiting the exclusion zone, disposal of debris and rinsate, and deconstruct/demobilize all site facilities.

10. Follow-up monitoring of remediated areas and maintenance, as needed, to address inadequacies of the remedy before it becomes operational.

Task 1 Method:

The Quapaw Tribe will self perform the remediation work on the Catholic 40 site. The Quapaw Tribe employs professional construction managers, project administrators, superintendents, construction coordinators, safety and health professionals, and accountants that specialize in the management of construction projects. Over the past 5 years, the Quapaw Tribe has successfully managed over $400 million of in place construction projects The Quapaw Tribe Environmental Office will maintain a consistent management capacity for the Catholic 40 project by retaining an engineering support contractor to provide assistance in development of site-specific plans, generation of remediation documents, and on-site management of remediation activities.

Task 1 Cost Estimate:

A summary of the estimated costs associated with the completion of Task 1 is included below in Table 1. A more detailed budget breakdown for Task 1 may be found in Appendix C.

Table 1: Summarized Cost Estimate for Task 1

Subtask Description	Subtask Cost
Preparation of Site-Specific Plans, Pre-construction Submittals, & Project Engineering Support (performed by engineering consulting firm)	$135,000
Site Mobilization	$104,102
Site Preparation	$151,320
Preparation of Access Road	$125,580
Removal, Transportation, & Disposal of Source Material & TZ Soils	$1,528,290
Filling & Capping of Mine Shaft, Cased Borings, and Removal of Asphalt Piles	$50,200
Water Management and Streambank Stabilization	$67,770
Confirmation Sampling and Analysis	$14,550
Decontamination and Demobilization	$148,850
Follow-Up Monitoring and Maintenance of Pre-Operational Remedy	$19,000
Health and Safety Incentive	$26,000
Performance and Payment Bonds (if needed for contracts above $150,000.00)	$30,000
TASK 1 TOTAL	**$2,400,662**

Task 1 Planned Schedule/Output:

The estimated timeline for completing the remediation activity at the Catholic 40 site is approximately 6 months (from mobilization to the site to demobilization). See the detailed project timeline on page 10.

Task 2: Tribal Project Management

The QTEO will be responsible for the management of the Cooperative Agreement grant and for general project management and oversight of the Catholic 40 project. Accordingly, the Tribe will have the ultimate authority in ensuring the quality and effectiveness of the remediation. The Tribe anticipates that more time and effort will be required of Tribal staff during the first 12 months of the 2 year project period. Consequently, the percentage of time required for each staff person to complete work plan tasks is as subdivided into Year 1 and Year 2 subcategories.

Below is a list of the primary tasks that the QTEO will undertake in overall project management, followed by a list of QTEO staff and the corresponding percentage of their time that is anticipated to be spent on that task for Year 1 and Year 2 of the project.

- Generation of Requests for Proposals (RFPs): This will include RFPs for the engineering support contractor, the laboratory contractor, and any other contractor that may be assisting the QTEO.

Environmental Director's Time:	**Year 1 = 8%**	**Year 2 = 0%**
Environmental Scientist's Time:	**Year 1 = 7%**	**Year 2 = 0%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**

Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Development and administration of contracts: This will involve negotiating and reviewing contracts, once contractors are selected. The Tribe's attorney will be involved in this process.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 0%**
Environmental Scientist's Time:	**Year 1 = 4%,**	**Year 2 = 0%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- On-site inspection. This will include having a representative of the Tribe on site whenever work is performed to ensure that work complies with the plans and specifications and that historically significant features are identified and protected. On-site personnel representing the Tribe will be qualified and experienced in inspection of remediation projects and will be familiar enough with the engineering plans and all other project related documents (i.e. QA/QC plans, and Health and Safety Plan, SWPPP, SAP, SOPs, ect) to ensure contractor compliance with the requirements in these documents. On-site personnel shall keep daily logs and take photographs of site activity. It should be noted that there will be Tribal representative, who is trained in the identification of historical features and artifacts, on site during certain phases of the remediation in which there may be a possibility of encountering these artifacts and/or features.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 2%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 3%**	**Year 2 = 1%**

Tribal Historic Preservation Specialist: $9,600 (8 hrs./day for 40 days @ $30/hr.)

- Scale Operation: A qualified tribal employee will be assigned to man and operate the on-site truck weight scale.

Tribal Scale Operator: $12,800 (8 hrs./day for 80 days @ $20/hr.)

- Task assignment, scheduling, contractor coordination. This will include day-to-day communication with project staff and contractors regarding ongoing and planned activity as well as addressing project related issues as they arise.

Environmental Director's Time:	**Year 1 = 3%**	**Year 2 = 2%**
Environmental Scientist's Time:	**Year 1 = 4%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Document review. This will include review of submittals from the remediation contractor (progress reports, engineering drawings, work measurement, pay requests, lab results, inspection reports, photographs, etc.).

Environmental Director's Time:	**Year 1 = 6%**	**Year 2 = 5%**
Environmental Scientist's Time:	**Year 1 = 9%,**	**Year 2 = 2%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

•Meetings: QTEO staff will participate in project related meetings including daily tailgate meetings, progress meetings, safety meetings, consultation meetings with EPA, and other meetings as issues arise. This will likely include utilization of the engineering support contractor to represent the Tribe when appropriate QTEO staff persons are unable to attend some meetings.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 2%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

•Coordination/consultation with, and reporting to, EPA: This will include ongoing communications and meetings with EPA's Remedial Project Manager (RPM) assigned to the project; and generating the required quarterly reports.

Environmental Director's Time:	**Year 1 = 5%**	**Year 2 = 5%**
Environmental Scientist's Time:	**Year 1 = 1%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Outreach to Tribal public: This will include public meetings, newsletter articles, information availability outreach efforts, and reporting to Tribal Business Committee

Environmental Director's Time:	**Year 1 = 1%**	**Year 2 = 2%**
Environmental Scientist's Time:	**Year 1 = 0%,**	**Year 2 = 3%**
Environmental Grants Manager's Time:	**Year 1 = 5%**	**Year 2 = 2%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 1%**

- Short-term remedy monitoring: It is anticipated that some monitoring of the Catholic 40 remediation will be required during the grant period to ensure that the remedies are performing as designed before becoming operational.

Environmental Director's Time:	**Year 1 = 0%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 0%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 5%**	**Year 2 = 3%**

- Training and travel: It is anticipated that travel and training will likely be required as the grant period progresses. Training is assumed to include 40-hour OSHA HAZWOPER training for Tribal non-contract personnel who will be visiting the site (CERCLA requires

this training for all who enter onto a Superfund work site). It is also assumed that there will be at least 2 Trips to EPA Region 6 offices in Dallas for meetings with EPA staff regarding project progress and other site-related issues.

Environmental Director's Time:	**Year 1 = 1%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 1%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 2%**	**Year 2 = 2%**

- Grant administration: This will include, but not limited to, budget tracking, records/document management and storage, and communications with EPA grant administrative staff.

Environmental Director's Time:	**Year 1 = 0%**	**Year 2 = 2%**
Environmental Scientist's Time:	**Year 1 = 0%,**	**Year 2 = 2%**
Environmental Grants Manager's Time:	**Year 1 = 10%**	**Year 2 = 8%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Summary of Time and Effort Required:

Environmental Director's Time:	**Year 1 = 30%**	**Year 2 = 20%**
Environmental Scientist's Time:	**Year 1 = 30%,**	**Year 2 = 13%**
Environmental Grants Manager's Time:	**Year 1 = 15%**	**Year 2 = 10%**
Environmental Technician's Time:	**Year 1 = 10%**	**Year 2 = 7%**
Tribal Scale Operator: $12,800		
Tribal Historic Preservation Specialist: $9,600		

Task 2 Method:
The Tribal project management tasks listed above will be accomplished by utilizing QTEO staff according to their workload. The Tribe's engineering support contractor will be utilized as needed. All time and effort expended in completing these tasks shall be reported in the quarterly reports to EPA.

Task 2 Cost Estimate: **$153,318.00[1]**

note 1: Includes personnel costs and fringe benefit costs for Quapaw Tribe staff, travel, training, supplies, and indirect costs (see the detailed budget breakdown attached in Appendix D).

Task 2 Planned Schedule/Output:

It is anticipated that the Tribal project management tasks listed above will be conducted and completed throughout the grant period according to the schedule established by the remediation contractor. All activity related to remediation of the Catholic 40, including Time and Effort (T&E) reports will be included in the Quarterly Reports to EPA.

Planned Schedule:

The above-listed activities shall be conducted as needed and as issues arise. General Tar Creek involvement activity will be reported to the EPA in Quarterly Reports. A report on all Superfund activity will be forward to the Tribal Business Committee on a monthly basis.

Task ID #	Task Description	Proposed Begin Date	Proposed End Date	Time Required (Days)	Task Status [1]
1	Initial grant award of $500,000	Oct. 1, 2012		---	Completed
2	Develop Engineering Support RFP	Oct 1, 2013	Oct. 15, 2013	14	Completed
3	Solicit Bids for Engr. Support Contractor	Oct. 16, 2012	Nov. 6, 2012	21	Completed
4	Review Bids for Engr. Support Contractor	Nov. 7, 2012	Nov. 14, 2012	7	Completed
5	Select Engr. Support Contractor	Dec. 1, 2012		---	Completed
6	Development of Site-Specific Plans (Health & Safety, Community Relations, QAPPs, etc.)	April 15, 2013	October 7 , 2013	31	Pending
7	Pre-Construction Meeting	October 21, 2013		---	Pending
8	Mobilization and Site Preparation		October 21, 2013		Pending
9	Source Material Removal	October 22, 2013	February 18, 2014	120	Pending
10	Site Restoration	Feb 19, 2014	March 14, 2014	30	Pending
11	Post-Construction Mtg/ Final Walkthrough	March 14, 2014		---	Pending
12	Decontamination and Demobilization	March 17, 2014	March 28, 2014	14	Pending
13	Remedy Monitoring (revegetation, filled shaft, etc.)	March 31, 2014	Sep 30, 2014	180	Pending
14	Develop and Finalize Remedial Action Report	Oct 1, 2014	Dec 30, 2014	120	Pending
15	Finalize Grant Close-Out	Jan 1, 2015	May 31, 2015	150	Pending

[1] Tasks identified as "Completed" have been completed as of 12/21/2012 with funds from the initial grant award of $500,000 for "administrative purposes". The timeline for successful completion of Tasks identified as "Pending" are subject to EPA's approval of this revised workplan and budget and subsequent review of Site Specific Plans.

D. Designation of Lead Site Project Manager

The lead site project manager for the Catholic 40 remediation will be Mr. Tim Kent, PG Environmental Director of the Quapaw Tribe Environmental Office (QTEO). The QTEO has coordinated with other Tribal departments including, but not limited to, Quapaw Services Authority (QSA), the Tribal Realty Department, and the Tribal Historic Preservation Department (THPO) in the process of planning the proposed remedial response activities.

E. Community Relations Plan

A draft site-specific Community Relations Plan (CRP) has been developed by the Quapaw Tribe, in accordance with 40 CFR Part 35 Subpart O, Section 35.6105(a)(2)(iv). The Tribe will prepare Fact Sheets for Tribal members, host informational meetings, and post a sign at the site to inform the public about what is happening and where to call if they see any criminal activity or trespassing on the site. The Quapaw Tribe of Oklahoma will comply with the community relations requirements described in EPA policy and guidance, and in the National Contingency Plan. The CRP will be finalized and reviewed by EPA before initiation of the RA.

F. Health and Safety Plan

A site-specific Health and Safety Plan (HSP) will be developed by the Quapaw Tribe and submitted to EPA Region VI before field activities begin, in accordance with 40 CFR Part 35 Subpart O, Section 35.6105(a)(2)(v). The HSP will ensure the protection of on-site personnel and area residents. The schedule for the development and finalization of the HSP is included in the proposed project timeline in Section 2.C.

G. Quality Assurance

The QTEO is well aware of EPA's unwavering commitment to Quality Assurance and Quality Control (QA/QC). The QTEO is equally committed to the generation of sound, scientific, quality assured data along with the successful completion of quality projects. The QTEO is currently administering five (5) EPA grants under an existing EPA-approved Quality Management Plan (QMP). All remedial activities for the proposed project will comply with the existing Site-wide Quality Assurance Plan developed for EPA by CH2M Hill. The Quapaw Tribe has developed site-specific QA/QC Plans for both sampling and analysis and for excavation/construction.. Quality Assurance Project Plans (QAPPs) have also been developed for all proposed data collection activities associated with successful completion of the project. All QAPPs and QA/QC Plans will be submitted to, and approved by, EPA Region VI before field activities begin.

H. Project Deliverables

Project deliverables will be both administrative and technical in nature. The administrative/grant deliverables will include 1) quarterly reporting to the EPA-designated Project Officer on the progress made toward individual workplan tasks along with financial updates, 2) a final report documenting the successful completion of all workplan tasks, and 3) all other certifications and grant forms typically required to successfully administer and close-out an EPA grant (i.e. FSR, MBE/WBE, etc.) The technical/remediation deliverables will include 1) weekly conference calls with the EPA-designated Remedial Project Manager (RPM) to report on the progress made in planning, implementing, and finishing the proposed remedial project, 2) a final walk through with EPA staff and Tribal representatives prior to project close-out, and 3) a remedial action report upon project close-out. The target dates for these project deliverables are incorporated into the proposed project timeline in Section 2.C.

III. CERCLA ASSURANCES

A. Operation and Maintenance

The Quapaw Tribe of Oklahoma will assume responsibility for all future operation and maintenance of the CERCLA-funded remedial action at the Catholic 40 for the expected life of the action as required by CERCLA Section 104(c).

B. Cost Sharing

The Quapaw Tribe of Oklahoma will not share in the cost of the CERCLA-funded remedial action at the Catholic 40 as Indian Tribes are not required to share in such costs according to 40 CFR Part 35 Subpart O, Section 35.6110(b)(3).

C. Twenty-Year Waste Capacity of Off-Site Disposal Location

A relatively small amount of source material will be disposed of on-site in an open mine shaft at the Catholic 40. Otherwise, all remaining source other material and TZ soils will be disposed of off-site at the EPA-approved OU4 Chat Repository located at the Central Mill Tailings Pond on E. 40 Rd. in Picher, OK or at an approved chat processor's site. The repository is located on non-restricted fee land and is operated by EPA and its contractors. This repository has been receiving source material and TZ soils from other Distal Group remediation projects since 2009. This repository has more than adequate capacity to securely receive and dispose of all source material and TZ soils associated with the remediation of the Catholic 40.

D. Notification of out-of-an-area-of-Indian-Country transfer of CERCLA Waste

The Quapaw Tribe of Oklahoma will provide the Oklahoma Department of Environmental Quality (ODEQ) with written notification of off-site shipments of CERCLA waste from the

Catholic 40 (tribal trust land) to the OU4 Chat Repository (non-restricted fee land), or at an approved chat processor's site, according to the requirements of 40 CFR Part 35 Subpart O, Section 35.6120.

IV. BUDGET NARRATIVE

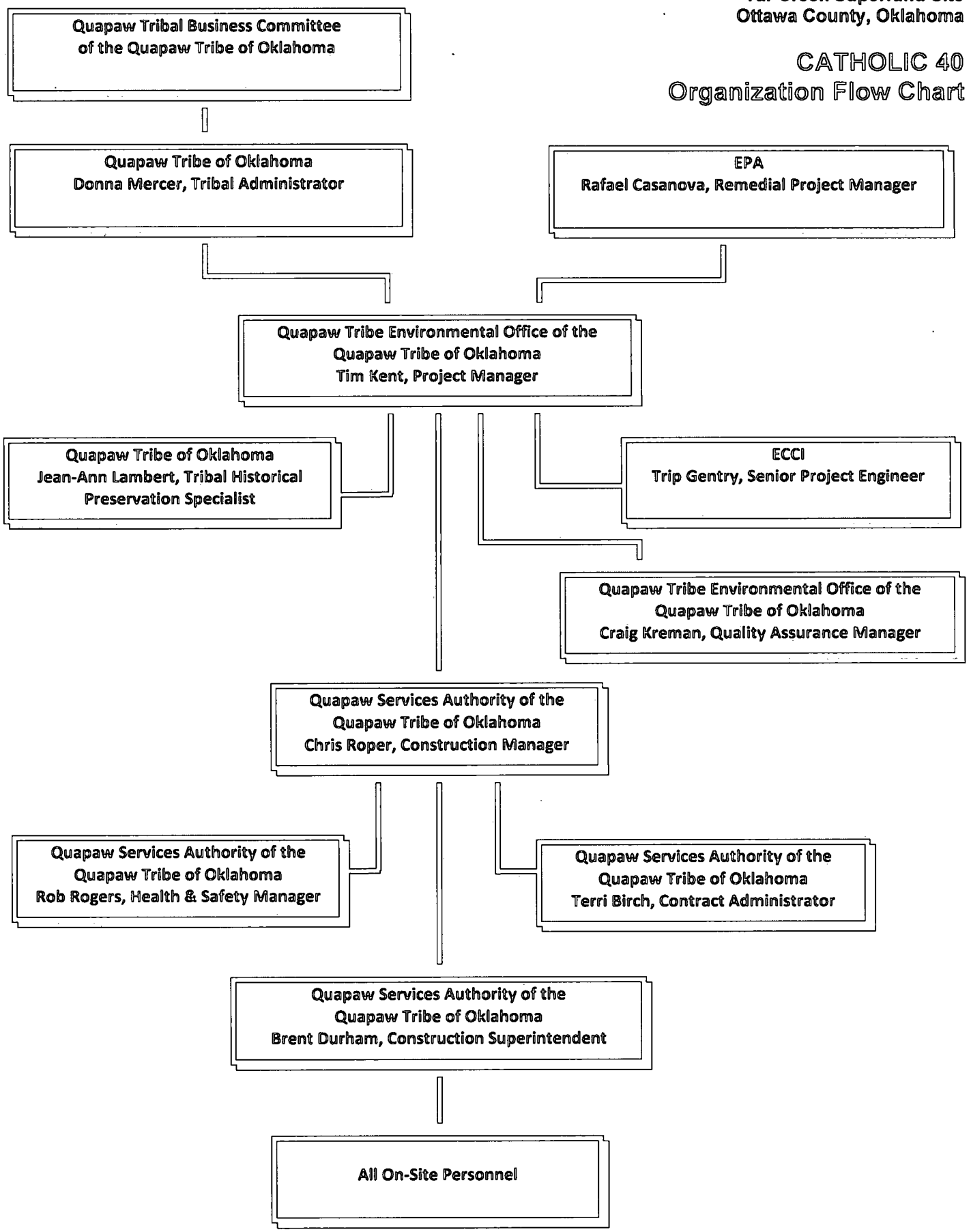
See detailed budget breakdowns attached as Appendix C and Appendix D.

Appendix A

QTEO Organizational Chart

Source Material Operable Unit 4
Distal Zone 8 Remedial Action
Tar Creek Superfund Site
Ottawa County, Oklahoma

CATHOLIC 40
Organization Flow Chart



Appendix B

Distal 8 Site Location Map

Legend

- Chat Bases
- Section
- Property Boundaries
- Road
- Creek

N

0 250 500 1,000 Feet

FIGURE 1
Distal 8 Location Map
Tar Creek Superfund Site
Operable Unit No. 4
Ottawa County, Oklahoma

CH2MHILL

Appendix C

Detailed Construction Budget Spreadsheet

Catholic 40 - Itemized Cost Estimate for Work Plan (Task 1)

		Line Items	Quantities	Unit	Unit Price	Subtotal
1		**Preparation of Site-Specific Plans, Pre-construction Submittals, and Project Engineering Support**				
	a.	Site Work Plan	1	PLAN	$12,500.00	$12,500.00
	b.	Field Sampling and Analysis Plan	1	PLAN	$7,500.00	$7,500.00
	c.	QA Project Plan	1	PLAN	$7,500.00	$7,500.00
	d.	Site Management Plan	1	PLAN	$7,500.00	$7,500.00
	e.	Stormwater Pollution Prevention Plan	1	PLAN	$7,500.00	$7,500.00
	f.	Construction Quality Assurance Plan	1	PLAN	$7,500.00	$7,500.00
	g.	Transportation Plan	1	PLAN	$5,000.00	$5,000.00
	h.	Disposition Plan	1	PLAN	$5,000.00	$5,000.00
	i.	Mine Shaft Closure Plan	1	PLAN	$10,000.00	$10,000.00
	j.	Closed Boring Abandonment Procedures	1	PLAN	$2,500.00	$2,500.00
	k.	Site Health and Safety Plan - QTEO	1	PLAN	$5,000.00	$5,000.00
	l.	Site Health and Safety Plan - Engineer/Construction Manager	1	PLAN	$5,000.00	$5,000.00
	m.	Site Health and Safety Plan - Contractor	1	PLAN	$5,000.00	$5,000.00
	n.	Waste Management Plan	1	PLAN	$2,500.00	$2,500.00
	o.	Spill Response Plan	1	PLAN	$2,500.00	$2,500.00
	p.	Develop RFP	1	RFP	$3,500.00	$3,500.00
	q.	Evaluate Proposals and Develop Contract	1	CONTRACT	$7,500.00	$7,500.00
	r.	Develop Community Relation Plan	1	PLAN	$3,000.00	$3,000.00
	s.	Review Pre-Construction Submittals	1	REVIEW	$1,800.00	$1,800.00
	t.	Pre-Construction Meeting in Quapaw, OK	1	MEETING	$2,400.00	$2,400.00
	u.	Third Party - ID Utilities	1	REPORT	$1,500.00	$1,500.00
	v.	Engage Oklahoma Surveyor to Shoot Boundaries and Mark Work Areas	1	SURVEY	$17,500.00	$17,500.00
	w.	Develop Remedial Action Report	1	REPORT	$5,300.00	$5,300.00
		Line Item 1 Subtotal				$135,000.00
2		**Site Mobilization**				
	a.	Office Trailer w/ Utilities	6	MONTHS	$2,145.00	$12,870.00
	b.	Portable Toilets x 3	6	MONTHS	$312.00	$1,872.00
	c.	Portable Truck Scales	6	MONTHS	$3,900.00	$23,400.00
	d.	Portable Truck Scales, Building w/ Utilities	6	MONTHS	$1,980.00	$11,880.00
	e.	Safety/Zone Fencing, Signage & Barricades	1	LUMP SUM	$6,240.00	$6,240.00
	f.	Lighted Traffic Boards x 2	6	MONTHS	$2,340.00	$14,040.00
	g.	25K lb Excavator	1	DELIVERY	$1,560.00	$1,560.00
	h.	100K lb Excavator	1	DELIVERY	$3,250.00	$3,250.00
	i.	30 Ton Off Road Truck	1	DELIVERY	$3,250.00	$3,250.00
	j.	40 Ton Off Road Truck	1	DELIVERY	$3,250.00	$3,250.00
	k.	18 cy Scraper	1	DELIVERY	$3,250.00	$3,250.00
	l.	21 cy Scraper	1	DELIVERY	$3,250.00	$3,250.00
	m.	7.25 cy Wheel Loader	1	DELIVERY	$3,250.00	$3,250.00
	n.	Motor Grader	1	DELIVERY	$3,250.00	$3,250.00
	o.	25K lb Dozer	1	DELIVERY	$1,560.00	$1,560.00
	p.	80K lb Dozer	1	DELIVERY	$3,250.00	$3,250.00
	q.	Skid Steer w/Sweeper Att.	1	DELIVERY	$1,560.00	$1,560.00
	r.	Rubber Tire Backhoe w/ Forks Att.	1	DELIVERY	$1,560.00	$1,560.00
	s.	Trencher	1	DELIVERY	$1,560.00	$1,560.00
		Line Item 2 Subtotal				$104,102.00

Catholic 40 - Itemized Cost Estimate for Work Plan (Task 1)

		Line Items	Quantities	Unit	Unit Price	Subtotal
3		**Site Preparation**				
	a.	Install Protective Fencing	1000	LF	$6.50	$6,500.00
	b.	Clearing & Grubbing	5	ACRE	$11,050.00	$55,250.00
	c.	Zone Establishments	1	LUMP SUM	$7,020.00	$7,020.00
	d.	Prep Site, Set Office & Utilities	1	LUMP SUM	$15,600.00	$15,600.00
	e.	Materials for Office (Sb-2 Gravel, Stairs, Misc.)	1	LUMP SUM	$10,400.00	$10,400.00
	f.	Prep Site Scales, Office & Utilities	1	LUMP SUM	$27,300.00	$27,300.00
	g.	Materials for Scales (Sb-2 Gravel, Concrete, Misc.)	1	LUMP SUM	$15,600.00	$15,600.00
	h.	Traffic Controls	1	LUMP SUM	$4,550.00	$4,550.00
	i.	Utility Locates and Drawing Prep (Subcontracted)	1	LUMP SUM	$4,550.00	$4,550.00
	j.	Install Decontamination Zone	1	LUMP SUM	$4,550.00	$4,550.00
		Line Item 3 Subtotal				$151,320.00
4		**Construction of Temporary Access Road**				
Southern Access 2308' × 26'						
	a.	Excavation and Embankment	970	CY	$9.10	$8,827.00
	b.	Borrow	48.5	CY	$14.00	$679.00
	c.	Geogrid for Pavement (Complete in Place)	1290	SY	$5.60	$7,224.00
	d.	Base Course for Haul Road (for Repairs)	950	TONS	$35.00	$33,250.00
	e.	R.C. Pipe (Class III) Culvert (Two Stream Crossings)	200	LF	$91.00	$18,200.00
	f.	Seeding	2	AC	$2,330.00	$4,660.00
	g.	Mulch Cover	2	AC	$3,500.00	$7,000.00
	h.	Site Preparation (incl. Mobilization)	1	LS	$32,660.00	$32,660.00
	i.	Trench and Excavation Safety Systems	1	LS	$3,270.00	$3,270.00
	j.	Erosion Control & Maintenance	1	LS	$6,540.00	$6,540.00
	k.	Roadway Construction Control	1	LS	$3,270.00	$3,270.00
		Temporary Access Road Subtotal				$125,580.00
5		**Removal, Transportation, and Disposal of Source Material, Waste Material, and TZ Soils**				
	a.	Engineering Support During Remediation	1	SUPPORT	$21,000.00	$21,000.00
	b.	On Site Engineering Construction Manager During Remediation Activities	80	DAYS	$953.00	$76,240.00
	c.	Engineering Contractor Project Meetings with Quawpaw Tribe	6	MEETING	$1,550.00	$9,300.00
	d.	Engineering Contractor Project Meetings with EPA Region 6 in Dallas, TX	2	MEETING	$1,400.00	$2,800.00
	e.	Water Truck and Water for Dust Control	100	DAYS	$1,436.50	$143,650.00
	f.	Removal and Transportation of Source Material to Repository	106700	TONS	$11.00	$1,173,700.00
	g.	Excavate by Hand w/ Equipment Support	300	TONS	$130.00	$39,000.00
	h.	20 cy Roll Off Containers, Waste Material X2	50	DAYS	$650.00	$32,500.00
	i.	Survey and Layout - BIA Certified Surveyor	20	DAYS	$1,105.00	$22,100.00
	j.	Construction Fencing and Barricade Replacement	2000	LF	$4.00	$8,000.00
		Line Item 5 Subtotal				$1,528,290.00
6		**Filling and Capping of Mine Shafts, Cased Borings, and Removal of Asphalt Piles**				
	a.	Mine Shaft Filling, Adjustable per Site Conditions ea.	1	LUMP SUM	$19,500.00	$19,500.00
	b.	Subsidence Features, Filling per Site Conditions ea.	1	LUMP SUM	$15,000.00	$15,000.00
	c.	Cased Borings	1	LUMP SUM	$12,000.00	$12,000.00
	d.	Remove Waste Asphalt Piles	185	TONS	$20.00	$3,700.00
		Line Item 6 Subtotal				$50,200.00

Catholic 40 - Itemized Cost Estimate for Work Plan (Task 1)

		Line Items	Quantities	Unit	Unit Price	Subtotal
7		**Water Management**				
	a.	Silt Curtain	2200	LF	$6.00	$13,200.00
	b.	Hay Bales	642	BALES	$10.00	$6,420.00
	c.	Rock Ditch Checks	520	TONS	$20.00	$10,400.00
	d.	Rip Rap	35	TONS	$50.00	$1,750.00
	e.	Gabion Buckets	10	BUCKETS	$200.00	$2,000.00
	f.	Initial Installation an management of SWPPP	1	LS	$30,000.00	$30,000.00
	g.	Maintenance of Erosion Control	1	LS	$4,000.00	$4,000.00
	h.	20k gl. Frac Tanks, Stormwater Collection × 2	50	DAYS	$2,340.00	$117,000.00
	i.	Double Bag, 10 Micron & 25 Micron Water Filter	50	DAYS	$3,185.00	$159,250.00
	j.	Storm Water Pumping and Handling	50	DAYS	$1,820.00	$91,000.00
		Line Item 7 Subtotal				$67,770.00
8		**Sampling and Analyses**				
	a.	Field Sampling, Compositing, Sieving	5	EVENT	$1,494.00	$7,470.00
	b.	Analytical (10 day TAT)	48	SAMPLES	$97.50	$4,680.00
	c.	Analytical (3 day TAT)	8	SAMPLES	$150.00	$1,200.00
	d.	Level IV Data Package	12	REPORT	$100.00	$1,200.00
		Line Item 8 Subtotal				$14,550.00
9		**Site Restoration**				
	a.	Post Construction Final Site Review	1	REVIEW	$1,550.00	$1,550.00
	b.	Develop Remedial Action Report	1	REPORT	$5,300.00	$5,300.00
	c.	Topographic Survey of Grids by BIA Certified Surveyor	14	GRIDS	$1,105.00	$15,470.00
	d	Soil Amendments & Hydromulching	14	GRIDS	$1,300.00	$18,200.00
	e.	Maintain Grid to 70% Cover	14	GRIDS	$2,600.00	$36,400.00
		Line Item 9 Subtotal			*see footnote 1*	($22,320.00)
10		**Decontamination and Demobilization**				
	a.	Decon & Demobilize Scales	1	LUMP SUM	$22,100.00	$22,100.00
	b.	Decon & Demobilize Heavy Equipment	1	LUMP SUM	$109,850.00	$109,850.00
	c.	Decon & Demobilize Office	1	LUMP SUM	$7,800.00	$7,800.00
	d.	Decon & Demobilize Water Equip.	1	LUMP SUM	$4,550.00	$4,550.00
	e.	Decon & Demobilize Roll Off Boxes	1	LUMP SUM	$4,550.00	$4,550.00
		Line Item 10 Subtotal				$148,850.00

Catholic 40 - Itemized Cost Estimate for Work Plan (Task 1)

		Line Items	Quantities	Unit	Unit Price	Subtotal
11		**Pret-Operational Follow-Up Construction**				
	a.	Maintenance of Capped Mine Shaft Until Final Acceptance of Remedial Action				$11,000.00
	b.	Maintenance of Vegetative Cover Until Final Acceptance of Remedial Action				$6,000.00
	c.	Repair of Erosion Controls Until Final Acceptance of Remedial Action				$2,000.00
		Line Item 11 Subtotal				$19,000.00
12		**Health and Safety Incentive**				
	a.	Health and Safety Incentive				$26,000.00
		Line Item 12 Subtotal				$26,000.00
13		**Performance and Payment Bond**				
	a.	Performance and Payment Bond				$30,000.00
		Line Item 13 Subtotal				$30,000.00
					Total Costs	$2,400,662.00

[1] ***Section 9 subtotal was not included in the $2,400,662.99 "Total Costs". As per EPA request, Site Restoration cost is absorbed under Section 5.***

Appendix D

Superfund Remedial Response Budget

SUPERFUND REMEDIAL RESPONSE BUDGET
(Catholic 40 Clean-Up)

Revised 10-08-13

October 1, 2012 - September 30, 2014

PERSONNEL FOR YEAR 1:		**$79,187.00**
Env. Director	$88,558 @ 0.30 FTE x 12 months	$26,567.00
Env. Scientist	$63,000 @ 0.30 FTE x 12 months	$18,900.00
Env. Grants Manager	$56,264 @ 0.15 FTE x 12 months	$8,440.00
Env. Technician	$28,802 @ 0.10 FTE x 12 months	$2,880.00
Scale Operator	(8 hr./day, 80 days @ $20/hr., fringe included)	$12,800.00
Historic Preservation Spec.	(8 hr./day, 40 days @ $30/hr., fringe included)	$9,600.00
PERSONNEL FOR YEAR 2:		**$33,544.00**
Env. Director	$88,558 @ 0.20 FTE x 12 months	$17,712.00
Env. Scientist	$63,000 @ 0.13 FTE x 12 months	$8,190.00
Env. Grants Manager	$56,264 @ 0.10 FTE x 12 months	$5,626.00
Env. Technician	$28,802 @ 0.07 FTE x 12 months	$2,016.00

TOTAL PERSONNEL: **$112,731.00**

FRINGE BENEFITS: **$32,947.00**

The fringe benefits of the Quapaw Tribe of Oklahoma are broken down as follows:

FICA-S	6.200%	
FICA-M	1.450%	
SUTA	6.700%	
Worker's Comp	0.005%	
	14.355% x $90,330	= $12,967.00
401(k) Contribution		
	$800/yr per employee x 1.35 FTE x 2 years	= $2,160.00
Health, Dental, Vision & Life Insurance		
	$6,600/yr per employee x 1.35 FTE x 2 years	= $17,820.00

TRAVEL: **$2,140.00**

Per Diem/Meals
($71 per day) x (2 days) x (2 trips) x (2 persons) $568.00

Hotels/Lodging
($113 per night) x (1 nights) x (2 trips) x (2 persons) $452.00

Air Fare
($200 per trip) x (2 trips) x (2 persons) $800.00

Taxi/Tolls/Parking
($50 per trip) x (2 trips) $100.00

POV Mileage
($110 per trip) x (2 trips) $220.00

Travel may be necessary for the staff to complete their deliverables. Assuming two (2) trips for two (2) Tribal staff members to Dallas, TX for one day meetings with EPA Region 6 staff.

SUPPLIES:	**$5,500.00**
Office Supplies ($150.00/ month) x (24 months)	$3,600.00
Personal Protective Equipment (Boots, Hardhats, etc.)	$1,000.00
Project Management Software	$900.00
CONSTRUCTION COST: (not subject to indirect cost) Includes cost for services rendered by engineering support contractor and Tribal construction division (see attached spreadsheet for itemized construction costs).	**$2,400,662.00**
SUBTOTAL:	**$2,553,980.00**
CONSTRUCTION COST- NOT SUBJECT TO INDIRECT COST	**$2,400,662.00**
NON-CONTRACTUAL- SUBJECT TO INDIRECT COST	**$153,318.00**
INDIRECT COST @ 53.42% IDC RATE	**$81,902.00**
TOTAL:	**$2,635,882.00**

Construction Quality Assurance Plan

Construction Quality Assurance Plan (Version 1.2)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
December 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

Construction Quality Assurance Plan (CQAP)
Version 1.2
DISTRIBUTION LIST

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Copies of this CQAP have been distributed to the following people:

Rafael Casanova, P.G. - U.S. EPA, Region 6, Remedial Project Manager

Tim Kent, P.G. - QTEO, Environmental Director / Project Manager

Craig Kreman - QTEO, Quality Assurance Manager

Chris Roper – QSA, Construction Manager

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Appendix C Accident Prevention Program, QSA

1.0 INTRODUCTION

The Quapaw Tribe strives to achieve the utmost quality in all of our construction projects by implementing the following quality assurance plan for all projects. QTEO shall be responsible for quality assurance to observe and verify that the required QC activities are indeed completed in accordance with the contract requirements.

The Quapaw Tribe defines Quality as achieving our customers' expectations by meeting the following objectives:

- Establishing and maintaining open and productive communication.
- Fostering cooperation through partnering and team work.
- Promoting a trusting environment.
- Coordinating and implementing the Contract Documents.
- Completing the Project on time and within budget.

The following are the objectives of this CQAP:

- Provide procedures for delivering the appropriate quality of services and products to meet the Remedial Action Objectives specified in the Tar Creek Superfund Site Source Material Operable Unit 4 Record of Decision.
- Establish clear responsibilities and accountabilities for key technical and quality staff and management decisions related to this project.
- Build quality into all aspects of this project.
- Enable the identification and resolution of performance problems and challenges and provide a standing process for corrective measures and continuous improvement of site practices.
- Assure the highest level of technical and management practices to consistently meet the project quality objectives.

2.0 PROJECT DESCRIPTION

The Catholic 40 is located in the Site's Operable Unit 4 SE Distal Zone and is classified as Distal 8. Distal 8 includes one (1) chat base (CB011) and one (1) known mine shaft. CB011 is located within the north half of Section 6 Township 28 North (T28N) Range 24 East (R24E), and more specifically, within Ottawa County Parcel 0000-06-028-024-0-001-00. An east-west running property line divides CB011 into two sections: CB011 North on non-restricted fee land and CB011 South on tribal trust land owned by the Quapaw Tribe. CB011 North is not included within the scope of this project. This project addresses only source material and affected transition zone (TZ) soils. The contaminants of concern (COCs) at the Catholic 40 are lead, zinc, and cadmium.

3.0 QUALITY ASSURANCE

The Tribe emphasizes the following basic categories relating to quality:

- Material Quality
- Installation Quality
- Means and Methods Quality
- Administrative Quality
- Safety Quality

3.1 Material Quality

Material quality will be controlled through the comparison of the requirements of the contract documents to actual purchased materials. This will be achieved by review of construction documents, coordination through the submittal process, and through the inspection process.

3.2 Installation Quality

Installation quality will be controlled through document control, submittal verification, and coordination of trades through the inspection process.

3.3 Means and Methods Quality

Means and Methods Quality will be controlled through the construction planning and coordination of required construction methods and techniques.

3.4 Administrative Quality

Administrative Quality Controls will be established and maintained through the implementation and periodic review of the following:

- Preconstruction Site Planning
- Material Handling and Control
- Scheduling
- Test Reports
- Inspection Reports
- Punch Lists
- As Built Drawings
- Logs (See DOCUMENT CONTROL)

3.5 Safety Quality

Safety Quality standards will be controlled through the implementation and maintenance of the tribe's safety program.

4.0 ORGANIZATION

EPA Region 6 Remedial Project Manager

Mr. Rafael Casanova is the EPA Region 6 Remedial Project Manager (RPM) for this project. Mr. Casanova serves as the EPA liaison for the project and has the ultimate responsibility for overall EPA management of the project. Any significant changes to the planned activities, site access issues, public outreach issues, or significant problems encountered will be reported to the RPM by the Project Manager (PM) or designee. Any changes in the systems defined in the site-specific plans for this project must be approved by the RPM.

Tar Creek Superfund Stakeholders

Representatives for the stakeholders of the Tar Creek Superfund Site include Quapaw Tribe, Ms. Jonna Polk/Bureau of Indian Affairs (BIA), Mr. David Cates/Oklahoma Department of Environmental Quality (ODEQ), and Mr. Dennis Datin/ODEQ.

QTEO Project Manager (PM)

Mr. Tim Kent serves as the PM for this project. The PM functions as the primary interface between the RPM and the project team and is responsible for meeting all technical, financial, and scheduling goals. The PM will be the central point of contact for all matters concerning the project. The PM site management responsibilities include:

1. Ensures proper management of EPA/Tribe Superfund Cooperative Agreement (SFCA) grant related to this RA.
2. Defines project objectives and develops a detailed Work Plan and schedule.
3. Establishes project policies and procedures to address the specific needs of the project as a whole, as well as the objectives of each task.
4. Advises the RPM of technical progress, program needs, potential problems, and recommended solutions.
5. Organizes, monitors, directs, and controls staff and other resources needed to execute the task order within budget and schedule restraints, and establish clear lines of communication within the QTEO organization.
6. Familiarizes field leaders and support staff with the project's special considerations.
7. Reviews the work performed and overall task performance for quality, responsiveness, timeliness, and budgetary considerations.
8. Reviews external reports (deliverables) before submission to the EPA.
9. Represents the project team at meetings with the EPA and other project stakeholders.

Quality Assurance Manager (QAM)
Mr. Craig Kreman serves as the QAM for this project. The QAM provides quality management support to the PM. The QAM responsibilities include:

1. Creates and approves the Quality Assurance Project Plans (QTEO's QAPP and the CQAP), and the Sampling and Analysis Plan (SAP).
2. Reviews program level quality work instructions and procedures.
3. Identifies quality assurance, testing, and equipment commissioning requirements.
4. Monitors the scope, quality and completeness of project reviews and deliverables.
5. Guides the QC process by serving as a technical resource and counselor to the PM.
6. Monitors and manages the flow of data throughout the project.
7. Creates and maintains the project database which will contain project analytical data.
8. Acts as project liaison to the analytical laboratories to address any technical chemistry issues or problems encountered by the laboratories or by data reviewers.
9. Performs or oversees the validation of all analytical data obtained and assesses its usability in achieving project DQOs and supporting project decisions.
10. Oversees submittals.

Senior Project Engineer (ECCI)
Mr. Trip Gentry serves as the Senior Project Engineer for this project. The Senior Project Engineer functions as the primary consultant with the QTEO and is responsible for meeting all technical, financial, and scheduling goals. The Senior Project Engineer will assist the PM with project management responsibilities as they are given. Additionally, the Senior Project Engineer will serve as a point of contact for technical issues on various project subtasks.

Construction Manager (CM)
Mr. Chris Roper serves as the CM for this project and is responsible for the overall planning, directing, controlling, and coordination of the construction team members during the construction process. The CM is responsible for assuring that the project goals are attained. Areas in which the CM controls the quality of work include, but are not limited to the following:

1. Works in conjunction with estimating staff during the initial phases of the project to ensure that subcontracts and purchase orders are issued in conformance with the grant documents and that the procurement is timely in regard to meeting the project schedule.
2. Establishes administrative procedures during the mobilization phase to ensure proper documentation methods, establish paper flow sequences and chain of command.
3. Coordinates efforts to develop a site layout plan addressing accessibility, traffic patterns, temporary utilities, signage and material storage.
4. Establishes and maintains methods of good communication and relationships with stakeholders and on-site personnel.
5. Schedules periodic inspections with Subcontractors, Suppliers and tribal personnel to ensure compliance with the grant documents and project specifications.
6. Oversees management of on-site personnel and subcontractors.

Site Superintendent

Mr. Brent Durham serves as the Superintendent for this project and is responsible for the planning, directing, controlling, and coordinating of field operations on the project. The Superintendent will ensure that the highest quality of workmanship is a standard among field crews. Areas in which the Superintendent controls the quality of work include, but are not limited to the following:

1. Conducts routine inspections of all work to ensure quality standards are met in compliance with specifications.
2. Schedules and conducts preconstruction conferences prior to the start of critical activities.
3. Maintains information to be included in the project record documents.
4. Ensures that material is received, checked, and properly stored prior to installation.
5. Ensures that the project is kept clean.
6. Ensures on-site compliance with the tribe's safety program.
7. Establishes and maintains line and grade control for the project.
8. Identifies and corrects deficiencies prior to final completion of the project.

Source Material Operable Unit 4
Distal Zone 8 Remedial Action
Tar Creek Superfund Site
Ottawa County, Oklahoma

CATHOLIC 40
Organizational Flow Chart

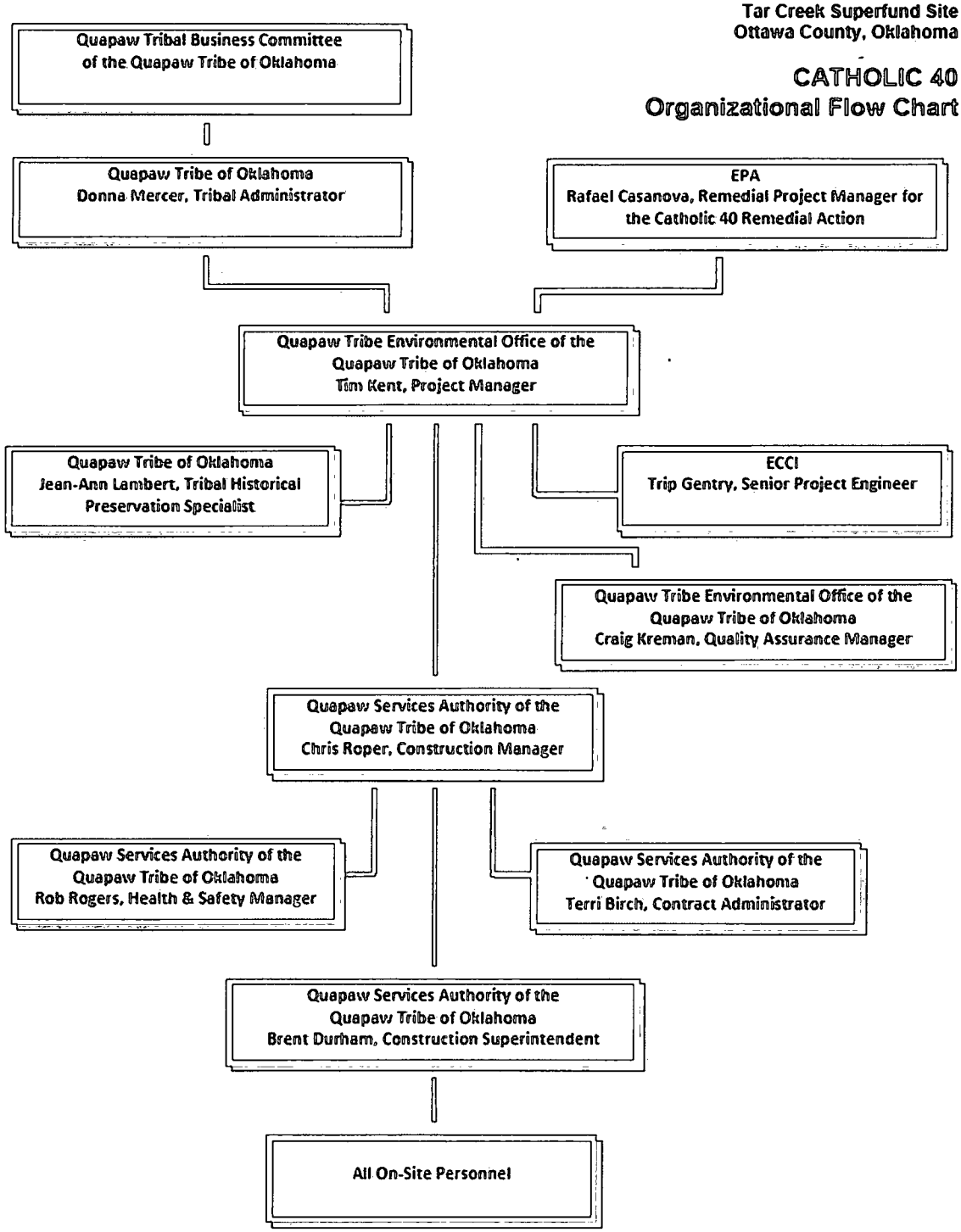

Figure 1.1 Organizational Chart **Quapaw Tribe of Oklahoma**

5.0 SPECIAL TRAINING / CERTIFICATIONS

Project team members have been chosen with the necessary experience and technical skills to perform required project tasks. The only additional training required is a mandatory review of the project specific HSP. All field staff for the site, including subcontractors, must meet the requirements specified in the Work Plan and the HSP.

6.0 ACCIDENT PREVENTION PROGRAM

One of the primary responsibilities as the Construction Manager is to ensure a comprehensive safety program for each Project.

The Quapaw Tribe and each Subcontractor shall provide and maintain, within their scope of work, a safe, hazard free workplace for their employees, fellow workers and the general public. All employees shall be constantly aware of their responsibility to work in a safe manner.

The Accident Prevention Program embodies the prevention of accidental injury, occupational illness and property damage, and it ensures the involvement and active participation of all project employees. The safety standards therein set forth only establish minimum standards in certain key areas, are not exclusive or exhaustive of the Subcontractors' project safety requirements and obligations, and do not exempt Subcontractors from their responsibility to maintain overall comprehensive company safety programs.

Subcontractors' individual safety programs for each project, as a minimum, shall incorporate the principles of this Accident Prevention Program (Appendix C). Subcontractors have a contractual obligation to perform their work using safe methods and to comply with their company safety programs, the project documents, Occupational Safety and Health Administration (OSHA) Standards, and all other tribal, federal, state and local codes and regulations.

7.0 CONSTRUCTION ACTIVITIES INSPECTIONS

In order to complete the remediation of the Catholic 40 property, the Tribe anticipates completing the following two major tasks.

7.1 TASK 1: Site Remediation

The estimated timeline for completing the remediation activity at the Catholic 40 site is approximately 6 months (from mobilization to the site to demobilization).

Subtasks

The remediation of the Catholic 40 property shall consist of the following subtasks:

1. Preparation of site specific plans and pre-construction submittals, including material submittals, health and safety related certifications, personnel related requirements, site specific work plans, etc.
2. Mobilization, including installation of decontamination facilities, waste containment facilities, scale house, construction trailers etc.
3. Site preparation, including pre-construction site survey, protection and marking of historic features, site clearing, work zone establishment, etc.
4. Repair of southern access road and associated water crossings.
5. Removal, transportation, and disposition of source material, waste materials, and TZ soils, including furnishing and maintaining weight scales and associated facilities.
6. Filling and capping of mine shafts, and cased borings, including cover construction over filled mine shafts.
7. Water management, including collection, containment, and disposal of decontamination water and stream bank stabilization.
8. Site restoration, including grading and surveying for verification of grid excavation depth and aerial extent.
9. Decontamination and demobilization, including intermediate decontamination before exiting the exclusion zone, disposal of debris and rinsate, and deconstruct/demobilize all site facilities.
10. Follow-up monitoring of remediated areas and maintenance, as needed, to address inadequacies of the remedy before it becomes operational.

7.2 TASK 2: Tribal Project Management

The QTEO will be responsible for the management of the Cooperative Agreement grant and for general project management and oversight of the Catholic 40 project. Accordingly, the Tribe will have the ultimate authority in ensuring the quality and effectiveness of the remediation. The Tribe anticipates that more time and effort will be required of Tribal staff during the first 12 months of the 2 year project period; consequently, the percentage of time required for each staff person to complete work plan tasks is as subdivided into Year 1 and Year 2 subcategories.

8.0 PROJECT COMMUNICATION AND COORDINATION

QTEO shall be responsible for ensuring compliance of the grant requirements with all tribal employees, contractors and suppliers. Construction Manager will provide meeting arrangements in coordination with QTEO throughout the duration of site construction, prepare meeting agendas and minutes, and preside over these meetings. Construction Manager shall provide meeting minutes to QTEO within 3 work days after the meetings that QTEO attends. The meetings shall include, but are not limited to, a pre-construction meeting, weekly progress meetings, and weekly Quality Control (QC) and Health and Safety (H&S) meetings. Various weekly meetings may be combined into one weekly meeting at the discretion of Construction Manager. The anticipated schedule for meetings will be at the job site trailer on each Tuesday while work is being performed on site. Additional project meetings may be required at the discretion of Construction manager to address any project issues or to review project progress.

8.1 Preconstruction Meeting

Prior to the commencement of any on-site construction work, Construction Manager and Superintendent shall attend a pre-construction meeting at the QTEO office in Quapaw, OK to discuss the following subjects, at minimum:

1. Status of Pre-Construction Submittals.
2. Project schedule.
3. Status of insurance.
4. Daily, weekly and monthly reporting requirements (H&S, QC, Operation, Invoices etc.).
5. Administrative project procedures and progress payments.
6. Sequencing of critical path work items.
7. Approved Schedule of Values (SOV).
8. Project changes and clarification procedures (including RFIs).
9. Use of the site, access, office and storage areas, security, and temporary facilities.
10. Site controls.
11. Major project delivery requirements or other important items and priorities.
12. Project Specific Health and Safety Plan and AHAs.
13. Required employee records.

A Preconstruction meeting is also conducted after subcontract awards or purchase orders, prior to contractors beginning work on-site. Construction Manager will prepare an agenda and chair the meeting. The following format will generally be followed to ensure compliance with quality control requirements.

1. Safety program with respect to on-site operations.
2. Status of contracts and insurance, procedures for RFI and changes in the work, and monthly billings for progress payments.
3. Administrative project procedures: Daily, weekly and monthly reporting requirements.
4. Use of the site, access, office and storage areas, security, and temporary facilities.
5. Required submittals, approvals, testing, and quantities.
6. Project schedule.
7. Specific requirements in technical specification sections.
8. Site controls.

8.2 Pre-Activity Meeting

Pre-Activity meetings will be conducted by the Superintendent with site personnel during the beginning of each major activity of work to confirm that proper material, equipment and methods will be used. This meeting can

coincide with the Preparatory Phase Inspection and should cover the following issues:

1. Review safety program and hazard analysis with respect to Subcontractor's operations.
2. Physical inspection of site, materials and equipment.
3. Review materials and equipment for proper submittals, approvals, testing, quantities and conformance to the contract documents.
4. Review major installation and coordination points of the specifications.
5. Review quality control / quality assurance requirements in the specifications.

8.3 Daily Tailgate Meetings

Daily tailgate meetings shall be held each morning. All Subcontractor personnel are required to attend the daily tailgate meetings. The following subjects will be discussed, at a minimum:

1. Review the work location, activities for the day, changes in work assignments, and accomplishments or problems encountered the previous day
2. Review and ensure that all AHAs, QC items, and HSE inspections and other related requirements are completed for the activities for that day, prior to start of work
3. Discuss existing or potential construction or schedule problems including HSE or QC related concerns
4. Pre-Task Safety Planning (Safety task analysis form completed for the work planned for the day).

NOTE: Each employee present should sign Pre-Task Safety form prior to beginning any work onsite

8.4 Progress Meetings

After the start of site work and throughout project execution, Construction Manager shall conduct weekly progress meetings with Subcontractors at a location to be determined. Representatives from each Subcontracting firm shall attend these progress meetings: to include the Project Managers, Site Superintendents, H&S and Site Safety Representatives. These meetings may coincide with Follow-up Phase inspections on DFOW in progress. At a minimum, the following will be reviewed, discussed or resolved at each meeting:

1. Review of the minutes of the previous meeting to include attendees
    a. Review of the schedule, to include:
    b. Review of work progress since last meeting
    c. Work or testing accomplished since last meeting
    d. Identification of problems that impede planned progress
    e. Corrective measures to regain projected schedules

2. Review of the status of submittals
    a. Submittals reviewed and approved since last meeting
    b. Submittals required in the near future

3. Review the work to be accomplished in the next two weeks and documentation required
    a. Inspections required
    b. Testing required
    c. Status of offsite work or testing
    d. Documentation required

4. Discussion of health and safety issues/concerns, such as near-misses and incidents

5. Resolutions to quality issues and corrective actions.

    a. RFI and logs
    b. Submittals and Submittal Register updates
    c. Waste Tracking Log
    d. Change Orders
    e. Sampling and Testing
    f. Survey data

g. Redline mark-up drawing updates
h. Inspection schedule and documentation

6. Other business relating to the SOW

Meetings conducted will be recorded in Weekly Status Meeting Minutes, prepared by Construction Manager and provided to QTEO.

8.5 Quality Control Meetings
Construction Manager shall conduct QC meetings on site at a location to be determined. QC meetings are to review test results, inspection reports, and other matters relating to the quality of construction. Construction Manager shall request QTEO's attendance at least 5 work days prior to any scheduled special inspection or additional testing.

8.6 Problem or Deficiency Meetings
A special meeting may be held if a problem or deficiency is present or likely to occur including H&S and QC related items. At a minimum, the appropriate QTEO and contractor representative will attend the meeting. The purpose of the meeting will be to define and resolve a problem or recurring work deficiency in the following manner:

- Define and discuss the problem or deficiency
- Review alternative solutions
- Implement a plan to resolve the problem or deficiency

Whenever required, a Corrective Action Plan (CAP) shall be prepared by contractor for review and approval by Construction Manager and/or QTEO for major items or circumstances such as H&S related incidents, quality of workmanship, spills, cross-contamination, re-work, schedule delay, adverse cost impact, personnel issues, etc. Representatives from all parties present during the meeting shall take notes and submit copies of their meeting notes to QTEO immediately after the meeting as noted above.

9.0 DOCUMENTATION AND REPORTING (See Appendices for Forms)

9.1 Project Records
Records that are generated for the project will be readily available for reference, and shall include the following, at minimum:

- Property access agreements
- Reconnaissance data
- Submittals, including Submittal Register
- Daily reports
- Meeting minutes
- Inspection reports—Preparatory Phase, Initial Phase, and Follow-up Phase Grid Diary Inspection Forms
- Punch list inspection results
- Pre-final and final inspection results
- Sampling log
- Test results including testing plan and log (chat characterization, confirmation sampling, storm water, geotechnical)
- Contract and contract modifications
- Construction change order and log
- Red-lined drawings/as-built drawings
- Survey data and maps
- RFIs arranged in numerical order and RFI log
- Certificates and qualifications
- Calibration records (Scale and other test equipment)
- Photographs and photograph log
- Corrective Action Plans

9.2 Daily Report and Daily Contractor Quality Control Report

The daily report is a record of operations on the job site and must be prepared to account for each calendar day over the duration of the project. It is an essential tool for recording and reporting the daily production safety and QC activities of the project. On non-working days, a separate daily report need not be prepared, but the previous and subsequent daily reports must address and account for the non-working days. The reports are the official record of work performance and compliance with project plans, drawings, and specifications. It is therefore critical that the reports are correct and timely.

Daily reports will be prepared for this project to document tasks that are performed each day. The Superintendent is responsible for preparing work summary details. QTEO is responsible for preparing work summary details involving sampling and testing (for further details see QTEO QAPP available under separate cover). The Health and Safety Manager will provide information on the health and safety activities. Other tasks being performed, such as ground water monitoring, will be documented by those assigned individuals in discrete work summary reports. Individual work summary reports will be compiled into the applicable daily reports (for instance, sampling/testing or construction). The daily reports will be submitted to the Construction Manager for review and finalization.

The daily report will include at a minimum, the following:

- Activities performed for the day including quality aspects of the project that are being performed by the subcontractor
- Planned activities including sampling, surveying and inspections
- Scheduling and resource issues/concerns
- Site safety inspections and concerns, inspections conducted and findings/result of inspection
- Environmental concerns
- Project schedule and progress
- QC inspections, inspections conducted and findings/result of inspection
- Tests performed and their results
- Personnel and equipment onsite, including man-hours
- Materials received and inspected
- Tailgate safety meeting minutes and signatures
- Changed conditions, delays, or conflicts encountered including QC issues
- Submittal Status
- Waste disposal summary

The project team must review the daily reports for accuracy and completeness because these reports are used to prepare the final reports for the project. QTEO will review these reports to ensure the quality processes and systems are working on the project.

9.3Photos and Photo Logs

Photographic records will be made and kept as part of the QA records. In addition to recording construction progress and as-built installation details, the photographic record will be used to document pre-existing conditions at the site and any deviations from design and nonconforming items or work. Each photograph will be assigned with an identification number, date, location, and description. Any of the observers may photograph work for record purposes. The photographer will prepare the photograph log and send it with the corresponding photographs to the Construction Manager for archiving. The Superintendent will archive and maintain the photographic record file using a digital camera that includes a date and time stamp to document when each photograph was taken.

NOTE: Health and Safety related documentation shall be included in the HSP. Testing and Sampling documentation is provided with QTEO's QAPP.

9.4 Conversation Record

Use this form to document verbal conversations with project stakeholders: Federal, State, or local agencies, etc. during the course of the Remedial Action.

9.5 Grid Diary Inspection Form

To provide accurate documentation of grid diary inspections during grid remediation within the designated area where TZ soil needs to be excavated to the required depths, a grid diary inspection form or its equivalent will be used.

The grid diary inspection form includes four types of hold-point inspections:

A. Type A—Used before collection of confirmation sample starts for each grid to document the inspection conducted in the excavated/remediated area to verify that all source material has been removed in accordance with the SOW.

B. Type B—Used after the required horizontal and vertical excavation limits have been completed in each grid. Documents that the grid is ready for post-excavation survey verification to ensure that both parties have collected their post-excavation survey information and have verified that that the required excavation depth has been met.

C. Type C—Used before final grading starts to ensure that all survey data has been collected, all other tasks prior to site restoration have been completed and that all issues have been resolved.

D. Type D—Other: Used for any special cases not covered above. In any instance during TZ soil removal, where a special case is encountered in the field as outlined below, Type D will be used.
   1) Case 1—Grids that are designated "no dig" and visible source material is observed.
   2) Case 2—Grids that are designated "excavate 6 inches" or "excavate 12 inches" and that are too wet to be excavated to the required depths.
   3) Case 3—Grids that are designated "excavate 6 inches" or "excavate 12 inches" and veins of source material are encountered that may potentially extend beyond the required excavation depths/limits.
   4) Case 4—Grids that are designated "excavate 6 inches" or "excavate 12 inches" and a rocky material or boulder (not source material) is encountered.
   5) Case 5—Grids that are designated "excavate 6 inches" or "excavate 12 inches" or "no dig" or where another special case is encountered that may necessitate deviation from the excavation tolerance of ±0.1 foot, as approved.

10.0 DOCUMENT CONTROL

10.1 Current Document Log and Drawing Log

The Superintendent shall ensure that the field force including Subcontractor field personnel, are using current documents. During the progress of the job, revisions may occur which require the issuing of revised drawings (As-Built/Red Line drawings) as clarifications or proposed changes. Once approval has been given and QTEO has directed work to proceed, the Construction Manager will update the Current Document Log or Drawing log. The Superintendent shall ensure that all field personnel are using current contract documents. The Construction Manager will assist the Superintendent in implementing the procedures for periodic verification.

10.2 Submittal Control

QTEO's Quality Assurance Manager (QAM) will ensure that the strict procedures that have been established are followed in managing submittals of drawings, brochures, manufacturers' catalogs and in management of samples and test data. All submittals will be checked by QTEO's staff for conformance to the project specifications.

The QC Manager will manage the logging and tracking of all submittals in the Submittal Register. Specific responsibilities regarding submittals include the following actions:

- Coordinating all submittal actions
- Maintaining necessary submittal records in an organized fashion
- Maintaining and tracking submittals in the Submittal Register
- Reviewing and certifying all submittals for compliance with the project plans, drawings, and specifications
- Approving all submittals except those designated to be approved by the QTEO Director / Project Manager, EPA site representative, and/or stakeholders
- Checking all material and equipment delivered to the project for compliance with the project plans, drawings, and specifications

The QTEO, or designee, is responsible for ensuring that all entities involved with the Remedial Action present their submittals in a timely manner to ensure the project schedule can proceed without any adverse impact. Critical submittals and long lead-time materials must be identified as separate activities on the schedule. The QTEO, or designee, will ensure that the submittal packages are complete so that valuable time is not wasted and effort lost on a resubmittal. Submittal status will be an agenda item of the weekly status meetings. If a submittal requires the EPA's approval, it should be clearly indicated in the submittal.

10.3 Materials and Equipment Control

It is the responsibility of the Superintendent to ensure that all equipment and material is stored in accordance with manufacturer's recommended procedures and/ or the specifications. All equipment and material will be properly handled and transported to prevent damage. Special handling instructions provided by the supplier will be carefully followed. It is the responsibility of the QAM to conduct periodic inspections of equipment and material in storage. The QAM will advise the Construction Manager and Superintendent of any items that are not properly stored. It shall be the responsibility of the Superintendent to ensure that any improper storage is corrected.

11.0 TESTING AND SAMPLING

QTEO shall be directly responsible for all soil testing and sampling.

11.1 Sampling and Testing Log

Sampling and testing will be performed to verify that control measures are adequate to provide a product that conforms to project plans, specifications, and drawings. The sampling and testing log will be populated to log the sampling and testing conducted. Offsite testing will be performed by laboratories and testing companies with accreditation and certifications through industry recognized organizations and standards. Onsite testing (*e.g.*, use of XRF equipment) will be performed by individuals qualified to perform the testing as determined by their supervisor and accepted by the QTEO.

11.2 Testing Companies

Testing services will be compliant with the project requirements and specifications prepared by the QTEO. The project plans will specify specific analytical and geotechnical testing methods (*e.g.*, American Society for Testing and Materials [ASTM] or similar standards), professional services, and other measurement protocols as specified in the project plans, designs, and specifications. The SOW will also specify the nature of the report or deliverable required of the testing laboratory, including requirements for professional certification. Scheduling of site services will be the responsibility of the QTEO or its designee.

The following activities will be performed and documented during testing:

- Verify that testing procedures comply with plan-specific requirements.
- Verify that facilities and testing equipment are available and comply with testing standards.
- Check test instrument calibration data against traceable certified standards.
- Verify that recording forms and the test identification system, including all test documentation requirements, have been prepared.
- Record results of all tests, both passing and failing tests, on the daily report for the date taken. Give section reference, location where tests were taken, and the sequential control number identifying the test. Actual test reports may be submitted later with a reference to the test number and the date taken.

The test results must be signed by the testing laboratory's representative authorized to sign certified test results. The signed reports, certifications, and other documentation will be submitted to EPA as part of the Final Remedial Action Report.

See QTEO's Quality Assurance Project Plan, submitted under a separate cover, for further details.

12.0 NONCOMPLIANCE AND CORRECTIVE ACTION

12.1 Resolution of Conflicts

The QTEO will notify the appropriate entity of any detected noncompliance with the foregoing requirements. A less formal communication (verbal or e-mail) of the deficiency is made first. Then, if corrective action is not put in place, formalized notice in the form of a noncompliance report is initiated by the QTEO or its designee and sent to the appropriate entity. Follow-up will occur and if not acceptable the QTEO will issue a notice to cure.

12.2 Corrective Measure Plan

The entity will take immediate corrective action after receipt of such notice. Such notice, when delivered to the entity at the work site, will be deemed sufficient notification. If the entity fails or refuses to comply promptly, the QTEO may issue an order stopping all or part of the work until satisfactory corrective action has been taken as outlined in the terms and conditions of the work requirements. The project team will monitor and inspect the remedial activity to ensure that materials, equipment, and work performed that do not conform to project requirements are identified and controlled to prevent unintended use or delivery. Through planning and the involvement of the quality team and other functional groups early in that planning process, actions can be taken to prevent potential noncompliance from occurring during project execution. Noncompliance notification or stop work orders will be documented in the daily report and a nonconformance/deficiency report. Completion of corrective action will be noted on the daily report and finalized nonconformance/deficiency reports. Verification of the corrective action and its results will be performed by the QTEO and documented in the daily report.

13.0 CONSTRUCTION QUALITY PLAN

13.1 Construction Quality Plan Objective

This Construction Quality Plan (CQP) provided in this CQAP for the Tar Creek OU 4 Source Material Remedial Action project for CB 011 (Catholic 40) presents the construction quality management process that will be implemented on the project. "Three Phases of Control" (3POC) intended through application of the protocol is enhanced quality and corresponding documentation of the quality process for each "definable feature of work" (DFOW) for the project. A DFOW is a task that is separate and distinct from other tasks and has separate control requirements.

13.2 Project Performance Objective

The project objectives for the Distal Area Remedy are defined in the Project Work Plan.

13.3 Three-Phases of Control (Preparatory, Initial, and Follow-up)

Construction Manager shall conduct Preparatory, Initial, and Follow-up Inspections (see Appendix B for form) prior to beginning each Definable Feature of Work subtask 2 through 10 under Task 1 – Site Remediation, and shall include a review of project work plan and specifications to ensure that planned work complies with the SOW:

1. Review safety measures and hazard analysis.

2. Review overall site conditions.

3. Review materials and equipment.

4. Review quality of workmanship.

13.3.1 Preparatory Phase

The Preparatory Phase is that step in delivering the project that essentially culminates the planning and design process leading up to actual field work of a specific site or sites. It also serves to assure that the project delivery, QC, and safety plans have been completed and are ready to be implemented. The following events take place during the Preparatory Phase for each DFOW established by the PM/CM:

1. Confirm that the appropriate technical specifications are incorporated into the project work plans, construction drawings and review specifications with the CMs and other field team members.

2. Confirm that the appropriate contract drawings are incorporated into the project work plan and review drawings with the CMs and other field team members.
3. Verify with the QAM that all shop drawings and preconstruction submittals (materials, health and safety, project plans) have been approved by the proper approving authority (including factory test results, when required).
4. Confirm with the QTEO that the testing plan coincides with the project plans and that adequate testing is called for to assure quality delivery.
5. Confirm definition of preliminary work required at the work site and examine the work area with the CM. CM to confirm required preliminary work has been properly completed.
6. Confirm availability of required materials and equipment. Confirm with QAM and CM that materials and equipment inspected and QAM to confirm compliance with approved submittals.
7. Confirm with the HSM that the site health and safety plan and activity hazard analysis have been reviewed and approved to ensure that safety concerns are adequately addressed and applicable safety requirements have been incorporated into the plan. Confirm that the appropriate material safety data sheets have been identified and properly submitted.
8. Discuss with the CM the construction methods to be employed during the RA. Confirm that all field team members are aware of the identified checkpoints and areas of evaluation that will allow determination that the appropriate quality of construction is being achieved.

13.3.2 Preparatory Phase

The Initial Phase occurs at the startup of remedial activities, or construction, associated with a specific DFOW. Essentially, the Initial Phase confirms that the CQAP is being effectively implemented and the desired results are being achieved. With the Initial Phase, notification of the QAM that the crews are ready to start a particular DFOW is required prior to their actual start.

Specific details associated with the Initial Phase are as follows:

1. Establish the quality of workmanship required to properly deliver the DFOW in accordance with project requirements. The QAM assures that the CM has made the subcontractor aware of expectations associated with the construction methods established under the preparatory phase. This assurance is to be achieved through observation of the initial work activities, as well as through interaction with the CM.
2. Resolve conflicts. The QAM will provide support to the CM in resolving conflicts involving quality issues. Should conflicts arise in establishing the baseline quality for the DFOW, the responsibility to resolve the conflict falls to the PM. Should the conflict not be resolved in a manner that satisfies the contract requirements, the PM must elevate the conflict to the program level and issue a Quality Control Exception Report (see QAPP). Should the issue jeopardize the results of the DFOW, or put the project at risk of non-compliant performance, the PM may direct a cessation of work activity.
3. Evaluate the site health and safety plan and AHA against actual work conditions with the CM to assure that the hazard analysis conducted to prepare the safety plan adequately addressed field conditions. Confirm applicable safety requirements are being implemented during construction activities.
4. Observe and evaluate the performance of testing technicians. Confirm with the Sample Task Manager that testing is being performed in accordance with the testing plan and that required protocols are being observed. Review reports and documentation associated with extraction, packaging, transporting, and testing of samples. Note discrepancies and direct correction accordingly.

Upon completion of the Initial Phase activities, results are to be documented in the daily report.

13.3.3 Follow-Up Phase

Completion of the Initial Phase of QC activity then leads directly into the Follow-Up Phase, which addresses the routine day-to-day activities on the project site. Inspection activities associated with each DFOW are to be addressed within the daily report. Specific concerns associated with the follow-up phase include the following:

1. Inspection of the work activity to assure work is in compliance with the contracted project tasks
2. Evaluation and confirmation that the quality of workmanship is being maintained at a level no less than that established during the initial phase

3. Evaluation and confirmation that required testing and surveying are being performed in accordance with procedures established during the Preparatory Phase and confirmed during the Initial Phase

Confirmation that non-conforming work is being corrected promptly and in accordance with the direction provided by the QAM.

13.4 Critical Inspections

13.4.1 Grid Diary Inspections
Once the crews have completed the excavation of the specified grids to the required horizontal and vertical limits, the superintendent shall inform QTEO in writing, using the Grid Diary Hold-Point Inspection form attached to this plan within Appendix B. The site superintendent shall conduct its own QC survey check of the horizontal and vertical limits of the excavation of those grids. QTEO or its subcontracted surveyor will then conduct a topographic survey of the post-excavation surface of the TZ soils to verify proper excavation depth. Should there be discrepancies between the site superintendent survey data and QTEO's third party surveyor regarding validation of elevations, areas, volumes, lengths or other survey-related items, the QTEO's third party surveyor data shall be used to verify the limits of excavation (and be the basis for compensation).

In any instance during TZ soil removal where a special case situation is encountered in the field, as outlined below, the Grid Diary Inspection Form shall be used to document the situation.

Case 1. Grids that are designated "no dig" and visible source material is observed.

Case 2. Grids that are designated for excavation but are too wet to be able to reasonably control excavation depth (i.e. previously a pond with fully saturated soils).

Case 3. Grids that are designated for excavation and veins of source material are encountered that may potentially extend beyond the required excavation depths/limits.

Case 4. Grids that are designated for excavation and a rocky material or boulder (not source material) is encountered, and removal of the rocks or boulders would result in excavation depth greater than required.

Case 5. Grids that are designated for excavation and another unspecified special case is encountered that may necessitate deviation from the excavation tolerance of ±0.1 ft as approved by QTEO.

NOTE: Wet conditions resulting from failure of the Contractor to remove or properly control storm water shall not be sufficient justification for a Grid Inspection Form notification.

13.4.2 Punch List Inspections, Pre-Final and Final Inspections
Prior to commencing the Site Restoration activities, QTEO will advise which grids and/or areas will be released for restoration. Completion of all site activities (i.e. plugging of cased borings, backfilling of mineshafts, confirmation surveying, etc.) will be required prior to initiation of the restoration activities. Updated project logs containing information on the summary of information shall be submitted to QTEO. Survey verification data demonstrating that the site crews have performed its QC check of the restored areas meeting the requirements shall be submitted to QTEO within 2 working days of the survey. Should there be an issue or inconsistency with survey data regarding validation of elevations, areas, volumes, lengths or other survey-related items, the third party surveyor data shall be used. QTEO will inform the site crews in writing what grids or areas are ready for site restoration.

Prior to demobilization from the site, QTEO will perform a final inspection and any deficiencies will be corrected prior to demobilization. Following the completion of the pre-final punch-list items, QTEO will schedule a pre-final site inspection with EPA. Documentation demonstrating that all outstanding items have been closed/ addressed/corrected shall be submitted to QTEO (e.g., signed and dated punch list items summary, pre-final and final inspection forms). All punch list items need to be addressed/corrected prior to final demobilization.

13.4.3 SWPPP Inspections
For details on SWPPP inspections, see Project SWPP provided under separate cover.

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Plan Revision History
Plan Version / Revision Date / Revision Reason
Version 1.0 09/01/2013 Plan drafted
Version 1.1 11/20/2013 EPA Comments (11/27/2013) addressed and resubmitted
Version 1.2 12/02/2013 Plan approved / implemented

Appendix A

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Drawing Log
Document Log
Daily Report and Daily Contractor Quality Control Report
RFI Form
RFI Tracking Log
Submittal Transmittal
Submittal Register
Waste Tracking Log
Photo – Video Log
Conversation Record

[See Attached]

DOCUMENT LOG

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: Catholic 40

PROJECT NAME: _____ SITE LOCATION: _____

Doc #	Doc Date	Date Initiated	Rec by	Submitted by	Replaces Doc #	Description of document	Description of Change

Page _____ of _____

DRAWING LOG

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: Catholic 40

PROJECT NAME: _____ SITE LOCATION: _____

Drawing #	Drawing Date	Date Initiated	Rec by	Submitted by	Replaces Drawing #	Description of drawing	Description of Change
Sheet No 001 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Cover Sheet	CJW No 1379
Sheet No 002 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Typical Sections	
Sheet No 003 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Plan & Profile	
Sheet No 004 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Plan & Profile	
Sheet No 005 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Culvert plan & profile	
Sheet No 006 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Culvert plan & profile	
Sheet No 007 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Temp erosion control	
Sheet No 001 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Cover Sheet	CJW No 1379
Sheet No 002 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Typical Sections	
Sheet No 003 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Plan & Profile	
Sheet No 004 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Plan & Profile	
Sheet No 005 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Culvert plan & profile	
Sheet No 006 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Culvert plan & profile	
Sheet No 007 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Temp erosion control	updated North Arrow on Sheet 7

DRAWING LOG

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: Catholic 40

PROJECT NAME: _____ SITE LOCATION: _____

Drawing #	Drawing Date	Date Initiated	Rec by	Submitted by	Replaces Drawing #	Description of drawing	Description of Change

Page _____ of _____

DAILY REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

CONTRACT NAME:		REPORT NO:			
CONTRACT NUMBER:		REPORT DATE:			
TASK ORDER NUMBER:		REVISION DATE:		REV #	
PROJECT NAME:		SITE NAME/DISTAL GROUP:			
PROJECT NUMBER:		PROJECT DESCRIPTION:			
PROJECT MANAGER:		FIELD QUALITY MANAGER:			
CONSTRUCTION MANGER:		H&S SAFETY MANAGER:			
AM WEATHER:		PM WEATHER:		MAX TEMP (F):	MIN TEMP (F):

SUMMARY OF WORK PERFORMED (by work area)

HEALTH AND SAFETY

JOB SAFETY	Was a Job Safety Meeting held this date?	YES	NO
	Were there any lost-time accidents this date? (If yes, attach a copy of completed OSHA report)	YES	NO
	Was a Confined Space Entry Permit administered this date:	YES	NO
	Was Crane/Manlift/Trenching/Scaffold/HV Elec/High Work/Hazmat work done?	YES	NO
	(If yes, attach statement or checklist shwoing inspection performed)		
	Was Hazardous Material/Waste released into the environment?	YES	NO
	(If yes, attach description of incident and proposed action)		

SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED (Include Observations, Safety Violations, Correction Instructions Given, Corrective Actions Taken, and Results of Safety Inspections Conducted:

TAILGATE TOPICS:

DAILY REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

SAFE BEHAVIOR OBSERVATIONS:

OPERATIONS / PRODUCTION REPORT

CONFIRMATION OF PROPERTY ACCESS

Are access agreements on file at the job site? (Y / N)

Have access agreements been reviewed to confirm they apply to the property where work is being performed? (Y / N)

Are property lines adequately marked to prevent unauthorized access? (Y / N)

WORK FORCE - CONTRACTOR AND SUBCONTRACTOR

Company	Total Hours Today

EQUIPMENT ON HAND (Initial Inspection conducted to check if the Equipment is clean and in good working order/operable)

Description of Equipment	Make/Model/Manufacture	Equipment ID Number	Inspection Performed by

EQUIPMENT COMMENTS (acceptance status, inspection findings, etc.):

PLANNED WORK

Planned Work / Test for tomorrow:

Planned Work / Test for next week:

DAILY REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

CHANGED CONDITIONS / DELAY / CONFLICTS ENCOUNTERED

(List any conflicts with the project [i.e. scope of work and/or drawings], delays to the project attributable to site and weather conditions, etc.)

VISITORS AND DISCUSSIONS:

REGULATORY COMPLIANCE REPORT

PERMIT INSPECTIONS PERFORMED:

WASTE ACCUMULATION/STOCKPILE AREA INSPECTION

Inspection performed by: ***Signature of Inspector:***

Accumulation / Stockpile Area Inspected:	See Waste Tracking Log						
No of Containers:	N/A	**No of tanks:**	N/A	**No of Roll-off Boxes:**	N/A	**No of Drums:**	N/A

Inspection Results:

GENERAL COMMENTS

General Comments (rework, directives, etc.):

DAILY CONTRACTOR
QUALITY CONTROL REPORT
(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DEFINABLE FEATURES OF WORK STATUS

DFOW No.	Definable Feature of Work	Preparatory	Initial	Follow-up
		❒	❒	❒
		❒	❒	❒
		❒	❒	❒
		❒	❒	❒
		❒	❒	❒
		❒	❒	❒
		❒	❒	❒
		❒	❒	❒
		❒	❒	❒

PREPARATORY

Was preparatory phase work performed today? YES NO
If yes, fill out and attach supplemental Preparatory Phase Checklist.

DFOW No.	Description	Preparatory Phase Report No. 02

INITIAL AND FOLLOW-UP FEATURE OF WORK COMMENTS

DFOW No.	Phase		Comment / Finding / Action
	Initial	Follow-up	
	❒	❒	
	❒	❒	
	❒	❒	
	❒	❒	
	❒	❒	
	❒	❒	
	❒	❒	
	❒	❒	
	❒	❒	
	❒	❒	
	❒	❒	
	❒	❒	

DAILY CONTRACTOR
QUALITY CONTROL REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

REWORK ITEMS

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)			**REWORK ITEMS CORRECTED TODAY** (FROM REWORK ITEMS LIST)	
TASK / ACTIVITY	DATE ISSUED	DESCRIPTION	TASK / ACTIVITY	CORRECTIVE ACTION(S) TAKEN

SAMPLING / TESTING PERFORMED:

TASK/ACTIVITY TESTED	SAMPLING/TEST PERFORMED	TEST RESULTS (PASS / FAIL CRITERIA)

MATERIALS / EQUIPMENT INSPECTION (Materials received and inspected against specifications)

DESCRIPTION/QUANTITY/VOLUME/WEIGHT	MAKE/MODEL/MFG	MATERIAL LOT #	INSPECTION PERFORMED BY

SUBMITTALS INSPECTION / REVIEW:

SUBMITTAL NO	SUBMITTAL DESCRIPTION	SPEC/PLAN REFERENCE	SUBMITTAL APPROVED?	COMMENT/REASON/ACTION
			YES NO	
			YES NO	
			YES NO	
			YES NO	

LIST OF ATTACHMENTS (examples, as applicable: preparatory phase checklist, QC meeting minutes, safety meeting minutes, crane inspections crane operation checklist, COCs, weight tickets, manifests, profiles, rework item list, testing plan and log, etc.):

On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

PREPARER'S SIGNATURE DATE

REQUEST FOR INFORMATION

RFI No: _____

Date: _____

PROJECT INFORMATION and REFERENCES

CONTRACT No. _____ Document: _____

PROJECT NAME: _____ Drawing / Plan: _____

SITE NAME: _____ Detail / Section: _____

SITE LOCATION: _____

CONTRACTOR: _____

REQUEST FOR INFORMATION DESCRIPTION

Description of existing condition and/or deficiency:

Recommended solution:

Clarification requested by: _____

Clarification requested of: _____

POTENTIAL IMPACT

Cost impact: Yes / No Schedule impact: Yes / No

Activity Impacted: _____

Work days impacted: _____ Estimated cost impact: $ _____

REQUESTOR INFORMATION

Requested by: _____

(Printed Name) *(Title)*

_____

(Signature) *(Date)*

RESPONSE DISPOSITION / CONCURRENCE

Response Disposition / Concurrence:

Further action required (if any):

Response provided by: _____

(Printed Name) *(Title)*

_____

(Signature) *(Date)*

REQUEST FOR INFORMATION LOG

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: _____

PROJECT NAME: _____ SITE LOCATION: _____

RFI #	Status	Date Initiated	Date Resolved	Prepared by	Submitted to	Description of Issue	Description of Disposition/Concurrence
1							
2							
3							
4							
5							

Page _____ of _____

Submittal Register

Project Submittal #	Contractor	Contractor's Number	Subcontractor	Sub's number	Submittal date	Description	Pages	Date received	Date forwarded to QTEO	Date forwarded to Engineer	Date forwarded to EPA	Date approved by QTEO	Rejected	Date approved by Engineer	Date approved by EPA	Rejected	Received approval	Notified Contractor	Comments

SUBMITTAL
TRANSMITTAL

Project: _____ **Date:** _____
Owner: _____ **A/E Project No:** _____
Submittal No: _____ **Resubmission Date (if applicable):** _____

TRANSMITTAL A
To (Construction Manager): _____ Date: _____
From (Subontractor / vendor): _____

Qty / Pages	Reference / Number	Title / Description / Manufacturer	Spec. Section Title and Paragraph Drawing Detail Reference

- ❒ Submitted for review and approval
- ❒ Resubmitted for review and approval
- ❒ Complies with contract requirements
- ❒ *Will be available to meet construction sche*
- ❒ A/E review time included in construction schedule
- ❒ Substitution involved - request attached
- ❒ If Substitution involved, submission includes point-by-point comparative data or prelim details
- ❒ *Items included in submission will be ordered* immediately upon receipt of approval

Other remarks on above submission: _____

TRANSMITTAL B
To (EPA): _____ Date: _____
From (QTEO): _____ By: _____

- ❒ APPROVED
- ❒ REJECTED
- ❒ FURNISH AS CORRECTED
- ❒ REVISE AND RESUBMIT
- ❒ SUBMIT SPECIFIED ITEM

Reviewed by (EPA): _____
Other remarks on above submission: _____

TRANSMITTAL C
To (A/E): _____ Date: _____
From (CM or PM QTEO): _____ By: _____

- ❒ APPROVED
- ❒ REJECTED
- ❒ FURNISH AS CORRECTED
- ❒ REVISE AND RESUBMIT
- ❒ SUBMIT SPECIFIED ITEM

Reviewed by (A/E): _____
Other remarks on above submission: _____

TRANSMITTAL D
To (Subcontractor): _____ Date: _____
From (Construction Manager): _____ By: _____

Waste Tracking Log

CONTRACT No. ____________________

PROJECT NAME: ____________________

PROJECT INFORMATION

SITE NAME: ____________________

SITE LOCATION: ____________________

Container Type	Container Designation	Load ID	Contractor	Transportor	Transportor EPA ID	Date Transported	Disposal Facility	Disposal Facility EPA ID	Media	Waste Type (Haz, Nonhaz)	Waste Code / Haz Waste No	Disposal Date	Manifest #	Incineration	Recycle	Landfill	Other	Units	Certificate of Disp/ Destruction Date	Comments/Notes	File status
																		tons			

PHOTO - VIDEO LOG

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: _____

PROJECT NAME: _____ SITE LOCATION: _____

PHOTO #	Date	Time	Description	View Direction	Taken By
1					
2					
3					
4					
5					

CONVERSATION RECORD

CONVERSATION WITH: _____

MEETING LOCATION OR

PHONE NUMBER: _____

DATE: _____ TIME: _____

CONVERSATION INITIATED BY: _____

CONVERSATION NOTES BY: _____

SUBJECT: _____

PARCEL ID : _____ (use table below if more detail is needed)

CHAT OR FT FEATURE IDS: _____

PROJECT NUMBER: _____

PARCEL ID	Chat pile	Chat base	Fine tail	Distal

DESCRIPTION OF CONVERSATION:

Appendix B

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Grid Diary Hold-Point Inspection
Three-Phase Inspections (Preparatory, Initial, Follow-up) Form

[See Attached]

GRID DIARY HOLD-POINT INSPECTION

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: _____

PROJECT NAME: _____ SITE LOCATION: _____

INSPECTION

Type A-Used before collection of confirmation sample starts for each grid to document the inspection conducted in the excavated/remediated area to verify that all source material has been removed in accordance with the SOW.

Type B-Used after the required horizontal and vertical excavation limits have been completed in each grid. Documents that the grid is ready for post-excavation survey verfication to ensure that both parties have commected their post-excavation survey information and have verified that the required excavation depth has been met.

Type C-Used before final grading starts to ensure that all survey data has been collected, all other tasks prior to site restoration have been completed and that all issues have been resolved.

Type D-Other: Used for any special cases not covered above. In any instance during TZ soil removal, where a special case is encountered in the field as outlined below, Type D will be used.

Date of Inspection: _____

Inspection #: _____

Type of Inspection: A B C D (CIRCLE ONE)

Details if Type D inspection:

Location Description:

(Provide dimensions as applicable (length, width, depth, diameter, circumference, distance, etc))

Inspection Notes:

(Include estimated quantities as applicable)

Correction Action Item Description	Assigned to	Due date

Attendees: Printed Name and Initials

Attachment A: Map of area inspected

Attachment B: Photograph of area inspected (for Type D inspection)

Note: Inspection # should be included in daily report. All parties should have an initialed copy of the completed inspection form.

THREE - PHASE INSPECTIONS (Preparatory, Intial, Follow-up)

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: _____

PROJECT NAME: _____ SITE LOCATION: _____

INSPECTION

Type 1 - PREPARATORY PHASE

Type 2 - INITIAL PHASE

Type 3 - FOLLOW-UP PHASE

Date of Inspection: _____

Inspection #: _____

Type of Inspection: _____
(PREP, INITIAL, FOLLOW UP)

Definable Feature of Work involved in inspection: _____

PREPARATORY PHASE

Submittals for DFOW have been approved: Y N If not, what submital is missing? _____

All materials are on hand: Y N If not, what material is missing? _____

Are materials stored properly? Y N If not, what corrective action was taken? _____

All required permits are on file: Y N If not, what permit is missing? _____

Review Specifications. Discuss procedures for accomplishing task. Clarify Differences.

Inspection Notes:

INITIAL PHASE

Discuss standards of workmanship required to properly deliver the DFOW subtask in accordance with project requirements.

Establish chain of command in case of conflicts.

Confirm testing procedures, which tests will be performed, frequency, and by whom.

Activity Hazard Analyisis has been completed? Y N (**Note:** If not, complete AHA at this time.)

Inspection Notes:

THREE - PHASE INSPECTIONS (Preparatory, Intial, Follow-up)

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: _____

PROJECT NAME: _____ SITE LOCATION: _____

INSPECTION

FOLLOW-UP PHASE

Work is in compliance with project tasks: Y N If not, what corrective action was taken? _____

Quality of workmanship is being maintained: Y N If not, what corrective action was taken? _____

Testing and surveying are being performed in accordance with established procedures: Y N

If not, what corrective action was taken? _____

Inspection Notes:

Specific tasks assigned	Assigned To	Due Date

Attendess: Printed Name and Initials

Note: Inspection # should be included in daily report. All parties should have an initialed copy of the completed inspection form.

Appendix C

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Accident Prevention Program, QSA

[See Attached]

ACCIDENT PREVENTION PROGRAM

Quapaw Services Authority

Responsibility
Management and Employees will establish and maintain a safe and healthful working environment by following the programs and procedures in this Accident Prevention Program.

Employee Participation
Employee involvement in preventing workplace injuries and illnesses is critical. To ensure employee participation a monthly Safety and Health meeting will be established at project locations. The purpose of the Safety and Health meeting is to bring employees and management together to promote safety and health.

Department Monthly Safety and Health Meetings

Safety and health meetings can be held as part of regularly scheduled staff meetings.

Safety and health meetings will be conducted during the first week of every month.

Safety and Health Meeting agenda items for possible discussion include:

- Job assignments and potential hazards.
- Review of safe work practices.
- New equipment and work practices and related safety and health hazards.
- Employee safety and health concerns.
- Observed hazardous conditions/practices and recommended corrective actions.
- Safety and health inspection results.
- Accident investigation review.
- Accident Prevention Program review.

Monthly Safety and Health Meetings are documented. The minutes are retained by the department for one year.

Notices and Safety Posters

Notices required by law and posters to enhance workplace safety will be located in every project trailer. Employees should check their areas regularly for new notices.

The following posters and information are displayed on the safety bulletin board:

- OSHA 3165 – Job Safety and Health: It's the law!
- Emergency Telephone Numbers
- OSHA 300 Log Summary of Injuries and Illnesses (Posted for the months of February- April).

Hazard Notification

Employees observing a potential safety and health concern are to contact their Superintendent immediately. A Hazard Observation Form should be completed and submitted to the Project Manager as soon as possible following the event. The Project Manager will develop and implement corrective action.

Safety and Health Inspections

QSA is committed to identify and promptly control hazardous conditions and practices that are likely to result in injury or occupational illness to employees. Daily and monthly inspections are performed to proactively identify potential hazards.

Once a hazard is identified, control procedures are developed and implemented as described in the Hazard Controls section below. The daily and monthly inspections ensure a safe and healthy work environment is established and maintained.

DAILY INSPECTIONS

The Daily Safety Inspection Checklist should be reviewed each morning prior to the commencement of construction activities. In addition, prior to using any tools and equipment, a brief visual inspection is conducted according to the manufacturer's specifications to determine if there are any obvious defects. Defective tools and equipment will be removed from service.

MONTHLY INSPECTIONS

A monthly safety and health inspection of all processes, tools, equipment and facilities is coordinated by QSA's Construction Manager.

Inspection results and corrective action shall be documented. The completed checklist is retained for one year.

Deficient inspection items that cannot be corrected during or immediately after, the inspection are to be brought to the Project Manager's attention so that he/she is able to develop a strategy for corrective action.

Hazard Controls

Conditions and practices creating an imminent and serious hazard will be immediately controlled and brought to the Superintendent's attention. *Employees will not remain exposed to a serious hazard.* Serious hazards that cannot be corrected immediately are to be brought to the Project Manager's attention. The Project Manger will develop a strategy for corrective action.

Minor safety and health deficiencies identified either during the course of work or through an inspection will be corrected as-soon-as-possible.

Hazardous conditions and practices are to be controlled through the use of engineering controls when technologically and economically feasible. Engineering controls are passive measures

designed to prevent contact with a hazard. Examples of engineering controls include installing barriers, enclosing hazards, and using local ventilation.

When engineering controls are not feasible, timely, or do not completely eliminate the hazard, personal protective equipment must be used.

Personal Protective Equipment (PPE)

HAZARD ASSESSMENTS

Assessments are conducted for all activities to determine if hazards are present necessitating the use of PPE. The Superintendent will ensure that hazard assessments have been conducted. Hazard assessments are to be documented and retained using the Activity Hazard Analysis form.

A hazard re-assessment will be conducted whenever new equipment or processes are introduced or an investigation of an injury or illness indicates the need for personal protective equipment.

TRAINING

If PPE is required as determined by the hazard assessment, the Superintendent will ensure employees are trained on how to use the assigned PPE.

Training and information to be provided to each employee includes:

- Why, when and what PPE is necessary
- How to properly put on, take off, adjust, and wear the PPE
- Selection criteria & limitations of PPE
- Proper care, inspection, maintenance, useful life and disposal of the PPE

Each employee will demonstrate an understanding of this training before being allowed to perform work requiring the use of PPE. Methods of demonstrating this understanding include orally questioning the employee, observing the employee using PPE in a real or artificial setting, or administrating a written test.

HEARING CONSERVATION

Employees using high-speed tools and mechanized equipment and/or operating heavy mobile equipment may be required to wear hearing protection. As a general guide, if a person has to shout to be clearly heard from two feet away, hearing protection should be used.

RESPIRATORY PROTECTION

Employees performing activities creating dusts, mists, fumes and vapors may be required to wear respiratory protection.

Accident Reporting

Supervisors and employees are to immediately report *major* injury accidents to the Construction Manager. Major accidents are those events that result in death, serious injury (e.g., fracture, amputation) or in-patient hospitalization. The site of a major injury accident is to be secured and preserved.

Employees are to promptly report occupational injuries and illnesses and near misses to their Superintendent.

Accident Investigation
The investigation of accidents and near misses is an essential part of the Accident Prevention Program. A thorough investigation identifies unsafe acts and conditions requiring corrective action. An accident investigation and subsequent corrective action minimizes the potential for future accidents.

The Superintendent and Project Manager should immediately investigate and complete an Accident Investigation Report when:

- An employee involved in a minor occupational accident is unable to work the subsequent full shift(s) due to a resulting injury or illness, or
- The employee receives medical treatment, or
- Events and conditions involving a near miss or non-injury accident indicate there was a high probability of serious injury, illness or significant property damage.

After the cause(s) of the accident is determined, the Superintendent initiates corrective action or provides recommendations for corrective action to the Project Manager.

Witnesses and injured persons may complete a Witness/Injured Person Statement.

Emergency Action Plan

The following Emergency Action Plan establishes administrative and employee actions for reporting emergencies, building evacuations, administering first-aid, fire planning and hazardous materials spills.

REPORTING EMERGENCIES *(ALSO SEE* ***PROJECT SPECIFIC HEALTH AND SAFETY PLAN)***

Department/Emergency	Call
Fire	911
Police	911
Emergency Medical Services	911
Serious Injuries and Illnesses	911
Hazardous Materials Spills	911

EVACUATION
Employees are to evacuate buildings and meet at an assigned gathering location at each project location, upon activation of emergency alarms. An evacuation map for complex structures shall be posted at those project locations. An evacuation map shall show location of exits, fire extinguishers, first-aid kits, emergency eyewashes and showers and the gathering location outside.

FIRST-AID/CPR
Sufficient numbers of employees are trained in first-aid/CPR to assure at least one person is always available to provide quick and effective first aid to all employees. Employees designated to provide first-aid as listed in their position description are covered by the company's Bloodborne Pathogens Exposure Control Plan.

A list of current first-aid and CPR certified employees shall be posted at project locations along with the expiration dates of their cards.

First-aid kits and supplies are available from Central Stores. First-aid kits are re-stocked whenever an item is used. First-aid kits are to be checked during the annual safety and health inspection.

FIRE PLANNING

Project Managers and Superintendents are to plan how their project staff will respond to a fire emergency. All QSA employees will be designated and trained to fight incipient stage fires (about the size of a wastepaper basket). Employees not engaged in extinguishing the fire are to evacuate the building. Contact the WSU Fire Marshall to schedule to annual fire extinguisher training. Employees will be trained on evacuation procedures.

Upon discovering a fire:

- Immediately notify another person in the area. Call or have them call 911.
- If the fire is small (such as a wastebasket fire) and there is minimal smoke, designated trained personnel may attempt to put the fire out with a fire extinguisher.
- Non-designated personnel are to immediately evacuate and go to the designated gathering area.
- If the fire grows and/or there is thick smoke, do not continue to fight the fire.
- Notify other employees in the area to evacuate.

Supervisors notified of a fire are to:

- Instruct employees to evacuate to the designated gathering area
- Insure all employees have been evacuated.
- Verify 911 has been called.
- Determine if the fire has been extinguished. If fire has grown or there is thick smoke, evacuate any employees attempting to fight the fire.
- Go to the designated gathering area and verify all employees are accounted for. If an employee is missing, no one will be permitted to re-enter the building. The responding fire fighting personnel will be notified an employee is missing and may be in the building.

HAZARDOUS MATERIALS SPILL

In the event of a hazardous materials spill:

- Immediately secure the area to prevent people from entering
- Notify people in the immediate vicinity
- Call 911 if you are not trained per the applicable program to clean-up a hazardous materials spill.

Safety and Health Training

Superintendents will ensure all new employees receive a safety orientation on the first day of work. Topics to be covered in the safety orientation should include an overview of the following:

- This Accident Prevention Program
- Emergency Action Plan
- Hazard Notification Procedures
- Back Injury Prevention
- Outdoor Heat Stress – if applicable
- Hearing Conversation Program
- Bloodborne Pathogens Exposure Control Plan
- Accident Reporting
- Potential Job Hazards
- Equipment Specific Safety Training
- Lockout/Tag Out - if applicable
- Personal Protective Equipment
- Respiratory Protection Program

The safety orientation is to be documented on the **Safety Orientation Checklist**.

Superintendents will ensure employees receive training on each type of equipment and process they are assigned to use.

Each employee will become familiar with the manufacturer's equipment manuals and safe operating procedures. The employee will also demonstrate to their Superintendent that he/she can safely operate the equipment prior to operating without direct supervision. Employee training should be documented.

Back Injury Prevention
Repetitive lifting and lifting of heavy and awkward items can lead to back injuries. Employees regularly lifting more than 20 lbs. will receive basic back injury prevention training.

****

Policy Revision History
Policy Version / Revision Date / Revision Reason
v.1 5/14/2013 Policy approved / implemented
v.2 9/24/2013 Policy re-formatted
(date)

Health and Safety Plan

Health and Safety Plan (Version 1.0)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
October 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

Health and Safety Plan (HSP)
Version 1.0
DISTRIBUTION SHEET

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Copies of this HSP have been distributed to the following people:

Rafael Casanova, P.G. - U.S. EPA, Region 6, Remedial Project Manager

Tim Kent, P.G. - QTEO, Environmental Director / Project Manager

Craig Kreman, E.I. - QTEO, Quality Assurance Manager

Robert Rogers - QSA, Health and Safety Manager

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Acronyms

µg/dL	micrograms per deciliter
µg/m3	micrograms per cubic meter
°F	degrees Fahrenheit
JHA	Job Hazard Analysis
APR	air-purifying respirator
ARRA	American Recovery and Reinvestment Act of 2009
ATV	all-terrain vehicle
BBS	behavior-based safety
CFR	Code of Federal Regulations
cm	centimeter
CO	carbon monoxide
CPR	cardiopulmonary resuscitation
CRZ	Contamination Reduction Zone
dBA	decibel, A-weighted
DEET	N, N-diethyl-meta-toluamide
EPA	U.S. Environmental Protection Agency
EZ	exclusion zone
FIT	Fitness Inspection Test
GFCI	ground fault circuit interrupter
HAZWOPER	hazardous waste operations and emergency response
HPS	Hantavirus pulmonary syndrome
H&S	Health and Safety
HSM	Health and Safety Manager
HASP	Health and Safety Plan
IARC	International Agency Research Cancer
IRF	Incident Report Form
kV	kilovolt
mg/m3	milligrams per cubic meter
mm	millimeter
MSDS	Material Safety Data Sheet
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PEL	permissible exposure level
PFD	personal flotation device
PPE	personal protective equipment
ppm	parts per million
RF	radio frequency
ROD	Record of Decision
SBO	Safe Behavior Observations
SOP	Standards of Practice/Standard Operating Procedures
TWA	time-weighted average
UV	ultraviolet
XRF	x-ray fluorescence
ZPP	protoporphyrin

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1.0 HEALTH AND SAFETY PLAN OVERVIEW

This Health and Safety Plan (HASP) will be kept on the site during field activities and will be reviewed as necessary. The plan will be amended or revised as project activities or conditions change or, when supplemental information becomes available. This plan adopts procedures in the project Work Plan. The Health and Safety Manager (HSM) is to be familiar with these SOPs and the contents of this plan. Quapaw Tribe Environmental Office (QTEO) personnel must sign Appendices A and D. All contractor/subcontractor personnel must sign forms similar to Appendices A and D in their respective HASPs as well as Appendix A of this Health & Safety Plan.

This plan describes the QTEO's program procedures in place to ensure the health and safety of all workers participating in activities related to the Response Action Contract (RAC) and Catholic 40 Remediation Action (RA).

1.1 Project Information and Description

PROJECT/SITE NAME: OU 4 Distal Zone 8 Remedial Action Project, Tar Creek Superfund Site

SITE ADDRESS: Ottawa County, Oklahoma

PROJECT MANAGER: Tim Kent

DATE HASP ORIGINALLY PREPARED: October 2013

DATE(S) OF SITE WORK: December 2013 through May 2014.

SITE DESCRIPTION AND HISTORY: As a result of mining and milling operations, large quantities of mining wastes were deposited on the surface in piles. The large surface piles contain tailings, known locally as chat, produced from the gravity separation milling process. The chat pile or source material located in Distal Zone 8 is labeled as Chat Base 11 (CB011). Distal Zone 8, commonly known as the Catholic 40, is approximately 40 acres in size and includes one (1) chat base and one (1) known mine shaft. CB011 is located adjacent to an historic and culturally significant complex of ruins that comprised a Catholic Church, school, and other supporting buildings.

A Record of Decision (ROD) was signed in 2008 for Operable Unit (OU) 4 (mining and smelter wastes). The ROD remedy for OU4 addresses the large volume of mining waste remaining on the surface and is the focus of this HASP. Mining wastes in Oklahoma contain elevated levels of lead and cadmium as high as 19,700 parts per million (ppm) and 540 ppm, respectively. Blood lead data collected by the Indian Health Services between February 1992 and May 1993 found that 35 percent of the children tested had blood lead levels greater than or equal to 10 micrograms per deciliter (µg/dL). In addition, previous EPA site assessments at high access areas and residential properties at the site have identified elevated levels of inorganic contaminants, including lead, in many locations.

The current scope of work for the Catholic 40 includes road improvement, remediation of source material, and site restoration. The following tasks are anticipated to be performed to complete this scope of work:

- Surveying (Watershed Planning and Construction)
- Subsidence Feature Investigations
- Access Agreements Acquisition
- Confirmatory Sampling (Hand Auger)
- Preliminary Property Reconnaissance Video and Photographic Surveys
- Remediation (Site Preparation, Clearing/Grubbing, Excavation, Transport and Restoration)
- Stream-Based Source Material Excavation and Disposition (including Installation of Possible Temporary Stream Diversionary Structures)
- Install Access Road
- Subsidence Feature Backfill (Surveying, Boat Sampling, Backfilling near Mine Openings)

1.2 Tasks to Be Performed Under This Plan

Refer to project documents (i.e., Work Plan) for detailed task information. A Health and Safety risk analysis (Table 1) has been performed for each task and is incorporated in this plan through task-specific hazard controls and requirements for monitoring and protection. Tasks other than those listed below require an approved amendment or revision to this plan before tasks begin. Refer to Section 8 for procedures related to "clean" tasks that do not involve hazardous waste operations and emergency response (HAZWOPER).

1.2.1 HAZWOPER – Regulated or Mining Health and Safety Administration - Regulated Tasks

- Surveying
- Site Reconnaissance (Including Video and Photographic Surveys)
- Soil Sampling
- Geotechnical Investigations
- Site Preparation/Installing Silt Fence
- Constructing Access Roads
- Installing Access Road Culverts
- Clearing/Grubbing
- Excavation
- Backfill (Until Affected Soils Covered by at least 6 inches of Backfill Materials)
- Decontamination of Transport Vehicles for Excavated Materials
- All Decontamination (Heavy Equipment and Sampling)
- Subsidence Feature Investigations
- Subsidence Feature Backfill

1.2.2 Non-HAZWOPER – Regulated Tasks

Under specific circumstances, the training and medical monitoring requirements of federal or state HAZWOPER regulations are not applicable. It must be demonstrated that the tasks can be performed without the possibility of exposure in order to use non-HAZWOPER trained personnel. Prior approval from the Health and Safety Manager (HSM) is required before these tasks are conducted on regulated hazardous waste sites.

TASKS

- Access Agreement Activities
- Equipment Removal and Site Restoration
- Hydro-mulching and Sod Placement
- Operation of Haul Trucks Transporting Excavated Materials
- Installation and Operation of Weigh Scales (Outside of Exclusion Zone)

CONTROLS

- Briefing on hazards, limits of access, and emergency procedures

Table 1.1- Health and Safety Risk Analysis

Potential Hazards	Surveying	Site Reconnaissance	Access Agreements	Soil Sampling	Geotechnical Investigations	Site Prep/Silt Fence	Clearing/ Grubbing	Excavation/ Backfill	Decon	Transport of Excavation Material and Weigh Scales Op	Road Construct.	Subsidence Feature Investigation & Backfill
Arsenic	X			X	X	X	X	X	X		X	X
Bio-Hazards	X	X	X	X	X	X	X	X	X	X	X	X
Cadmium	X			X	X	X	X	X	X		X	X
Chainsaws		X				X	X					
Heavy Metals-Inhalation	X			X	X	X	X	X	X		X	X
Concrete & Masonry Work											X	
Crystalline Silica	X			X	X	X	X	X	X		X	X
Cranes, Hoists & Rigging					X		X	X	X		X	X
Demolition	X					X	X				X	
Electrical Safety	X	X	X	X	X	X	X	X	X	X	X	X
Excavations	X	X		X				X			X	X
Fall Protection					X			X				X
Field Vehicles	X	X	X	X	X	X	X	X	X	X	X	X
Fire Prevention	X	X	X	X	X	X	X	X		X	X	X
Forklifts					X	X		X	X			
Hand & Power Tools	X	X		X	X	X	X	X	X	X	X	X
Haul Truck Operations	X	X		X				X	X	X	X	X
Heavy Equipment	X	X		X	X	X	X	X	X	X	X	X
Hexavalent Chromium	X			X	X	X	X	X	X		X	X
Hydro-mulching	X	X		X							X	X
Lead	X			X	X	X	X	X	X		X	X
Manual Lifting	X	X		X	X	X	X	X	X	X	X	X
Mine Openings, Subsidence Areas, Chat Piles	X	X	X	X	X	X	X	X	X	X	X	X
Noise	X	X		X	X	X	X	X	X	X	X	X
Equipment Decontamination					X		X	X	X			X
Pressurized Lines/Equipment					X	X	X	X	X		X	X
Ladders												X
Sod Placement	X	X		X								X
Utilities	X	X		X	X	X	X	X		X	X	X
Vehicular Traffic	X	X	X	X	X	X	X	X	X	X	X	X
Visible Lighting	X	X	X	X	X	X	X	X	X	X	X	X
Welding & Cutting							X	X				X
Wild Animals	X	X	X	X	X	X	X	X	X	X	X	X
Working Alone		X	X	X								X
Work Near Water	X	X		X		X	X	X				X
Wood Chipping	X	X					X					X
Zinc	X			X	X	X	X	X	X		X	X

2.0 HAZARD CONTROLS

This section describes the safe work practices and control measures used to reduce or eliminate potential hazards. These practices and controls are to be implemented by the party in control of either the site or the particular hazard. Quapaw Tribe Environmental Office (QTEO) employees and contractor/subcontractors must remain aware of the hazards affecting them regardless of who is responsible for controlling the hazards. Contractor/subcontractors should follow the applicable Safety Procedure Criteria presented in Appendix C. QTEO employees and contractor/subcontractors who do not understand any of these provisions should contact the Health and Safety Manager (HSM) for clarification.

Job Hazard Analysis (JHAs) forms shall be completed for each feature of work. An example JHA form is provided in Appendix D.

2.1 Project Specific Physical Safety Hazards

2.1.1 Working Around Heavy Equipment

- QTEO authorizes only those employees and contractor/subcontractors qualified by training or previous experience to operate material handling equipment.
- Equipment must be checked at the beginning of each shift to ensure the equipment is in safe operating condition and free of apparent damage. The check should include: service brakes, parking brakes, emergency brakes, tires, horn, back-up alarm, steering mechanism, coupling devices, seat belts and operating controls. All defects shall be corrected before the equipment is placed in service. Documentation of this inspection must be maintained onsite at all times.
- Equipment must be on a stable foundation such as solid ground or cribbing; outriggers are to be fully extended.
- Equipment must not be used to lift personnel; loads must not be lifted over the heads of personnel.
- Equipment, or parts thereof, that are suspended must be substantially blocked or cribbed to prevent shifting before personnel are permitted to work under or between them. All controls shall be in a neutral position, with the motors stopped and brakes set.
- Equipment that is operating in reverse must have a reverse signal alarm distinguishable from the surrounding noise or a signal person when the operator's view is obstructed.
- When equipment is used near energized power lines, the closest part of the equipment must be at least 10 feet from the power lines < 50 kilovolt (kV). Provide an additional 4 feet for every 10 kV over 50 kV.
- A person must be designated to observe clearances and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance visually. All overhead power lines must be considered to be energized until the electrical utility authorities indicate that they are not energized and have been visibly grounded.
- Operators loading/unloading from vehicles are responsible for seeing that vehicle drivers are in the vehicle cab or in a safe area.
- The parking brake shall be set whenever equipment is parked; wheels must be chocked when parked on inclines.
- When not in operation, the blade/bucket must be blocked or grounded; the master clutch must be disengaged when the operator leaves the cab. When equipment is unattended, power must be shut off, brakes set, blades/buckets landed, and shift lever in neutral.
- Never approach operating equipment from the rear. Always make positive contact with the operator, and confirm that the operator has stopped the motion of the equipment.
- Never approach the side of operating equipment; remain outside of the swing and turning radius.
- Maintain distance from pinch points of operating equipment.
- Because heavy equipment may not be equipped with properly functioning reverse signal alarms, never turn your back on any operating equipment.
- Never climb onto operating equipment or operate contractor/subcontractor equipment.
- Never ride contractor/subcontractor equipment unless it is designed to accommodate passengers and is equipped with firmly attached passenger seat.
- Never work or walk under a suspended load.

- Always stay alert and maintain a safe distance from operating equipment, especially equipment on cross slopes and unstable terrain.

Lift plans will be required before beginning the following activities:

- Lifting objects exceeding 70 percent of the equipment's load capability
- All lifts where slopes are involved that compromise the load capability of the equipment performing the lift
- All lifts where personnel are required to set or place materials or equipment beyond the need for simple tag lines

Spotters are required in the following situations:

- During positioning of equipment and end-dump trucks
- During work in congested areas
- When access for equipment is necessary from public roads
- Where more than one piece of equipment is being operated simultaneously in the same general work area
- When an operator is working in an isolated area without radio communication
- All equipment spotters will be required to wear reflective/high-visibility safety vests.

2.1.2 Haul Trucks (On-Road and Off-Road)

On-Road Trucks:

- For the initial contracts, non-40-hour haul truck drivers can be used. This policy will be reviewed and may be modified by the HSM as the project work progresses.
- All efforts should be made to minimize the number and length of times any haul truck remains within an exclusion zone (EZ).
- All drivers must remain inside the cabs of their trucks, at all times, whenever they are asked to drive into an EZ.
- When a haul truck is inside an EZ, the windows of the cab must remain fully closed, even during the hot season of the year.
- Under no circumstances may a driver exit the cab of his/her truck in an EZ UNLESS a situation arises that is immediately dangerous to life or health.
- In addition, non-contractor/subcontractor employees may not be allowed in the cab of any haul truck during standard work hours.
- The cab of each haul truck is considered part of the support zone for field work; therefore, no eating, smoking, chewing or drinking is recommended during periods when the trucks are temporarily inside an EZ.
- It is recommended that each contractor/subcontractor consider require its drivers to wear the appropriate personal protective equipment (PPE) while they are inside the cabs of their trucks.
- At a minimum, all drivers should have clothing that minimizes skin exposures, namely pants without large torn or potholed areas, short sleeve shirts, and work boots or shoes.
- Transport of materials on public roads must take place only on the approved haul routes through all towns.
- Obey all posted speed limits and all traffic signs. Ottawa County roads have an un-posted speed limit of 45 mph unless otherwise posted.

Off-Road Trucks:

- Haul truck operators should be familiar with their equipment and inspect all equipment before use.
- Haul truck operators should ensure all persons are clear before operating truck or equipment. Before moving, operators should sound horn or alarm; all equipment should be equipped with a working backup alarm.
- Haul trucks or equipment with restricted visibility should be equipped with devices that eliminate blind spots.
- Employees should stay off interior property haul roads. When approaching a haul area, employees should make eye contact and communicate their intentions directly with the equipment operator.

- Trucks are to be operated within the manufacturer's recommendations.

2.1.3 Exposure to Public Vehicular Traffic

- Exercise caution when exiting a traveled way or parking along street – avoid sudden stops, use flashers, etc.
- Park in a manner that will allow for safe exit from vehicle, and where practicable, park the vehicle so that it can serve as a barrier.
- All staff members working adjacent to traveled way or within work area must wear reflective/high-visibility safety vests.
- Eye protection shall be worn to protect from flying debris.
- All equipment travelling on public roads must be fully escorted (warning lights deployed) or have multiple hazard lights deployed on both the rear and front of equipment.
- Remain aware of factors that influence traffic-related hazards and required controls – sun glare, rain, wind, flash flooding, limited sight-distance, hills, curves, guardrails, width of shoulder (i.e., breakdown lane), etc.
- Always remain aware of an escape route -- behind an established barrier, parked vehicle, guardrail, etc.
- Always pay attention to moving traffic – never assume drivers are looking out for you.
- Work as far from the traveled way as possible to avoid creating confusion for drivers.
- When excavation limits are directly adjacent to the pavements of state highways, the contractor/subcontractor shall prepare a vehicular traffic plan and submit it for approval to QTEO.
- When workers must face away from traffic, a "buddy system" shall be used, with one worker facing oncoming traffic.
- When working on sites that involve highway traffic, obtain a copy of the contractor's traffic control plan.
- The work area should be protected by a physical barrier – such as a K-rail or Jersey barrier.
- Review traffic control devices to ensure that they are adequate to protect your work area.

Traffic control devices should: 1) convey a clear meaning, 2) command respect of road users, and 3) give adequate time for proper traffic response. The adequacy of these devices depend on limited sight distance, proximity to ramps or intersections, restrictive width, duration of job, and traffic volume, speed, and proximity.

- Either a barrier or shadow vehicle should be positioned a considerable distance ahead of the work area. The vehicle should be equipped with a flashing arrow sign and truck-mounted crash cushion. All shadow vehicles within 40 feet of traffic should have an orange flashing hazard light atop the vehicle.
- Except on highways, flaggers should be used when 1) two-way traffic is reduced to using one common lane, 2) driver visibility is impaired or limited, 3) project vehicles enter or exit traffic in an unexpected manner, or 4) the use of a flagger enhances established traffic warning systems.
- Lookouts should be used when physical barriers are not available or practical. The lookout continually watches approaching traffic for signs of erratic driver behavior and warns workers.
- Vehicles should be parked at least 40 feet away from the work zone and traffic. Minimize the amount of time that you will have your back to oncoming traffic.

2.1.4 Forklifts

Forklifts may be used on occasion to unload equipment or materials during the course of the project. Equipment intended to primarily move dirt but are temporarily being used to move materials with temporary forks, are not considered forklifts per 1910.178(A)(1).

- Contractor/subcontractor-operated forklifts must provide a copy of the operators' forklift certification to QTEO.
- Maintain a safe distance from operating equipment and stay alert for movement of the forklift.
- Do not place yourself between fixed objects and operating forklifts.
- Remain outside of the forklift swing and turning radius.
- Avoid turning your back on operating forklifts.
- When required to work in proximity to operating forklifts, wear highly visible vests.
- Approach operating forklifts ONLY after receiving the operator's attention.
- Personnel shall not ride on forklifts unless they are specifically designed to carry passengers. Forklifts shall not be used to lift or lower personnel unless the forklift and platform are specifically designed to do so.
- Do not stand or pass beneath the elevated portion of any piece of forklift, loaded or empty.

2.1.5 Hand and Power Tools

Occasionally hand and power tools are used by the contractor/subcontractors for various functions.

- Operate tools according to the manufacturers' instructions and within design limitations.
- Maintain hand and power tools in a safe condition.
- Inspect tools before each use; if defective, tag as "Do Not Use."
- Gloves, safety glasses, earplugs, and face shields must be used as appropriate for the hazards associated with the use of the tool.
- Do not lower or carry power tools by the cord or hose.
- Safety guards are to remain installed while using the tool and promptly repaired or replaced.

2.1.6 Welding and Cutting

Occasionally welding or cutting may be necessary to repair equipment at the project site.

- Only authorized and trained personnel are permitted to operate welding/cutting equipment.
- Do not enter areas where welding/cutting operations are taking place unless completely necessary and only after receiving permission from the welding/cutting operator.
- If you must be present in an area during welding/cutting operations, position yourself behind flash screens or wear glasses/goggles with lenses of appropriate darkness.
- Do not look directly at the welding/cutting flash or at reflective surfaces surrounding welding/cutting operations.
- Avoid contacting compressed gas cylinders. Cylinders should be firmly secured in an upright position at all times.
- Be aware of tripping hazards created by welding hoses, power cables, leads, and cords positioned on walking surfaces.
- Suitable fire extinguisher equipment shall be immediately available in the work area.
- Workers designated to operate welding and cutting equipment shall have been properly instructed and qualified to operate such equipment.
- Before welding or cutting is permitted, the area shall be inspected by the individual responsible for authorizing the welding or cutting operation. The authorization by QTEO will include a Hot Work Permit (**Appendix C**) which shall detail precautions to be taken before work is to begin.
- Suitable fire extinguishing equipment shall be immediately available in the work area.
- Flame-resistant blankets shall be used to control sparks produced by welding and cutting operations from traveling to lower levels or adjacent surfaces.
- If the valve on a fuel-gas cylinder is found to leak around the valve stem, the valve shall be closed and the gland nut tightened. If this does not stop the leak, the cylinder is to be tagged and removed from service.
- Nothing should be placed on top of a cylinder or manifold that will damage it or interfere with the quick closing of the valve.
- Flow gages and regulators shall be inspected prior to use and removed from cylinders when not in use.
- Hoses, leads, and cables shall not be routed through doorways and walkways unless covered, elevated, or protected from damage. Where hoses, leads, and cables pass through wall openings, adequate protection shall be provided to prevent damage.
- Flash arresters shall be installed at the torch handle.
- Arc welding electrodes shall not be struck against compressed gas cylinders to strike an arc.
- All arc welding or cutting operations shall be shielded by noncombustible or flame resistant screens to protect employees or other persons in the vicinity from the direct rays of the arc.
- Proper ventilation shall be provided to maintain the level of contaminants in the breathing zone of welders below applicable permissible exposure limits.
- Cylinders being transported, moved, or stored shall have valve protection caps installed. When transported by motor vehicle, hoisted, or carried, cylinders shall be in the vertical position.
- Hoses shall be inspected at the beginning of each shift. Defective hoses shall be removed from service.
- Hose couplings shall be designed to be disconnected with a rotary motion, not by straight pull.
- Torches shall be inspected at the beginning of each shift for leaking valves, connections, and couplings. Defective torches shall be removed from service.
- Torches shall be ignited with friction lighters, not open flames or hot work.

Minimum PPE includes the following:

- Safety-toed shoes or boots, hard hats, and safety glasses
- Body protection (such as gloves, coveralls, or Tyvek) when chemical hazards exist
- Hearing protection when working in close proximity to loud equipment and machinery
- Protective clothing and gloves to prevent burns
- Suitable eye protective equipment for the type of welding or cutting performed
- Opaque screens to block arc flash from arc welding and cutting operations
- Mechanical ventilation systems for welding and cutting operations conducted in enclosed or confined spaces
- Air monitoring or sampling equipment to evaluate airborne concentrations of welding and cutting contaminants in enclosed or confined spaces
- Respiratory protection when airborne concentrations of contaminants exceed

Regulatory limits

- Only manual electrode holders that are designed for arc welding or cutting and are capable of safely handling the maximum rated current shall be used.
- Only cable that is free from repair or splices for a minimum distance of 10 feet from the cable's attachment to the electrode holder shall be used.
- Any current-carrying part that arc welders or cutters grip in their hand, as well as the outer surfaces of the jaws of the holder, shall be fully insulated against the maximum voltage encountered to ground.
- The frames of arc welding or cutting machines shall be grounded. Grounding circuits, other than by means of the structure, shall be checked to ensure that the circuit between the ground and the grounded power conductor has resistance low enough to permit sufficient current flow to cause the fuse or circuit breaker to interrupt the current.
- When electrode holders are left unattended, the electrode shall be removed and the holder placed where it cannot harm employees.
- Hot electrode holders shall not be dipped in water to cool them.
- When welding or cutting is stopped for any appreciable length of time, or before the welding or cutting machine is moved, the power shall be shut off.
- Before starting welding or cutting operations, all connections to the machine shall be checked.

2.1.7 Drilling

- Only authorized personnel are permitted to operate drill rigs.
- The drill rig is not to be operated in inclement weather.
- The driller is to verify that the rig is properly leveled and stabilized before raising the mast.
- Personnel should be cleared from the sides and rear of the rig before the mast is raised.
- The driller is not to drive the rig with the mast in the raised position.
- The driller must check for overhead power lines before raising the mast. A minimum distance of 15 feet between mast and overhead lines (<50 kV) is recommended.
- Increased separation may be required for lines greater than 50 kV.
- Personnel should stand clear before rig startup.
- The driller is to verify that the rig is in neutral when the operator is not at the controls.
- Become familiar with the hazards associated with the drilling method used (cable tool, air rotary, hollow-stem auger, etc.).
- Stay clear of rotating components of drill rigs.
- Do not wear loose-fitting clothing, watches, etc., that could get caught in moving parts.
- Do not smoke or permit other spark-producing equipment around the drill rig.
- The drill rig must be equipped with a kill wire or switch, and personnel are to be informed of its location.
- Be aware and stand clear of heavy objects that are hoisted overhead.
- The driller is to verify that the rig is properly maintained in accordance with the drilling company's maintenance program.
- The driller is to verify that all machine guards are in place while the rig is in operation.

- The driller is responsible for housekeeping (maintaining a clean work area).
- The drill rig should be equipped with at least one fire extinguisher.
- If the drill rig comes into contact with electrical wires and becomes electrically energized, do not touch any part of the rig or any person in contact with the rig, and stay as far away as possible. Notify emergency personnel immediately.
- Always know where the "kill switch" for the rig is located in the event of an emergency.

2.1.8 Stairways and Ladders

- A stairway or ladder is generally required when a break in elevation of 19 inches or greater exists.
- Personnel should avoid using both hands to carry objects while on stairways; if unavoidable, use extra precautions.
- Personnel must not use pan and skeleton metal stairs until permanent or temporary treads and landings are provided the full width and depth of each step and landing.
- Ladders must be inspected by a competent person for visible defects prior to each day's use. Defective ladders must be tagged and removed from service.
- Ladders must be used only for the purpose for which they were designed and shall not be loaded beyond their rated capacity.
- Only one person at a time shall climb on or work from an individual ladder.
- User must face the ladder when climbing; keep belt buckle between side rails.
- Ladders shall not be moved, shifted, or extended while in use.
- User must use both hands to climb; use rope to raise and lower equipment and materials.
- Straight and extension ladders must be tied off to prevent displacement.
- Ladders that may be displaced by work activities or traffic must be secured or barricaded.
- Portable ladders must extend at least 3 feet above landing surface.
- Straight and extension ladders must be positioned at such an angle that the ladder base to the wall is one-fourth of the working length of the ladder.
- Stepladders are to be used in the fully opened and locked position.
- Users are not to stand on the top two steps of a stepladder, nor are users to sit on top or straddle a stepladder.
- Fixed ladders > 24 feet in height must be provided with fall protection devices.
- Fall protection should be considered when working from extension, straight, or fixed ladders higher than 6 feet from lower levels and both hands are needed to perform the work, or when reaching or working outside of the plane of ladder side rails.

2.1.9 Concrete and Masonry Construction Activities

- Protruding reinforcing steel (rebar), onto which personnel could fall, must be guarded to eliminate the hazard of impalement.
- During post-tensioning, only those personnel essential to the operation are permitted behind the tensioning jacks.
- Personnel shall not ride concrete buckets nor position themselves in areas where buckets are lifted overhead.
- Personnel shall maintain a safe distance from formwork and shoring being removed from concrete structures.
- Personnel shall maintain a safe distance from precast and lift-slab concrete being lifted into position until physically secured.
- Personnel shall not enter limited access zones during masonry wall construction.

2.1.10 Working Above or Near Water

- Fall protection should be provided to prevent personnel from falling into water.
- Appropriate PPE shall be worn, including waders (appropriately sized for the person wearing them and the depth of water), face shield, and Tyvek coveralls.
- No work shall be performed near water bodies during lightning storms.

2.1.11 Working on or near Mine Openings, Subsidence Areas, and Chat Piles

WARNING: Extreme caution must be taken while working within the project area. One open mine shaft has been identified within the boundary of the Catholic 40 work-site. Workers must be aware that additional mine openings and/or subsidence features may exist within the site boundaries.

- Before beginning work within the project area, historical data, survey information, and property owner information should be reviewed with the work team to understand potential mine-related hazards that may exist at the property.
- When working in a subsidence area, the known and anticipated limits of the subsidence area should be denoted in the field.
- Many areas of subsidence, open mine shafts, air shafts, and small light shafts are filled with water and require precautions for working near or above water described in Section 2.1.10.
- Before working on a chat pile, each field team member shall make a visual determination of the stability of the pile. Piles with extreme slopes, loose material, surrounding dangers (such as mine shafts), or other visual instabilities shall be avoided.
- During ascension of each chat pile, if any instability is noticed or felt in the pile materials, field team members shall immediately leave the area of the chat pile.
- Driving on chat piles with field vehicles or all-terrain vehicles (ATVs) is prohibited unless a specific hazard assessment has been conducted and approved for the planned work. These chat pile assessments include review of stability conditions (engineer signature required) and physical hazard identification/mitigation, including the signature of the QTEO HSM. Decontamination of field vehicles is required before site departure.
- Remediation work may be occurring over an abandoned mine shaft or mine subsidence area. The total depth of the body of water may exceed 100 feet and temperatures may be very cold. Additional safety precautions therefore should include a redundant rescue program and provisions for emergency rescue related to hypothermia hazards.

2.2 General Hazards

2.2.1 General Hazards and Housekeeping

- Worker break and lunch areas should be established in a dust-minimized environment such as a building. No smoking is permitted in any established EZs at any work sites and should be conducted in designated smoking pens. Smoking pens should have access to butt cans, a gallon of water for fire control, and a fire extinguisher. Proper signage is desirable as well.
- Site work shall be performed during daylight hours whenever possible. Work conducted during hours of darkness will require enough illumination intensity to read plans without difficulty.
- Hearing protection shall be worn in areas where it is necessary to shout to be heard within 3 feet.
- Good housekeeping shall be maintained at all times in all project work areas.
- Common paths of travel shall be established and kept free from the accumulation of materials.
- Access to aisles, exits, ladders, stairways, and emergency equipment shall be free from obstructions.
- Slip-resistant surfaces, ropes, and/or other devices shall be provided and used.
- Specific areas shall be designated for the proper storage of materials.
- Tools, equipment, materials, and supplies shall be stored in an orderly manner.
- As work progresses, scrap and unessential materials shall be neatly stored or removed from the work area.
- Containers shall be provided for collecting trash and other debris and shall be removed at regular intervals.
- All spills shall be quickly cleaned up. Oil and grease shall be cleaned from walking and working surfaces.
- Uninvolved personnel such as family members, bystanders, or friends are not permitted at the work sites, including but not limited to, the work zones, equipment cabs, or other vehicles involved in the activities described in this HASP.
- All reasonable efforts should be made to keep the general public, residents, or uninvolved parties out of all work zones.
- All reasonable efforts should be made to assist stakeholder representatives, property owners, and agency representatives in remaining outside all EZs unless appropriate 40-hour HAZWOPER training has been provided to QTEO. Any such individuals with appropriate training certifications should be requested to

read and provide signatures of acceptance for both the QTEO HASP and the appropriate contractor/subcontractor's HASP before entering any EZ.

- All vehicles that are ROUTINELY involved in the WORK activities described in this HASP (including but not limited to, pickup trucks, service vehicles, water trucks, trailer hauling trucks, and end-dump trucks) shall be equipped with backup alarms, an appropriate fire extinguisher, first aid kit, and a portable eye wash kit. If backup alarms are not feasible, the horn must be sounded twice before backing up.

2.2.2 Hazard Communication

The HSM or designee is to perform the following:

- Confirm that an inventory of chemicals brought onsite by QTEO contractor/subcontractors is available.
- Request or confirm locations of Material Safety Data Sheets (MSDSs) from the contractor/subcontractors, for chemicals to which QTEO employees potentially are exposed.
- Obtain an MSDS for each hazardous chemical prior to the chemicals arriving onsite.
- Label chemical containers with the identity of the chemical and with hazard warnings, and store properly.
- Give employees a required chemical-specific Hazardous Communications training using Appendix B.

2.2.3 Shipping and Transportation of Chemical Products

Chemicals brought to the site might be defined as hazardous materials by the U.S. Department of Transportation. All contractor/subcontractors who ship the materials or transport them by road must have documented training records for shipping dangerous goods. All hazardous materials that are shipped (e.g., via Federal Express) or are transported by road must be properly identified, labeled, packed, and documented by trained personnel. Contact the HSM for additional information.

2.2.4 Manual Lifting

- Proper lifting techniques must be used when lifting any object.
- Plan storage and staging to minimize lifting or carrying distances.
- Split heavy loads into smaller loads.
- Use mechanical lifting aids whenever possible.
- Have someone assist with the lift, especially for heavy or awkward loads.
- Make sure the path of travel is clear prior to the lift.

2.2.5 Slips, Trips, and Falls

- Institute and maintain good housekeeping practices.
- Pick up tools and debris in the work area.
- Walk or climb only on equipment surfaces designed for personnel access.
- Be aware of poor footing and potential slipping and tripping hazards in the work area.
- Keep hands on handrails when ascending or descending stairs.
- Fall protection systems must be used to eliminate fall hazards when performing construction activities at a height of 6 feet or higher and when performing general industry activities at a height of 4 feet or higher.
- When contractor/subcontractors design or install fall protection systems, the staff shall be qualified as fall protection competent persons or work directly under the supervision of a fall protection competent person.
- The company responsible for the fall protection system shall provide a fall protection competent person to inspect and oversee the use of the fall protection system.
- QTEO personnel shall be aware of and follow all requirements established by the fall protection competent person for the use and limitation of the fall protection system.
- When horizontal lifelines are used, the company responsible for the lifeline system shall provide a fall protection qualified person to oversee the design, installation, and use of the horizontal lifeline.
- Only one person shall be simultaneously attached to a vertical lifeline and shall also be attached to a separate independent lifeline.
- Fall protection equipment and components shall be used only to protect against falls - not to hoist materials.
- Remain within the guardrail system when provided. Leaning over or stepping across a guardrail system is not permitted.

- Do not stand on objects (boxes, buckets, bricks, blocks, etc.) or ladders to increase working height on top of platforms protected by guardrails.
- Inspect personal fall arrest system components before each use. Do not use damaged fall protection system components at any time or for any reason.
- Personal fall arrest systems shall be configured so that individuals cannot free-fall more than 6 feet or contact any lower level.
- Only attach personal fall arrest systems to anchorage points capable of supporting at least 5,000 pounds. Do not attach personal fall arrest systems to guardrail systems or hoists.
- Do not use personal fall arrest systems that have been subjected to impact loading.

2.2.6 Excavation Activities

This section applies to all excavation entry regardless of the party in control of the excavation.

- Do not enter the excavation unless completely necessary, and only after the excavation competent person has completed a daily inspection and has authorized entry. An inspection shall be conducted by the competent person before the start of work, as needed throughout the shift, after every rainstorm, and after any hazard increasing occurrence. Documentation of the inspection must be maintained onsite at all times.
- Follow all excavation entry requirements established by the excavation competent person and any excavation permit being used.
- Sloping, benching, shoring, shielding, or other protective systems are required to protect personnel from cave-ins, except when the excavation is made entirely in stable rock or is less than 5 feet deep and there is no indication of possible cave-in, as determined by the excavation competent person. Protective systems for excavations deeper than 20 feet must be designed or approved by a registered professional engineer.
- Trenches deeper than 4 feet deep shall be provided with a ladder, stairway, or ramp positioned so that the maximum lateral travel distance is no more than 25 feet.

Excavations shall not be entered when:

- Protective systems are damaged or unstable.
- Objects or structures above the work location may become unstable and fall into the excavation.
- The potential for a hazardous atmosphere exists, unless the air has been tested and found to be at safe levels.
- Accumulated water exists in the excavation, unless precautions have been taken to prevent excavation cave-in.

2.2.7 Field Vehicles

- Field vehicles may be personal vehicles, rental vehicles, fleet vehicles, or project vehicles.
- Project offices have emergency supplies for personal and rental vehicles. Fleet vehicles are equipped with emergency supplies. It is a project responsibility to equip all project vehicles with emergency equipment.
- Maintain both a first aid kit and fire extinguisher in the field vehicle at all times. All deficient equipment should be noted and replaced/repaired.
- Utilize a rotary beacon on a vehicle if working adjacent to an active roadway.
- Drivers must familiarize themselves with the following requirements for rental cars:
    - Dual air bags
    - Antilock brakes
    - Be midsize or larger
    - Mirror adjustments
    - Seat adjustments
    - Cruise control features, if offered
    - Pre-program radio stations
- Always wear seatbelt while operating vehicle.
- Adjust headrest to proper position.
- Tie down loose items if using a van.

- Pull off the road, put the car in park, and turn on flashers before talking on a mobile phone.
- Close car doors slowly and carefully. Fingers can get pinched in doors on the truck.
- Park vehicle in a location where it can be accessed easily in the event of an emergency. If not possible, carry a phone.

2.2.8 Knife Use

Open-bladed knives (e.g., box cutters, utility knives, pocket knives, machetes, and multipurpose tools with fixed blades such as a Leatherman™) are prohibited at work sites except where the following three conditions are met:

- The open-bladed knife is determined to be the best tool for the job.
- An approved JHA or written procedure is in place that covers the necessary safety precautions (work practices, PPE, and training).
- Knife users have been trained and follow the JHA.

Contractor/subcontractors are responsible for funding and ensuring the correct tool is being used and that employees are wearing the proper PPE when using knives. Employees are responsible for having and using the proper PPE while performing an activity requiring the use of a knife. Employees are also responsible for understanding the proper use of a knife.

In general, Kevlar cut-resistant gloves are to be worn when using a knife in an occupational setting. Other types of gloves may be required and will be identified within the contractor/subcontractor's written procedure.

Many tasks using a utility knife require a knife edge but not a sharp point. For these tasks, you can add protection against puncture wounds by using a rounded-tip blade. A locking blade type must be used when cutting with a folding knife. Never use a knife that will fold under pressure. Make sure there is a handle guard to keep your hand from slipping forward when using a fixed blade knife. If you carry a fixed blade knife, use a sheath or holder. Also, make sure the handle is dry and non-greasy/slippery to assure a better grip.

When cutting, make the force of the cut carry the blade away from any part of your body. If you have a peculiar situation where this is not possible, protect yourself with a leather apron or other material placed between you and the blade. Consider putting the material to be cut in a vise or other holding device.

Store utility knives safely and retract the blade or sheath an open blade before storing. Never leave a knife with the blade exposed on the floor, on a pallet, on a work surface, or in a drawer or cabinet. Keep your knife sharp. A dull blade requires you to use more force to cut and consequently increases the risk of slip or mistake. Knives used on the job, but not carried with you, must be properly stored when not in use. Never use a defective knife.

Utility knife blades are brittle and can snap easily. Don't bend them or apply side loads to them by using them to open cans or pry loose objects. Use the knife only to cut. It was not designed to work as a pry bar, screw driver, hole punch, or other assorted tool.

If you do get cut, seek medical attention to treat the injury by notifying your supervisor.

Stay focused on the cutting job. It only takes a second of inattention with a sharp blade to produce a serious cut. Letting the mind wander or talking with others while using a knife greatly increases the risk of an accident and injury. If you are interrupted while working with a knife, stop cutting, retract the blade, and place the knife down on a secure surface before dealing with the interruption. You should never continue cutting while distracted!

As always, utilize the hierarchy of controls and first attempt to engineer out the hazard and frequently ask yourself if you have the right tool for the job.

2.2.9 Noise

- Areas or equipment emitting noise at or above 90 A-weighted decibels (dBA) shall be evaluated to determine feasible engineering controls. When engineering controls are not feasible, administrative controls can be developed and appropriate hearing protection will be provided.

- In areas or around equipment emitting noise levels at or above 85 dBA, hearing protection must be worn.
- Employees exposed to 84 dBA or a noise dose of 50 percent must participate in the Hearing Conservation program, including initial and annual (as required) audiograms.
- Hearing protection is selected based upon noise levels and specific tasks to be performed.
- Employees shall be trained in the hazards of noise and how to properly wear and maintain their hearing protection.
- Hearing protection will be maintained in a clean and reliable condition and inspected before use and after any occurrence to identify any deterioration or damage. Damaged or deteriorated hearing protection will be repaired or discarded.
- In work areas where actual or potential high noise levels are present at any time, hearing protection must be worn by employees working or walking through the area.
- Areas where tasks requiring hearing protection are taking place may become hearing protection-required areas as long as that specific task is taking place.
- High-noise areas requiring hearing protection should be posted, or employees must be informed of the requirements in an equivalent manner.

2.2.10 Pressure Washing

- Only trained, authorized personnel may operate the high-pressure washer.
- Follow manufacturer's safety and operating instructions.
- Inspect pressure washer before use and confirm dead man switch is fully operational.
- The wand must always be pointed at the work area.
- The trigger should never be tied down.
- Never point the wand at yourself or another worker.
- The wand must be at least 42 inches from the trigger to the tip.
- The operator must maintain good footing.
- Non-operators must remain a safe distance from the operator.
- No unauthorized attachment may be made to the unit.
- The wand may not be modified.
- All leaks or malfunctioning equipment must be repaired immediately or taken out of service.
- Poly-coated Tyvek or equivalent, 16-inch-high steel-toed rubber boots, safety glasses, hard hat with face shield, and inner and outer nitrile gloves are recommended.

2.2.11 Respiratory Protection

- Respirator users must have completed appropriate respirator training within the past 12 months. Level C training is required for air-purifying respirators (APR) use.
- Respirator users must complete the respirator medical monitoring protocol and be approved for the specific type of respirator to be used.
- Tight-fitting face piece respirator (negative or positive pressure) users must have passed an appropriate Fitness Inspection Test (FIT) test within past 12 months.
- Respirator use shall be limited to those activities identified in this plan. If site conditions change that alters the effectiveness of the specified respiratory protection, the HSM shall be notified to amend the written plan.
- Tight-fitting face piece respirator users shall be clean-shaven and shall perform a user seal check before each use.
- Canisters/cartridges shall be replaced according to the change-out schedule specified in this plan. Respirator users shall notify the HSM of any detection of vapor breakthrough.
- The HSM shall report any breakthrough events to the HSM for schedule upgrade.
- Respirators in regular use shall be inspected before each use and during cleaning.
- Respirators in regular use shall be cleaned and disinfected as often as necessary to ensure they are maintained in a clean and sanitary condition.
- Respirators shall be properly stored to protect against contamination and deformation.
- Field repair of respirators shall be limited to routine maintenance. Defective respirators shall be removed from service.

2.2.12 Fire Prevention

Fire extinguishers shall be provided so that the travel distance from any work area to the nearest extinguisher is less than 100 feet. When 5 gallons or more of a flammable or combustible liquid is being used, an extinguisher must be within 50 feet. Extinguishers must:

- Be maintained in a fully charged and operable condition
- Be visually inspected each month
- Undergo a maintenance check each year

The area in front of extinguishers must be kept clear. Post "Exit" signs over exiting doors, and post "Fire Extinguisher" signs over extinguisher locations.

Combustible materials stored outside should be placed at least 10 feet from any building. Solvent waste and oily rags must be kept in a fire-resistant, covered container until removed from the site.

2.2.13 Chainsaws

Only chainsaws equipped with a spark arrestor and fully functioning chain brake or "safety chain" shall be used. The following safety equipment shall be readily available while operating a chainsaw:

- Chainsaw operator's manual
- Fully stocked first aid kit
- Multipurpose fire extinguisher
- Foreign voltage detector when topping utility poles
- Grounded extension cord approved for outdoor use and ground fault circuit interrupter (GFCI) for electrical-powered chainsaws
- Approved safety gasoline container and funnel or flexible nozzle for refueling gasoline powered chainsaws
- Sledge hammer and non-metallic wedges when necessary to prevent pinching of the chain

The following PPE shall be worn while operating chainsaws:

- Safety glasses with side shields or face shield to prevent injury from wood chips, sawdust, or other flying objects
- Hard hat with properly fitted suspension to prevent head injury from falling debris
- Steel-toed safety shoes or boots to prevent foot injury from falling objects and accidental contact with the moving chain
- Hearing protection to prevent permanent damage to hearing
- Ear muffs or plugs will have a decibel noise reduction rating assigned to them. The higher the rating, the greater the protection offered.
- Non-leather, fabric work gloves to prevent hand injury from abrasions, splinters and cuts
- Clothing that is well-fitted and free of loose edges that could become entangled in the saw
- Protective chaps or leggings that cover the area from the groin to about 2 inches above the ankles should be considered. These chaps are made from synthetic fabrics that are designed to prevent the running saw chain from coming in contact with the legs.

The following safe operation guidelines shall be followed regardless of the purpose for using a chainsaw:

- Inspect the chainsaw prior to use.
- Hold chainsaws firmly with both hands, with thumbs and fingers encircling both chain saw handles.
- Stand slightly to the left side of the saw, out of the plane of the cutting chain and guide bar to reduce the risk of injury in the event of a kickback.
- Position saw so that it is between the waist and mid-chest level. Overreaching or cutting above the mid-chest height shall be avoided.
- Maintain a full throttle setting while cutting. Chainsaws are designed to be run at full speed.
- Always be aware of what is in the saw's downward path after the cut.
- Do not attempt to cut material that is larger than the guide bar of the saw.

- Avoid cuts that will cause the chainsaw to jam. Always cut into the compression wood first until the cut starts to close; then cut from the other side toward the compression cut.
- Use a non-metallic wedge to prevent the compression cut jamming on the blade.
- Chainsaws are designed to feed themselves into the wood and require only light pressure to cut efficiently. If extra force is required to keep cutting, the chain requires sharpening. A saw that is cutting crooked, fine sawdust instead of chips, or the smell of burnt wood, are signs of a dull chain. Do not use a dull chain.
- Bystanders and helpers shall be kept at a safe distance from operation.
- Do not operate a chainsaw when fatigued; take frequent breaks.
- Work slowly; don't rush.
- A fire extinguisher shall be present at all times when operating the chainsaw in forest or brushy areas.

The fuel for gasoline-powered chainsaws shall be mixed in accordance with the manufacturer's recommendations as outlined in the chainsaw operator's manual. Fuel shall be stored and transported in an approved safety container. The following precautions should also be followed:

- The engine shall be shut off and allowed to cool before refueling; never refuel a hot engine.
- A fire extinguisher shall be present during fueling and refueling.
- Smoking around fueling or refueling operations shall be prohibited.
- A funnel or a flexible nozzle shall be used to avoid spilling fuel on the engine.

2.2.14 Wood Chipping

- Wear protective gloves when feeding limbs or wood chunks into chipper/grinder.
- Always wear protective eye goggles, hearing protection, hard hat, and leather chaps.
- Avoid any loose clothing near chipping/grinding operations.
- Inspect equipment for proper guards and protective equipment.
- Be wary of flying and falling chipped material. Stay out of the debris fallout area while chipper/grinder is being used
- Clear walkway work areas of equipment, tools, vegetation clutter, debris, and congestion to the greatest extent possible.
- Exit equipment slowly and maintain three-point contact.
- Mark, identify, or barricade other obstructions.
- Personnel will be briefed on the hazards of wet, muddy soil hazards and traversing uneven grades.
- Walk or climb only on equipment and/or surfaces that are designed for personnel access.
- Be aware of potential for poor footing while working on un-compacted backfill materials.
- Workers will wear hearing protection whenever voices must be raised above normal conversational speech or when noise levels exceed 85 dBA due to a loud noise source, such as working around heavy equipment.
- Hearing protection will be worn by equipment operators when working in open cab equipment, or when doors/windows are open.
- Workers will wear protective eyewear with side shields that meet ANSI Z-87 at all times.
- Workers will avoid wearing loose-fitting clothing.
- Workers will keep hands away from moving parts.
- Work at site is expected to take place only during daylight hours.

2.2.15 Electrical

General Electrical Safety

- Only qualified personnel are permitted to work on unprotected energized electrical systems.
- Only authorized personnel are permitted to enter high-voltage areas.
- Do not tamper with electrical wiring and equipment unless qualified to do so. All electrical wiring and equipment must be considered energized until lockout/tag out procedures are implemented.
- Inspect electrical equipment, power tools, and extension cords for damage prior to use.
- Do not use defective electrical equipment; remove it from service.
- QTEO has selected GFCIs as the standard method for protecting employees from the hazards associated with electric shock.

- GFCIs shall be used on all 120-volt, single-phase 15 and 20-amphere receptacle outlets that are not part of the permanent wiring of the building or structure.
- Extension cords must be equipped with third-wire grounding. Cords passing through work areas must be covered, elevated, or otherwise protected from damage. Cords should not be routed through doorways unless protected from pinching. Cords should not be fastened with staples, hung from nails, or suspended with wire.
- Electrical power tools and equipment must be effectively grounded or double-insulated, Underwriters Laboratory-approved.
- Operate and maintain electric power tools and equipment according to manufacturers' instructions.
- Maintain safe clearance distances between overhead power lines and any electrical conducting material unless the power lines have been de-energized and grounded, or where insulating barriers have been installed to prevent physical contact. Maintain a distance of at least 10 feet from overhead power lines for voltages of 50 kV or less, and 10 feet plus ½ in ch for every 1 kV over 50 kV.
- Temporary lights shall not be suspended by their electric cord unless designed for suspension. Lights shall be protected from accidental contact or breakage.
- Protect all electrical equipment, tools, switches, and outlets from environmental elements.

Portable Generator Hazards

- Portable generators are useful when temporary or remote electric power is needed, but they also can be hazardous. The primary hazards to avoid when using a generator are carbon monoxide (CO) poisoning from the toxic engine exhaust, electric shock or electrocution, and fire.
- NEVER use a generator indoors or in similar enclosed or partially-enclosed spaces.
- Generators can produce high levels of CO very quickly. When you use a portable generator, remember that you cannot smell or see CO. Even if you can't smell exhaust fumes, you may still be exposed to CO.
- If you start to feel sick, dizzy, or weak while using a generator, get to fresh air RIGHT AWAY. DO NOT DELAY. The CO from generators can rapidly lead to full incapacitation and death.
- If you experience serious symptoms, get medical attention immediately. Inform project personnel that CO poisoning is suspected. If you experienced symptoms while indoors, have someone call the fire department to determine when it is safe to re-enter the building.
- Follow the instructions that come with your generator. Locate the unit outdoors and away from doors, windows, and vents that could allow CO to come indoors.
- Keep the generator dry and do not use in rain or wet conditions. To protect from moisture, operate it on a dry surface under an open, canopy-like structure. Dry wet hands before touching the generator.
- Plug appliances directly into the generator. Or, use a heavy duty, outdoor-rated extension cord that is rated (in watts or amps) at least equal to the sum of the connected appliance loads. Check that the entire cord is free of cuts or tears and that the plug has all three prongs, especially a grounding pin.
- Most generators come with GFCIs. Test the GFCIs daily to ensure they are working.
- If the generator is not equipped with GFCI-protected circuits, plug a portable GFCI into the generator and plug appliances, tools and lights into the portable GFCI.
- Never store fuel near the generator or near any sources of ignition.
- Before refueling the generator, turn it off and let it cool down. Gasoline spilled on hot engine parts could ignite.
- All portable electric generator receptacles must be effectively grounded by bonding the receptacle grounding wire to the generator frame.
- All electrical equipment shall be inspected quarterly.
- Operations adjacent to overhead power lines are PROHIBITED unless one of the following conditions is satisfied:
- Power has been shut off; positive means (such as lockout) have been taken to prevent the lines from being energized; lines have been tested to confirm the outage; and the utility company has provided a signed certification of the outage.
- The minimum clearance from energized overhead lines is as shown in the table below, or the equipment will be repositioned and blocked to ensure that no part, including cables, can come within the minimum clearances shown in the table.

Minimum Distances From Power Lines

Nominal System Kv	Minimum Required Distance, Feet
0-50	10
51-100	12
101-200	15
201-300	20
301-500	25
501-750	35
751-1000	45

(These distances have been determined to eliminate the potential for arcing based on the line voltage.)

- The power line(s) has been isolated through the use of insulating blankets that have been properly placed by the utility. If insulating blankets are used, the utility will determine the minimum safe operating distance; get this determination in writing with the utility representative's signature.
- All inquiries regarding electric utilities must be made in writing and a written confirmation of the outage/isolation must be received by the Project Manager/Construction Manager prior to the start of work.

2.2.16 Visible Lighting

- While work is in progress outside, construction areas shall have at least 33 lux (lx) of illumination.
- Construction work conducted inside buildings should be provided with at least 55 lx light.
- The means of egress shall be illuminated with emergency and non-emergency lighting to provide a minimum 11 lx measured at the floor. Egress illumination shall be arranged so that the failure of any single lighting unit, including the burning out of an electric bulb, will not leave any area in total darkness.

2.2.17 Wireless Phone Restrictions

- Wireless phones are only to be used in areas where work is not in progress (only in office buildings or parked cars).
- The use of pagers in the work area is allowed (treat wireless phone like a pager—i.e., check caller ID and call back in proper location).
- Refrain from using cell phones—hand-held or hands-free—while driving.

2.2.18 Working Alone

- Personnel can only be tasked to work alone by the Project Manager, who has assessed potential hazards and appropriate control measures, with assistance from the responsible HSM.
- "Lone workers" with an automated person-down system or an accountability system are permitted, depending on the hazards present.

2.2.19 Accountability Systems

- The employee shall at all times be equipped with a working voice communication device such as a cellular phone or two-way radio to check in with project contact(s) at pre-determined times.
- A JHA shall be developed for the tasks allowing work alone and shall address check-in frequency and contact names and phone numbers.
- Check-in or contact times must be based on the risk associated with the task, or the timeframe expected to complete the task, but at a minimum of at least two times during an 8-hour work shift.
- Work tasks will cease if communication is lost during work day. Work may resume when communication is re-established.

2.2.20 Ultraviolet Radiation (Sun Exposure)

- Health effects regarding ultraviolet (UV) radiation are confined to the skin and eyes. Overexposure can result in many skin conditions, including erythema (redness or sunburn), photoallergy (skin rash), phototoxicity (extreme sunburn acquired during short exposures to UV radiation while on certain medications), premature skin aging, and numerous types of skin cancer.
- Acute overexposure of UV radiation to the eyes may lead to photokeratitis (inflammation of the cornea), also known as snow blindness. Symptoms include redness of the eyes and a gritty feeling, which progresses to pain and an inability to tolerate any kind of light. This condition can also occur when working in or around water and other UV radiation reflectors. In addition, long-term exposure to sunlight is thought to cause cataracts or clouding of the lens of the eye.

Limit Exposure Time

- Rotate the staff so the same personnel are not exposed to UV radiation all of the time.
- Limit exposure time when UV radiation is at peak levels (approximately 2 hours before and after the sun is at its highest point in the sky).
- Avoid exposure to the sun, or take extra precautions when the UV index rating is high.

Provide Shade

- Take lunch and breaks in shaded areas.
- Create shade or shelter through the use of umbrellas, tents, and canopies.
- Fabrics such as canvas, sailcloth, awning material and synthetic shade cloth create good UV radiation protection.
- Check the UV protection of the materials before buying them. Seek protection levels of 95 percent or greater, and check the protection levels for different colors.

Clothing

- Reduce UV radiation damage by wearing proper clothing; for example, long-sleeved shirts with collars and long pants. The fabric should be closely woven and should not let light through.
- Head protection should be worn to protect the face, ears, and neck. Wide-brimmed hats with a neck flap or "Foreign Legion" style caps that offer added protection.
- Wear UV-protective sunglasses or safety glasses. These should fit closely to the face. Wrap-around style glasses provide the best protection.

Sunscreen

- Apply sunscreen generously to all exposed skin surfaces at least 20 minutes before exposure, allowing time for it to adhere to the skin.
- Re-apply sunscreen at least every 2 hours, and more frequently when sweating or performing activities where sunscreen may be wiped off.
- Choose a sunscreen with a high sun protection factor. Most dermatologists advocate a sun protection factor of 30 or higher for significant sun exposure.
- Waterproof sunscreens should be selected for use in or near water, and by those who perspire sufficiently to wash off non-waterproof products.
- Check for expiration dates, because most sunscreens are only good for about 3 years. Store in a cool place out of the sun.
- Remember—no sunscreen provides 100 percent protection against UV radiation. Other precautions must be taken to avoid overexposure.

2.2.21 Temperature Extremes

Each employee is responsible for the following:

- Recognizing the symptoms of heat or cold stress
- Taking appropriate precautionary measures to minimize their risk of exposure to temperature extremes
- Communicating any concerns regarding heat and cold stress to their supervisor or the HSM

2.2.22 Heat and Cold Stress

Preventing and Treating Heat Stress

- Drink 16 ounces of water before beginning work. Disposable cups and water maintained at 50 degrees Fahrenheit (°F) to 60°F should be available. Under severe conditions, drink 1 to 2 cups every 20 minutes, for a total of 1 to 2 gallons per day.
- Take regular breaks in a cool, shaded area. Do not use alcohol in place of water or other nonalcoholic fluids. Decrease your intake of coffee and caffeinated soft drinks during working hours.
- Acclimate yourself by slowly increasing workloads (e.g., do not begin with extremely demanding activities).
- Use cooling devices, such as cooling vests, to aid natural body ventilation. The devices add weight, so their use should be balanced against efficiency.
- Use mobile showers or hose-down facilities to reduce body temperature and cool protective clothing.
- Conduct field activities in the early morning or evening and rotate shifts of workers, if possible.
- Provide adequate shelter/shade to protect personnel against radiant heat (sun, flames, hot metal).
- Maintain good hygiene standards by frequently changing clothing and showering.
- Monitor buddy for signs of heat stress. Persons who experience signs of heat rash or heat cramps should consult the HSM to avoid progression of heat-related illness.
- Those who experience heat syncope (sudden fainting), heat exhaustion (hot, pale, clammy/moist skin), or heat stroke (red, hot, dry skin; loss of consciousness) must be cooled down immediately and provided with cool water or a sports drink. Persons who experience heat syncope or heat exhaustion should also seek medical attention as soon as possible. Persons who experience heat stroke must get immediate medical attention.

Monitoring Heat Stress

These procedures should be considered when the ambient air temperature exceeds 70°F, the relative humidity is high (>50 percent), or when workers exhibit symptoms of heat stress.

Heart rate should be measured by the radial pulse for 30 seconds, as early as possible in the resting period. Heart rate at the beginning of the rest period should not exceed 100 beats/minute, or 20 beats/minute above resting pulse. If the heart rate is higher, the next work period should be shortened by 33 percent, while the length of the rest period stays the same. If the pulse rate still exceeds 100 beats/minute, at the beginning of the next rest period, the work cycle should be further shortened by 33 percent. The procedure is continued until the rate is maintained below 100 beats/minute, or 20 beats/minute above resting pulse.

Preventing and Treating Cold Stress

- Be aware of the symptoms of cold-related disorders, and ***wear proper clothing for the anticipated field work.***
- Consider monitoring the work conditions and adjusting the work schedule using guidelines developed by the U.S. Army (wind-chill index) and the National Safety Council.

Wind-chill index is used to estimate the combined effect of wind and low air temperatures on exposed skin. The wind-chill index does not take into account the body part that is exposed, the level of activity, or the amount or type of clothing worn. For these reasons, it is used only as a guideline to warn workers when they are in a situation that can cause cold-related illnesses.

National Safety Council *Guidelines for Work and Warm-Up Schedules* can be used with the wind-chill index to estimate work and warm-up schedules for field work. The guidelines are not absolute; workers should be monitored for symptoms of cold-related illnesses. If symptoms are not observed, the work duration can be increased. Persons who experience signs of incipient frost bite (frost nip) or incipient hypothermia (generally cold, shivering) should consult the HSM to avoid progression of cold-related illness.

Persons who experience signs of frost bite (discolored, waxy, resilient skin) or hypothermia (low body temperature characterized by uncontrollable shivering, weakness, apathy, etc.) must be warmed and provided warm fluids (not hot, and no caffeinated drinks), and must get immediate medical attention.

Table 2.1- Symptoms and Treatment of Cold Stress

	Immersion (Trench) Foot	**Frostbite**	**Hypothermia**
Signs and Symptoms	Feet discolored and painful; infection and swelling present.	Blanched, white, waxy skin, but tissue resilient; tissue cold and pale.	Shivering, apathy, sleepiness; rapid drop in body temperature; glassy stare; slow pulse; slow respiration.
Treatment	Seek medical treatment immediately.	Remove victim to a warm place. Rewarm area quickly in warm–but not hot–water. Have victim drink warm fluids, but not coffee or alcohol. Do not break blisters. Elevate the injured area, and get medical attention.	Remove victim to a warm place. Have victim drink warm fluids, but not coffee or alcohol. Get medical attention.

2.2.23 Procedures for Locating Buried Utilities

Underground Utilities

Do not begin subsurface construction activities (e.g., trenching, excavation, drilling, etc.) until a check for underground utilities and similar obstructions has been conducted. The use of as-built drawings and utility company searches should be supplemented with a geophysical or other survey by a qualified, independent survey contractor to identify additional and undiscovered buried utilities. Excavation or drilling of the upper depth interval should be performed manually when necessary, (e.g., uncertainty about utility locations). Contractor/subcontractor shall maintain a minimum 2-foot safety zone, where only hand digging will be performed around all utility lines.

Examples of the type of geophysical technologies include:

- Ground-penetrating radar, which can detect pipes, including gas pipes, tanks, conduits, cables, etc., both metallic and non-metallic, at depths up to 30 feet depending on equipment. Sensitivity for both minimum object size and maximum depth detectable depends on equipment selected, soil conditions, etc.
- Radio frequency (RF), involves inducing an RF signal in the pipe or cable and using a receiver to trace it. Some electric and telephone lines emit RF naturally and can be detected without an induced signal. This method requires knowing where the conductive utility can be accessed to induce RF field if necessary.
- Dual RF, a modified version of RF detection using multiple frequencies to enhance sensitivity but with similar limitations to RF.
- Ferromagnetic detectors are metal detectors that will detect ferrous and non-ferrous utilities. Sensitivity is limited; e.g., a 100-millimeter (mm) iron disk to a depth of about 1 meter or a 25-mm steel paper clip to a depth of about 20 centimeters (cm).
- Electronic markers are emerging technologies that impart a unique electronic signature to materials such as polyethylene pipe to facilitate location and tracing after installation. This technology is promising for future installations but not of help for most existing utilities already in place.

Procedures

The following procedures shall be used to identify and mark underground utilities during subsurface construction activities on the project:

- The survey contractor shall select the most appropriate geophysical technique or combinations of techniques to identify the buried utilities on the project, based on the survey contractor's experience and expertise, types of utilities anticipated to be present, and specific site conditions.
- The survey contractor should consider employing geophysical techniques used on the project to identify the buried utilities and to survey the proposed path of subsurface construction work to confirm no buried utilities are present.
- Contact utility companies or the state/regional utility protection service at least 2 working days before excavation activities begin to advise of the proposed work, and ask them to establish the location of the utility underground installations before the start of actual excavation.
- Perhaps schedule an independent survey.
- Obtain utility clearances for subsurface work on both public and private property.
- Clearances are to be in writing, signed by the party conducting the clearance.
- All marked underground utility locations must be physically verified by hand digging using wood- or fiberglass-handled tools when any adjacent subsurface construction activity (e.g., mechanical drilling, excavating) work is expected to come within 5 feet of the marked underground system. If subsurface construction activity is within 5 feet and parallel to a marked existing utility, the utility location must be exposed and verified by hand digging at a minimum every 100 feet.
- Protect and preserve the markings of approximate locations of facilities until the markings are no longer required for safe and proper excavations. If the markings of utility locations are destroyed or removed before excavation begins or is completed, the contractor/subcontractor must notify the utility company or utility protection service to inform them that the markings have been destroyed.
- Conduct a site briefing for employees regarding the hazards associated with working near the utilities and the means by which the operation will maintain a safe working environment. Detail the method used to isolate the utility and the hazards presented by breaching the isolation.
- Monitor for signs of utilities during advancement of intrusive work (e.g., sudden change in advancement of auger or split spoon during drilling or change in color, texture or density during excavation that could indicate the ground has been previously disturbed).

Available Local Utilities

Emergency	911	
Fire Department	918-674-2443	
City Hall	918-674-2525	
SW Bell Repair Center	800-246-8464	
AEP Public Service Co. of Oklahoma (Electric, some areas)	888-218-3919(Outage)	888-216-3523 (Customer Service)
Northeast Oklahoma Coop (Rural Electric in some areas)	800-256-6405	
Oklahoma Natural Gas Company (Some areas)	918-832-7800	
Ottawa County Rural Water District (Some areas)	918-540-1893	
Local Utility Mark-Out Service, Name: Call OKIE	800-522-6543	

2.3 Biological Hazards and Controls

2.3.1 Poison Ivy, Poison Oak, and Poison Sumac

Poison ivy, poison oak, and poison sumac typically are found in brush or wooded areas. They are more commonly found in moist areas or along the edges of wooded areas. Shrubs are usually 12 to 30 inches high, or can also be a tree-climbing vine, with triple leaflets and short, smooth hair underneath. Plants are red and dark green in spring and summer, with yellowing leaves anytime, especially in dry areas. Leaves may achieve bright reds in fall, but plants lose their (yellowed, then brown) leaves in winter, leaving toxic stems. All parts of the plant remain toxic throughout the seasons. These plants contain urushiol, a colorless or pale yellow oil that oozes from any cut or crushed part of the plant, including the roots, stems, and leaves and causes allergic skin reactions when contacted. The oil is active year round.

Become familiar with the identity of these plants (see below). Wear protective clothing that covers exposed skin and clothes. Avoid contact with plants and the outside of protective clothing. If skin contacts a plant, wash the area with soap and water immediately. If the reaction is severe or worsens, seek medical attention.

Contamination with poison ivy, sumac, or oak can happen through several pathways, including:

- Direct skin contact with any part of the plant (even roots once aboveground foliage has been removed).
- Contact with clothing that has been contaminated with the oil.
- Contact from removing shoes that have been contaminated (shoes are coated with urushiol oil).
- Sitting in a vehicle that has become contaminated.
- Contact with any objects or tools that have become contaminated.
- Inhalation of particles generated by weed whacking, chipping, vegetation clearing.

If you must work on a site with poison ivy, sumac, or oak, the following precautions are necessary:

- Do not drive vehicles onto the site where it will come into contact with poison ivy, sumac or oak. Vehicles that need to work in the area, such as drill rigs or heavy equipment, must be washed as soon as possible after leaving the site.
- All tools used in the poison ivy, sumac, or oak area, including those used to cut back poison oak, surveying instruments used in the area, air monitoring equipment or other test apparatus, must be decontaminated before they are placed back into the site vehicle. If onsite decontamination is not possible, use plastic to wrap any tools or equipment until they can be decontaminated.
- PPE, including Tyvek coveralls, gloves, and boot covers, must be worn. PPE must be placed into plastic bags and sealed if it is not disposed immediately into a trash receptacle.
- As soon as possible following the work, shower to remove any potential contamination. Any body part with suspected or actual exposure should be washed with "Tecnu" or other product designed for removing urushiol. If you do not have Tecnu, wash with cold water. Do not take a bath because the oils can form and invisible film on top of the water and contaminate your entire body upon exiting the bath.
- Tecnu may also be used to decontaminate equipment.
- Use IvyBlock or similar products to prevent poison oak, ivy, and sumac contamination. Follow all directions for application.

If you do come into contact with one of these poisonous plants and a reaction develops, contact your supervisor.

2.3.2 Ticks

Ticks typically are in wooded areas, bushes, tall grass, and brush. Ticks are black, black and red, or brown and can be up to one-quarter inch in size. If bitten by a tick, grasp it at the point of attachment and carefully remove it. After removing the tick, wash your hands and disinfect and press the bite areas. Save the removed tick. Report the bite to your HSM. Look for symptoms of Lyme disease or Rocky Mountain spotted fever. Lyme disease: a rash might appear that looks like a bull's eye with a small welt in the center. Rocky Mountain spotted fever: a rash of red spots under the skin 3 to 10 days after the tick bite. In both cases, chills, fever, headache, fatigue, stiff neck, and bone pain may develop. If symptoms appear, notify the HSM and seek medical attention.

- If you must work in a high risk area, take precautions to avoid exposure prior to starting field work.
- Spray repellants **only outside** of protective clothing (i.e., ug-out suit™), with permethrin or permanone and spray skin with only N, N-diethyl-meta-toluamide (DEET) and tick removal kits.
- Sulfur powder can also be used on clothing to repel ticks and chiggers.
- Wear light-colored, long pants with the pant legs tucked into your socks, and long-sleeved cotton shirts tucked in at the waist. Tyvek suits sprayed with a repellent are also effective. Ticks typically hitch rides from their perches on grass blades or low brush. Once picked up on a shoe, sock, or pant leg, they climb upwards until they find a suitable place to attach.
- Use the buddy system and perform regular tick inspections, especially when coming from the field, by carefully checking your clothes and closely examining your skin for ticks.

2.3.3 Bees and Other Stinging Insects

Bees and other stinging insects, such as wasps or scorpions, may be encountered almost anywhere and may present a serious hazard, particularly to people who are allergic. Watch for and avoid nests. Keep exposed skin to a minimum. Carry a kit if you have had allergic reactions in the past, and inform the HSM and/or buddy. If a stinger is present, remove it carefully with tweezers. Wash and disinfect the wound, cover it, and apply ice. Watch for allergic reaction; notify the HSM and seek medical attention if a reaction develops.

2.3.4 Africanized Honey Bees

Africanized honey bees are present in the Phoenix, Arizona area and other parts of the southwestern United States. The following precautions should be taken:

- Aside from watching for nests, be extra careful when moving discarded materials on the ground.
- Be alert for bees that appear to be acting more aggressive or strangely.
- If bees begin to fly at your face or buzz around over your head, quickly retrace your steps and leave the area immediately. Report this occurrence to your HSM and fellow workers at the site. Avoid this area until instructed that it is safe to reenter.
- Wear light-colored clothing because dark clothing/color appears to attract and anger bees.
- Avoid wearing any type of aftershave or perfume. This may also attract bees.
- If swarmed by bees, run quickly to an enclosed shelter. Do not stop to pick up belongings or materials. Do not flail at bees because this will increase their attack, but cover head and face as best as you can.
- Once away from bees, evaluate your condition. If you have been stung more than 15 times or if you are having any symptoms other than local pain and swelling, seek medical attention immediately.
- If stung, do not pull out stingers, but use something like a credit card to scrape the stingers off. Pulling them only injects more of the venom.

Africanized honey bees are very similar to their European cousins. It is very difficult for laymen to tell the difference. The venoms of the two species are the same; they can only sting once; they pollinate flowers; they produce honey and wax; and they will defend their colony. The big differences are that Africanized honeybees tend to be more aggressive in response to a threat of the nest, can sense a threat from 50 feet or more, can sense power equipment vibrations (drilling/excavation), and may pursue a perceived enemy for a ¼ mile. On the other hand, remember that bees on flowers are working and are likely away from the colony. They are not as likely to sting or be aggravated by your presence if left undisturbed.

2.3.5 Hanta Virus

Hantavirus pulmonary syndrome (HPS) is a rare disease caused by a virus transmitted from certain rodents to humans. Symptoms may develop between 14 and 31 days after exposure to infected rodents and their droppings and body fluids. Early symptoms include fatigue, fever, and muscle aches, especially the large muscle groups--thighs, hips, back, and sometimes shoulders. These symptoms are universal. About half of all HPS patients also experience headaches, dizziness, chills and/or abdominal pain. Four to 10 days after the initial phase of the illness, late symptoms of HPS may appear. These include coughing and shortness of breath, with the sensation of, as one survivor put it, a "... tight band around my chest and a pillow over my face" as the lungs fill with fluid, which can cause pulmonary shock, failure and death.

The presence of Hantavirus is recognized throughout the southwestern United States. Human infection may occur when infected saliva or excreta are inhaled as aerosols produced directly from the animal. Transmission may also occur when dried materials contaminated by rodent excreta are disturbed, directly introduced into broken skin, introduced onto the eye, or ingested in contaminated food or water. People have also become infected after being bitten by rodents. In New Mexico, the deer mouse is the main carrier of the virus, with the cotton rat and the white-footed and brush mice also identified as carriers. Therefore, all wild mice and rats should be considered potential Hantavirus carriers. Researchers do not believe that Hantavirus is transmitted to humans by any other types of animals besides rodents. There is currently no evidence that squirrels or rabbits carry Hantavirus. Dogs and cats do not carry the virus, but they may bring home infected rodents.

2.3.6 Blood-borne Pathogens

Exposure to blood borne pathogens may occur when rendering first aid or CPR, or in waste streams containing potentially infectious material. Hepatitis B vaccination must be offered before a person participates in a task where exposure is a possibility. If you think you have been exposed, notify the HSM.

2.3.7 Snakes

Snakes typically are found in underbrush and tall grassy areas. If you encounter a snake, stay calm and look around; there may be other snakes. Turn around and walk away on the same path you used to approach the area. If a person is bitten by a snake, wash and immobilize the injured area, keeping it lower than the heart if possible. **DO NOT** apply ice, cut the wound, or apply a tourniquet. Try to identify the type of snake: note color, size, patterns, and markings.

2.3.8 Spiders

Species of spiders of concern in this area are the black widow and the brown recluse (fiddle-back) spiders. These spiders can be found in any location in the area, especially around the foundations of buildings. To avoid being bitten, always check dark areas before inserting hands into them. Use gloves when putting hands into areas that cannot be seen. If bitten, seek medical attention immediately.

Brown Recluse Spiders

The brown recluse spider is regarded by many as the most dangerous spider in the United States. The brown recluse spider can be found most anywhere in the United States as a result of interstate shipping/transportation. Brown recluse spiders are usually 1 inch or larger in size, including the legs and can grow as large as 3 inches. Young brown recluse spiders are smaller. Brown recluse spider bites don't always hurt right away. In fact, you may not know that you have been bitten until other symptoms appear.

Symptoms of a brown recluse spider bite may include the following:

- Reddened skin followed by a blister that forms at the bite site.
- Mild to intense pain and itching for 2 to 8 hours following the bite.
- An open sore with a breakdown of tissue (necrosis) that develops within a few hours to 3 to 4 days following the bite and the area may become painful, itchy, hot, swollen, red and tender. An irregular ulcerous sore, caused by necrosis, will often appear that is from 1/4 inch to 10 inches in diameter. Prompt attention is the best defense against preventing the necrosis. The wound is often described as being reddish and surrounded by a bluish area with a narrow whitish separation in between the red and the blue. This gives it the famous "bull's eye" pattern. In just hours, a bite from the highly venomous brown recluse spider can create blisters and cause tissue damage.

Some people have a severe, systemic (whole-body) reaction to brown recluse spider bites, including the rapid destruction of red blood cells and anemia. Signs and symptoms include:

- Fever and chills
- Skin rash all over the body with many tiny, flat purple and red spots
- Nausea or vomiting
- Joint pain

If you think you have been bitten by a brown recluse spider:

- Remain calm. Too much excitement or movement will increase the flow of venom into the blood.
- Try to collect the spider, without being bitten (even a mangled specimen has diagnostic value), if possible, for positive identification by a spider expert. A plastic bag, small jar, or pill vial is useful and no preservative is necessary, but rubbing alcohol helps to preserve the spider.
- Apply a cool, wet cloth to the bite or cover the bite with a cloth and apply an ice bag to the bite.
- Do not apply a tourniquet. It may cause more harm than benefit.
- Try to positively identify the spider to confirm its type.
- Seek prompt medical attention.

A brown recluse bite can be serious and will likely require immediate medical care. Seek medical attention if you believe you have been bitten by a recluse spider, especially if severe symptoms develop throughout your body or an open sore and necrosis develop. A brown recluse spider bite is diagnosed through a physical examination and questions about the bite. You should be prepared to describe the spider, where and when the bite took place, and what you were doing at the time. Your health professional will ask what your main symptoms are, when they began, and how they have developed, progressed, or changed since the bite.

Widow Spiders
The Northern Black Widow spider may be encountered in northern regions of the United States. Other similar widow spiders are the Red Widow and the Brown Widow. Female widow spiders range from 8-15 mm in body length; males are smaller, sometimes very small (2 mm). Most have globed, shiny abdomens that are predominantly black with red markings (although some may be pale and/or have lateral stripes), with moderately long, slender legs. These spiders are nocturnal and build a three-dimensional tangled web, often with a conical tent of dense silk in a corner where the spider hides during the day. In nature, most species are found under rocks and logs, but they readily adapt to human-altered environments, where they are most commonly found in outbuildings (sheds, barns, privies), water meter holes, nursery cans, and under any item or structure (*e.g.*, barbeque grill, slide, sand box) that has been undisturbed for a lengthy period. Formerly, most bites by black widows (almost all by female spiders) occurred in outhouses, but presently, widow bites occur most frequently when the spider is trapped against human skin, either by reaching under objects where the spider is hiding or when putting on clothing, gloves or shoes containing the spider. Widow spiders are generally very timid and only bite in self-defense when they accidentally contact humans.

Bite symptoms are systemic, spreading through the lymphatic system, and usually start about 1-3 hours after the bite. The most common symptoms are intense pain, rigid abdominal muscles, muscle cramping, malaise, local sweating, nausea, vomiting, and hypertension. Other symptoms may include tremors, labored breathing, restlessness, increased blood pressure, and fever. If left untreated, bite symptoms usually last 3 to 5 days.

If bitten, remain calm, and immediately seek medical attention (contact your physician, hospital and/or poison control center). Apply an ice pack directly to the bite area to relieve swelling and pain. Try to collect the spider, without being bitten, (even a mangled specimen has diagnostic value) if possible, for positive identification by a spider expert. A plastic bag, small jar, or pill vial is useful and no preservative is necessary, but rubbing alcohol helps to preserve the spider. A hospital stay may be recommended, particularly for those with a heart condition or with health problems. A physician may administer a specific antivenin to counteract the venom or calcium gluconate to relieve pain. Calcium gluconate and/or antivenin may be administered to relieve or counteract symptoms.

2.3.9 Scorpions

Basic Information
Only a very small number of the more than 1,050 known species of scorpions are dangerous to humans. Most produce a bee-sting like reaction in humans. It is very painful, but not life-threatening. Scorpions are part of the natural environment. Most in the U.S. are not dangerously harmful; however, it is also important to remember that even a nearly nontoxic species can cause death if the victim has a severe allergic reaction to the venom.

Symptoms
Some components in scorpion venom appear to have no other function than to cause localized pain or discomfort in the victim. In vertebrates, the systemic effects observed after scorpion envenomation are probably the result of the release of massive quantities of catecholamines from the victim's adrenal glands. The scorpion's venom, therefore, is not directly responsible for the severe manifestations we see in some cases. Instead, the neurotoxins induce the victim's own chemical communication system to destroy the victim's homeostatic functions.

Scorpions not considered of any medical importance (typical southern California species) normally have venoms that are of low toxicity. These scorpions normally produce a localized reaction similar to that a honeybee sting. They would have to be several feet long before they could produce and inject enough venom into a person to kill them.

The presence of pre-existing medical conditions such as pneumonia, hypertension, and certain heart ailments can turn otherwise normal systemic reactions into life-threatening situations. Persons with such conditions are at greater risk of severe envenomation than are healthy persons. Some people are allergic to scorpion venom in the same way that some are allergic to honey bee venom. In such cases, very severe effects, including death, can occur very rapidly and are not related to the toxicity of the venom. Deaths due to envenomation by non-medically important species are usually the result of allergy induced anaphylactic shock.

Envenomation is usually categorized into two or three levels of severity: 1) localized effects, 2) systemic effects, and 3) systemic effects with central nervous system involvement. Localized effects are common to nearly all scorpion stings regardless of the toxicity of the venom. These symptoms are restricted to the site of sting and include intense pain, minor swelling, redness or induration, numbness, tenderness, and tingling. Intense pain normally subsides within one hour, giving way to numbness, tenderness, and tingling at the site of the sting. This normally results in the favoring of an affected limb. These symptoms normally fade after 24 hours.

Prevention
When entering an area that has the potential to contain scorpions, the following PPE is recommended: long pants, long-sleeved shirts with collars, hard hat with brim, leather work gloves, and leather work boots. Reaching into enclosures or recesses without prior visual inspection is not recommended. Thoroughly inspect each area before accessing.

2.3.10 West Nile Virus

Because of the recent detection of the West Nile Virus in the southeastern United States, it is recommended that preventative measures be taken to reduce the probability of being bitten by mosquitoes whenever possible. Mosquitoes are believed to be the primary source for exposure to the West Nile Virus, as well as several other types of encephalitis. The following guidelines should be followed to reduce the risk of these concerns for working in areas where mosquitoes are prevalent:

- Stay indoors at dawn, dusk, and in the early evening.
- Wear long-sleeved shirts and long pants whenever you are outdoors.
- Spray clothing with repellents containing permethrin or DEET because mosquitoes may bite through thin clothing.
- Apply insect repellent sparingly to exposed skin. An effective repellent will contain 35% DEET. DEET in high concentrations (greater than 35 percent) provides no additional protection.
- Repellents may irritate the eyes and mouth, so avoid applying repellent to the hands.
- Whenever you use an insecticide or insect repellent, be sure to read and follow the manufacturer's DIRECTIONS FOR USE, as printed on the product.
- Note: Vitamin B and "ultrasonic" devices are NOT effective in preventing mosquito bites.

Symptoms of Exposure to the West Nile Virus
Most infections are mild, and symptoms include fever, headache, and body aches, occasionally with skin rash and swollen lymph glands. More severe infection may be marked by headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis, and, rarely, death.

The West Nile Virus incubation period is from 3-15 days. If you have any questions or to report any suspicious symptoms, contact the project HSM.

2.3.11 Fire Ants

Fire ants are common in the southern U.S. These insects typically build mounds on the land surface that are usually easy to identify. Avoid disturbing these mounds. A bite from a fire ant can be painful but rarely is life-threatening. However, it is possible that the bite could cause an allergic reaction. If bitten, check for symptoms of an allergic reaction such as weakness, nausea, vomiting, dizziness, or shortness of breath. If symptoms appear, notify the HSM and seek medical attention.

2.3.12 Dogs and Feral Animals

Dogs that belong to owners of property to be accessed or that are feral are not to be approached or harassed. Stay ALERT! Do not turn your back on any dog. Report aggressive dogs to the HSM and do not enter the property unless

the dog is restrained or removed by the owner. Contact the HSM to report animals that are displaying unusual symptoms that may indicate rabies or other diseases. In addition, project personnel may come into contact with resident's dogs during remedial activities and should not enter a property where the dog is not secure in some manner.

2.3.13 H1N1 Flu Precautions

Flu is often transmitted through the air, so cover your mouth and nose when you cough or sneeze—but not with your hands. Use a tissue and throw it in the trash or, if no tissue is available, use the upper arm area of your sleeve. Why not use your hands? Well, another way to get the flu is to touch a surface where the virus may be deposited—such as a countertop or even someone else's hand—and then touch your nose or mouth.

To help, wash your hands regularly and thoroughly. And note that antibacterial soap makes little difference—thorough scrubbing for 20 seconds with regular soap and warm water gets rid of the virus. If no soap and water are available, use an alcohol-based hand sanitizer. And, of course, avoid touching your nose or mouth if your hands aren't clean.

2.4 Contaminants of Concern

The primary contaminants of concern are lead, cadmium, arsenic, and zinc, which are constituents of chat, as well as crystalline silica. Mining waste in Oklahoma contains elevated levels of lead and cadmium as high as 13,000 ppm and 540 ppm, respectively. Project personnel are potentially exposed to these contaminants when airborne aerosol concentrations are generated in personnel breathing zones when sampling, excavating, and handling contaminated soil. The potential routes of exposure include inhalation of contaminated airborne dust and ingestion. The following summarizes the chemical hazards posed by these contaminants during planned activities.

Arsenic

Permissible Exposure Limit = 0.01 milligrams per cubic meter (mg/m3)

Arsenic is considered carcinogenic to humans by the International Agency for Research on Cancer (IARC) and is an Occupational Safety and Health Administration (OSHA)-regulated carcinogen. Arsenic is a skin irritant and may cause dermatitis. Some arsenic compounds, after prolonged contact, are corrosive to the skin. Acute toxic effects of arsenic from inhalation are exceedingly rare. The effects of arsenic are generally seen following ingestion; however, this effect rarely occurs in the occupational setting. Symptoms of ingestion are constricting of the throat, stomach pains, vomiting, and diarrhea.

Cadmium

Permissible Exposure Limit = 0.005 µg/m3(micrograms per cubic meter)

Cadmium is considered probably carcinogenic to humans by the IARC. Cadmium is a respiratory tract irritant. Prolonged exposure can cause olfactory fatigue and a yellow stain that gradually appears on the necks of the teeth. Acute toxic effects of cadmium are almost always caused by inhalation of dusts or fumes when the cadmium is heated. Symptoms include irritation of the upper respiratory tract, coughing, pain in the chest, and sweating.

Lead

Permissible Exposure Limit = 0.05 mg/m3

Exposure to lead can be from inhalation of dusts or from ingestion. Symptoms are nonspecific and can be hard to distinguish from minor seasonal illnesses. The symptoms are decreased physical fitness, fatigue, sleep disturbance, headache, aching bones and muscles, digestive disorders (particularly constipation), abdominal pains, and decreased appetite.

Zinc

Permissible Exposure Limit=5.00 mg/m3

Under poor hygiene conditions, dermal exposure to zinc can cause a specific dermatitis. Toxic effects of inhalation are not experienced outside the manufacturing environment.

Crystalline Silica (Cristobalite, Quartz, Tridymite, Tripoli)
Permissible Exposure Limit (Quartz, Tripoli =0.1 mg/m3 (Respirable Dust)
Permissible Exposure Limit (Cristobalite, Trydymite) = 0.05 Mg/M3 (Respirable Dust)

Crystalline silica compounds cause scarring of the lungs with long-term overexposure, with scar tissue formed around the inhaled silica crystal, reducing the lung capacity to oxygenate blood. This health effect is called silicosis, which occurs over years of exposure and could be fatal. Quartz and tripoli have a more fibrous nature that allows these types of crystalline silica to travel farther into the lower lungs with increasing lung damage.

2.5 Other Hazards: Methamphetamine Laboratories
The project area is high on the national list for number of methamphetamine (meth) labs seized each year. Be aware that:

- Meth labs are present in the project area.
- Operators of meth labs could be dangerous to your personal safety.
- Leave immediately if you believe that you have found a structure with a meth lab in it, and tell your supervisor of your concern.

2.6 Inclement Weather
Sudden inclement weather can rapidly encroach upon field personnel. Preparedness and caution are the best defenses. Field crew members performing work outdoors should carry clothing appropriate for inclement weather. Personnel are to take heed of the weather forecast for the day and pay attention for signs of changing weather that indicate an impending storm. Signs include towering thunderheads, darkening skies, or a sudden increase in wind. If stormy weather ensues, field personnel should discontinue work and seek shelter until the storm has passed.

Protective measures during a lightning storm include seeking shelter in the following manner:

- Avoiding projecting above the surrounding landscape (don't stand on a hilltop-seek low areas)
- Cease intrusive work inside a building (i.e., direct-push technology)
- Stay away from open water, metal equipment, railroad tracks, wire fences, and metal pipes
- Position people several yards apart.

Some other general precautions include:

- Know where to go and how long it will take to get there. If possible, take refuge in a large building or vehicle. Do not go into a shed in an open area.
- The inclination to see trees as enormous umbrellas is the most frequent and most deadly mistake. Do not go under a large tree that is standing alone. Likewise, avoid poles, antennae and towers.
- If the area is wide open, go to a valley or ravine, but be aware of flash flooding.
- If you are caught in a level open area during an electrical storm and you feel your hair stand on end, drop to your knees, bend forward, and put your hands on your knees or crouch. The idea is to make yourself less vulnerable by being as low to the ground as possible and taking up as little ground space as possible. Lying down is dangerous because the wet earth can conduct electricity. Do not touch the ground with your hands.
- Do not use telephones during electrical storms, except in the case of emergency.
- Remember that lightning may strike several miles from the parent cloud, so work should be stopped/restarted accordingly. The lightning safety recommendation is 30-30: seek refuge when thunder sounds within 30 seconds after a lightning flash, and do not resume activity until 30 minutes after the last thunder clap.
- High winds can cause unsafe conditions, and activities should be halted until the wind dies down. High winds can also knock over trees, so walking through forested areas during high-wind situations should be avoided. If winds increase, seek shelter or evacuate the area. Proper body protection should be worn in case the winds hit suddenly, because body temperature can decrease rapidly.

2.7 Storm Shelters

O-Gah-Pah Learning Center and Robert Whitebird Cultural Center at the corner of E. 50 Road and Hwy 137

Miami Civic Center at 129 Fifth Ave. NW

Commerce Christian Church at the corner of Commerce and South Walnut

- Inclement weather, including severe thunderstorms and tornados, may occur at the project site. During lightning storms, all work must stop. Seek shelter immediately inside of a safe location.
- Sudden inclement weather can encroach on unprepared samplers in the field. Field crew members shall carry clothing appropriate for bad weather. In severe weather conditions, (i.e., high wind or electrical storms), the field crews should leave the area and find shelter until the weather abates and field activities can continue or until a decision is made to halt the field activities.
- Preparedness and precaution are the best defenses against lightning. Many lightning deaths and injuries happen before or after a thunderstorm's peak. The HSM shall monitor weather forecasts for predictions of electrical storms in the area. At first sight of lightning, operations shall be stopped and only resumed when conditions permit. The HSM shall monitor weather conditions to determine when it is appropriate to resume work. The lightning safety recommendation is 30-30: seek refuge when thunder sounds within 30 seconds after a lightning flash, and do not resume activity until 30 minutes after the last thunder clap. Other precautions include:
- Know where to go and how long it will take to get there. If possible, take refuge in a large building or vehicle. Do not go into a shed in an open area.
- The inclination to see trees as enormous umbrellas is the most frequent and most deadly mistake. Do not go under a large tree that is standing alone. Likewise, avoid poles, antennae and towers.
- Stay away from lakes, streams, pools, or any water.
- Stay away from railroad tracks that can carry lightning charges for long distances.
- If the area is wide open, go to a valley or ravine, but be aware of flash flooding. Do not stand on top of a hill.
- If you are caught in a level area such as a prairie or field during an electrical storm, and you feel your hair stand on end, drop to your knees, bend forward and put your hands on your knees or crouch. The idea is to make you less vulnerable by being as low to the ground as possible and taking up as little ground space as possible. Lying down is dangerous, since the wet earth can conduct electricity. Do not touch the ground with your hands.
- Do not use telephones during electrical storms, except in the case of emergency.

3.0 PROJECT ORGANIZATION AND PERSONNEL

3.1 Employee Medical Surveillance and Training

All personnel who will perform or be exposed to the activities covered under this HASP must have completed the training and medical surveillance requirements specified in the OSHA Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) [29 CFR §1910.120 (e) and (f)]. Workers regularly on-site and engaged in hazardous substance removal or other activities which expose or potentially expose workers to hazardous substances and health hazards must have completed the 40 hours of initial training and a minimum of three days actual field experience under the direct supervision of a trained, experienced supervisor. Workers on-site only occasionally for a specific limited task and who are unlikely to be exposed over permissible exposure limits and published exposure limits must have completed the 24 hours of initial training or the 8 hours of refresher training within the last year. No person will be allowed to work on the project unless they have reviewed and signed the HASP, and have been trained or certified in those aspects of the HASP appropriate to the work activities to be performed.

Employees will be enrolled in a medical surveillance program that meets state and federal regulatory requirements for hazardous waste operations. Certain tasks (e.g., confined-space entry) and contaminants (e.g., lead) may require additional training and medical monitoring.

In addition to the hazardous waste operations medical surveillance and training requirements, project personnel potentially exposed to airborne concentration of lead will be trained and provided with biological monitoring, in

accordance with OSHA's lead standard, contained in 29 Code of Federal Regulations (CFR) 1926.62. Potential exposed project personnel include personnel actually sampling, removing, handling, or excavating lead-contaminated soil.

Personnel potentially exposed to chat will be trained and provided with biological monitoring, in accordance with OSHA's cadmium standard, contained in 29 CFR 1926.1127.

3.2 Team Project Responsibilities

3.2.1 Project Manager

The Project Manager will direct the project implementation. The Project Manager has primary responsibility for:

- Assuring that all personnel are aware of the potential hazards of the site and proper procedures for handling those hazards including all health and safety provisions in this Plan.
- Assuring required personal protective equipment is available and utilized properly by all site personnel.
- Monitoring the safety performance of personnel to ensure that mandatory health and safety procedures are adequate and correcting any performances that do not comply with this Health and Safety Plan.
- Consulting with the HSM.
- Preparation and submittal of any and all project reports.

3.2.2 Health and Safety Manager

The primary responsibilities of the HSM are:

- Advise the Project Manager of all health and safety related matters involved at the site.
- Direct and ensure that the health and safety procedures are being correctly followed in the field, including the proper use of personal protective equipment and site monitoring equipment.
- Ensure that the field crews observe the appropriate work practices and decontamination procedures.

3.2.3 Field Personnel

These individuals will be those employees involved in field work. All personnel engaged in site activities are required to become thoroughly familiar with, and to conform to, the provisions of this Plan and other safety directives as may be considered appropriate by the Project Manager and HSM. Personnel are encouraged to offer ideas, suggestions, or recommendations regarding any operation, condition, procedure or practice that may enhance the safety of site personnel or the public. Primary responsibilities of all field personnel will be to:

- Familiarize themselves with and understand the HASP, including proper use of personal protective equipment, and perform all required work safely.
- Report any unsafe conditions to supervisory personnel.
- Be aware of signs and symptoms of potential exposure to site contaminants, heat stress, and cold stress.
- No employee shall perform a task that they feel may compromise their safety or the safety of others.

3.2.4 Other Site Personnel

All visitors, inspectors, or other personnel planning to enter the site are required to become thoroughly familiar with, and to conform to, the provision of this HASP, and other safety directives as may be considered appropriate by the Project Manager and HSM. Personnel are encouraged to offer ideas, suggestions or recommendations regarding any operation, condition, procedure or practice that may enhance the safety of site personnel or the public. Primary responsibilities are as follows:

- Be familiar with and understand the HASP, including proper use of personal protective equipment and perform all required work safely.
- Report any unsafe conditions to supervisory personnel.
- Be aware of signs and symptoms of potential exposure to site contaminants, heat stress, and cold stress.
- No visitors, inspectors, or other personnel shall perform a task that they feel may compromise their safety or the safety of others.

Contractors/subcontractors are responsible for the Health and Safety procedures specific to their work and are required to submit these procedures and a completed Contractors/subcontractor Safety Performance Questionnaire (Appendix E) to QTEO for review before the start of field work. Contractors/subcontractors are responsible for the incorporation of any comments provided by QTEO before starting any work. QTEO will review contractor/subcontractors' submittals, including their HASP and provide written documentation of comments that require incorporation before QTEO will accept their documents. When modifications to a contractor/subcontractor's accepted HASP are necessary, the contractor/subcontractor will provide written documentation and justification for the changes to QTEO for review and comment. Any modifications to the HASP must be fully incorporated into the contractor/subcontractor's HASP and accepted by QTEO before such changes are considered to be in effect. Contractor/subcontractors must comply with the established HASP(s). The HSM should verify that contractor/subcontractor employee training, medical clearance, and FIT test records are current and must monitor and enforce compliance with the established plan(s). Contractor/subcontractors must submit documentation for each employee of HAZWOPER training with current annual 8-hour refresher, documentation of FIT test for respirator use, letter documenting compliance with medical monitoring requirements of OSHA, and letter documenting successful completion of medical evaluation for fitness of employee to wear a respirator.

The contractor/subcontractors are responsible for monitoring compliance with their HASP and providing any required documentation to QTEO. QTEO should also continuously endeavor to observe contractor/subcontractors' safety performance. These endeavors should be reasonable and include observing for hazards or unsafe practices that are both readily observable and occur in common work areas. QTEO is not responsible for exhaustive observation for hazards and unsafe practices. In addition to this level of observation, the HSM is responsible for confirming QTEO contractor/subcontractor performance against the contractor/subcontractor's safety plan, applicable JHAs, and applicable self-assessment checklists. Health and Safety-related communications with QTEO contractor/subcontractors should be conducted as follows:

- Brief contractor/subcontractors on the provisions of this plan, and request contractor/subcontractor(s) to brief the project team on the hazards and precautions related to their work.
- When apparent non-compliance/unsafe conditions or practices are observed, notify the contractor/subcontractor safety representative and require corrective action. The contractor/subcontractor is responsible for identifying and implementing necessary controls and corrective actions.
- When repeat non-compliance/unsafe conditions are observed, notify the contractor/subcontractor safety representative and stop affected work until adequate corrective measures are implemented.
- When an apparent imminent danger exists, immediately remove all affected QTEO employees and contractor/subcontractors; notify contractor/subcontractor safety representative; and stop affected work until adequate corrective measures are implemented. Notify the Project Manager and HSM as appropriate.
- Document all verbal Health and Safety-related communications in project field logbook, daily reports, or other records.

4.0 PERSONAL PROTECTIVE EQUIPMENT

All QTEO employees and contractor/subcontractors will be required to wear appropriate work clothes and, at a minimum, hard hat, safety glasses, high-visibility safety vest, and approved steel toe shoes for any work task described in this HASP. Prescription glasses that are not safety glasses cannot be worn in any of the work zones or EZs. In addition, if safety prescription glasses are worn, they must have side shields.

Work zones are defined as the area where the work is being conducted, namely the excavation area, sampling area, or any area designated as an EZ by the HSM. The construction zone will be established for each work site and will consist of an area outside of the EZ where heavy equipment or trucks are located. The construction zone requires hard hat, safety glasses, high-visibility safety vest, and approved steel toe shoes and shall be posted by contractor/subcontractor. The support zone will be established beyond the construction zone and will consist of an area where no heavy equipment or trucks are present and therefore no PPE is required. At most locations surrounding the Catholic 40 project site, the support zone will be close or directly adjacent to public roadways to allow for employee parking. Contractor/subcontractors shall provide all signage for designation of each zone.

In general, no eating, chewing or drinking is permitted within the exclusion areas. Ear protection should be worn when conversations cannot be held at distances of 3 feet or less without shouting. Cartridge change-out schedule is

at least every 8 hours (or one work day), except if relative humidity is above 85%, or if organic vapor measurements are greater than the midpoint of Level C range—then at least every 4 hours. If encountered conditions are different than those anticipated in this HASP, contact the HSM. Performing a task that requires an upgrade to a higher level of protection (e.g., Level D to Level C) is permitted only when the PPE requirements have been approved by the HSM. Steel toes shoes shall consist only of leather material, with ankle support and defined heels. Prescription safety glasses shall have clip on hard side shields and ANSI approved frames and lenses or overglasses are required. Work clothes are defined as clothing suitable for the weather and work conditions. The minimum for field work shall be short sleeve shirt, long trousers, and leather or other protective work shoes or boots. Shorts, T-shirts, rolled up sleeves or open shirts are not considered acceptable work clothes. Where muddy conditions exist within the EZ, workers must be provided with adequate splash protection such as splash suits and face shields to minimize contact between cotton work clothes and potentially contaminated mud. At a minimum, all drivers should have clothing that minimizes skin exposures, namely pants without large, torn areas, short sleeve shirts, and work boots or shoes.

Please refer to the PPE specifications on the following pages.

Table 4.1- PPE

PPE Specifications [a]				
Activity	**Level**	**PPE Required**	**Head**	**Respirator [b]**
Surveying, site reconnaissance, sampling, geotechnical investigations, site preparation/installing silt fence, constructing access roads, public road cleanup, clearing/grubbing, excavation, backfill, installation of leachate collection system, construction of landfill cell, access agreement activities, equipment removal and site restoration, hydromulching & sod placement, operation of haul trucks transporting excavated materials, installation and operation of weigh scales, tagging and un-tagging haul truck beds, Inspection of raised beds on haul trucks, drilling and well installations	D	Work clothes; steel-toe, defined heel, leather work boots; high visibility vest; leather work gloves. Outer chemical protective gloves with inner nitrile gloves for sample handling.	Hard hat Safety glasses w/side shields Ear protection	Dust mask (during air rotary drilling)
Well development, decontamination of transport vehicles for excavated materials, all decontamination (heavy equipment and sampling), dewatering, well and stream gauging.	Modified D	**Coveralls:** Uncoated Tyvek **Boots:** Steel-toe, chemical resistant defined heel boots OR steel-toe, leather defined heel work boots with outer rubber boot covers. **Gloves:** Leather or inner surgical style nitrile & outer chemical resistant nitrile gloves.	Hardhat Face shield Safety glasses w/side shields Ear protection	None required
Soil/sediment sampling or work in tailings ponds with standing water	Modified D	**Waders:** Waterproof chest high **Boots:** Steel-toe, water proof, defined heel boots. **Gloves:** Leather or inner surgical style nitrile & outer chemical resistant nitrile gloves.	Hard hat Face shield Safety glasses w/ side shields	None required
Tasks requiring upgrade	C	**Coveralls:** Tyvek **Boots:** Steel-toe, chemical resistant defined heel boots OR steel-toe, leather defined heel work boots with outer rubber boot covers. **Gloves:** Inner surgical-style nitrile & outer chemical-resistant nitrile gloves	Hard hat Splash shield Ear protection Spectacle inserts	APR, full face, MSA Ultratwin or equivalent; with GME-H cartridges or equivalent

Table 4.1- PPE (continued)

Reasons for Upgrading or Downgrading Level of Protection	
Upgrade	**Downgrade**
Request from individual performing tasks. Change in work tasks that will increase contact or potential contact with hazardous materials. Occurrence or likely occurrence of gas or vapor emission. Known or suspected presence of dermal hazards. Instrument action levels (**Section 5**) exceeded.	New information indicating that situation is less hazardous than originally thought. Change in site conditions that decrease the hazard. Change in work task that will reduce contact with hazardous materials.

[a] Modifications are as indicated. QTEO will provide PPE only to QTEO employees.
[b] No facial hair that would interfere with respirator fit is permitted.

5.0 AIR MONITORING/SAMPLING

5.1 Air Monitoring Specifications

The following operations will be evaluated and monitored as needed to confirm personnel exposures are below the OSHA action levels of lead (30 µg/m3) and cadmium (2.5 µg/m3) during Tar Creek remedial operations:

- Sampling (Air, Water, Soil, Chat, Groundwater)
- Geotechnical Investigations
- Site Preparation/Installing Silt Fence
- Constructing Access Roads (Public Road Cleanup)
- Clearing/Grubbing
- Excavation
- Backfill
- Yard Remediation
- Smelter Remediation
- Chat Pile/Base Fine Tailings Pond Remediation
- Drilling, Water Well and Monitoring
- Well Installations
- Decontamination of Transport Vehicles for Excavated Materials
- All Decontamination (Heavy Equipment and Sampling)
- Installation of Leachate Collection System
- Construction of Landfill Cell
- Hydromulching & Sod Placement
- Operation of Haul Trucks Transporting
- Excavated Materials
- Installation and Operation of Weigh Scales (Outside of EZ)
- Stream-Based Source Material Excavation
- Subsidence Feature Investigations
- Subsidence Feature Backfill

An action level will be used during remedial operations, which requires temporary suspension of operations and implementation of dust control measures or upgrade to Level C. Baseline conditions for dust-generating activities and background values for offsite sources beyond control of the project will be established. Readings will be used to evaluate dust-generating activities, and corrective actions will be implemented to control dust. The action level is 1.0 mg/m^3 as a 2-minute time-weighted average (TWA) reading, above background, which is based on the highest concentration of lead in soil at 19,000 milligrams per kilogram. Readings will be obtained in the personnel breathing zone and compared to the action level for required actions. Background readings will be collected directly upwind of remedial operations where offsite sources of dust cannot be controlled.

Air monitoring for air rotary drilling will consist of dust monitoring in the breathing zone for the drillers and downwind if dust cannot be controlled. Air samples are not anticipated for drilling unless dust monitoring documents uncontrolled dust above action levels.

Air monitoring results will be documented by the HSM. Any readings in excess of the action level will be reported to the Project Manager.

Table 5.1- Air Monitoring Specifications

Instrument	Tasks	Action Levels[a]	Action	Frequency[b]	Calibration
Dust Monitor	Grubbing; residential soil sampling; drilling and well installations, sampling of chat piles, soil excavation, handling, backfilling; heavy equipment decontamination	< 1.0 mg/m^3	Level D	Initially and periodically during tasks	Zero Daily
		> 1.0 mg/m^3	Temporarily suspend operations and institute dust control measures or upgrade to Level C		
Noise-Level Monitor[c]	Heavy equipment operations; drilling	≤ 85 dBA	No action required	Initially and periodically during tasks	Daily
		86-120 dBA	Hearing protection required		
		> 120 dBA	Stop; re-evaluate		

[a] Action levels apply to sustained breathing-zone measurements (2-minute average period) above background.
[b] The exact frequency of monitoring depends on the field conditions and is to be determined by the HSM; generally, every 5 to 15 minutes if acceptable; more frequently may be appropriate. Monitoring results should be recorded. Documentation should include instrument and calibration information, time, measurement results, personnel monitored, and place/location where measurement is taken (e.g., "Breathing Zone/MW-3"," at surface/SB-2", etc.).
[c] Noise monitoring and audiometric testing shall be performed by the remediation contractor/subcontractor.

5.2 Air Sampling

Personnel exposure monitoring will be performed to measure personnel exposures and the requirements of the OSHA lead and cadmium standards, contained in 29 CFR 1926.62 and 1926.1127, respectively. Personnel sampling for lead and cadmium will be performed on the most at-risk exposed personnel during work activities to confirm they are not overexposed to these airborne contaminants during the course of the project.

Air Sampling Methodology

Personnel breathing zone air samples will be collected for 4- to 6-hour periods to compare with the TWA according to the OSHA lead standard, contained in 29 CFR 1926.62 and the OSHA cadmium standard, contained in 29 CFR 1926.1127. Lead and cadmium air samples will be analyzed by a laboratory accredited by the American Industrial Hygienists Association according to National Institute for Occupational Safety and Health Method 7300, "Elements by ICP" analysis.

Air Sampling Frequency

Baseline data will be collected during the initial 2 weeks of each new remedial operation. Two personnel breathing zone air samples will be collected each week at the selected operations, with one sample collected from an equipment operator and one collected from ground personnel at each selected operation. A maximum of 8 personnel breathing zone air samples will be analyzed for lead and cadmium.

Following each baseline data collection period, the air sampling frequency for all operations will be reduced to one sampling event (four total samples composed of two operator and tow ground personnel samples from selected operations), each month for at least 2 months. Air sampling will be discontinued when two consecutive monthly sampling events reveal all results are below the action level of lead and cadmium.

Personal lead and cadmium exposure monitoring must also be performed on exposed personnel if the dust monitoring action level of 1.0 mg/m^3 for level C upgrade is exceeded after instituting dust control measures.
Additional air sampling will not be required during drilling and groundwater sampling operations.

Air Sample Equipment
Personnel breathing zone air samples will be collected on a cellulose ester membrane filter using an air sample pump.

Sampling Pump Calibration
All air sample trains (pump, tubing, and filter) will be calibrated using a standard traceable to a primary standard. All calibration devices will have a current factory calibration certificate from the manufacturer. All samples will be calibrated to the flow rate specified by the manufacturer.

Air Sampling Results and Recordkeeping
All air sampling results shall be reviewed by the HSM and posted so that employees are notified of their personal exposures within 5 workdays after receiving the results. Air sampling results will be kept by the HSM in log, datasheet, or equivalent format.

Lead Exposure Monitoring and Control Program
For site personnel exposed to airborne lead concentrations in excess of the action level of 0.03 mg/m^3, the following requirements apply:

- Personnel lead air monitoring must continue until two consecutive readings in exposed personnel are below the action level.
- Biological monitoring must be implemented (Blood lead and protoporphyrin [ZPP]).
- Lead hazard communication training must be performed.
- Hand-washing facilities must be made available.
- For site personnel exposed to airborne lead concentration in excess of the permissible exposure level (PEL) of 0.05 mg/m^3 for an 8-hour TWA, the following requirements apply:
    - Personnel lead air monitoring must continue until two consecutive readings in exposed personnel are below the action limit.
    - Biological monitoring must be implemented (Blood lead and ZPP).
    - Lead hazard communication training must be performed.
    - Respiratory protection and protective clothing is required, consistent with Level C protection.
    - Personnel are required to wash hands/face when exiting the EZ and shower daily prior to exiting the site.

Cadmium Exposure Monitoring and Control Program

- For site personnel exposed to airborne cadmium concentrations in excess of the action limit of 2.5 $\mu g/m^3$ for 30 calendar days in a 12-month period, the following requirements apply:
    - Personnel cadmium air monitoring must continue until two consecutive readings in exposed personnel, separated by 7 days, are below the action limit.
    - Biological monitoring must be implemented (blood and urinary cadmium and beta-2 microglobulin in urine).
    - Cadmium hazard communication training must be performed.
    - Respiratory protection and protective clothing is required, consistent with Level C protection.
    - Personnel are required to wash hands/face when exiting the EZ.

Questions on Air Monitoring and Blood Lead Monitoring Programs

Contact the HSM for additional questions on the air monitoring program and/or the lead blood monitoring program.

6.0 DECONTAMINATION

The HSM will establish and monitor the decontamination procedures and their effectiveness. Decontamination procedures found to be ineffective will be modified by the HSM. The HSM must ensure that procedures are established for disposing of materials generated on the site.

6.1 Decontamination Specifications

Table 6.1- Decontamination Specifications

Personnel	Sample Equipment	Heavy Equipment
• Boot wash/rinse • Glove wash/rinse • Outer-glove removal • Body-suit removal • (decontamination of waders if • applicable) • Inner-glove removal • Respirator removal • Hand wash/rinse • Face wash/rinse • Appropriate dispose of PPE in municipal trash, or contain for disposal • Appropriate disposal of • personnel rinse water	• Wash/rinse equipment • Dispose of wash/rinse water at the repository or at sampling site	• Dry decontamination with brushes and orchard sprayers for dust control • When wet decontamination is required, use pressure washers or water cannons • Appropriate disposal of wash/rinse water

All decontamination fluids and PPE must be disposed of at appropriate locations at the end of the day and should not be held or stored in field vehicles or storage facilities.

Personnel will use a boot cleaning station at the contamination reduction zone (CRZ) to manually scrape visible contamination from the sole and sides of boots. This station will include brushes to remove visible chat and mud from the sides and bottoms of work boots. Water may be necessary for proper decontamination of muddy boots. Hand-washing facilities, consisting of disposable towels, will be available at the CRZ and must be used when personnel exit the EZ.

Any vehicle, on-road or off-road haul truck, or heavy equipment with visible chat contamination will be grossly decontaminated by manual scraping, or equivalent, before moving from one EZ to the next EZ (excavation). All equipment that has been only scraped during gross contamination must be loaded on to a trailer and transported to the new EZ. The flatbed of the transport trailer should be swept off after loading the equipment and following unloading the equipment, as well as the standard decontamination of the trailer as appropriate for its next transportation use. Equipment or trucks being removed from the project or moved from EZ to a clean construction zone shall be decontaminated until all visible chat has been removed. This decontamination may require a pressure washer or water cannon. All equipment and truck decontamination must be inspected by a QTEO representative before mobilization. Colorimetric wipe samples for lead may be used to determine the level of decontamination required.

On-road trucks that do not remain on the project site overnight must have their truck beds decontaminated. This decontamination may require a pressure washer or water cannon. All truck beds must be inspected by a QTEO representative before leaving the site.

The contractor/subcontractor shall develop specific decontamination procedures for personnel and equipment leaving the EZ. These procedures shall be detailed in their site-specific HASP that has been accepted by QTEO before execution of the procedures. All personnel leaving the EZ shall exit through the decontamination station and be decontaminated, including washing chemical-resistant boots or removing the outer rubber boot covers of leather boots. All personnel shall exit the EZ and the support zone before eating, drinking, chewing, or smoking.

6.2 Personnel Decontamination Line

No eating, drinking, chewing, or smoking is permitted in contaminated areas and in exclusion or decontamination zones. The HSM should establish areas for eating, drinking, chewing, and smoking.

The construction zone will be designated as a clean buffer zone beyond the CRZ and prior to support zone where standard PPE is still required and clean equipment can reside.

The support zone is beyond the construction zone and will contain a first aid kit with portable eye wash, a receptacle for clean trash disposal, fluids for consumption by workers, and means of transportation to a hospital in the event of an injury/accident. No PPE is required in the designated support zone.

Work zones are to be modified by the HSM to accommodate task-specific requirements.

The area designated as the EZ applies to all soil excavation areas, contaminated sample collection areas, drilling areas, and preparation areas.

7.0 SPILL CONTAINMENT AND SITE CONTROL PROCEDURES

7.1 Spill Containment Procedures

Sorbent material will be maintained in the support zone. Incidental spills will be contained with sorbent and disposed of properly in the repository. For additional information, see Appendix F – Spill Response Plan.

7.2 Site-Control Procedures

Site-control will be implemented with the designation of three zones:

1. Exclusion Zone (EZ)
2. Contamination Reduction Zone (CRZ)
3. Support Zone

Exclusion Zone

The EZ constitutes the place where active investigation and remediation operations take place. Within the EZ, all personnel must wear prescribed levels of protection. The exclusion zone boundary is initially established based upon the presence of actual wastes and is placed around all physical indicators of hazardous substances. The hot line may be redefined based upon subsequent observations, measurements, and tasks. This boundary shall be physically secured and posted or well defined by physical and geographic boundaries.

Under some circumstances, the exclusion zone may be subdivided into zones based upon environmental measurements or expected on-site work conditions.

Contamination Reduction Zone

Between the EZ and the Support Zone is the CRZ. This zone provides an area to prevent or reduce the transfer of hazardous materials, which may have been picked up by personnel or equipment leaving the EZ. All decontamination operations are described in Section 6.0.

Support Zone

The Support Zone is the outermost area of the sites and is considered a non-contaminated or clean area. The support zone contains the command post for field operations, first aid stations, and other investigation and cleanup support. Normal work clothes are appropriate apparel within this zone. Potentially contaminated personnel, clothing, equipment, etc. are not permitted in the support zone.

- The HSM will conduct a site safety briefing (see below) before starting field activities or as tasks and site conditions change.
- Topics for briefing on site safety include general discussion of the H&S Plan, site-specific hazards, location of work zones, PPE requirements, equipment, special procedures, and emergencies.
- Establish support, contamination reduction, and exclusion zones. Delineate with flags or cones as appropriate. Support zone should be upwind of the site. Use access control at entry and exit from each work zone.
- Establish onsite communication consisting of the following:
- Line-of-sight and hand signals
- Air horn
- Two-way radio. Cellular phones alone are not acceptable for communications because of the poor reception/service in the area.
- Establish offsite communication.
- Establish and maintain the "buddy system."
- Initial air monitoring is conducted by the HSM in appropriate level of protection.

- The HSM is to conduct periodic inspections of work practices to evaluate the effectiveness of this plan. Deficiencies are to be noted, reported to the PM, and corrected.

8.0 HAZWOPER COMPLIANCE PLAN

Certain parts of the site work are covered by state or federal HAZWOPER standards and therefore require training and medical monitoring. Anticipated HAZWOPER tasks (**Section 1.2.1**) might occur consecutively or concurrently with respect to non-HAZWOPER tasks. This section outlines procedures to be followed when approved activities specified in **Section 1.2.2** do not require 24- or 40-hour training. Non-HAZWOPER-trained personnel also must be trained in accordance with all other state and federal OSHA requirements.

In many cases, air sampling, in addition to real-time monitoring, must confirm that there is no exposure to gases or vapors or dust exceedances before non-HAZWOPER-trained personnel are allowed on the site, or while non-HAZWOPER-trained personnel are working in proximity to HAZWOPER activities. Other data (e.g., soil samples) also must document that there is no potential for exposure. The HSM must approve the interpretation of these data. Refer to **Sections 2.4** and **5.2** for contaminant data and air sampling requirements, respectively.

When non-HAZWOPER-trained personnel are at risk of exposure, the HSM must post the EZ and inform non-HAZWOPER-trained personnel of the:

- nature of the existing contamination and its locations
- limitations of their access
- emergency action plan for the site

Periodic air monitoring with direct-reading instruments conducted during regulated tasks also should be conducted to ensure that non-HAZWOPER-trained personnel (e.g., in an adjacent area) are not exposed to airborne contaminants.

When exposure is possible, non-HAZWOPER-trained personnel must be removed from the site until it can be demonstrated that there is no longer a potential for exposure to health and safety hazards.

9.0 EMERGENCY RESPONSE PLAN

9.1 Pre-Emergency Planning

The HSM performs the following applicable pre-emergency planning tasks before starting field activities and coordinates emergency response with QTEO onsite parties, and local emergency-service providers as appropriate:

- Review the site emergency and contingency plans where applicable.
- Identify what onsite communication equipment is available (e.g., two-way radio, air horn).
- Monitor "Weather Alert" radio for National Weather Service updates on severe weather.
- Identify what offsite communication equipment is needed (e.g., nearest telephone, cell phone).
- Confirm and post emergency telephone numbers, evacuation routes, assembly areas, and route to hospital; communicate the information to onsite personnel.
- Review changed site conditions, onsite operations, and personnel availability in relation to emergency response procedures.
- Where appropriate and acceptable to the client, inform emergency room and ambulance and emergency response teams of anticipated types of site emergencies.
- Place hospital directions and map inside field vehicles.
- Inventory and check site emergency equipment, supplies, and potable water in field vehicles.
- Communicate emergency procedures for personnel injury, exposures, fires, explosions, and releases.
- Rehearse the emergency response plan before site activities begin, including driving route to hospital.
- Brief new workers on the emergency response plan.

The HSM will evaluate emergency response actions and initiate appropriate follow-up actions.

9.2 Emergency Equipment and Supplies

Table 9.1- Emergency Equipment Locations

Emergency Equipment and Supplies	Location
10 LB fire extinguisher (ABC Classes)	Field Office
5 LB fire extinguisher (ABC Classes)	Field Vehicle
First Aid Kit	Field Office/Field Vehicle
Eye Wash	Field Vehicle
Potable Water	Field Vehicle
Bloodborne-Pathogen Kit	Field Office/Field Vehicle

9.3 Incident Response

In fires, explosions, or chemical releases, actions to be taken include the following:

- Shut down operations and evacuate the immediate work area.
- Notify appropriate response personnel. Contact local fire departments using 911 and, if necessary, the local numbers provided in Procedures for Location of Buried Utilities.
- Account for personnel at the designated assembly area(s).
- Assess the need for site evacuation and evacuate the site as warranted.
- Instead of implementing a work-area evacuation; note that small fires or spills posing minimal safety or health hazards may be controlled. ***For chemical/fuel spills, refer to the Spill Response Plan.***

9.4 Emergency Medical Treatment

The procedures listed below may also be applied to non-emergency incidents. Injuries and illnesses (including overexposure to contaminants) must be reported to the HSM.

- Notify appropriate emergency response authorities (e.g., 911).
- The HSM will assume charge during a medical emergency until the ambulance arrives or until the injured person is admitted to the emergency room.
- Prevent further injury.
- Initiate first aid and CPR where feasible.
- Get medical attention immediately.
- Perform decontamination where feasible; life-saving and first aid or medical treatments take priority.
- Make certain that the injured person is accompanied to the emergency room.
- Report incident as outlined in **Section 9.7**.

9.5 Evacuation

- Evacuation route(s) and assembly area(s) will be designated by the HSM before work begins in the field at each location.
- Personnel will assemble at the assembly area(s) upon hearing the emergency signal for evacuation.
- The HSM and a "buddy" will remain on the site after the site has been evacuated (if safe) to assist local responders and advise them of the nature and location of the incident.
- The HSM will account for all personnel in the onsite assembly area.
- A designated person will account for personnel at alternate assembly area(s).
- The HSM will write up the incident as soon as possible after it occurs (See Appendix D – Incident Report Form [IRF]) and submit a report to the Project Manager.

9.6 Evacuation Signals

Table 9.2- Evacuation Signals

Signal	Meaning
Grasping throat with hand	Emergency-help me.
Thumbs up	OK; understood.
Grasping buddy's wrist	Leave area now.
Continuous sounding of horn (severe weather)	Emergency; leave site now. Find shelter.

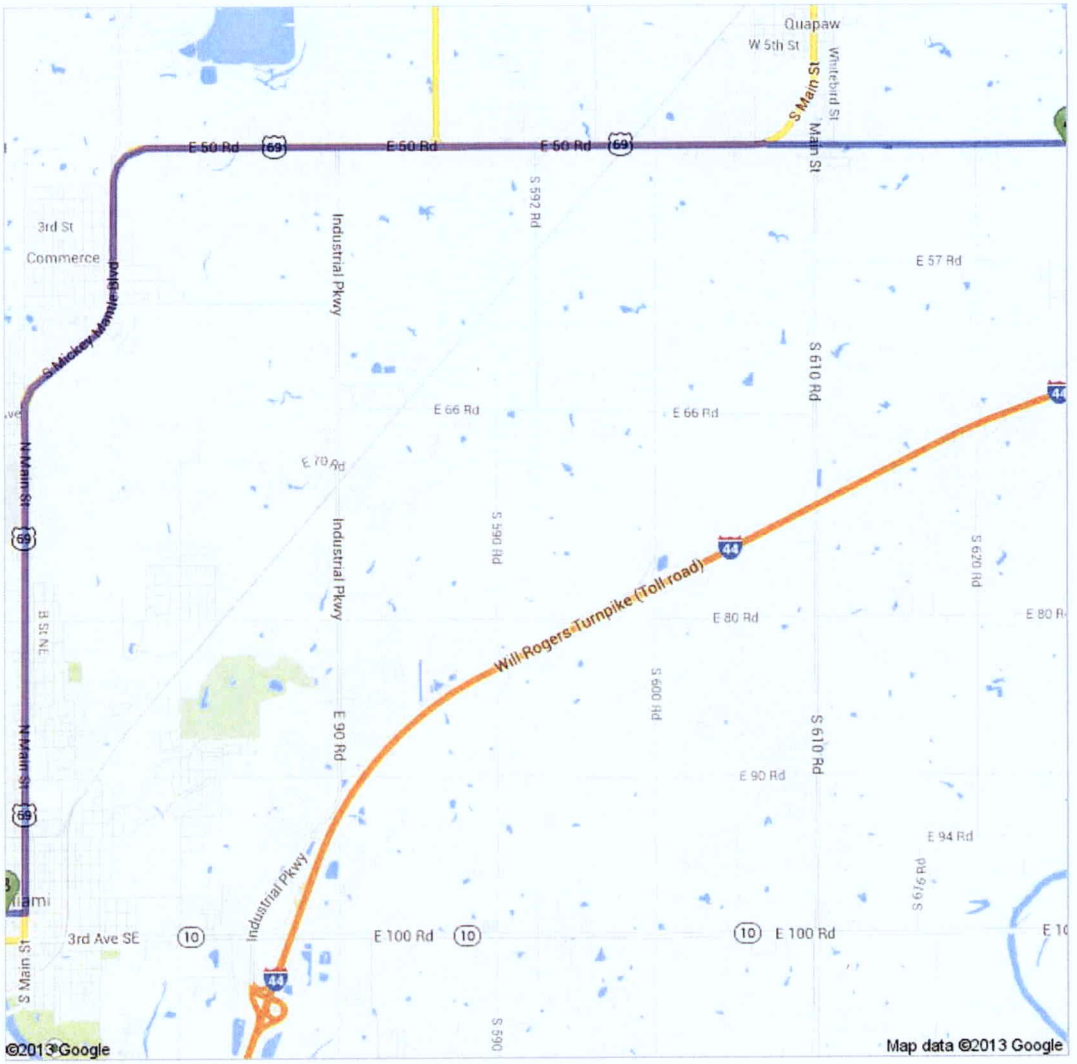
9.7 Incident Notification and Reporting

- Incident investigations shall be performed for all QTEO contractor/subcontractor incidents involving:
- Person injuries/illnesses
- Equipment/property damage
- Spills, leaks, regulatory violations
- Motor vehicle accidents
- If you are injured at work, notify your supervisor immediately.
- All supervisors must complete an employee injury/illness report.
- Immediately notify the Project Manager, Emergency Response Coordinator (ERC), and/or HSM for any project incident (fire, spill/release, injury/illness, near miss, property damage, or security-related).
- Report any **serious incidents** (life-threatening injury/illness, death, kidnap/missing person, terrorism, property damage greater than $500K, significant environmental release) **immediately** notify your ERC, PM, or HSM.
- For contractor/subcontractor incidents, immediately notify the ERC and HSM to complete and submit an incident report form.
- The HSM will inform the Responsible Environmental Manager of any environmental incidents.
- Evaluation and follow-up with the IRF (Appendix D) will be completed by the HSM or Responsible Environmental Manager.
- Incident investigations must be initiated and completed as soon as possible but no later than 72 hours after the incident.

Figure 9.1- Hospital Route

Google

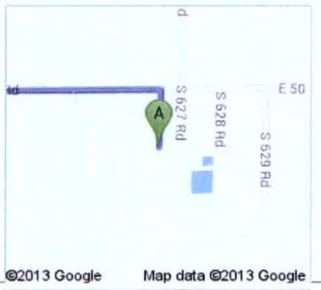
Directions to Hospital
B St SW
11.2 mi – about 18 mins



https://maps.google.com/local?q=from:36.9397382081,+-94.7593016527+(Catholic+40)+to:36.8725812636,+-94.8799789868+(Hospital)&sll=36.8974,-94.7875&... 1/3

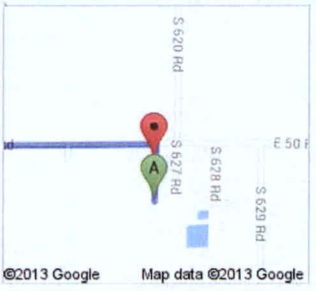
Figure 9.1- Hospital Route (continued)

Catholic 40
Unknown road



1. Head **north** toward **E 50 Rd** — **go 0.1 mi** total 0.1 mi

2. Turn left onto **E 50 Rd** — **go 1.9 mi** total 2.0 mi
About 4 mins



3. Turn left onto **US-69 Alt S/E 50 Rd** — **go 3.9 mi** total 5.9 mi
Continue to follow E 50 Rd
About 5 mins

4. Continue onto **US-69 S/N Park Cir** — **go 5.1 mi** total 11.1 mi
Continue to follow US-69 S
About 8 mins

Figure 9.1- Hospital Route (continued)

8/7/13 Catholic 40 to Hospital - Google Maps

5. Turn right onto 1st Ave SW — go 0.1 mi, total 11.2 mi

6. Turn left onto B St SW — go 299 ft, total 11.2 mi
Destination will be on the right

B Hospital
B St SW

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2013 Google

Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.

https://maps.google.com/local?q=from:36.8397362061,+-94.7583016527+(Catholic+40)+to:36.8725812636,+-94.8799788868+(Hospital)&all=36.8974,-94.7875&... 3/3

10.0 BEHAVIOR BASED SAFETY

Behavior Based Safety (BBS) processes have four major components: 1) investigation of the antecedents to at-risk behavior, 2) the observation process, 3) action plans to influence at-risk behaviors and conditions, and 4) feedback. BBS gives an avenue for employee involvement and a systematic approach to identify and correct behaviors and conditions that lead to employee injuries. Analyzing hazards is built into the BBS process. Hazards are being analyzed during each observation and the worker observed receives immediate feedback on how to minimize the risk.

Job Hazard Analysis
Personnel who are deemed to be working closest to the risk generate these documents. Information derived from these documents will assist in determining hazards on a "task to task; step by step" basis.

Safe Behavior Observations
Conducted by the HSM, these observations of specific work tasks will be compared to the established safe work procedures identified in the project-specific HASP and Job Hazard Analysis. These observations are to be used by supervisors to provide positive reinforcement for work practices performed safely, while also identifying deviations from safe work practices.

Incident Reports
Information extracted from observations will indicate behaviors that have placed employees at risk for injury in the past. Review of these behaviors will often result in more than one critical behavior contributing to an injury or incident.

The HSM is responsible for implementing BBS processes.

10.1 Job Hazard Analysis

A Job Hazard Analysis (JHA) defines the activity being performed, the hazards posed, and control measures required to perform the work safely. Workers are briefed on the JHA before doing the work and their input is solicited before, during, and after the performance of work to further identify the hazards posed and control measures required.

JHAs will be prepared before beginning each project activity posing hazards to project personnel, using the JHA form provided in Appendix D. The JHA shall identify the work tasks required to perform each activity, along with potential hazards and recommended control measures for each work task.

The project specific and general hazards sections (**Sections 2.1 and 2.2**, respectively) of this HASP and the Hazard Analysis Table (Table 1) should be used as a basis for preparing JHAs.

Contractor/subcontractors are required to provide JHAs specific to their scope of work on the project for acceptance by QTEO. Each contractor/subcontractor shall submit JHAs for their field activities, as defined in their work plan/scope of work, along with their project-specific HASP.

10.2 Safe Behavior Observations (SBOs)

SBOs shall be conducted by the HSM for specific work tasks or operations comparing the actual work process against established safe work procedures identified in this project-specific HASP and JHAs. SBOs are to be used by supervisors to provide positive reinforcement for work practices performed correctly, while also identifying and eliminating deviations from safe work procedures. The HSM shall perform SBOs for tasks/operations addressed in this project-specific HASP or JHA using the SBO form found in Appendix D.

10.3 Incident Reports

Incident investigations shall be performed for the all QTEO and contractor/subcontractor incidents involving:

- Person injuries/illnesses
- Equipment/property damage
- Spills, leaks, regulatory violations
- Motor vehicle accidents

The following is the incident investigation process:

- Gather all relevant facts, focusing on fact-finding, not fault-finding, while answering the who, what, when, where, and how questions.
- HSM should complete
- Draw conclusions, putting facts together into a probable scenario.
- Identify incident root cause(s), which are basic causes on why an unsafe act/condition existed.
- Develop and implement solutions, matching all identified root causes with solutions.
- Communicate incident as a lesson learned to all project personnel.

******

Health and Safety Plan History
Version / Revision Date / Revision Reason
Version 1.0 10/01/2013 Plan approved / implemented

Appendix A

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Acknowledgement Statement

[See Attached]

Acknowledgement Statement

QTEO personnel have the authority to stop work performed by our contractor/subcontractors if any work is not performed in accordance with the requirements of this Site Safety Plan.

All ECCI project personnel are required to sign the following acknowledgment prior to conducting work at the site.

I have read and fully understand the Health and Safety Plan and my individual responsibilities.

Name	Signature	Company	Date
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Name	Signature	Company	Date

*If contractor/subcontractors are directly subcontracted by QTEO, all contractor/subcontractor personnel are also required to sign the acknowledgment statement.

Appendix B

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Chemical-Specific Training Form

[See Attached]

Chemical-Specific Training Form

Location:	Project Name/Number:
Trainer:	

Training Participants:

Name	Signature	Name	Signature

Regulated Products/Tasks Covered by This Training:

The HSM shall use the product MSDS to provide the following information concerning each of the products listed on the previous page.

- Physical and Health Hazards
- Control measures that can be used to provide protection (including appropriate work practices, emergency procedures, and personal protective equipment to be used)
- Methods and observations used to detect the presence or release of the regulated product in the workplace (including periodic monitoring, continuous monitoring devices, visual appearance or odor of regulated product when being released, etc.)
- Training participants shall have the opportunity to ask questions concerning these products and, upon completion of this training, will understand the product hazards and appropriate control measures available for their protection. Copies of MSDSs, chemical inventories, and the HASP shall be made available for employee review in the facility/project hazard communication file.

Appendix C

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Contractor/Subcontractor Safety Criteria

[See Attached]

Contractor/subcontractor Safety Criteria

The following criteria are not intended to be all-inclusive but are provided as a tool to facilitate development and review of contractor/subcontractor Health and Safety procedures. Contractor/subcontractors are expected to address the following items in their safety procedures for applicable activities.

Cadmium

1. Provide the name and qualifications of the "competent person" responsible for cadmium operations (for example, years of experience, training, certification, etc.).
2. Provide the training records for personnel involved in operations in which there is a potential or known exposure to cadmium above the Action Level.
3. Provide medical surveillance approvals for individuals exposed to cadmium above the permissible exposure limit. Also, provide medical approval for individuals required to wear negative pressure respirators.
4. Provide information pertaining to the development of an exposure assessment. The information should include the basis of sampling for compliance with the Cadmium Standard.
5. Provide background information when a negative exposure assessment is used.
6. Describe control methods to be used to minimize exposure to cadmium.
7. Provide a written compliance program addressing the following topics:

    - A description of each activity in which cadmium is emitted
    - A description of the specific means that will be employed to achieve compliance, such as engineering plans
    - A report of the technology considered in meeting the PEL
    - Air-monitoring data that documents the source of cadmium emissions
    - A detailed schedule of implementation of the program, such as purchase order and construction contracts
    - A work practice program
    - An administrative control schedule
    - A description of arrangements to share information among contractors onsite pertaining to exposures to cadmium
    - Any other relevant information

8. Provide a copy of a written emergency plan dealing with accidental releases of cadmium.
9. Provide a copy of a written respiratory protection program, if it is anticipated that respirators will be used, in conjunction with engineering and work practice controls to maintain employee exposure to cadmium below the PEL.
10. Describe methods used to recycle or dispose cadmium-containing waste.

Drilling

1. Provide name and qualifications of the drilling "competent person" responsible for drilling (years and type of experience, training background, etc.).
2. Describe drill rig and equipment inspection criteria or procedures (frequency of inspections, visual vs. written inspections, items that are inspected).
3. Describe methods of identifying underground utilities (contacting utility companies, detection equipment).
4. Describe methods of avoiding contact with overhead power lines (de-energizing and grounding, insulating, safe clearance distances).
5. Describe methods to identify hazardous atmospheres and controls used to eliminate (detection equipment and controls).
6. Describe leveling and stabilizing methods for drill rig (drilling pad, jacks, cribbing, guy wires).
7. Verify that rig equipment is in good operational condition (including "kill" switch, cathead, ropes, pressurized hoses and lines, operator controls, machine guards, and drilling tools).
8. Describe procedures for operating in inclement weather, including lightning, high winds, severe rain storms.
9. Describe other safe work practices for equipment operation (drill rig, equipment, tools, rig transportation, rig travel).
10. Describe on-the-job maintenance procedures, including lockout/tagout.
11. Describe safe work practices for other activities to be performed during this project (use of ladders, fall protection, use of electrical power tools, use of personal protective equipment, etc.).
12. Describe methods for disposal of non-hazardous drill cuttings and purge water (including accumulation, transport, and disposal).

13. Provide documentation of hazardous waste worker training and medical surveillance records for all project personnel (40-hour or 24-hour training, 8-hour refresher training) and describe methods of hazardous waste management (including accumulation, transport, and disposal).
14. Submit a copy of drilling license/certification and drill rig permit.
15. Describe methods and responsibilities for submittal of notifications and logs.
16. Describe methods used to recycle or dispose of waste for each proposed transport and disposal facility.
17. Describe procedures for drilling site clean-up upon job completion.

1. If drilling in areas with known or potential Munitions and Explosives of Concern (MEC) hazards:

18. Provide documentation of UXO qualifications, hazardous waste worker training, medical surveillance records, and drug testing for all project personnel (Technical EOD/UXO training certificate, 40-hour or 24-hour training, 8-hour refresher training).
19. Describe procedures for MEC avoidance, identification and marking the boundaries of a clear approach path and work site for the sampling crews, vehicles, and equipment to enter the site.
20. Describe the procedures for drilling and monitoring, and the process for encountered MEC.

Earthmoving Equipment

1. Provide name and qualifications of the "competent person" responsible for earthmoving equipment (years and type of experience, training background, etc.).
2. Provide qualifications of equipment operators (years and type of experience, training background, etc.).
3. Describe earthmoving equipment and associated component inspection criteria or procedures (frequency of inspections, visual vs. written inspections, items that are inspected).
4. Describe methods of identifying underground utilities (contacting utility companies, detection equipment).
5. Describe methods of avoiding contact with overhead power lines: (de-energizing and grounding, insulating, safe clearance distances).
6. Describe methods of avoiding "on-foot" traffic and other safe operating procedures (backup alarms, horns, spotters, high-visibility vests, safe operating speed and slope, etc.).
7. Describe methods to identify hazardous atmospheres and controls (detection equipment and controls).
8. Verify that earthmoving equipment is in good operating condition (including seat belts, rollover protective systems, braking system, lights, cab glass, pressurized hoses and lines, operator controls, machine guards, and accessories).
9. Describe on-the-job maintenance procedures (including lockout/tagout, blocking, cribbing, etc.).

Excavations

1. Provide name and qualifications of the "competent person" responsible for excavation activities (for example, years and type of experience, training background).
2. Describe excavation and protective system inspection criteria or procedures (for example, frequency of inspections—daily, as needed throughout day, after rain; visual versus written inspections, items that are inspected).
3. Describe methods of identifying underground utilities (for example, contacting utility companies, detection equipment).
4. Describe specific method(s) of cave-in protection to be used on project (for example, sloping, benching, shoring, shielding).
5. Describe option(s) that will be used for protective systems determination (for example, soil classification, tabulated data, other data, and registered professional engineer design).
6. Describe methods used to identify hazardous atmospheres and controls (for example, detection equipment, ventilation, respiratory protection, rescue equipment).
7. Describe methods used to prevent water accumulation (for example, water removal equipment, special support systems, harnesses and lifelines).
8. Describe methods used to protect workers from material falling into the excavation (for example, remove or support objects, keep material 2 feet (61 cm) back from edge of excavation, or keep workers off slopes).
9. Describe methods used to support adjacent structures near excavations (for example, shoring, bracing, or underpinning).
10. Provide summary of equipment that will be needed to perform excavation safely and verify that equipment is in good operational condition (for example, excavation digging equipment, shoring and shielding materials).

Fall Protection

1. Provide the name and qualifications (years and type of experience, training background, knowledge of OSHA fall protection standard, etc.) of the "competent person" responsible for direction of fall protection activities.

2. Provide the name and qualifications (years and type of experience, training background, etc.) of the "qualified person" responsible for design, installation, and use of horizontal lifelines, when such lifelines are needed.
3. Provide the qualifications (years and type of experience, training background, etc.) of personnel assembling or using fall protection systems.
4. Provide a list of work areas and activities where fall hazards of 6 feet or greater may be encountered on this project.
5. Provide the specific fall protection system(s) (guardrails, safety nets, personal fall arrest systems, positioning devices, warning line, controlled access zone, safety monitoring, and fall protection plan) to be used for each work area and activity.
6. Provide a description of how each fall protection system will be implemented during each phase of the work activities.
7. Provide a description of the components and minimum construction criteria for fall protection systems (guardrail: wood, pipe, steel, or wire, dimensions, height, spacing, strength; safety net: configuration, strength, testing; personal fall arrest: full body harness, lanyards, horizontal or vertical lifelines, anchorages, configuration, strength, limitations; etc.).
8. Provide safe work practice guidelines on use and limitations for each type of fall protection system to be used.
9. Provide a description of fall-protection inspection criteria or procedures (frequency of inspections per work shift, as needed throughout day; visual versus written inspections; items that are inspected).
11. Provide a description of methods to be used to protect personnel from falling objects from elevated surfaces (toeboards, screens, canopies, barricading area below).

Forklifts

1. Provide name and qualifications of the "competent person" responsible for forklift activities (years and type of experience, training background, etc.).
2. Provide qualifications of forklift operators (certifications, years and type of experience, training background, etc.).
3. Describe means to ensure that only properly classified forklifts are used in hazardous locations.
4. Describe methods to identify hazardous atmospheres and controls (detection equipment and controls).
5. Verify that forklifts are in good operating condition and that any additional components and attachments are approved for use by the forklift manufacturer.
6. Describe forklift and associated component inspection criteria or procedures (frequency of inspections, visual vs. written inspections, items that are inspected).
7. Describe methods of avoiding "on-foot" traffic and other safe operating procedures (backup alarms, horns, spotters, high-visibility vests, safe operating speed and slope, etc.).
8. Describe methods for ensuring safe loading/unloading procedures of trucks/trailers.
9. Describe methods for ensuring safe fueling and battery change-out practices, and designated locations.
10. Describe on-the-job maintenance procedures (including lockout/tagout, blocking, cribbing, etc.).

Hand and Power Tools

1. Describe the method of training and qualifying personnel in the use of powder-actuated tools if such tools are to be used on the project.
2. Provide safe work practice guidelines on use and limitations for the types of hand and power tools to be used.
3. Provide a list of the types, work areas, and activities where special hand and power tools will be used.
4. Describe plans for the inspection of hand and power tools prior to introducing such tools to the work environment (i.e., tools brought on site by equipment rental vendors, home office storage facilities/yards, new purchases, employee supplied, etc.).
5. Provide a description of hand and power tool inspection criteria or procedures (frequency of inspections and items that are inspected).

Hearing Conservation

1. Provide a copy of safe work practices associated with high noise levels.
2. Provide a copy of the hearing conservation program.
3. Provide list of work areas and activities that will occur for which employees will be exposed to high noise levels.
4. Provide the manner of the sampling strategy to document employee exposure to noise.
5. Provide copies of most recent completed baseline/annual audiograms.
6. Provide copies of completed noise level training.
7. Provide the type, make, and NRR ratings of hearing protectors to be utilized on the project.

Lead

1. Provide the name and qualifications of the "competent person" responsible for all lead operations.
2. Provide the training records for personnel involved in operations where there is a potential or known exposure to lead above the action level.
3. Describe methods of identifying areas where lead may exist.
4. Describe methods of testing for lead content of painted or coated surfaces where welding, burning, cutting, grinding, brazing, sandblasting, or other abrasive operations will take place.
5. Provide medical surveillance approvals for individuals exposed to lead above the permissible exposure limit. Also provide medical approval for individuals required to wear negative pressure respirators.
6. Provide information pertaining to the development of an exposure assessment. The information should include the basis of sampling for compliance with the Lead Standard.
7. Provide background information when a negative exposure assessment is utilized.
8. Provide control methods utilized to minimize exposure to lead.
9. Provide a site-specific written compliance program addressing the following topics: Description of each activity in which lead is emitted; a description of the specific means that will be employed to achieve compliance such as engineering plans; a report of the technology considered in meeting the PEL; air monitoring data that documents the source of lead emissions; a detailed schedule of implementation of the program such as purchase order and construction contracts; a work practice program; an administrative control schedule; a description of arrangements to share information among contractors onsite pertaining to exposures to lead; and any other relevant information.

Uses and Occurrences

Lead can be found in the following: construction materials for tank linings and piping; component of lead-acid storage batteries; lead solder; plastics; steel; and pigments for paints. Lead can also be found in waste rock associated with mining activities, wood debris or stock used for electrical co-generation activities, and soil and waste associated with manufacturing activities. Elevated levels of naturally occurring lead may also be found in the soil in certain parts of this country.

Physical Characteristics

Appearance: Bluish-white, slivery, gray metal. Very soft and easily malleable
Odor: None
Flammable: Noncombustible
Flash Point: Not Applicable
Flammable Range: Not Applicable
Specific gravity: 11.35
Stability: very stable
Incompatibilities: hot nitric acid, boiling concentrated hydrochloric and sulfuric acids
Melting Point: 327°C

Signs and Symptoms of Exposure

Skin and Eye: Irritation
Ingestion and Inhalation (Acute Overexposure): Lead is a potent, systemic poison that serves no known useful function once absorbed by your body. Taken in large enough doses, lead can kill you in a matter of days. A condition affecting the brain called acute encephalopathy may arise that develops quickly to seizures, coma, and death from cardio-respiratory arrest. A short term dose of lead can lead to acute encephalopathy. Short term occupational exposures of this magnitude are highly unusual, but not impossible. Similar forms of encephalopathy may, however, arise from extended, chronic exposure to lower doses of lead. There is no sharp dividing line between rapidly developing acute effects of lead, and chronic effects that take longer to acquire. Lead adversely affects numerous body systems, and causes forms of health impairment and disease that arise after periods of exposure as short as days or as long as several years.
Ingestion and Inhalation (Chronic Overexposure): Chronic overexposure to lead may result in severe damage to your blood-forming, nervous, urinary and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity and colic. In lead colic, there may be severe abdominal pain.

Modes of Exposure

Inhalation: Dusts and fumes Skin Absorption: None Ingestion: Dusts and solids

Exposure Limits

Action level 0.03 mg/m3 PEL 0.05 mg/m3 STEL None
PEL-C None TLV 0.05 mg/m3

EXPOSURE LEVEL (EL)	REGULATORY REQUIREMENTS
EL less than Action Level (AL)	Maintain exposure as low as reasonably achievable
EL greater than AL and less than PEL	Implement portions of the OSHA Lead Standard (i.e., initial medical monitoring) and Training
EL greater than PEL	Implement all portions of the OSHA Lead Standard including training, medical surveillance, engineering controls, establishment of work areas, etc.

PPE

Eye: Safety Glasses
Skin: Coveralls or disposable coveralls to keep lead off clothing and to prevent the spread of lead contamination.
Respiratory: Air purifying respirators and supplied air respirators, depending on the exposure.

First Aid

Inhalation: Move to fresh air, contact a physician
Skin: Wash with water
Eyes: Flush with water
Ingestion: Contact a physician

Respiratory Protection

1. Provide name and qualifications of the "program administrator" responsible for overseeing your respiratory protection program (years and type of experience, training background, etc.).
2. Describe training requirements for respirator users.
3. Describe medical evaluation requirements for respirator users.
4. Describe fit testing requirements for respirator users.
5. Describe methods used in the respirator selection process, such as estimating exposure level. Provide types of respiratory protection to be used, in known.
6. If air-purifying respirators will be used for protection against gases, or vapors, or both, describe methods used to determine cartridge or canister change-out schedules.
7. Describe respirator procedures to include respirator use, inspection, cleaning and disinfecting, storage, and repair.
8. If atmosphere-supplying respirators will be used, describe methods used in providing and maintaining Grade D breathing air.
9. Describe methods to be used to evaluate the effectiveness of your respiratory protection program on this project.

Rigging Inspection Logs for Wire Rope, Synthetic Slings and Shackles

1. Provide the qualifications (years and type of experience, training background, etc.) of personnel designated rigging competent person.
2. Provide a description of rigging inspection criteria or procedures (frequency of inspections, documentation, items that are inspected).
3. Provide a list of work areas and activities where rigging will be performed.
4. Describe safe work practice guidelines on in use and the limitations for each type of rigging to be used.

Stairways and Ladders

1. Provide name and qualifications (years of experience, training background, etc.) of the "competent person" responsible for inspection and use of stairways and ladders.
2. Describe ladder inspection criteria or procedures (frequency of inspections per work shift, as needed throughout day; visual versus written inspections; items that are inspected).

3. Describe the methods used to inform personnel that ladders are damaged or otherwise unsafe for use (tags, verbal notification, out-of-service notice).
4. Provide a list of work areas and activities where stairway and ladder usage is anticipated on this project.
5. Describe the types of ladders (extension, portable, step, fixed, etc.) to be used.
6. Describe the safe work practices for positioning, climbing, and working from stairways and ladders.
7. Describe the safe work practices for alternate means of providing access and egress to work areas (aerial lifts, scaffolds, fall protection, etc.).
8. Describe the anticipated activities and methods of using fall protection in conjunction with stairways and ladders, as needed.
9. If job-made ladders will be used, describe specifications and industry standards (OSHA, ANSI, etc.) used in their construction.

Traffic Control

1. Provide the name and qualifications (years and type of experience, training background, state certification, etc.) of the individual responsible for designing and supervising traffic control operations.
2. Provide the qualifications (years and type of experience, training background, etc.) of personnel working in traffic control zones as flaggers.
3. Provide a list of work areas and activities where traffic control will be required.
4. Provide an inventory (amount and type) of traffic control devices and equipment to be used for traffic control operations (truck-mounted crash cushion or attenuator vehicles, cone trucks, message boards, arrow boards, signage, channeling devices, barriers, etc.).
5. Provide a copy of the traffic control plan for the traffic control zones anticipated to be required for this project.
6. Provide a copy of an engineering study of the location for which the traffic control plan was developed.
7. Provide a description of traffic control device inspection criteria or procedures (frequency of inspections and items that are inspected).
8. Describe the arrangements to be made with local police or highway patrol to facilitate traffic control device installation and removal.

Welding and Cutting

1. Provide the name and qualifications (years and type of experience, training background, knowledge of OSHA Welding and Cutting standard, etc.) of the "competent person" responsible for direction of welding and cutting activities.
2. Provide the qualifications (years and type of experience, training background, etc.) of personnel using welding and cutting equipment.
3. Provide a list of work areas and activities where welding and cutting will be performed.
4. Describe safe work practices for each type of welding and cutting system to be used.
5. Describe the means by which worker exposure to airborne concentrations of contaminants during welding and cutting operations will be evaluated and controlled (for example, ventilation, air monitoring, respiratory protection).
6. Describe welding and cutting inspection criteria or procedures (frequency of inspections and items that are inspected).
7. Provide a copy of a "hot work permit" to be used on the project for any work involving welding, cutting, brazing, or similar flame or spark producing operation. In lieu of such a permit system, describe alternate control methods for fire prevention and protection.
8. Describe safe work practices for other activities associated with welding and cutting operations to be performed during this project (for example, use of ladders, personal protective equipment, fall protection systems, scaffolding, confined space entry).

Hot Work Permit

CONTRACTOR: _____
Time Hot Work Allowed From _____ To _____ Date: _____
Job Description _____
Location: _____
_____ Floor: _____

Person Doing The Work Must Check Items and Sign Below

Type Of Work
☐ Electric Welding
☐ Red Heading
☐ Powder Gun
☐ Hammering
☐ Gas Welding/Burning
☐ Other _____

☐ Melting Pot
☐ Chiseling
☐ Grinding
☐ Brazing
☐ Soldering
☐ Oxy-Acetylene

Special Instructions

_____

Person Performing the Hot Work

Name: _____

Signature: _____

_____

Approval By

Name: _____

Signature: _____

Alarms Must Be Cut Off	☐ Yes	☐ No
Fire Watch Required	☐ Yes	☐ No
Vapor/Gas Combustion Test Required	☐ Yes	☐ No

OXYGEN: _____

CO : _____

LEL : _____

Initial : _____

	Yes	NA
Hand Fire Extinguisher In Area	☐	☐
Combustible Materials Removed From Area	☐	☐
Combustible Materials Removed From Area below	☐	☐
All Flammable Liquids Removed From Area	☐	☐
All Flammable Gas Shut-Off And Isolated	☐	☐
Welding Screens Positioned Provided	☐	☐
Sheathing Provided Where Needed	☐	☐
Welding Cables And Hoses Out Of Travel Areas Or Secured At Least 2m Overhead	☐	☐
Using PPE as Required:	☐	☐

_____

The Person Performing The Hot Work Must Ensure That:

1. Sparks and molten slugs of metal must be confined to the work area and kept from falling into or entering other areas.
2. When using hand tools for drilling or chipping in hazardous areas, use spark- proof tools or keep tools lubricated with water or other adequate material to reduce risk of sparks.
3. When using air or electric drills in hazardous areas, water or oil must be kept on bit to prevent sparks.
4. When cutting or chipping concrete floor, etc., keep concrete wet.
5. The person doing the work must ensure before leaving the area that there is no danger of a fire being started as a result of the work.
6. Any worker who leaves the jobsite for any reason must check upon return to see that no hazardous conditions have developed during the absence.
7. Permit becomes void if:

    A. Hot work delayed for one hour or more
    B. An emergency alarm sounds for the area
    C. A fire occurs in the area

8. When "Hot Work" job is finished, assure that any fixed fire protection system (such as sprinklers, alarms, smoke detectors, etc.) That were turned off are now returned to operable condition. Coordinate this through the project site safety representative.
9. This tag must be posted at work site then returned to the site safety representative.

Appendix D

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Safe Behavior Observation Form
Job Hazard Analysis Form
Incident Report Form

[See Attached]

Safe Behavior Observation Form			Date:
Project Name:			Observer:
Position/Title of worker observed:			Background Information/comments:
Task Observed:			
• Identify and reinforce safe work practices/behaviors • Identify and improve on at-risk practices/acts • Identify and improve on practices, conditions, controls, and compliance that eliminate or reduce hazards • Proactive PM support facilitates eliminating/reducing hazards (do you have what you need?) • Positive, corrective, cooperative, collaborative feedback/recommendations			
Actions & Behaviors	**Safe**	**At-Risk**	**Observations/Comments**
Current & accurate Pre-Task Planning/Briefing (JHA, etc., as needed)			Positive Observations/Safe Work Practices:
Properly trained/qualified/experienced			
Tools/equipment available and adequate			
Proper use of tools			Questionable Activity/Unsafe Condition Observed:
Barricades/work zone control			
Housekeeping			
Communication			
Work Approach/Habits			
Attitude			
Focus/attentiveness			Observer's Corrective Actions/Comments:
Pace			
Uncomfortable/unsafe position			
Inconvenient/unsafe location			
Position/Line of fire			
Apparel (hair, loose clothing, jewelry)			
Repetitive motion			Observed Worker's Corrective Actions/Comments:
Other…			

Job Hazard Analysis		
Job/Task:		Date: Project:
Description of the work:		Site Supervisor: Health and Safety Manager:
Work Activity Sequence (Identify the principal steps involved and the sequence of work activities)	**Potential Health and Safety Hazards** (Analyze each principal step for potential hazards)	**Hazard Controls** (Develop specific controls for each potential hazard)

Equipment to be used (List equipment)	**Inspection Requirements** (List requirements)	**Training Requirements** (List requirements including hazard communication)

Print Name	**Signature**	
Supervisor Name:_____	_____	Date/Time:_____
HSM:_____	_____	Date/Time:_____
Employee Name:_____	_____	Date/Time:_____
_____	_____	Date/Time:_____
_____	_____	Date/Time:_____
_____	_____	Date/Time:_____
_____	_____	Date/Time:_____
_____	_____	Date/Time:_____
_____	_____	Date/Time:_____
_____	_____	Date/Time:_____
_____	_____	Date/Time:_____
_____	_____	Date/Time:_____
_____	_____	Date/Time:_____
_____	_____	Date/Time:_____

Incident Report Form

Date/Time:_____

Description:

Actions Taken:

Outcome:

Appendix E

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Subcontractor Safety Performance Questionaire

[See Attached]

SUBCONTRACTOR SAFETY PERFORMANCE QUESTIONNAIRE

Project Name: **Project #:**

Project Manager:

Name of Subcontractor: _____

Address of Subcontractor: _____

Contact Name: _____

Phone Number: _____

Standard Industrial Classification (SIC) Code _____

Date: _____

HEALTH AND SAFETY

Please use your OSHA No. 200 logs to record the number of injuries and illnesses for the last three (3) years.

1. YEAR	___	___	___
a. Number of Fatalities	____	____	____
b. Lost Work Day Cases Incident Rate[1]	____	____	____
c. OSHA Recordable Incident Rate[2]	____	____	____
d. Number of Hours Worked	____	____	____
e. Total Number of Employees on Your Payroll	____	____	____

f. Attach a copy of your OSHA No. 200 logs for the last three (3) years.

[1] The following formula is used for calculating the Lost Work Day Incident Rate: = $\frac{\text{Number of Lost Work Day Cases x 200,000}}{\text{Number of Hours Worked}}$

[2] The following formula is used for calculating the OSHA Recordable Incident Rate: = $\frac{\text{Number of Recordable Cases x 200,000}}{\text{Number of Hours Worked}}$

2. List your company's Worker's Compensation (WC) Experience Modification Rate (EMR) for the three (3) mos

recent years:

	Year	Interstate	Intrastate
a.	___	___	___
b.	___	___	___
c.	___	___	___

d. Provide a letter from your WC insurance carrier certifying the above EMRs.

e. If your WC carrier has not issued your company an EMR because you have not accrued enough WC costs, provid a copy of your WC Loss Run (available from your WC carrier).

f. If your current EMR is greater than 1.0, provide a written explanation of the safety methods that are being implemented by your company to reduce this rate.

3. List all activities your company will be performing

_____

_____

_____

4. Has your company received an OSHA (or State OSHA) citation within the last five (5) years?

Yes ___ No ___

If you answered yes above, provide the following information below or on additional sheet if necessary:

a. The number and type of violations?_____

b. The penalties assessed by OSHA?

_____

c. Were the citations contested/vacated?

d. What specific corrective actions were taken to prevent further penalties/injuries?

_____

5. Does your company have a written occupational safety and health program?

Yes ___ No ___ We reserve the right to request copies of your health & safety program.

6a. Does your company conduct field safety inspections to determine compliance with applicable regulations and procedures?

Yes ___ No ___

b. Who conducts these inspections? _____

c. How often are safety inspections conducted? _____

7. Does your company have the following on your staff or on retainer?

	Yes	How Many	Staff	Retainer	No
Occupational Physician*	___	___	___	___	___
Certified Industrial Hygienist	___	___	___	___	___
Certified Safety Professional	___	___	___	___	___
Certified Health Physicist	___	___	___	___	___

* Board Eligible or Board Certified

8. Does your company have an orientation program for new hires? Yes ___ No ___

9. Has your company implemented any of the following training programs?

Yes	No	N/A		Yes	No	N/A	
☐	☐	☐	Asbestos	☐	☐	☐	Hazardous Waste (40-hour)
☐	☐	☐	Blasting/Explosives	☐	☐	☐	Hearing Conservation
☐	☐	☐	Bloodborne Pathogens	☐	☐	☐	Heavy Equipment operation
☐	☐	☐	Confined Space Entry	☐	☐	☐	Laboratory Safety
☐	☐	☐	Construction (OSHA Certified 10 Hours)	☐	☐	☐	Ladder/Scaffolding
☐	☐	☐	Construction (OSHA Certified 30 Hours)	☐	☐	☐	Lead
☐	☐	☐	Cranes Operations	☐	☐	☐	Lockout/Tagout
☐	☐	☐	Electrical Safety	☐	☐	☐	Personal Protective Equipmen
☐	☐	☐	Excavation Competent Person	☐	☐	☐	Powder-actuated Tools
☐	☐	☐	Fall Protection	☐	☐	☐	Process Safety Management
☐	☐	☐	Fire Extinguishers	☐	☐	☐	Radiation Protection
☐	☐	☐	First Aid/CPR	☐	☐	☐	Respiratory Protection
☐	☐	☐	Forklift Operations	☐	☐	☐	Welding/Cutting

10. Does your company have a program in place to discipline workers that perform unsafe work practices? Yes____ No____

11. Does your company have written Accident Investigation Procedures? Yes____ No____

12. Does your company currently maintain a program in compliance with applicable state "Right to Know" laws and the OSHA Hazard Communication Standard? Yes____ No____

13. Does your company currently maintain an Accident Prevention Program in compliance with applicable state OSHA regulations? (Required for Alaska, California, Minnesota, Nevada and North Carolina) Yes____ No____ N/A____

14. Does your company implement a medical surveillance program for employees that work on hazardous waste sites or with hazardous chemicals (i.e., lead, asbestos, benzene, arsenic, formaldehyde, etc.)? Yes____ No____ N/A____

15a. Does your company hold "tailgate/toolbox" safety meetings? Yes____ No____

b. If yes, how often? _____

18. The undersigned warrants and represents the data provided in this document is accurate in all respects.

Name of Firm: _____

Completed by: _____

Signature: _____

Title: _____

Date: _____

Appendix F

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Spill Response Plan

Please refer to the Spill Response Plan for the Tar Creek Superfund Site, Operable Unit No. 4 Remedial Action, SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40), Ottawa County, Oklahoma. Prepared for US EPA by Quapaw Tribe Environmental Office, November 2013.

Spill Response Plan

Spill Response Plan (Version 1.1)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
November 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

Spill Response Plan (SRP)
Version 1.1
DISTRIBUTION LIST

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Copies of this SRP have been distributed to the following people:

Rafael Casanova, P.G. - U.S. EPA, Region 6, Remedial Project Manager

Tim Kent, P.G. - QTEO, Environmental Director / Project Manager

Craig Kreman - QTEO, Quality Assurance Manager

Chris Roper – QSA, Construction Manager

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1.0 DESIGNATED EMERGENCY COORDINATORS

The On-site Health and Safety Manager should be contacted, whenever there is an imminent or actual emergency. This individual has had training in responding to emergency situations. In all emergencies the safety of personnel is the first priority.

1. EMERGENCY COORDINATORS

Name	Role	Telephone Number
Tim Kent	Quapaw Tribe Environmental Office Project Manager	918-533-2592
Robert Rogers	Quapaw Tribe Health and Safety Manager	620-387-9614

2. FIRE DEPARTMENT AND PARAMEDICS: 911
3. CITY OF JOPLIN EMERGENCY MANAGEMENT COORDINATOR (417) 624-0820 ext. 260 – Mr. Keith Stammer
4. OTTAWA COUNTY EMERGENCY MANAGEMENT COORDINATOR (918) 541-9391– Mr. Frank Geasland
5. BUREAU OF INDIAN AFFAIRS MUSKOGEE AREA OFFICE ENVIRONMENTAL SERVICES: (800) 204-0552
6. BUREAU OF INDIAN AFFAIRS MIAMI AGENCY: (918) 542-3396
7. BUREAU OF INDIAN AFFAIRS POLICE: (918) 542-3396
8. OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (Miami Office) (918) 542-0150
9. NATIONAL RESPONSE CENTER (EPA): (800) 424-8802

2.0 INTRODUCTION

This SPILL RESPONSE PLAN describes the steps that must be taken by all personnel to situations at the project site which pose a real or potential threat to human health or the environment. The provisions of this plan must be carried out immediately whenever there is an unplanned sudden or non-sudden release of hazardous chemicals, diesel, gasoline, or oil constituents to air, soil, or water which could threaten human health or the environment. A storm water pollution control plan (SWPP) has also been generated for the project and is applicable during construction. The SWPP is under a separate cover but also has spill prevention and countermeasure procedures.

3.0 SPILL PREVENTION, CONTROL AND COUNTERMEASURES

Under the Emergency Planning and Community Right-to-Know Act (EPCRA), Congress designated 360 "extremely hazardous substances" that require the reporting of releases to state and local authorities. The reportable quantities (RQs) for the extremely hazardous substances are based on the substance's acute lethal toxicity. The Comprehensive Environmental Response Compensation and Liability Act (CERCLA), also known as the Superfund Law, contains a list of "CERCLA hazardous substances" which also have reportable spill quantities.

The Environmental Protection Agency (EPA) prepared an Oil Pollution Prevention Regulation (OPPR) and published it in Volume 38, Number 237, of the Federal Register on December 11, 1973. This regulation addresses non-transportation related facilities and is further explained in Title 40, Code of Regulations (CFR), Part 112.

Note: All handling, storage, and disposal of solid and liquid waste (including hazardous substances) shall conform to Quapaw Code Title 15, specifically, the Solid Waste Code and the Toxic and Hazardous Substance Control Code.

3.1 Responsibilities

Quapaw Tribal Environmental Office (QTEO)
QTEO is responsible for acting as reserve primary responders to the spill response team. If necessary, QTEO will provide on-site response support, including personnel and equipment if available. QTEO also is responsible for

making the determination whether additional assistance is necessary, such as from the State or BIA Hazardous Materials (HAZMAT) Team. If a release occurs, the QTEO is responsible for notifying the appropriate agencies if necessary.

On-Site Health and Safety Manager (HSM)
The HSM is responsible for overseeing activities related to safety and emergency response on site, including chemical product storage and the overall safety aspects of daily operations. The HSM will review vendor standard operating procedures for drivers when they arrive on site. The HSM is also responsible for ensuring the employees on site are routinely trained on the proper procedures for responding to potential spills. During an incident, the HSM is responsible for notifying QTEO. The HSM will respond according to the pre-approved Spill Response Plan and any related standard operating procedures.

3.2 Site Description
Site Overview: The Catholic 40 site is located North of 57 Road and South of 50 Road, 2 miles southeast of Quapaw, Oklahoma. According to the Soil Survey of Ottawa County, Oklahoma, the soil at this site consists of cherty silt loams. Perched groundwater is generally found above bedrock which consists of weathered cherty limestone while the shallow-most permanent aquifer is within Mississippian age formations between 150-300 feet in depth. The surface elevation slopes toward the south and surface water drains into Beaver creek.

3.3 Spill Scenarios and Preventative Measures
If safety will not be compromised, spills or releases should be stopped and contained. If at all possible, stop the source of the spill or release immediately. Close valves, upright containers, shut down pumping, and/or take whatever actions possible to stop the release. Call and/or radio the Site Superintendent and/or the Site Safety Coordinator. If he/she is unavailable, call and/or radio the first alternate. If they are not available, call and/or radio the second alternate. If conditions are hazardous (e.g., fire or potential explosion, etc.) do not approach.

There are many scenarios that may cause a chemical/fuel. The following list of the most likely based on the process and equipment used.

1. Truck driver delivering chemicals crashes into a fixed structure or another vehicle on, or near project site. The accident with the structure or a vehicle punctures the tanker truck and causes the chemical to spill onto the ground. Spill prevention measures include:
    a. HSM, Construction Manager, or Superintendent reviewing the vendor's standard operating procedures for drivers when they arrive at the project site.
    b. Preparing operational procedures for the delivery truck driver to follow upon arriving on project site.
    c. Providing clear access to the transfer area.

2. Chemicals used for cleaning and maintenance are spilled. Spill prevention measures shall include:
    a. Cleaning/maintenance liquids are stored in small containers inside lockable cabinets with secondary containment capability.
    b. Preparing operational procedures for using and transferring liquids.
    c. Liquids absorbent supplies (spill kits) shall be placed in Cleaning/maintenance liquids storage areas in case of spills.
    d. MSDS sheets for all stored liquids shall be placed in the Cleaning/maintenance liquids storage area.

3.4 Recommendations

- Place spill response kits near all chemical storage areas along with copies of all applicable MSDS sheets.
- Prepare standard operating procedures for chemical delivery operations and emergency response team action using spill kits.
- Review and update fuel spill-related operating procedures annually.
- Place emergency response team standard operating procedures with spill kits.
- Conduct quarterly training workshops on spill prevention and response procedures for employees. This training is to include reviewing the SPCC and hands on emergency response drills.

4.0 DEFINITIONS

A **"spill"** is defined as an unexpected release of any material from a container. For operational purposes, spills of hazardous materials will be divided into two levels:

"Small spills" are defined as less than or equal to 5 gallons of non-hazardous material. In some cases, such as those involving "EPCRA Extremely Hazardous Substances" or "CERCLA Hazardous Substances" (a list for each of these types of substances is enclosed in appendix 1), spills less than 500 milliliters will be considered large spills based upon the material spilled. Small spills may, at the discretion of the employees involved, be handled directly by personnel in the immediate area who are familiar with the associated hazards.

"Major spills" are defined as greater than the "reportable quantity" of any "EPCRA Extremely Hazardous Substance" or "CERCLA Hazardous Substance". Major spills must be reported to the Emergency Coordinator so that emergency assistance will be available if needed. Employees should leave the immediate area until assistance arrives.

A **"leak"** is a release from a container via a puncture or other small opening of a weak spot in the container. Leaks will be treated as small spills unless they result in a rapid discharge of material.

IN THE EVENT OF A SPILL, use the Chemical Accident checklist included in this plan.

5.0 CHECKLIST – CHEMICAL ACCIDENT

- ☐ Report the spill to the on-site Health and Safety Manager (HSM) who will determine if the spill is "small" or "major".
- ☐ If the HSM is not available, notify your immediate supervisor who will determine whether the spill is "small" or "major" by checking the names of the chemicals on the MSDS against the lists of "EPCRA Extremely Hazardous Substances" and "CERCLA Hazardous Substances." If any of the chemicals spilled are on these lists and the amount spilled is in excess of the "reportable quantities", the spill is major.
- ☐ If the spill is defined as "small," clean up the spill utilizing one of the spill kits, and report the details of the spill to the HSM.
- ☐ If the spill is "major," clear the area and immediately and notify the HSM who will determine whether to remain in place or evacuate. (The nature of the chemical and nearness of the accident will be the deciding factor – only major spills of hazardous substances warrant evacuation procedures). If the HSM is not available, immediately notify your immediate supervisor who will in-turn notify the Construction Manager and the Quapaw Tribe Environmental Office.
- ☐ For major spills that are an immediate threat to human health and safety, notify the Fire Department **911**. Give location and chemical information, if known, and have someone stay on line to give additional information while emergency units are in route.
- ☐ The HSM shall notify the BIA so that the BIA HAZMAT team can be notified to respond.
- ☐ NOTE: Do not attempt to clean up a hazardous chemical spill. The contacted BIA HAZMAT Team will accomplish the clean up.
- ☐ Evacuation of the site may be ordered by the HSM, the Police Department, or the Fire Department.
- ☐ If the decision is made to evacuate the project site:
- ☐ PRIMARY: PROJECT OFFICE
- ☐ SECONDARY: SOUTH ENTRANCE OF PROJECT
- ☐ NOTE: During periods of inclement weather, when evacuations are expected to last for some time, a decision will be made by the HSM to move to an alternate location.
- ☐ Supervisors or managers will report the names of missing employees to the HSM. Those not found will be reported to the Fire Department or Law Enforcement Officials as they arrive.
- ☐ Ask for advice on evacuation if so advised by the HSM, Fire or Police Department.
- ☐ Log activities and decisions.
- ☐ Estimate extent of injuries or potential physical danger with EMS personnel.
- ☐ The HSM will keep a list of hospitalized persons and where employees were evacuated.
- ☐ Upon request by the Quapaw Tribe, the HSM will assist QTEO with media personnel in preparing any fact sheets and/or media statement.
- ☐ Employees will not be allowed to re-enter the project site until the Fire Department or Law Enforcement Officials have declared the area safe.

6.0 SPILL RESPONSE

6.1 Spill or Release Cleanup and Removal

The range of cleanup and removal actions will vary because potential spills or releases can be of widely varied nature. For small spills or releases, cleanup action may be as simple as removing the spilled or released material, containment material, and affected media, and placing them in an approved container(s) for disposal, or it could also be to place the spilled or released material back into the original container (*e.g.*, truck, roll-off, tank, etc.). Such action will begin at the discovery of a spill or release. Spilled or released material, contaminated containment/cleanup material, and contaminated media will be cleaned up and removed as soon as possible. The material will be disposed in accordance with project protocol and/or federal, state, and local laws and regulations. A large spill/release could result in an extensive cleanup of soil and/or water (*e.g.*, surface and/or ground), and may be beyond the capabilities of immediately available resources. If this were to occur, an initial response effort would be initiated, and the situation evaluated to determine further actions.

In the event of a release of source materials or vehicular fluids into the environment, the release will be contained and controlled. Shovels, brooms, and other hand tools, as well as absorbent pads and temporary containers will be maintained at the field office to respond to spills. Any spill or release of source material that occurs during transportation will be addressed as required or approved by federal, state, or local requirements/officials (see the Storm Water Pollution Prevention Plan for more details). Spilled source material will be immediately cleaned up from the outside of trucks, outside of containers, on the ground, and on the road surface. The spilled material will be returned to the original container if undamaged, but in any case the spilled material will be properly contained and disposed.

The EPA has provided approval to dispose of incidental wastes resulting from clean up of small leaks and spills of petroleum products in the course of the Operable Unit 4 Remedial Action implementation in the Central Mill Repository. Disposal of these incidental wastes is limited to 2.0 cubic yards (CY) or less per occurrence. In the event the waste volume exceeds 2.0 CY, the QTEO will obtain the EPA's approval in a case-by-case manner prior to disposal at the Central Mill Repository.

In the event of a spill, DO NOT:

- Leave the spill area unattended unless the chemicals spilled present a clear and immediate health hazard to anyone exposed. Isolate the spill area and do not allow anyone to enter the area.
- Try to clean up a major spill.
- Attempt to stop or contain the spill or release if safety is compromised.
- Handle the material in any way.

6.2 Liquid Spills/Releases

In the event of a liquid (*e.g.*, contaminated water, fuels, oils, etc.) spill or release the following steps should be followed:

- Stop the spill or release at the source, if possible, by closing valves, turning off pumps, plugging leaks, uprighting container(s), etc.
- Build berms; made from soil, sand absorbent materials, etc.; around the spill or release to halt the spread of the material in the smallest possible area.
- Prevent spilled or released material from entering storm drainage systems through drop inlets, curb inlets, culverts, ditches, etc.
- Make every effort to keep the spill or release contained to the area. If the material enters the storm drainage system, attempt to dam the drainage system at a manhole, culvert, or in a ditch, to prevent the continued flow of the material.
- Monitor for runoff until safety personnel arrive at the scene to provide further guidance."

6.3 Solid Spills/Releases

- In the event of a solid (*e.g.*, contaminated soil, etc.) spill or release the following steps should be followed:
- Stop the spill or release at the source, if possible, by plugging holes, uprighting container(s), etc.
- Make every effort to keep the spill/release contained to the area. Prevent migration of spilled or released material. If raining, cover the material to prevent contact with stormwater. If unable to cover, prevent contact stormwater from running off by building berms; made from soil, sand absorbent materials, etc.; around the spilled or released material.
- Monitor for migration or runoff until safety personnel arrive at the scene to provide further guidance.

6.4 Traffic Control at Spill/Release Areas

In the event that traffic is affected due to a spill/release, take precautions to stop or direct traffic around the area until law enforcement arrives. Only allow traffic to travel by the affected area if safety will not be compromised. Stop traffic and reroute onto other streets or roads or other areas, if necessary. If one lane of a two lane road is affected, provide traffic control for one lane of traffic around the spill/release, alternating the traffic direction. Pedestrian traffic may also need to be controlled.

7.0 FIRE/EXPLOSIONS

IN CASE OF ANY FIRE OR EXPLOSION, EVACUATE TO A SAFE AREA.

1. Immediately report all fires by dialing 911 after evacuating to an area where such communication is safe to perform.
2. Give your name, location, telephone number and a brief explanation of the problem.
3. IF THE FIRE CAN BE SAFELY FOUGHT WITH A PORTABLE EXTINGUISHER, DO SO. IF IN DOUBT, LEAVE THE AREA IMMEDIATELY.
4. When leaving the area, proceed directly to the pre-designated emergency meeting area.
5. Upon arrival, the Fire Captain at the scene becomes the incident commander and has total control of the situation whenever a fire or explosion occurs, or at other times when Fire Department assistance may be required.
6. After the situation is contained, the area must be carefully checked for other hazards, cleaned and decontaminated. All hazards relating to the incident will be removed before personnel are allowed to reenter the area. Do not reenter the area until instructed it is safe to do so by either the on-scene incident commander or the emergency coordinator.
7. If you have not already done so, report the incident to QTEO.

8.0 REPORTING REQUIREMENTS

All responses to incidents will be recorded in an incident report. This report will contain a critique of the response to the incident and possible methods of preventing the incident in the future. If the spill is "major" (above a CERCLA or EPCRA "reportable quantity"), report the spill accordingly.

In the event of a major spill of a hazardous substance, personnel should call the HSM, 911, and the Ottawa County Emergency Coordinator immediately.

The HSM should:

- Make certain all personnel in the area are aware of the emergency and are removed to a safe location.
- Notify BIA or Oklahoma DEQ for additional assistance, if needed.
- Identify the nature and extent of the spilled or released material, specifically whether the spill is "major" or "small."
- Assess possible danger to human health and the environment. If none exists, proceed with containment, cleanup and decontamination.

If the assessment indicates that evacuation of local area may be advisable, HSM should:

- Notify BIA Police and local police departments as to the nature and extent of the incident.
- Assist in determining the necessary evacuation perimeter.
- Immediately notify the Oklahoma Department of Environmental Quality if the incident exposes individuals which are not solely within the boundaries of Quapaw Tribal lands.
- Ensure proper notification of all parties.

NOTE: Any spill of a reportable quantity of an "EPCRA Extremely Hazardous Substance" or "CERCLA Hazardous Substance" should be reported in writing within 15 days to the ODEQ and the Regional Administrator of the EPA.

The report must include:

- Name, address, and phone number of the owner or operator and of the facility
- the names of the parties/entities contacted
- Date, time, and type of incident
- the location, source and cause of the spill or release
- Name and quantity of material(s) involved and whether the material is hazardous or non-hazardous
- description of the affected area(s) and affected media (*e.g.*, soil, surface water, concrete, asphalt, etc.)
- The extent of injuries, if any
- An assessment of actual or potential hazards to human health or the environment, where applicable
- Any corrected actions taken
- estimated quantity and disposition of recovered material that resulted from the incident
- Steps taken to prevent a recurrence of the incident
- Any changes required in the contingency plan
- whether evacuation was necessary

9.0 SPILL PREVENTION

The primary activities that may result in a spill include vehicle fueling and management of source material. Spill prevention practices for these activities include the following practices:

- Fueling — Vehicles will be fueled and serviced prior to moving onto the site. Only mobile refuelers will be used at the site. Onsite fueling of equipment will be conducted within a designated and controlled area located away from drainage courses to prevent migration of spills. Use of drip pans or absorbent pads will be required during mobile refueling activities to capture minor spills. No bulk quantities of fuel will be stored onsite unless approved by the QTEO.
- Material Transfer — Source material transfer operations will only be conducted in areas predesignated for these activities. Spill equipment will be available at these areas for the cleanup of source material spilled outside of these designated areas.
- Source Material Handling — Source material will be properly contained for transport. As such, source material will be placed into dump trucks and covered securely with a tarpaulin prior to transport. Haul trucks will be inspected to ensure they are clean, have no holes, do not leak fuel or oil, have properly operating tailgates, are serviceable, and are weighed empty prior to use.

10.0 TRAINING

All employees shall be trained to respond to chemical spills. This training shall be incorporated into the required quarterly safety training sessions. Training shall be conducted by the HSM or QTEO's Environmental Director. Training shall include, but not be limited to:

- Types and quantities of chemicals utilized at the project site;
- Location and proper storage of chemicals utilized at the project site;
- Determination factors of whether a spill is "major" or "minor" and proper responses to each;
- Potential health hazards associated with chemical spills;

- Location and use of spill kits;
- Proper isolation of spill areas;
- Hands-on emergency response drills;
- Reporting procedures and reporting hierarchy;
- Proper storage and disposal of waste material;
- Emergency notification procedures; and
- Appropriate evacuation procedures.

11.0 PLAN REVIEW

With input from Quapaw Tribe and HSM, QTEO will review this plan annually and update as necessary.

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Plan Revision History
Plan Version / Revision Date / Revision Reason
Version 1.0 09/01/2013 Plan drafted
Version 1.1 11/20/2013 Plan approved / implemented

Project Specifications

Project Specifications (Version 1.2)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
December 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

Project Specifications (PS)
Version 1.2
DISTRIBUTION LIST

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

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Appendices

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Appendix D Backfilled Mine Shaft Monitoring Procedures

1.0 TECHNICAL SPECIFICATIONS

The following Subsections provide requirements for the tasks outlined for the Statement of Work (SOW), included within the Work Plan with the Quapaw Tribe's revised Grant Application. Three-Phases of Control meetings shall be completed prior to performing work (See Construction Quality Assurance Plan). Measurement and Payment of Tasks detailed below will be lump sum unless otherwise noted herein and will include all labor, materials, equipment and contractors required to perform each Task.

1.1 TASK 1 - Preparation of Site Specific Plans

QTEO shall prepare and submit the project plans to include: Work Plan and Site Management Plan (within Grant Application), Transportation Plan (TP), Construction Waste Management Plan (QWMP), Construction Quality Assurance Project Plan (QAPP), Spill Response Plan (SRP), Contractor Site Health and Safety Plan (HSP), Disposition Plan (included within Task 5) and other submittals listed in the SOW.

1.2 TASK 2 - Mobilization

QTEO will mobilize all resources necessary to efficiently and completely perform the SOW within the timeframes provided in the baseline schedule. The resources include, but are not limited to, personnel, equipment, materials, supplies, and support facilities (e.g., decontamination facilities, waste containment facilities, electrical power supply, water, etc.) to support the work activities at the Site. will coordinate all traffic control signage installation and coordinate with the Ottawa County Commissioner.

Only Contractor and Subcontractor personnel who are PM approved are allowed on the project site. These personnel shall have submitted required HSP-related and other documentation.

1.3 TASK 3 - Site Preparation

QTEO will conduct site preparation activities, including a pre- construction site survey, protecting and marking of site features that are not designated for removal or disturbance, site clearing, work zone establishment, erosion control, and traffic control. A registered land surveyor, will provide the initial boundaries of the construction areas prior to mobilization. All other surveys to layout, control and complete the work, including site preparation, shall be coordinated by the site superintendent

1.3.1 Pre-Construction Site Survey

QTEO will coordinate the chat disposition determination and when the crews are permitted access to the properties for implementation of the RA activities. QTEO will conduct a survey of the site conditions prior to intrusive earth-moving work. QTEO will use digital photography or videotaping to document existing conditions of site features which may include stream banks, vegetation, wells, shafts, vents, bore-holes, adjacent roads, other on-site structures, and designated haul roads. The site survey shall be conducted prior to but no earlier than ten (10) calendar days before start of intrusive site preparation. The site survey will be used as a reference for site restoration which will return the vegetation, roads, and other site features back to the pre-construction conditions.

QTEO will engage a third party Subcontractor to conduct utility locates to identify utilities in the areas where earth-moving activities may occur and may potentially impact subsurface utilities. The final design drawings shall be complete with dimensions (e.g., length, depths, etc.), type of buried utility, and area covered by utility locate survey.

The Site Layout Map shall include the following information, at a minimum:

- Location of the chat, development rock and/ or waste material to be removed.
- Site Ingress/egress along the temporary southern access road and County road (57 Road).
- Areas of vegetation to be cleared, including vegetating for access road construction.
- Detailed layout of the work zones including exclusion zone, decontamination station, vehicle parking, storage area, scale house, and source material stockpile location if applicable.
- Subsidence, open pits, mineshaft and other features that need to be protected
- Erosion control devices proposed to individual chat locations.

1.3.2 Protection of Site Features

QTEO will mark the site features to be protected. Those features may include, but are not limited to the Catholic 40 school and dormitory structures, wells, utilities, mine workings (e.g., shafts, vents, and open bore holes). Orange construction fencing will be installed around these areas to alert equipment operators and site workers to the presence of the features and to preserve the historical and cultural significance for the Quapaw Tribe.

The historical references to surface manifestations of the catholic school, dormitory structures, mine workings - vents, borings, and "likely" locations of shafts - are shown on the design drawings. These locations are only approximate, and are based upon historical references. On site personnel will investigate, locate, flag and follow the Contract requirements for the management of locations of mine shafts, vents, borings, subsidence features, etc.

1.3.3 Site Clearing and Work Zone Setup

QTEO shall conduct site clearing prior to intrusive earth-moving activities to remove heavy bushes, shrubs, and trees if necessary in preparation of the construction of access roads, removal of chat material or filling of subsidence and mine shaft features. Any clearing associated with grasses and/ or small bushes or shrubs is considered incidental to site preparation and will not be counted as site clearing area for payment. Site clearing will be conducted in the areas with tree cover that are anticipated to be removed during the remedial action and as depicted on the Site Layout Map.

Access roads are the routes of ingress and egress from the areas to be remediated to the haul roads, which are normally established public roads (county or state roads). The clearing activities may include, but are not limited to, clearing and grubbing trees and heavy bushes, removal and grinding of stumps, and felling and removal of unsafe dead tree snags. Trees can be cut down and stockpiled (excluding the root balls which shall be transported and disposed in the OU4 repository). The measurement and payment for root ball transportation and disposal shall be at the same fixed unit price as in Task 6 as measured on the project scales.

QTEO will coordinate with the local electricity supplier to disconnect or de-energize any low overhead electrical lines (i.e., power drops), if such electrical lines are found at the site and deemed to pose an overhead hazard during site activities.

QTEO will set up operational work zones (e.g., Exclusion zone, Contamination Reduction Zone and Support Zone), including, mineshaft/subsidence/boring and other open excavation zones, storm water management and erosion and sediment control (as indicated in QTEO's Construction Storm Water Pollution Prevention Plan (SWPPP) a decontamination zone, and a temporary stockpile location (if needed).

1.3.4 Erosion Control

Prior to initiating any earth-moving activities at the Site, crews will install erosion control devices in accordance with requirements specified in the Design Specification and Standard Detail Drawings, QTEO SWPPP and as determined by QTEO in conjunction with the Contractor's planning and scheduling

The Contractor shall install erosion control devices at natural ditches, ponds, and steep slopes to prevent silt from disturbed areas from running on to the surrounding environment. The erosion control devices may include, but are not limited to silt fence, hay bales, and erosion control blanket on slopes.

QTEO will conduct inspections weekly throughout the course of the remediation, and will immediately make the necessary repairs to the erosion control devices identified as needing repair/replacement.

1.3.5 Traffic Control

Traffic controls will be installed as required in the QTEO approved Contractor's Transportation Plan, and as required by the local and state agencies. Workers will follow the approved haul route for the site. Signage shall be set up and flag-person shall be assigned as needed to the Site to control the movement of traffic to and from the excavation sites, at access roads, driveways, designated haul roads, and associated intersections. At a minimum, all signage requirements for construction traffic on county and state roads and entrances must meet OK DOT requirements.

1.4 TASK 4- Construction of Access Roads

The temporary southern site access road is located at the south bend of East 57 Road (see Appendix A for access road specifications). The construction of the temporary southern access road will include repair of a wash-out at an unnamed tributary to Beaver Creek and road repair over Beaver Creek. Please reference the QTEO design drawings and maps for access road design details. The temporary southern access road construction requirements provided within the solicitation constitute only the minimum requirements (e.g., to make them usable and operational in a safe manner) and QTEO shall be responsible for constructing and maintaining the access road to render it operational based on specific site conditions. Contractors shall note that the on-site temporary southern access road exiting from the site decontamination station to the public haul road shall be constructed of clean limestone material.

The materials used for new access road construction or improvement of existing non-chat access roads which will remain in place at the conclusion of the project, shall meet requirements in the design specifications and shall not be constructed of chat or chat-based material. The road shall consist of a geosynthetic liner placed below the crushed limestone base. Roads intended for 2-way traffic shall be a minimum 25 feet wide, unless revised by QTEO. During the hauling phase, the access road shall be maintained by the Contractor (e.g., adding materials, re-grading, etc) at no additional cost to QTEO. At QTEO's discretion, the clean gravel road(s) that are left in place shall be reworked (e.g., re-graded, place additional gravel, etc.) at the end of the project (prior to demobilization).

Best management practices will be used for storm water protection and run off management of the southern access road. Straw waddles, straw bales, silt fence, and rip rap checks and dikes will be used alond the entrance road and waterways to prevent storm run off from freely flowing into nearby streams. These BMP's are included in the storm water prevention plan. "Any significant deviations from the southern access road design drawings included in Appendix A (Access Road Construction) should be discussed with the EPA prior to their implementation."

Chat from the Catholic 40 site may be used to build up existing chat-based temporary access roads within the site only. However, chat shall not be used to build up an existing non-chat (uncontaminated) access road.

Decontamination provisions shall be made at the transition from exclusion zone areas, including chat access roads to "clean" limestone roads / areas to prevent cross- contamination. A decontamination pad shall be constructed during site preparation to establish the practice of having all vehicles decontaminated as they leave contaminated areas (e.g., EZ, existing chat roads, etc.

It is anticipated that the southern access temporary haul road shall be left in place at the conclusion of the project. The Contractor shall ensure that the remaining road material is clean and contaminant-free from the previous chat removal operation.

1.5 TASK 5 - Removal of Marketable Chat and Disposition Plan

QTEO will ensure that all temporary controls are in place including storm water management (QTEO SWPPP) prior to removal of any source material. QTEO will ensure that all QC and Health and Safety-related pre-requisites and requirements including inspection and documentation are in place and accepted by QTEO prior to start of these activities.

1.5.1 Removal of Chat

QTEO will direct the excavation process with depth and location of the chat to be removed. The actual marketable chat quantity will be determined and reimbursed using temporary truck scales weights discussed later in this SOW. Workers will conduct excavation with extra care not to remove excessive TZ soil prior to receiving a Field Order from QTEO.

The workers shall conduct excavation in such a way that will protect utilities, wells, mine workings (e.g., shafts, vents, and open bore holes), and storm water drains and culverts.

Dust abatement measures will be applied as necessary to the roads used by haul trucks and during loading of trucks, grading, material handling, dumping, and compaction operations for alleviation or prevention of nuisance dust. However, care will be taken to keep the soil unsaturated, which will minimize the accumulation of dirt, mud, or debris that is tracked or dropped onto the roads. A street sweeper, if needed, will also remain at the site for the duration of source material hauling activities to keep the roadways free of soil. Source material hauling trucks will

be required to cover their loads with a tarpaulin, and trucks will be appropriately decontaminated prior to leaving the Site.

Water trucks shall be provided for dust control use. Only potable water will be used on roads and areas where there is no existing source material. All personnel involved in Site disposal activities shall follow the safety and spill response procedures outlined in the Site's Health and Safety Plan and Transportation Plan."

1.5.2 Transportation of Chat

The Contractor shall transport the chat to the respective locations as indicated in Appendix B, using a QTEO approved haul route. The current approved route is as follows:

Access from Catholic 40 – Temporary Southern Access Road
West on 57 Road to North on Hwy 137
West on Hwy 69A to North on 560 Road
North on 560 Road to North on 565 Road
North on 565 Road to East on 40 Road
East on East 40 Road to Repository
Return
Repository to East 40 Road
East on East 40 Road to Hwy 69
South on Hwy 69 to East Hwy 69A
East on Hwy 69A to East on 50 Road
East on 50 Road to South on 620 Road
South on 620 Road to East on 57 Road to site

QTEO shall inspect the trucks daily prior to work to ensure they have an automatic backup alarm, a DOT approved tarpaulin, the vehicle is safe to operate, a clean truck bed and will reject any trucks that do not meet these requirements. Once a truck is loaded with the chat material, the truck bed shall be covered with the equipped automatic tarpaulin prior to departure for the disposition location. A detailed haul route for loaded and unloaded (empty) trucks is available in the Transportation Plan for Chat Base 011

1.5.3 Waste Tracking System

QTEO will develop a system using haul/ truck scale weight tickets or combination of both shall be used to track and record the transportation activities. The QTEO's system of tracking the disposition (*e.g.*, weight/volume and final destination) of the source materials will be easily incorporated into the overall tracking system for the Operable Unit 4 Remedial Action. Two types of tickets are generated to account for all the hauled loads from the material origin and delivered to the designated destination.

A. The truck scale weight ticket generated from the scale house and provided to the truck drivers. This includes the following information:

- Date and time
- Subcontractor
- Material weight (tons) for each material type
- Material type/matrix- Chat, development rock, TZ soil, etc. The scale operator shall use the material code developed in the Waste Management Plan
- Origin/Source- Chat Base (CB) or Chat Pile (CP) number, etc. The scale operator shall specify the ID for each chat pile and base, as provided by QTEO
- Designated Destination (as specified in the Disposition Plan)

B. The haul ticket shall be generated by the scale operator and provided to the truck drivers hauling that day.

This includes the following information:

- Date and time leaving the site.
- Subcontractor name
- Material type/matrix- Chat, development rock, TZ soil, etc. The scale operator shall use the material code as developed in the Waste Management Plan
- Origin/Source- CB or CP number, etc. The scale operator shall specify the ID for each chat pile and base, as developed in the Transportation Plan
- Destination (as specified in the Disposition Plan)

The site superintendent will ensure that each hauled load that goes through the scale house is delivered to the designated destination (as specified in the Disposition Plan developed by Contractor). The hauler shall not be paid for any hauled load that they cannot account for (e.g. load that left the site was delivered to the designated destination) at the end of each haul day.

The haul tickets (or equivalent) shall be left and collected at the designated destination. The tickets shall serve as documentation that all loads were delivered to the correct designated destination. QTEO may check the number of collected tickets at the designated destination anytime during hauling. The superintendent shall inventory the collected copies of the haul ticket (or its equivalent) at the end of each haul day. These haul tickets (or its equivalent) shall be placed in a ziploc bag in an organized manner (one Ziploc bag should only contain tickets for the same day) together with the summary of how many tickets are inside the bag. The summary shall include explanation notes should there be any discrepancy between the number of loads from the origin and the number of tickets collected at the destination. The number of haul tickets should match the daily number of loads generated at the scale house.

The copy of the truck scale weight ticket provided to the truck drivers shall be kept by QTEO as the backup hard copy of the loads, for their records. At the end of each haul day, the transportation and disposition of materials shall be inventoried by the superintendent on the day of transportation from the site using the Transportation and Disposal Log. The information in the Transportation and Disposal Log shall match the Schedule of Values (i.e., billed quantity). Copies of haul tickets for each load taken to a processor or the repository shall be complete with the required information (see above) and shall be collected at the end of the day and submitted to QTEO for archiving.

Copies of material manifests for each load taken to other disposal facilities are collected at the end of the day and submitted to QTEO for archiving.

The following information shall be recorded in the tracking documents (haul/truck scale weight tickets):

- Date and time the truck is loaded
- Location where the truck is loaded (The Contractor shall specify the ID for each chat pile and base, as provided by designated in the Waste Management Plan)
- Truck ID number
- Material (marketable or unmarketable chat, soil, or development rock) being transported, and the weight and/ or volume of the material
- Location where the truck is unloaded

Subcontractor shall maintain a Transportation and Disposal Log for all material removed from the site as described and presented in the Transportation and Waste Management Plans.

All truckloads shall be transported directly to the destination using the designated haul route and the haul ticket shall be in the possession of the driver at all times during the transportation. The truck shall not stop between the loading and destination locations.

The Contractor shall establish a communication mechanism, such as radios, whereby the Contractor can talk to the haul truck drivers, as necessary, and to allow truck drivers to be informed of disposition location for each load and prevent wrong delivery.

1.5.4 Weighing of Marketable Chat

The QTEO's system of tracking the disposition (*e.g.*, weight/volume and final destination) of the source materials will be easily incorporated into the overall tracking system for the Operable Unit 4 Remedial Action. All trucks transporting excavated materials to the chat processor location shall be weighed at an Oklahoma Department of Transportation (ODOT)-certified scale. Contractor shall be responsible for the provision, maintenance and demobilization of the temporary truck weigh scales that will be used for this work. The scale operator and software will be provided by others as Specified. No standby time will accrue to the Subcontractor for the duration that the haul trucks are waiting at the scale house to be weighed.

QTEO will provide all hardware required by the system to function properly, including LED scale readout. For hardware, 120 volt power, a power conditioner (short life, under the desk UPS), Ethernet NIC, and all interface cabling shall be provided. RS232, continuous output is required for connection between scale indicators and WasteWorks (or equivalent) tracking software/ computer(s). WasteWorks (or equivalent) software, computer and scale operator are provided by others. The initial installation and configuration of the system can be performed off-site. Final configuration of the system, including connection to the scale hardware shall be performed on-site at the same time or immediately subsequent to on-site training.

The Source materials will be managed at the processing facility or onsite repository or other locations as approved by the EPA. The QTEO, with the EPA's approval, will specify at the time of transport the actual location to which a source material load will be transported.

Other miscellaneous solid material including packaging for testing equipment and supplies and PPE that are uncontaminated will be placed in single plastic bags, sealed, and contained for disposal in the municipal waste stream as non-regulated solid waste. Miscellaneous domestic and office waste will be contained for disposal in the municipal waste stream as non-regulated wastes.

Spill-related waste or spill-related petroleum contaminated soils (such as heavy equipment fluids, like diesel fuel and gasoline, and source material) can unintentionally be generated. The type of spill material will be handled accordingly, depending on the type of material and the location where it will be disposed."

The site superintendent shall be responsible for preparing the designated location at the site for the installation of the truck weigh scales, including but not limited to, clearing, grading, utilities, subgrade compaction of the site required for the installation of portable truck weigh scales at the site. If not located on-site, Contractor shall be responsible for identifying and leasing a suitable location and provision of all necessary utilities for the installation and operation of the scales.

At the discretion of QTEO, the truck scales may be used for other projects ongoing concurrent to the work described in the SOW, and/ or continue to use the scales for other projects following the conclusion of this work.

The scale will be sized so that it is sufficient to single pass weigh the proposed truck transports . The weigh scales shall be calibrated prior to use and quarterly thereafter, at a minimum. Weigh scale and calibration shall be performed by State of Oklahoma licensed/ certified technicians. Calibration reports shall be provided to QTEO within 24 hours of completion of calibration. Standard red-green light display should be included by the vendor in the scale package to control the truck movement over the scale. QTEO will provide radios for scale operators for communication with the drivers. QTEO will provide a scale house that is climate controlled and equipped with a

scale printer and printer supplies for the duration of the work. The scale house will be sized to house the printer and work area of the scales operation.

The scale vendor will be responsible to respond to all operational issues or service calls on the scale and related hardware. Response to all operational or service issues shall be within 24 hours of notification.

1.6 TASK 6 – Removal and Transportation of and Disposition Plan for Unmarketable Source Materials, Waste Material and TZ Soils

Several types of materials may remain following the removal of the marketable chat at a site. Those materials include unmarketable chat, historic chat-based haul roads and RR beds, development rock, fine tailings, waste materials, and TZ soils. Contractor shall remove these materials in accordance with the following sections.

1.6.1 Removal of Unmarketable Chat, Fine/Wash Tailings and Development Rock

QTEO will remove unmarketable chat material in the same way as for marketable chat. Unmarketable chat will be removed until no visual chat remains at the chat location. Unmarketable chat materials may be found in small chat piles/bases, historic haul roads, and the lower (approximately) 2 feet of the chat piles/bases. Actual unmarketable chat quantity will be based on the material weight measured the same way as in the case of the marketable chat removal.

Fine and/ or wash tailings, where found, shall be removed until no visual tailings remains at the source material location. Fine/wash tailings may be soft and flowing, and may require improvement of material consistency to load and transport the material to the designated disposition location indicated. The site superintendent may seek approval from QTEO for options to mix a portion of unmarketable material, such as unmarketable chat and TZ soils, to improve consistency of fine/wash tailings, if required for removal and transport. Other materials proposed for use by the superintendent to improve consistency of fine/wash tailings shall be reviewed and accepted by QTEO prior to use.

Development rock is the waste rock generated in drilling shafts to the deep mines and is present at some locations throughout the Site. QTEO will direct the site superintendent with locations of the development rock to be removed within the properties at which the work described herein will occur. Requirements for removal, transportation, and weighing of the development rock are the same as that for unmarketable chat, unless consolidated into subsidence features or used in filling mine shafts or vents (see Section 1.7).

QTEO superintendent will conduct excavation with extra care not to remove excessive TZ soil prior to receiving a Field Order as defined.

1.6.2 Removal of Waste Materials and TZ Soils

After the removal of the source material, the workers will remove the soil under and around each source material location that contains Site COCs at concentrations exceeding RGs (i.e. TZ soils). Vertical and horizontal excavation limits for TZ soils will be based on confirmation sample results as described in the Sampling and Analysis Plan. Excavation of TZ soils will not exceed 12 inches below ground surface. The confirmation sampling and analysis will be performed by a QTEO personnel. QTEO will provide the sample results, with a definition of the area to be excavated and the depth of excavation, in a Field Order (FO). The depth of excavation may be 6 inches, 12 inches, or no excavation. To provide accurate documentation of Grid Diary Inspections during grid remediation within the designated area where TZ soil needs to be excavated to the required depths indicated in the Field Order from sample collection to site restoration, a Grid Diary Inspection form as developed and presented in the Contractor's Construction Quality Assurance Plan shall be used.

The horizontal limit may be shortened or extended beyond that distance, based upon the confirmation sampling conducted by QTEO. Such extensions shall be considered included as part of the scope of work and the work shall be executed in full compliance with the Contract.

Confirmation sampling will be conducted based on grids approximately 200 feet by 200 feet in area. The site superintendent will inform QTEO in writing at least 5 workdays in advance of when the source material removal will be completed from a given area so that QTEO can prepare for the sampling effort. Source material removal need not be completed for an entire chat base or pile before requesting confirmation sampling. However, source

material removal must have been completed for the entire area being requested to be sampled (approximately 30,000 to 40,000 square feet for each confirmation sampling grid).

Sampling will be conducted by QTEO within 5 workdays of notification of the source material removal completion. If field inspection conducted by the QTEO Sampling Team indicates that the area has debris or remaining visible source material, no confirmation samples will be collected until the QTEO CM and Field Team Leader have confirmed that the material has been cleared. This shall be documented in the Daily Report, noting the CB/CP# and other details, and noted in the Grid Diary Inspection Form (See Construction QA Plan) . A revised/updated Grid Diary Inspection Form shall be submitted before QTEO will proceed with sample collection.

Confirmation samples are collected from two depths: 0-6 inches and 6-12 inches. QTEO anticipates that approximately 3-4 grids can be sampled in one day. The site superintendent shall strategically plan their schedule and sequence their work to allow QTEO's Sampling Team to collect samples as noted above (e.g., 3 to 4 grids in one Grid Diary Inspection form) unless prior advance notice to QTEO is in place. No standby or downtime will accrue to the haulers for the duration that the sampling team cannot complete the soil sampling on time.

It is anticipated that final analytical results will typically be available within 6 working days after collection. When validated sample results become available, and prior to TZ soil excavation, QTEO will mark the sampling grids with respective excavation depth (no excavation, 6 inches or 12 inches) for the Contractor. Then a Field Order will be issued, typically within 1-2 days after the validated sample results are available, indicating the area to be excavated and the depth of excavation. The above sampling, analysis and field order time durations should be viewed as approximate duration for planning purposes. Although efforts will be made to meet these durations, no guarantee or warranty is implied for these estimated durations. No standby or downtime will accrue to the haulers for the duration waiting on the FO. Contractor shall sequence its work (and the 5 on/2 day off schedule) to minimize impacts from sample/ analysis activities.

The site superintendent shall only remove TZ soil in areas covered by the Field Order. Excavation of TZ without an issued FO from QTEO shall not be compensated. The Field Order shall be issued only after the analytical results have been validated and the top of TZ and confirmation grid comers have been surveyed in that particular grid. The Contractor shall be responsible for any schedule delays and cost impact associated with not clearing the whole area of a confirmation sampling grid when it is indicated as "Ready to Sample" in Grid Diary Inspection form.

The site superintendent will ensure that the excavation, staging and transportation of the TZ soil or other debris shall not cross-contaminate the uncontaminated areas or grids. Should this happen, the superintendent will inform the QTEO CM and QC Manager in writing within 24 hours of the incident.

Once the crews have completed the excavation of the specified grids to the required horizontal and vertical limits, the superintendent shall inform QTEO in writing (using the Grid Diary Inspection form Specified in the Contractor's Construction QA Plan). The site superintendent shall conduct its own QC survey check of the horizontal and vertical limits of the excavation of those grids. QTEO or its subcontracted surveyor will then conduct a topographic survey of the post-excavation surface of the TZ soils to verify proper excavation depth. Should there be discrepancies between the site superintendent survey data and QTEO's third party surveyor regarding validation of elevations, areas, volumes, lengths or other survey-related items, the QTEO's third party surveyor data shall be used to verify the limits of excavation (and be the basis for compensation).

In any instance during TZ soil removal where a special case situation is encountered in the field, as outlined below, the Grid Diary Inspection Form shall be used to document the situation.

Case 1 – Grids that are designated "no dig" and visible source material is observed.

Case 2 – Grids that are designated for excavation but are too wet to be able to reasonably control excavation depth (i.e. previously a pond with fully saturated soils).

NOTE: Wet conditions resulting from failure of the Contractor to remove or properly control storm water shall not be sufficient justification for a Grid Inspection Form notification.

Case 3 – Grids that are designated for excavation and veins of source material are encountered that may potentially extend beyond the required excavation depths/limits.

Case 4 – Grids that are designated for excavation and a rocky material or boulder (not source material) is encountered, and removal of the rocks or boulders would result in excavation depth greater than required.

Case 5 – Grids that are designated for excavation and another unspecified special case is encountered that may necessitate deviation from the excavation tolerance of ±0.1 ft as approved by QTEO.

For Grid Diary Inspection Forms, the following information at a minimum shall be included:

- Attach applicable sketches/maps to define the extent of the areas and depths covered by the inspection.
- Include photos complete with description (photo log)
- Provide dimensions in the documentation as applicable (Length, Width, Depth, Diameter, Circumference, Distance etc)
- Provide estimated quantities as applicable.

Other waste material, such as wood wastes, concrete debris, metal debris, etc. will be removed and recycled where feasible. The remaining wastes that cannot be recycled will be transported and disposed in the repository. Tires and tire wastes should be disposed of at the ODEQ-approved tire recycling facilities. The measurement of the quantities of other waste material will be on weight basis and will be measured and compensated in a similar fashion as that for the Unmarketable Chat material.

It is possible that storm water and/ or groundwater may accumulate in the excavations at the site. Site crews shall take all precautions necessary to limit the amount of water from accumulating in the excavations, including run-on controls. The site superintedent shall plan and schedule their work and ensure that the site is prepared/set up prior to any rain/storm event or prior to leaving the site at the end each shift. Water that accumulates within excavated areas (groundwater seepage or storm water runoff) shall be handled as follows:

1. If the water accumulates within an area where source materials and TZ soil removal has already been performed, the accumulated water is presumed to be not contaminated and may be discharged onsite
2. If the water accumulates within an area where source material and/ or TZ soil removal has not yet been completed, the water is assumed to be potentially contaminated.

3. If the water accumulates within an area where source materials and TZ soil removal has already been performed, and it is adjacent to the source material consolidation areas (i.e., source material to be left in place and prior to capping) or other features that may have potentially contaminated the accumulated storm water, the accumulated water is presumed to be potentially contaminated and may not be discharged onsite. The water may be utilized as onsite dust control (only in areas where source material or TZ soil removal has not yet been completed) or discharged onsite, after analytical testing for site constituents of concern, if it meets discharge criteria.

NOTE: The site superintendent shall ensure that the non-tested accumulated storm water in excavations shall not cross-contaminate the "clean" areas or grids during dust control or storm water management operations. Should this happen, the superintedent shall inform the QTEO CM and QC Manager in writing within 24 hours of the incident.

QTEO will provide all pumps, hoses, and other equipment to remove the water from the excavations Storage may consist of an on-site bermed area. Liquid storage areas shall be inspected daily, and documented on the daily Production Report. If any deficiency is noted, the superintendent will rectify immediately. The equipment shall be inspected by QTEO upon arrival to the project site. If in QTEO's sole and absolute judgment, the equipment is found to be contaminated and/ or in disrepair, QTEO will reject the equipment.

In select cases, water accumulated in the excavations may be treated and discharged on-site as directed by QTEO as described in Section 1.8.

1.6.3 Transportation of Unmarketable Chat, Fine or Wash Tailings, Development Rock, TZ Soil, and Waste Materials

Unmarketable chat, development rock, fine or wash tailings, TZ soils, and waste materials shall be transported to the Central Mill Repository. The work crews may temporarily stage these materials at the site when approved by QTEO.

QTEO shall transport the materials to the respective locations utilizing QTEO approved haul routes. The site superintendent shall inspect the trucks daily prior to work to ensure they have an automatic backup alarm, a DOT approved tarpaulin, and a clean truck bed and will reject any trucks that do not meet the requirements.

The repository will be open to receive materials from 7:30AM to 5:00PM. Once a truck is loaded with any of these materials, the truck bed shall be covered with the equipped automatic tarpaulin prior to departure for the disposition location.

The haulers shall follow the same requirements in hauling, weighing, transporting and waste tracking including ticket inventories and archiving in the same manner as marketable chat. All waste material shall be transported directly to the destination using the designated haul route and the haul ticket will be in the possession of the driver at all times during the transportation. The truck shall not stop between the loading and destination locations.

QTEO shall establish a communication mechanism to allow truck drivers to be informed of disposition location for each load and prevent wrong delivery. Other requirements detailed under the transportation of marketable material shall also apply to the transportation of unmarketable material. The Transportation Plan for Chat Base 011 provides guidelines and addresses measures for vehicular traffic control during the loading and transportation of source material. It also discusses the effects of transportation activities on existing traffic routes, and major roads that are to be used by source material transporters including circulation patterns and volume/numbers of various vehicles that are expected. Traffic controls, dust abatement, spill prevention and response and reporting are also addressed in the Transportation Plan.

The following practices will be observed during the transport of source materials:

- Impacts to general public traffic will be minimized.
- Vehicles will be decontaminated prior to reuse. At a minimum, the truck tires and exterior of the dump truck body will be swept clean of adhered visible source material prior to each truck leaving the exclusion zone, the processing plant, or repository.
- Dust abatement measures will be applied as needed to control visible dust at active remediation areas, access roads, and site egress points.
- Trucks transporting solids (*e.g.*, soil, debris, etc.) will be covered with a tarpaulin during transport.
- Trucks transporting liquids will be sealed. All seals will be checked to ensure they are in good condition.
- Road damage caused during transportation will be repaired.

- The final disposition point for source materials will either be at a chat processer's facility, a consolidation or staging area, a cased boring or mine shaft, or the Site's repository.

1.6.4 Weighing of Unmarketable Material

All trucks transporting excavated materials to the disposition location shall be weighed at an ODOT-certified scale.

QTEO shall maintain a Waste/Material Log for all material removed from the site. The Waste/Material Log will include the date/time, origin, type of material, destination, and weight.

1.7 TASK 7- Filling and Capping of Mine Shafts, Vent Openings, and Subsidence Features

One known mine shaft is located on the west boundary of CB 011. Additional mine shafts, cased borings, and/or vent openings may be located on the site areas included in this solicitation. Vent openings and cased borings have the same appearance at the surface, but vent openings are open to the mine caverns while cased borings terminate in the bedrock. For purposes of this SOW, the two are treated the same and referred to as vent openings. QTEO will address cased borings and vent openings according to the procedures detailed in the Cased Boring Identification, Evaluation, and Abandonment Procedures (Appendix C). Site crews will be responsible for placement of source material to fill the designated mine shafts and mine openings.

Site crews will place a cover over the mine shafts and vent openings, following the completion of the filling operation and completion of removal of required source material and any TZ soil removal within the foot print of the cover. Contractor will monitor the filled opening per the Backfilled Mine Shaft Monitoring Procedure (Appendix D).

The site superintendent shall provide information in the Daily Report and Mineshaft Summary table regarding the estimated quantity of materials that went into each mineshaft (in cubic yards) including the capping material.

1.8 TASK 8 - Water Transportation and Disposal

Water accumulated from the equipment decontamination process and potentially contaminated water removed from excavations shall be stored in a QTEO approved storage area at the each construction site. If approved in advance by QTEO, storm water accumulation in the excavations may also be pumped out of the excavation and discharged overland to an adjacent chat feature or mine shaft. The water shall also be used for dust suppression within portions of the exclusion areas of the site which have not yet been remediated (i.e. TZ has not been completely removed). If more water is generated than can be used for dust suppression, Contractor shall manage the water as required under the specification.

The on-site water treatment used by the site crew shall consist of filtration capable of removing the sediments from the water. A typical system consists of a standard double bag water filtration system using 10 micron and 25 micron filters or another comparable device approved by QTEO. The system must be capable of filtering up to 200 gpm. The optional water management unit cost shall include all costs associated with furnishing and completing the water treatment and discharge, including but not limited to equipment and materials costs, all filter media used, and labor, power, supplies and equipment necessary to operate the system. Spent filter media may be disposed of at the repository designated for non-marketable source material. No water will be discharged outside the project site footprint without prior approval from QTEO.

The trucks, containers and other equipment utilized for management of water shall be inspected by QTEO upon arrival to the project site. QTEO will reject the trucks and/or other equipment if they are found to be contaminated and/ or in disrepair. The Contractor will be responsible, at no additional cost to QTEO, for replacement of the rejected trucks and/ or other equipment in a timely manner so as not to delay the project.

A system (e.g., utilizing haul tickets) shall be established to track and record the estimated quantities of water leaving the sites and disposed at the repository. The following information shall be recorded in the tracking documents (e.g., haul tickets).

- Date and time the truck is loaded
- Location where the truck is loaded
- Truck ID number
- Material being transported and weight and / or estimated volume of the material
- Location where the truck is unloaded

All truckloads shall be transported directly to the destination using the designated haul route and the haul ticket will be in the possession of the driver at all times during the transportation. The truck shall not stop between the loading and destination locations.

The site superintendent will submit a copy of the haul tickets to QTEO the next work day, as a requirement to receive compensation for the work.

1.9 TASK 9 - Site Restoration

Prior to commencing the Site Restoration activities, QTEO will advise which grids and/or areas will be released for restoration. Completion of all site activities (i.e. plugging of cased borings, backfilling of mineshafts, confirmation surveying, etc.) will be required prior to initiation of the restoration activities. Updated project logs containing information on the summary of information shall be submitted to QTEO. Survey verification data demonstrating that the site crews have performed its QC check of the restored areas meeting the requirements shall be submitted to QTEO within 2 working days of the survey. Should there be an issue or inconsistency with survey data regarding

validation of elevations, areas, volumes, lengths or other survey-related items, the third party surveyor data shall be used. QTEO will inform the site crews in writing what grids or areas are ready for site restoration.

Per the Record of Decision (ROD) requirements, import of backfill material for excavations is not permitted under the OU4 RA activities. The site crews shall grade the excavated areas in accordance with the QTEO proposed final grading plan or direction. This re-grading includes replacement of the northern berm that borders Beaver Creek southern end of the site. Excess fill material generated from grading activities per the plan shall be utilized to re-construct the berm to match the original contours, above native soil. The berms shall be constructed by placing fill in 8" loose lifts and compacting to minimum 95% per ASTM D698. QTEO's third party geotechnical Subcontractor will perform required geotechnical testing. Subsequent lifts will not be placed until test results indicate that the 95% compacting requirement has been met. The site crews will perform the grading operations utilizing soil sources located within the property boundaries, and minimize disturbance of areas outside the excavated areas. The final topography of the re-graded areas shall provide positive drainage and prevent potential surface water ponding.

1.9.1 Soil Amendment

After fine grading the remediated area, the site superintendent shall collect and analyze agricultural samples of soils remaining. QTEO will collect and analyze agricultural samples of soils at the site per the OSU fact sheet "How to collect a good soil sample". A location map showing the location of the sample locations and depth and all test results including OSU recommendations shall be submitted to QTEO as soon as the information becomes available. The site crews will amend the soil based on the sample results and per recommendations of the Oklahoma State University, Plant and Soil Sciences Department (assume 28 tons/ acre for mushroom compost and 6.5 tons per acre of wheat straw or 6.5 tons per acre chicken litter with 6.5 tons per acre of wheat straw). Following the receipt of these sample results, The site crews shall physically break up and aerate the soil by disking, tilling, or other acceptable manner to a depth of 6 inches to promote vegetative growth.

1.9.2 Seeding

The site crews shall prepare the soil bed as necessary prior to applying the seed. The seed mix application shall meet design specification or as approved by QTEO. Typical grasses that may be used are Bermuda, annual rye, oats, fescue, barley, wheat, and anti-bloat clover. Typical seed mixes and planting timeframes can be found in the specifications. The vegetation shall be evenly distributed with no bare areas. Maintenance shall include any required watering, re-planting, and other tasks necessary to achieve 70 percent vegetation density.

NOTE: Copies of seed manufacture tickets shall be submitted to QTEO as the material is delivered to the site for use.

1.10 TASK 10 - Decontamination and Demobilization

Decontamination under this task includes intermediate and final decontamination. Intermediate decontamination is defined as decontamination prior to leaving from the exclusion zone throughout the course of the construction period. Final decontamination is defined as decontamination prior to demobilizing from the Site which includes equipment and personnel that complete their duty for the project and demobilize completely from the Site. There will be one final decontamination for each demobilization.

Prior to demobilization from the site, QTEO will perform a final inspection and any deficancies will be corrected prior to demobilization. Following the completion of the pre-final punch-list items, QTEO will schedule a pre-final site inspection with EPA. Documentation demonstrating that all outstanding items have been closed/ addressed/corrected shall be submitted to QTEO (e.g., signed and dated punch list items summary, pre-final and final inspection forms). All punch list items need to be addressed/corrected prior to final demobilization.

Site Crews will be required to decontaminate the equipment that is removed from the exclusion zone for performing other functions elsewhere.

1.10.1 Intermediate Decontamination

1.10.1.1 Truck and Equipment Decontamination

Site crews will decontaminate all trucks, equipment, and tools that encounter contaminated soil and chat. Decontamination shall be performed prior to leaving the exclusion zone, at the decontamination pad.

Decontamination is required for all personnel, trucks, tools, and equipment prior to moving from one source material removal area to another or anytime there is a possible concern of cross-contamination from a designated dirty area to a clean area. A temporary decontamination pad may only be used in cases approved by QTEO as determined by QTEO H&S Manager at any work area. Trucks shall be decontaminated each time the truck leaves the exclusion zone to transport a load of source material to the repository or other designated destination. Employee work trucks shall also be decontaminated each time the vehicle leaves the exclusion zone.

Decontamination shall include removal of soil from the exterior of the truck/equipment, including but not limited to tires and wheels, wheel wells, fenders, truck bed exterior, tracks, buckets, booms, and frames. This decontamination may be performed using brooms, shovels, or brushes, and typically does not require the use of water. However, if wet soil is caked on the truck/equipment, water may be necessary to remove the material. If liquid is generated by decontamination, it shall be properly contained and handled as detailed under Task 8.

1.10.1.2 Personnel Decontamination

QTEO will set up a personnel decontamination station at each removal area. Decontamination shall include, but not be limited to, removal of soil from clothes, gloves, and shoes; removal and disposal of chemical resistant over boots; and removal and disposal of disposable items such as gloves. Clean water shall be provided to facilitate the removal of soil from shoes and clothing, if necessary, and for washing hands.

1.10.2 Final Decontamination and Demobilization

QTEO shall ensure to decontaminate all personnel and equipment before leaving the Site, which shall include the final decontamination of equipment using water to wash the equipment. All debris and rinsate generated by the decontamination activities shall be disposed at the repository by the end of decontamination day.

Following the decontamination, all personnel, equipment, temporary facilities, and utilities shall be demobilized from the Site. In addition, fencing, any remaining debris, trash, and decontamination materials shall be removed and properly disposed.

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Project Specifications History

Version / Revision Date / Revision Reason
Version 1.0 10/01/2013 Specifications drafted
Version 1.1 11/20/2013 EPA Comments (11/27/2013) addressed and resubmitted
Version 1.2 12/02/2013 Plan approved / implemented

Appendix A

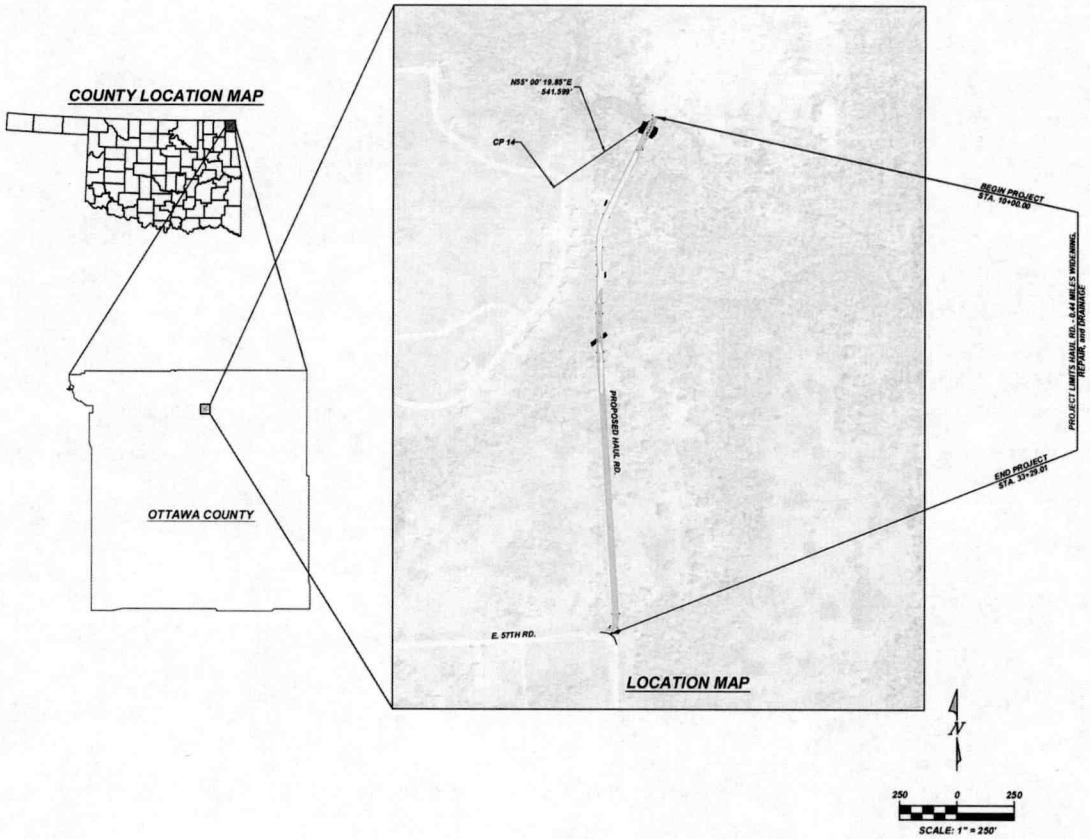
QUAPAW TRIBE ENVIRONMENTAL OFFICE

Access Road Construction Specifications

[See Attached]

HAUL ROAD

QUAPAW TRIBE OF OKLAHOMA
QUAPAW, OTTAWA COUNTY, OKLAHOMA



GENERAL NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF EXISTING UNDERGROUND FACILITIES PRIOR TO BEGINNING INSTALLATION OF NEW FACILITIES. CONTACT THE ENGINEER FOR INSTRUCTIONS WHEREVER ANY CONFLICTS ARE DISCOVERED.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CORRECT ANY DAMAGE TO UNDERGROUND UTILITIES OR OTHER OBSTRUCTIONS WHICH ARE DUE TO HIS OPERATIONS.
3. ALL IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF OKLAHOMA STANDARD PLANS FOR HIGHWAY CONSTRUCTION AND THE OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION; AND THE CITY OF QUAPAW STANDARD DETAILS.
4. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES BEFORE EXCAVATION. UTILIZE "OKLAHOMA ONE-CALL" BY CALLING 1-800-522-OKIE.
5. ALL CONSTRUCTION SIGNS AND BARRICADES MUST BE UTILIZED AND MAINTAINED IN COMPLIANCE WITH PART VI OF THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND ANY REVISIONS THERETO.
6. THE CONTRACTOR WILL KEEP THE PROJECT NEAT AND ORDERLY AT ALL TIMES WHILE CONSTRUCTION IS TAKING PLACE. STREETS TO THE PROJECT SHALL BE KEPT CLEAN OF MUD AND DEBRIS, PAPER AND WASTE MATERIAL AT ALL TIMES.
7. A COPY OF THE FILED PLANS MUST BE ON SITE AT ALL TIMES.

SHEET INDEX:

COVER SHEET.....01
QUANTITY / TYPICAL SECTIONS.....02
ROADWAY PLAN AND PROFILES.....03 - 04
CULVERT PLAN AND PROFILES.....05 - 06
EROSION CONTROL PLANS.....07

CONTROL POINT #CP-14

N-721362.0291 M
E-2914761.3127 M
ELEVATION=804.73 FT

Prepared by:
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LICENSED PROFESSIONAL ENGINEER
DANE SEILER
PE24862
10-10-13
OKLAHOMA

HAUL ROAD
QUAPAW TRIBE OF OKLAHOMA
OTTAWA COUNTY, OKLAHOMA

No.:	Description:	Date:
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SURVEY BY	CJW
DATE	10/10/13
DWG	COVER
DESIGN	CJW
DRAWN	CJW
CHECKED	CJW
SCALE HOR.	1"=250'
SCALE VERT.	N/A

COVER

SHEET NO.
001
CJW NO. 1379 OF 07

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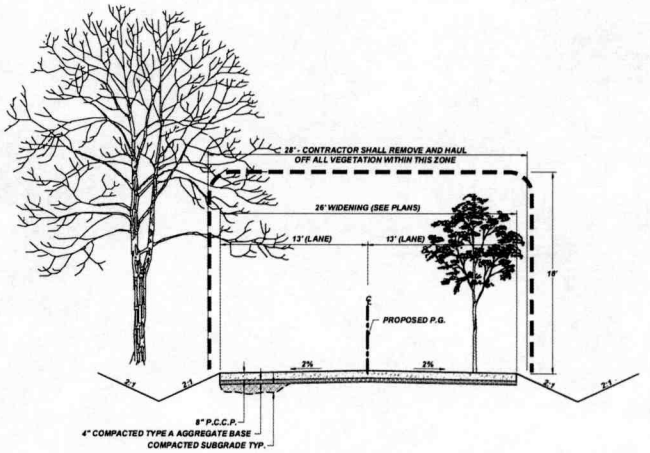

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STA. 19+00.00 TO STA. 20+60.00
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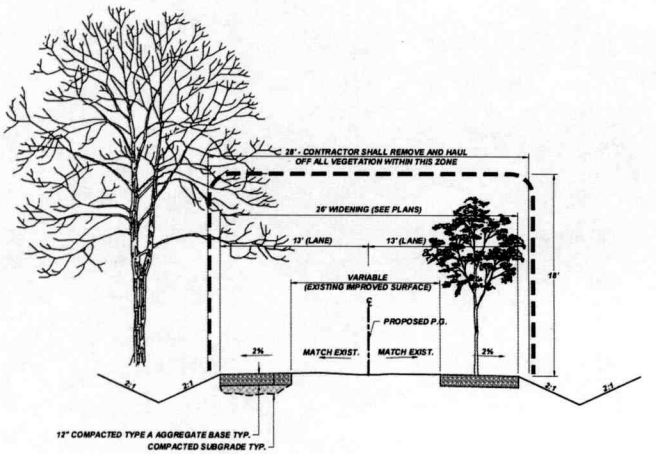

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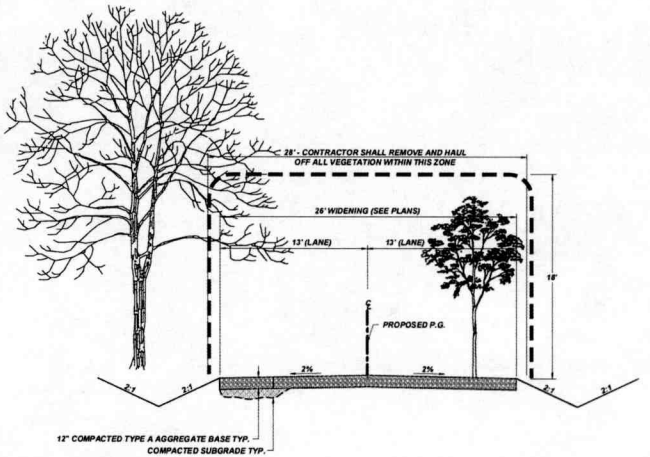

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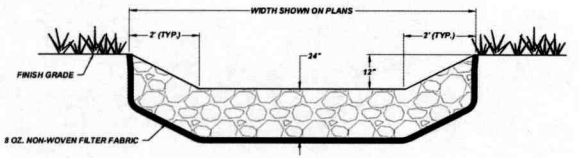
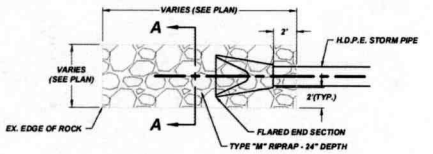


SECTION A-A



PERMANENT EROSION CONTROL RIPRAP DETAIL (TYP.)
NOT TO SCALE

Prepared by:
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CJW Transportation Consultants, L.L.C. Engineering MO C.A. #2006012365
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DANIEL SEILER PE24862 10-10-13 OKLAHOMA

HAUL ROAD
QUAPAW TRIBE OF OKLAHOMA
OTTAWA COUNTY, OKLAHOMA

No.	Description:	Date:
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SURVEY BY	CJW
DATE	10/10/13
DWG	TYP. SEC.
DESIGN	CJW
DRAWN	CJW
CHECKED	CJW
SCALE HOR.	N/A
SCALE VERT.	N/A

TYPICAL SECTIONS

SHEET NO. 002
CJW NO. 1379 OF 07

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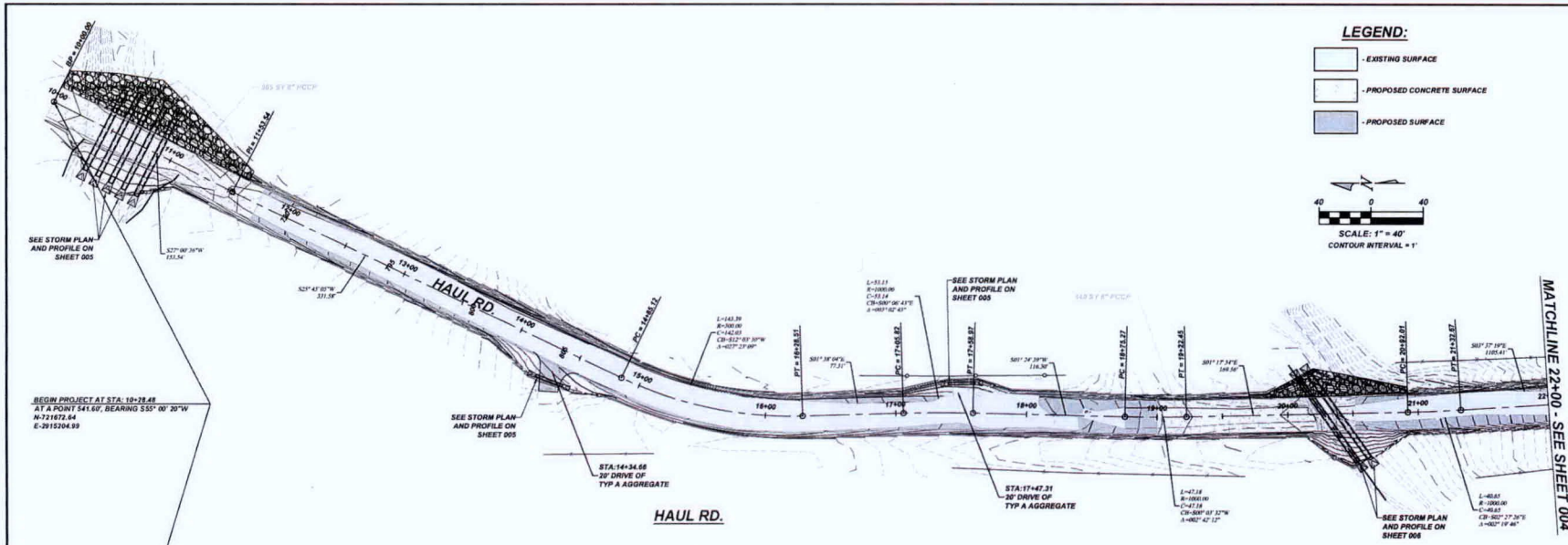

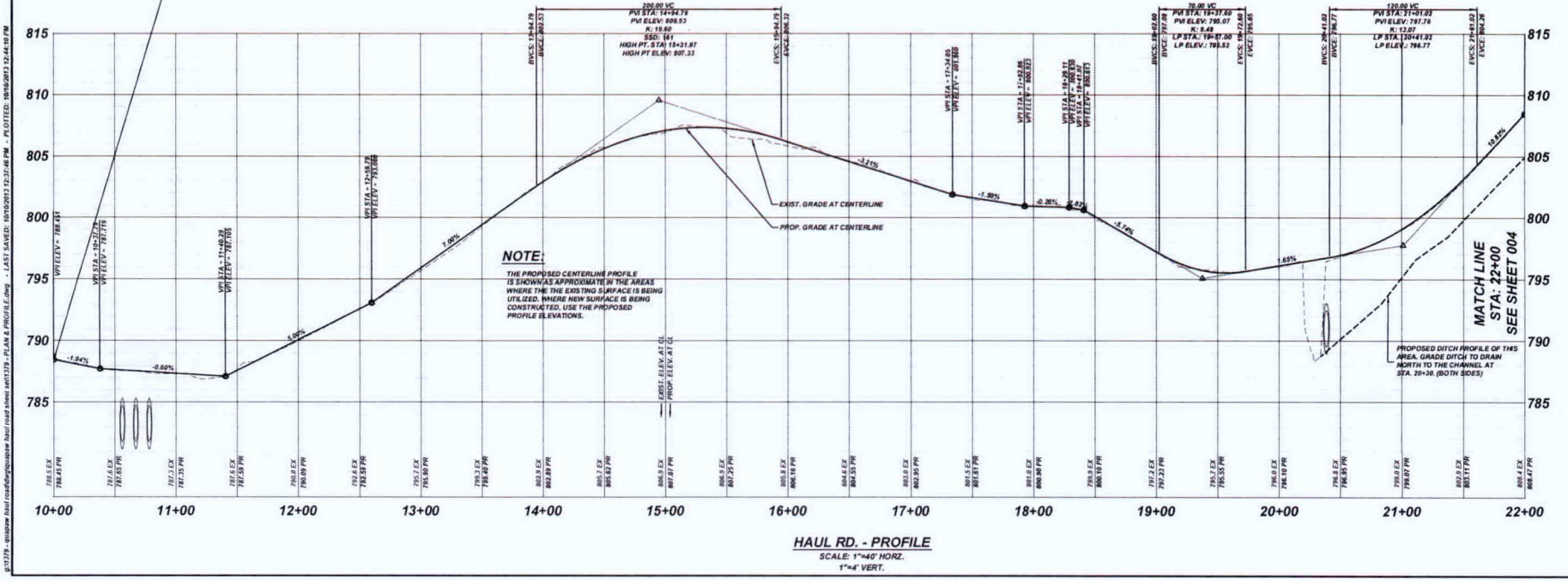

HAUL RD. - PROFILE
SCALE: 1"=40' HORZ.
1"=4' VERT.

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PROFESSIONAL ENGINEER
DATE SEILER PE24862 10-10-13 OKLAHOMA

HAUL ROAD
QUAPAW TRIBE OF OKLAHOMA
OTTAWA COUNTY, OKLAHOMA

No.	Description:	Date:
—	—	—/—/—

SURVEY BY	CJW
DATE	10/10/13
DWG	P&P
DESIGN	CJW
DRAWN	CJW
CHECKED	CJW
SCALE HOR.	1" = 40'
SCALE VERT.	1" = 4'

PLAN & PROFILE

SHEET NO. 003
CJW NO. 1379 OF 07

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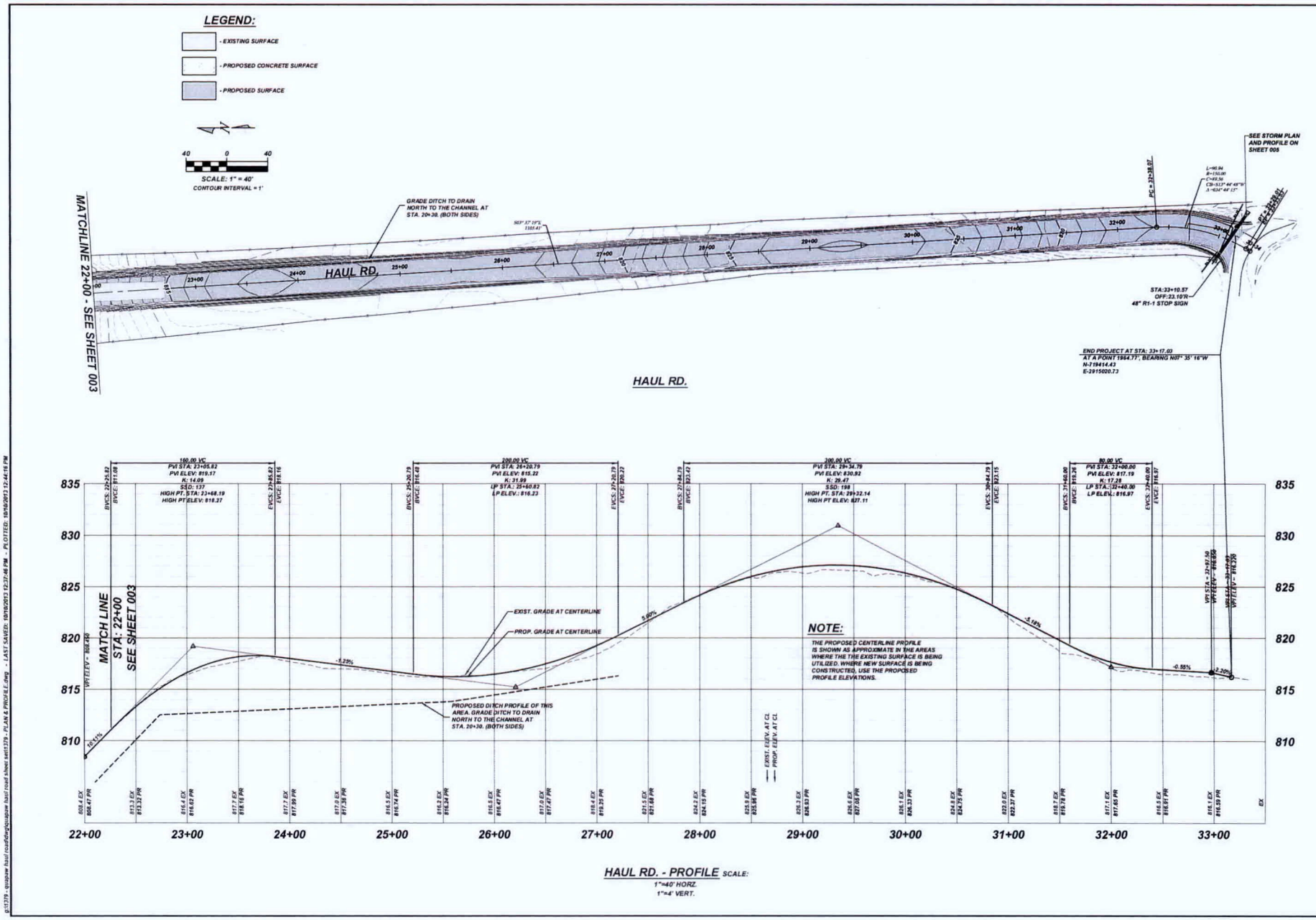

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LICENSED PROFESSIONAL ENGINEER DANE SEILER PE24862 10-10-13 OKLAHOMA

HAUL ROAD
QUAPAW TRIBE OF OKLAHOMA
OTTAWA COUNTY, OKLAHOMA

No.:	Description:	Date:
—	—	—

SURVEY BY	CJW
DATE	10/10/13
DWG	P&P
DESIGN	CJW
DRAWN	CJW
CHECKED	CJW
SCALE HOR.	1" = 40'
SCALE VERT.	1" = 4'

PLAN & PROFILE

SHEET NO.
004
CJW NO. 1379 OF 07

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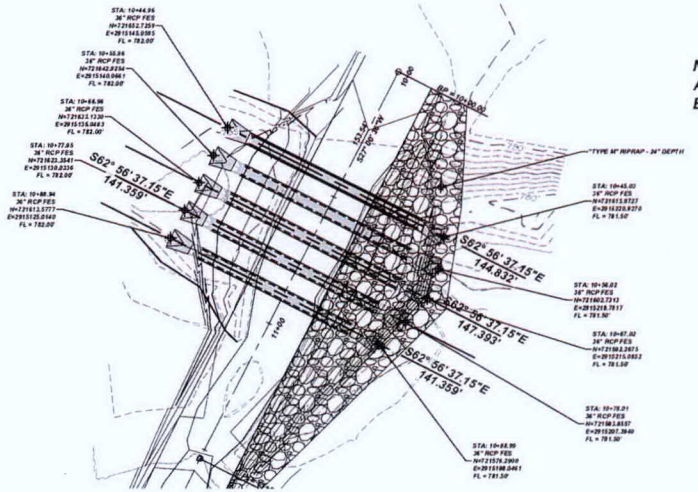

CULVERT PLAN A

NOTE: PLAN STATIONS AND OFFSETS ARE BASED ON HAUL RD.

N

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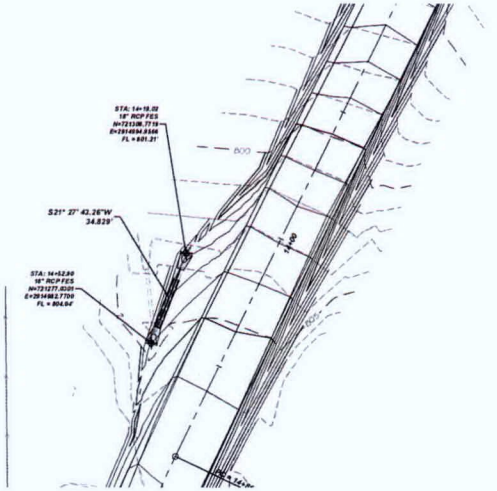
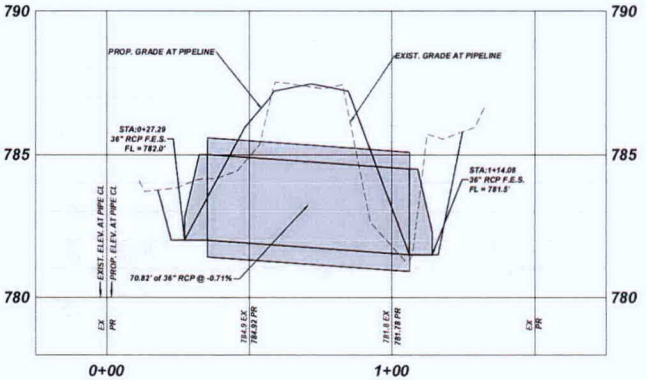
SCALE: 1" = 20'



WEST DRIVEWAY CULVERT PLAN



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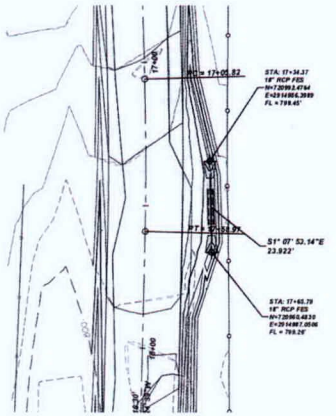

EAST DRIVEWAY STORM PLAN

Prepared by:

CJW

CJW Transportation Consultants, L.L.C.

CJW Transportation Consultants, L.L.C. Engineering MO C.A. #2000012385

5901 S. Mastroni Suite 4-110 Springfield, MO 65810

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LICENSED PROFESSIONAL ENGINEER DANE SEILER PE24862 10-10-13 OKLAHOMA

HAUL ROAD
QUAPAW TRIBE OF OKLAHOMA
OTTAWA COUNTY, OKLAHOMA

No.	Description:	Date:
1		

SURVEY BY	CJW
DATE	10/10/13
DWG	CUL P&P
DESIGN	CJW
DRAWN	CJW
CHECKED	CJW
SCALE HOR.	1" = 20'
SCALE VERT.	1" = 2'

CULVERT PLAN & PROFILE

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CJW NO. 1379 OF 07

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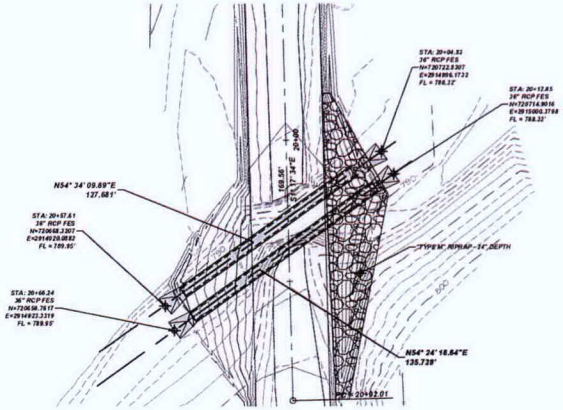
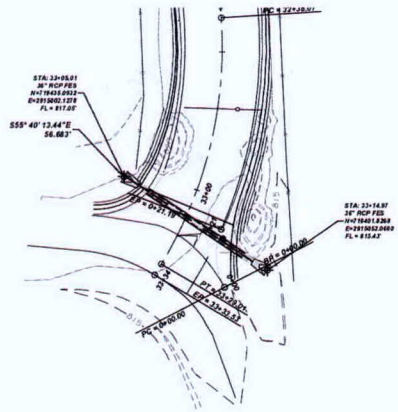
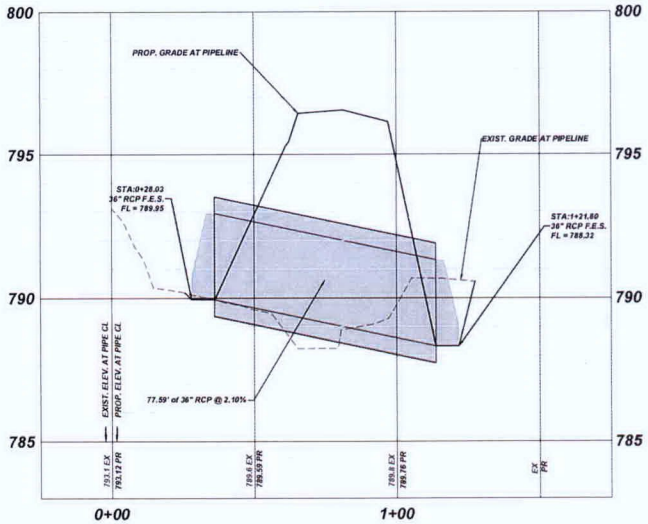


CULVERT PLAN B

NOTE: PLAN STATIONS AND OFFSETS ARE BASED ON HAUL RD.



HAUL RD. & E. 57TH RD. STORM PLAN



CENTERLINE PLAN PROFILE

SCALE: 1"=20' HORZ.
1"=2' VERT.

Prepared by:
CJW
CJW Transportation Consultants, L.L.C.
CJW Transportation Consultants, L.L.C. Engineering 1601-CA 4500001285
5851 S. National Suite 4139 Springfield, MO 65810
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DANE SEILER PE24882 10-15-13 OKLAHOMA

HAUL ROAD
QUAPAW TRIBE OF OKLAHOMA
OTTAWA COUNTY, OKLAHOMA

No.	Description:	Date:
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SURVEY BY	CJW
DATE	10/10/13
DWG	CUL P&P
DESIGN	CJW
DRAWN	CJW
CHECKED	CJW
SCALE HOR.	1" = 20'
SCALE VERT.	1" = 2'

CULVERT PLAN & PROFILE

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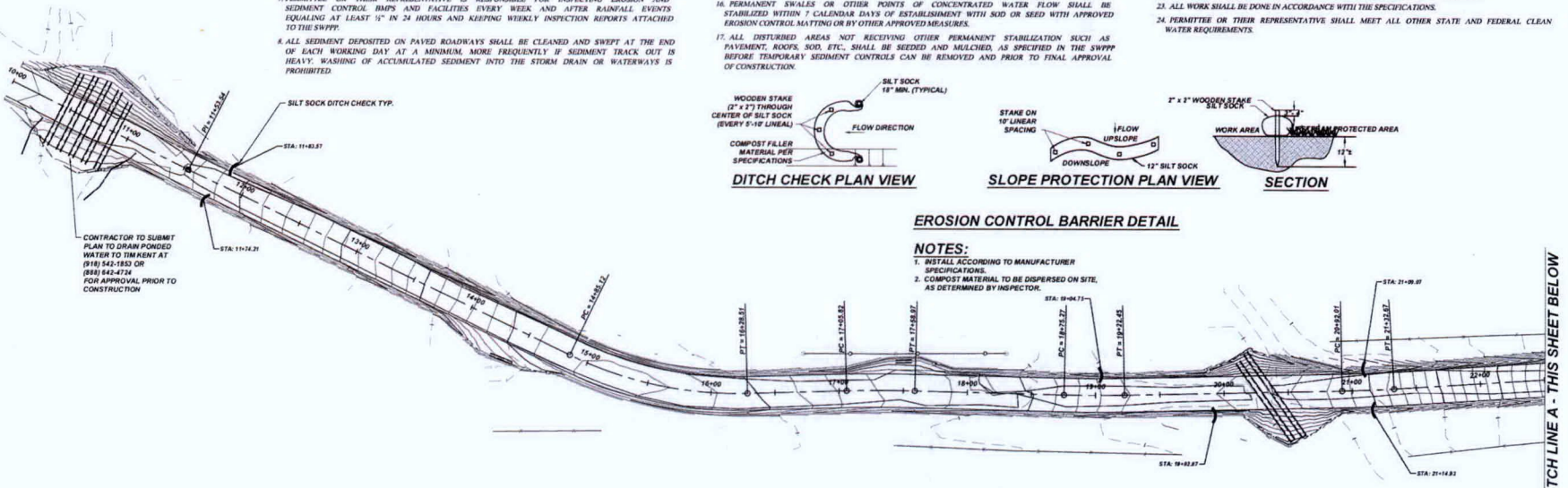
SEDIMENT AND EROSION CONTROL GENERAL NOTES:

1. THIS PLAN SHOWS THE LOCATION AND DETAILS PRIMARY SEDIMENT CONTROLS TO BE CONSTRUCTED. THE PERMITTEE OR THEIR REPRESENTATIVE IS RESPONSIBLE FOR CONTROLLING EROSION AND DISCHARGE OF SEDIMENT FROM THE SITE AT ALL TIMES DURING CONSTRUCTION. THE PERMITTEE OR THEIR REPRESENTATIVE SHALL PROVIDE NECESSARY MEASURES DURING ALL PHASES OF CONSTRUCTION REGARDLESS OF WHETHER THEY ARE SPECIFICALLY NOTED ON THIS PLAN AND SHALL MAINTAIN AND REPLACE CONTROLS AS NECESSARY DURING CONSTRUCTION TO PREVENT THE MOVEMENT OF SEDIMENT DOWNSTREAM.
2. ALL EROSION AND SEDIMENT CONTROL BMPS SHALL BE INSTALLED AND MAINTAINED ACCORDING TO THE SPECIFICATIONS.
3. THE PERMITTEE OR THEIR REPRESENTATIVE IS RESPONSIBLE FOR INFORMING ALL PARTIES ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE SWPPP.
4. THE LIMITS OF CLEARING, GRADING, AND DISTURBANCE, AS SHOWN ON THE PLAN(S), SHALL BE KEPT TO A MINIMUM WITHIN THE APPROVED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE THE LIMITS OF DISTURBANCE SHALL REMAIN TOTALLY UNDISTURBED. PHASING SHALL BE USED TO MINIMIZE THE AMOUNT OF DISTURBED AREA AT ANY GIVEN TIME.
5. SEDIMENT BASINS, IF SHOWN ON THIS PLAN, MUST BE INSTALLED WITHIN 10 CALENDAR DAYS AFTER CONSTRUCTION BEGINS OR PRIOR TO 2 OR MORE ACRES BEING DISTURBED, WHICHEVER OCCURS FIRST.
6. A COPY OF THE SWPPP AND INSPECTION REPORTS MUST BE ACCESSIBLE AT THE CONSTRUCTION SITE.
7. PERMITTEE OR THEIR REPRESENTATIVE IS RESPONSIBLE FOR INSPECTING EROSION AND SEDIMENT CONTROL BMPS AND FACILITIES EVERY WEEK AND AFTER RAINFALL EVENTS EQUALING AT LEAST ½" IN 24 HOURS AND KEEPING WEEKLY INSPECTION REPORTS ATTACHED TO THE SWPPP.
8. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE CLEANED AND SWEPT AT THE END OF EACH WORKING DAY AT A MINIMUM, MORE FREQUENTLY IF SEDIMENT TRACK OUT IS HEAVY. WASHING OF ACCUMULATED SEDIMENT INTO THE STORM DRAIN OR WATERWAYS IS PROHIBITED.
9. DUST SHALL BE CONTROLLED DURING CONSTRUCTION AND CONSTRUCTION AREAS SHALL BE WATERED WHENEVER CONDITIONS WARRANT.
10. SEDIMENT REMOVED FROM EROSION AND SEDIMENT CONTROLS AND FACILITIES SHALL NOT BE PLACED ON STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND SHALL BE IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.
11. SEDIMENT ACCUMULATION IN BASINS SHALL BE REMOVED UPON ACCUMULATION OF 6 INCHES OF SEDIMENT.
12. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH AN APPROVED SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER NON DISTURBED AREAS.
13. THE PERMITTEE OR THEIR REPRESENTATIVE IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS OFF-SITE BORROW AND FILL AREAS.
14. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT DEPOSITION, THE PERMITTEE OR THEIR REPRESENTATIVE SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT DEPOSITION.
15. THE PERMITTEE OR THEIR REPRESENTATIVE SHALL STABILIZE ALL DISTURBED AREAS NOT SUBJECT TO CONSTRUCTION ACTIVITY WITHIN 14 CALENDAR DAYS AFTER ACTIVITY HAS CEASED.
16. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITHIN 7 CALENDAR DAYS OF ESTABLISHMENT WITH SOD OR SEED WITH APPROVED EROSION CONTROL MATTING OR BY OTHER APPROVED MEASURES.
17. ALL DISTURBED AREAS NOT RECEIVING OTHER PERMANENT STABILIZATION SUCH AS PAVEMENT, ROOFS, SOD, ETC., SHALL BE SEEDED AND MULCHED, AS SPECIFIED IN THE SWPPP BEFORE TEMPORARY SEDIMENT CONTROLS CAN BE REMOVED AND PRIOR TO FINAL APPROVAL OF CONSTRUCTION.
18. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
19. AFTER FINAL STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS SHALL BE STABILIZED IMMEDIATELY.
20. SILT AND DEBRIS MUST BE REMOVED FROM STORM DRAINS, CONVEYANCE CHANNELS, BASINS OR ANY PART OF THE STORMWATER SYSTEM PRIOR TO FINAL SITE STABILIZATION APPROVAL.
21. THE FOLLOWING WILL BE IMPLEMENTED ACCORDING TO LOCAL, STATE, AND FEDERAL REGULATIONS: LIQUID AND SOLID WASTE MANAGEMENT, CHEMICAL AND MATERIAL DELIVERY AND STORAGE, CONCRETE WASTE, PAINTING AND DRYWALL WORK, VEHICLE FUELING, MAINTENANCE AND CLEANING, ASPHALT, SAWCUTTING, CORING, AND GRINDING ACTIVITIES, BUILDING BLASTING AND CLEANING, CEMENT, GROUT AND MORTAR WORK, SANITARY AND SEPTIC WASTES, WATER LINE DISINFECTION, FLUSHING, DEWATERING, AND OTHER NON-STORMWATER DISCHARGES, HAZARDOUS WASTE MANAGEMENT, AND PROHIBITED DISCHARGES.
22. PERMITTEE OR THEIR REPRESENTATIVE SHALL CLOSE OUT THEIR LAND DISTURBANCE PERMIT AT THE END OF CONSTRUCTION ACTIVITIES AND AFTER FINAL STABILIZATION MEASURE AND REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROLS HAVE BEEN REVIEWED.
23. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS.
24. PERMITTEE OR THEIR REPRESENTATIVE SHALL MEET ALL OTHER STATE AND FEDERAL CLEAN WATER REQUIREMENTS.



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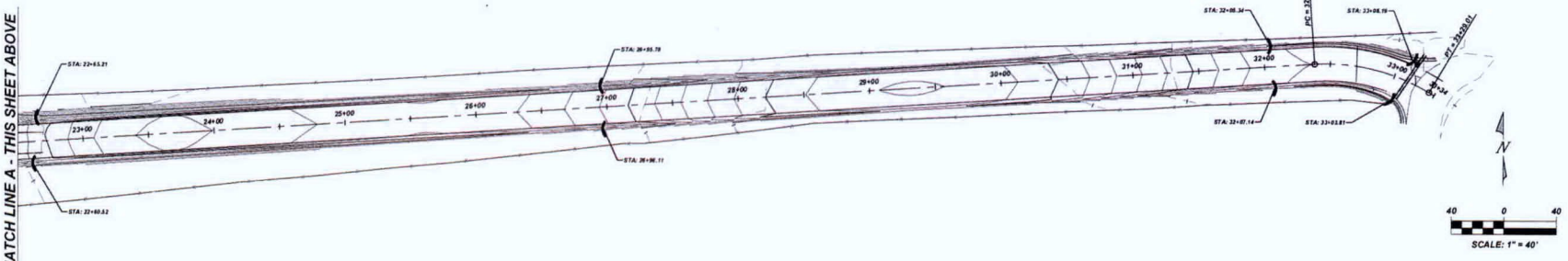

MATCH LINE A - THIS SHEET ABOVE

DITCH CHECK PLAN VIEW

SLOPE PROTECTION PLAN VIEW

SECTION

EROSION CONTROL BARRIER DETAIL

NOTES:

1. INSTALL ACCORDING TO MANUFACTURER SPECIFICATIONS.
2. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY INSPECTOR.

Prepared by:
CJW
CJW Transportation Consultants, L.L.C.
CJW Transportation Consultants, L.L.C. Engineering MD C.A. #3080012383
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REGISTERED PROFESSIONAL ENGINEER
ERNIE SEILER
PE24862
10-10-13
OKLAHOMA

HAUL ROAD
QUAPAW TRIBE OF OKLAHOMA
OTTAWA COUNTY, OKLAHOMA

No.	Description:	Date:
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SURVEY BY	CJW
DATE	10/10/13
DWG	0000-PLAN
DESIGN	CJW
DRAWN	CJW
CHECKED	CJW
SCALE HOR.	1"=20'
SCALE VERT.	N/A

TEMP EROSION CONTROL

SHEET NO. 007
CJW NO. 1379 OF 07

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Appendix B

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Areas included in Contractor's Scope of Work

Project Items	Disposition
Estimated Quantities	
Marketable Chat, Ton	*
Unmarketable Chat, Development Rock & Waste Materials (Soil), Ton	*
Access Road Installed	LS
Access Road Removed	LS
Designated Disposition Location	
Marketable Chat	Bingham Sand & Gravel Processing Area, Flint Rock Products Processing Area or other processing area located within a radius of 10 miles of the Group site.
Unmarketable Chat	OU 4 Repository located on East 40 Road
Fine or Wash Tailings	OU 4 Repository located on East 40 Road
Development Rock	OU 4 Repository located on East 40 Road
Transition Zone Soils	OU 4 Repository located on East 40 Road
Miscellaneous Waste Materials	OU 4 Repository located on East 40 Road

* Assumes measured volumes at locations multiplied by factor of 1.3 tons / Cubic Yard.

NOTE: Disposition of unmarketable materials may also include filling mine shafts/vents/subsidence features as determined by QTEO.

Appendix C

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Cased Boring Identification, Evaluation, and Abandonment Procedures

[See Attached]

Cased Boring Identification, Evaluation, and Abandonment Procedures (Version 1.0)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
October 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

Cased Boring Identification, Evaluation, and Abandonment Procedures
Version 1.0
DISTRIBUTION SHEET

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Copies of this Cased Boring Identification, Evaluation, and Abandonment Procedures have been distributed to the following people:

Rafael Casanova, P.G. - U.S. EPA, Region 6, Remedial Project Manager

Tim Kent, P.G. - QTEO, Environmental Director / Project Manager

Craig Kreman, E.I. - QTEO, Quality Assurance Manager

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1.0 PURPOSE AND OBJECTIVES 1

2.0 PROCEDURE 1

3.0 LIST OF CONTACTS 2

Acronyms

µg/dL	micrograms per deciliter
µg/m3	micrograms per cubic meter
°F	degrees Fahrenheit
AHA	Activity Hazard Analysis
APR	air-purifying respirator
ARRA	American Recovery and Reinvestment Act of 2009
ATV	all-terrain vehicle
BBLPS	behavior-based loss prevention system
CFR	Code of Federal Regulations
cm	centimeter
CO	carbon monoxide
CPR	cardiopulmonary resuscitation
CRZ	Contamination Reduction Zone
dBA	decibel, A-weighted
DEET	N, N-diethyl-meta-toluamide
DFWP	Drug-Free Work Place
EPA	U.S. Environmental Protection Agency
EZ	exclusion zone
FIT	Fitness Inspection Test
GFCI	ground fault circuit interrupter
HAZWOPER	hazardous waste operations and emergency response
HITS	Hours and Incident Tracking System
HPS	Hantavirus pulmonary syndrome
H&S	Health and Safety
HSM	Health and Safety Manager
IARC	International Agency Research Cancer
IRF	Incident Report Form
kV	kilovolt
mg/m3	milligrams per cubic meter
mm	millimeter
MSDS	Material Safety Data Sheet
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PEL	permissible exposure level
PFD	personal flotation device
PPE	personal protective equipment
ppm	parts per million
PTSP	Pre-Task Safety Plan
RF	radio frequency
ROD	Record of Decision
SBO	Safe Behavior Observations
SOP	Standards of Practice/Standard Operating Procedures
TWA	time-weighted average
UV	ultraviolet
XRF	x-ray fluorescence
ZPP	protoporphyrin

1.0 PURPOSE AND OBJECTIVES

The purpose of this document is to provide the procedures that are to be followed whenever cased borings are encountered during the course of remediating the Tar Creek Operable Unit 4 site.

2.0 PROCEDURE

1. Obtain GPS coordinates and photographs for each cased boring during pre-construction site reconnaissance.

    a. Provide with the correspondence to GIS for mapping:

        i. Condition of casing (e.g. bent, collapsed, perforated, or viable)

        ii. Indication (visual inspection) if the casing is plugged at the surface

2. If the casing appears to be viable with no apparent plugging, notify the RE of the presence and location.

    a. The RE, or designated party within the field reconnaissance team will either forward the information to ECCI Engineer (Engineer). A tracking sheet, or "chain of custody" will be established and maintained in the field to ensure that all discovered borings have been reviewed and a course of action established.

        i. The Point-of-Contact for ECCI is Trip Gentry (501)975-8100.

    b. Document findings and successful correspondence/notification to ECCI with the field QC or designated personnel.

        i. The Engineer will review the location against existing mine maps to determine the potential for the cased boring to serve as a monitoring well, and therefore warrant protection during site remediation efforts.

        ii. If the Engineer deems that the boring is not completed in an aquifer of interest they will notify the field personnel who made initial contact that the cased boring can be scheduled for abandonment. It is the responsibility of the field personnel who made the contact with the Engineer to notify the RE and/or QC so the course of action can be documented in the "Cased Boring Tracking Sheet."

        iii. If the Engineer finds that further investigation is warranted, they will contact and direct the field reconnaissance team, via the RE, with a recommended course of action to define the viability of the cased boring.

        iv. Upon the completion of those activities the cased boring will either be identified in the tracking sheet as "protect/preserve" or "abandon."

3. If the cased boring is to be abandoned the following procedures will be carried out:

    a. Excavate soils surrounding the casing to a depth of 4 feet below ground surface. For active remediation grids this will be accomplished subsequent to removal of transition zone soils.

    b. Cut the casing horizontally at a level as close to the excavation grade as equipment being used will provide for.

c. If the casing has not already been backfilled with material, insert an inflatable sewer plug as deep into the casing as can be done safely.

d. Using either grout or polyurethane foam (PUF), backfill the casing to the top of the remaining casing with a minimum of 12-inches (depth) of material being utilized.

e. Finish out the abandonment by creating a crown over the top of the casing so that water will shed away from the exterior of the casing.

f. Survey in the centerline of the abandoned casing, including elevation, and provide documentation on the site's redlined drawings those coordinates.

g. Document in the tracking sheet that the cased boring was successfully abandoned.

4. Backfill with excavated materials and slope evenly to shed water conically away from the casing.

3.0 LIST OF CONTACTS

Name	Address	Phone
Tim Kent	Quapaw Tribe of Oklahoma PO Box 765 Quapaw, OK 74363	(918)542-1853
Kurt Lesher	Quapaw Tribe of Oklahoma PO Box 765 Quapaw, OK 74363	(918)542-1853 Ext. 226
Trip Gentry	ECCI 13000 Cantrell Road Little Rock, AR 72223	(501)975-8100

******

Cased Boring Identification, Evaluation, and Abandonment Procedures Version History
Version / Revision Date / Revision Reason
Version 1.0 10/01/2013 Procedures drafted

Appendix D

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Backfilled Mine Shaft Monitoring Procedures

[See Attached]

Backfilled Mine Shaft Monitoring Procedure (Version 1.1)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
December 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

Backfilled Mine Shaft Monitoring Procedures
Version 1.1
DISTRIBUTION SHEET

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Copies of this Backfilled Mine Shaft Monitoring Procedures have been distributed to the following people:

Rafael Casanova, P.G. - U.S. EPA, Region 6, Remedial Project Manager

Tim Kent, P.G. - QTEO, Environmental Director / Project Manager

Craig Kreman, E.I. - QTEO, Quality Assurance Manager

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3.0 MONITORING RECOMMENDATIONS 1

1.0 BACKGROUND

The procedure for backfilling and capping mine shafts under the OU4 Distal 8 remedy is a cost effective approach of using "source" materials (predominantly mining activity waste rock), which are typically readily available at each mine shaft property. Such source materials include coarse material, in the form of development rock (large-cap and shell-rock boulders created in the process of developing a shaft), and mining-era concrete that has been culled by size to avoid creating a "false-bottom" in the shaft, where the concrete gets lodged in the upper reaches of the shaft throat. This coarse material is placed into the shaft until it is just below the surface opening. Smaller-sized source material, known as "chat," is then backfilled into the shaft until the material reaches the surface opening.

At this point, a surcharge or preload, consisting of source material, is established over the backfilled shaft by placing about 2 feet of material over the opening. The purpose of the surcharge is to induce compaction within the backfilled materials in the shaft without using equipment in and around the shaft opening.

Once the preload has been established, a temporary survey monument is established in the center of the preload material and monitored daily for settling for two weeks, or until a clear trend has been established that the backfilled material has stabilized (3 or more data points with no change). After the backfilled materials have stabilized, the preload material is then regraded and capped with 18 inches of uncontaminated topsoil.

Finally, a surveying monument (usually a "pin") is then established on the cap and monitored daily for two weeks. If no settling is evident over the two-week period, the monitoring frequency is then extended to quarterly. If review of the quarterly data suggests that the cap has stabilized and no further maintenance is likely to be required, the monitoring period is then changed to an annual monitoring frequency. The current monitoring procedure does not stipulate how long the annual monitoring should continue. This was not an oversight, but simply reflects that the efficacy of the current mine shaft backfilling and capping procedure would need to be validated with empirical evidence.

2.0 DATA REVIEW

In the time since the OU4 RA was initiated in January 2010, 84 mine shafts have been backfilled and capped, and monitored in accordance with the regimen described above. The surveying data were reviewed recently to validate the efficacy of the backfilling procedures, and determine if a more cost-effective means of monitoring for subsidence might be acceptable. See Technical Memorandum Tar Creek Source Material Operable Unit 4 Remedial Action Modification to the Backfilled Mine Shaft Monitoring Procedure produced by CH2MHILL for all subsidence monitoring data.

3.0 MONITORING RECOMMENDATIONS

Maintain the current preload and immediate post-capping monitoring regimen, whereby elevations are recorded daily for a period of two weeks after the pin is in place. If, during that two week period review of the daily survey data provides that the cap and backfill have stabilized (3 or more data points with no elevation change), it is recommended to proceed to quarterly monitoring for one year after the final inspection. At the completion of that year, it is anticipated the remedy for that particular site will be determined by EPA to be operational and functional (O&F), and once that determination is made, active monitoring of the backfilled shafts via survey will cease, and the capped shafts will thereafter be the responsibility of the landowner to maintain.

******

Backfilled Mine Shaft Monitoring Procedures Version History
Version / Revision Date / Revision Reason
Version 1.0 10/01/2013 Procedures drafted
Version 1.1 12/02/2013 Plan approved / implemented

Quality Assurance Project Plan

Quality Assurance Project Plan (Version 1.1)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
December 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

QUALITY ASSURANCE PROJECT PLAN (QAPP)
Version 1.1
APPROVAL SHEET

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Prepared by: Quapaw Tribe Environmental Office (QTEO) Date: December 2013

Approved by:

_____ _____
Rafael Casanova, P.G. Date
U.S. EPA, Region 6, Remedial Project Manager

_____ _____
Tim Kent, P.G. Date
QTEO, Project Manager

_____ _____
Craig Kreman, E.I. Date
QTEO, Quality Assurance Manager

USEPA QTRAK #: ____

QUALITY ASSURANCE PROJECT PLAN (QAPP)
Version 1.1
DISTRIBUTION LIST

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

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Craig Kreman - QTEO, Quality Assurance Manager

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Acronyms

ASTM	American Society of Testing and Materials
ASL	Analytical Support Level
ARARs	Applicable or Relevant and Appropriate Requirements
BIA	United States Bureau of Indian Affairs
bgs	below ground surface
C	Celsius
CLP	Contract Laboratory Program
COC	Chain-of-Custody
DMP	Data Management Plan
DO	Dissolved Oxygen
DQE	Data Quality Evaluation
DQO	Data Quality Objective
EDMS	Electronic Document Management System
EPA	U.S. Environmental Protection Agency
ERB	Equipment Rinsate Blank
ESAT	Environmental Services Assistance Team
FB	Field Blank
FD	Field Duplicate
FSP	Field Sampling Plan
FTL	Field Team Leader
GPS	Global Positioning System
HCWP	Hydrogeologic Characterization Work Plan
HI	Hazard Index
HSP	Health and Safety Plan
ID	Identification
IDW	investigation-derived waste
LOAEL	Lowest observed adverse effect level
LCOC	Laboratory Chain of Custody
MCL	Maximum Contaminant Level
MS/MSD	Matrix Spike/ Matrix Spike Duplicate
NAD83	North American Datum of 1983
ODEQ	Oklahoma Department of Environmental Quality
ORP	Oxidation Reduction Potential
OWRB	Oklahoma Water Resources Board
PC	Project Chemist
PCR	Property Control Representative
PM	Project Manager
PPE	Personal Protective Equipment
PVC	Polyvinyl Chloride
OU	Operable Unit
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RA	Remedial Action
RAOs	Remedial Action Objectives
RGs	Remediation Goals
RD	Remedial Design
ROD	Record of Decision
RPLS	Registered Public Land Surveyor
RSCC	Regional Sample Control Coordinator
SDG	Sample Delivery Group
SMO	Sample Management Officer
SMP	Site Management Plan
SOP	Standard Operating Procedure
SPLP	Synthetic Precipitation Leaching Procedure
TAL	Toxic Analyte List

TAT	Turn-around-time
TDS	Total Dissolved Solids
TM	Task Manager
TOC	Total Organic Carbon
TR	Traffic Report
TZ	Transition Zone
UIC	Underground Injection Control
USACE	United States Army Corps of Engineers
USDW	Underground Source of Drinking Water
USGS	United States Geological Survey

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1.0 PROJECT MANAGEMENT

This Quality Assurance Project Plan (QAPP) has been prepared for the U.S. Environmental Protection Agency (EPA) in support of the Source Material Remedial Action (RA) for Operable Unit (OU) 4, Distal Zone 8, the "Catholic 40 Site", at the Tar Creek Superfund Site, Ottawa County, Oklahoma. Section 1 of the Quality Assurance Project Plan (QAPP) presents information regarding the management of the project. Aspects of project management discussed include:

- Project organization, roles, and responsibilities
- Problem definition and background
- Project task description
- Project data quality objectives (DQOs)
- Special training requirements
- Documentation and records management

The purpose of this QAPP is to present the quality assurance/quality control (QA/QC) requirements for the collection and analysis of samples in support of activities at the Catholic 40 Site (Site). This document together with the QTEO Field Sampling Plan (FSP), the QTEO Health and Safety Plan (HSP), and the QTEO Site Management Plan (SMP) describe the procedures to be used during the performance of the Catholic 40 remediation.

This QAPP was written according to guidelines set forth in *EPA Guidance for Quality Assurance Project Plans (EPAQA/G-5)* (EPA, 2002). This plan describes the Quapaw Tribe Environmental Office's (QTEO) program procedures in place to ensure the highest possible quality of environmental data collection and evaluation activities related to the Response Action Contract (RAC) and Task Order Scope of Work.

1.1 Introduction

As a result of mining and milling operations, large quantities of mining wastes were deposited on the surface in piles. The large surface piles contain tailings, known locally as chat, produced from the gravity separation milling process. The chat pile or source material, located on Distal Zone 8, is labeled as Chat Base 11 (CB011). Distal Zone 8, commonly known as the Catholic 40, is approximately 40 acres in size and includes one (1) chat base and one (1) known mine shaft. CB011 is located adjacent to an historic and culturally significant complex of ruins that comprised a Catholic church, school, and other supporting buildings.

1.2 Project/Task Organization

EPA Region 6 Remedial Project Manager:
Mr. Rafael Casanova is the EPA Region 6 Remedial Project Manager (RPM) for this project. Mr. Casanova serves as the EPA liaison for the project and has the ultimate responsibility for overall EPA management of the project. Any significant changes to the planned activities, site access issues, public outreach issues, or significant problems encountered will be reported to the RPM by the Project Manager (PM) or designee. Any changes in the systems defined in the site-specific plans for this project must be approved by the RPM.

Tar Creek Superfund Stakeholders:
Current stakeholders for the Catholic 40 include the Quapaw Tribe of Oklahoma, Bureau of India Affairs (BIA), and Oklahoma Department of Environmental Quality (ODEQ). Representatives for the stakeholders of the Tar Creek Superfund Site include the Quapaw Tribe, Ms. Jonna Polk/BIA, Mr. David Cates/ODEQ, and Mr. Dennis Datin/ODEQ.

QTEO Project Manager:
Mr. Tim Kent serves as the PM for this project. The PM functions as the primary interface between the RPM and the project team and is responsible for meeting all technical, financial, and scheduling goals. The PM will be the central point of contact for all matters concerning the project. The PM site management responsibilities include:

- Ensure proper management of EPA/Tribe Superfund Cooperative Agreement (SFCA) grant related to this RA
- Define project objectives and develop a detailed Work Plan and schedule

- Establish project policies and procedures to address the specific needs of the project as a whole, as well as the objectives of each task
- Advise the RPM of technical progress, program needs, potential problems, and recommended solutions
- Arrange, organize, monitor, direct, and control staff and other resources needed to execute the task order within budget and schedule restraints, and establish clear lines of communication within the QTEO organization
- Familiarize field leaders and support staff with the project's special considerations
- Review the work performed and overall task performance for quality, responsiveness timeliness, and budgetary considerations
- Oversee management of subcontractors
- Review external reports (deliverables) before submission to the EPA
- Represent the project team at meetings with the EPA and other project stakeholders

QTEO Quality Assurance Manager:
Mr. Craig Kreman serves as the Quality Assurance Manager (QAM) for this project. The QAM provides quality management support to the PM. The QAM responsibilities include:

- Create and approve the Program Quality Management Plan (PQMP), the Quality Assurance Project Plan (QAPP), and the Field Sampling Plan (FSP)
- Review program level quality work instructions and procedures
- Monitor the scope, quality and completeness of project reviews and deliverables
- Guides the QC process by serving as a technical resource and counselor to the PM
- Monitor and manage the flow of data throughout the project
- Create and maintain the project database which will contain project analytical data
- Act as project liaison to the analytical laboratories to address any technical chemistry issues or problems encountered by the laboratories or by data reviewers
- Perform or oversee the validation of all analytical data obtained and assess its usability in achieving project DQOs and supporting project decisions

QTEO Health and Safety Manager:
Mr. Robert Rogers serves as the QTEO Health and Safety Manager (HSM). The HSM responsibilities include:

- Serve as a resource and contact point for all QTEO team members regarding issues/concerns related to QTEO health and safety
- Provide review of the QTEO HSP and subsequent addenda
- Conduct field audits if necessary in accordance with QTEO policies and procedures
- Determine the cause and implement necessary corrective action in the event of an accident.

QTEO Senior Procurement Specialist:
Ms. Ardie Blair serves as the QTEO Senior Procurement Specialist. The Senior Procurement Specialist is responsible for the management of any subcontract documents created in support of this project. Specific responsibilities of the Senior Procurement Specialist include:

- Administer the contractor in accordance with program and legal requirements
- Procure equipment and materials from vendors necessary for QTEO to administer/manage the SFCA grant
- Resolve any subcontract disputes

Field Sampling Team Leader:
A qualified staff member from the QTEO will serve as the Field Sampling Team Lead (FSTL). The Field Sampling Team Lead (FSTL) is responsible for all onsite activities during the field investigation including sample collection, field analysis, and direction of any other field sampling activities. Other responsibilities include:

- Coordinate the day-to-day sampling activities of the project team
- Maintain close contact with the PM and QAM so that potential schedule, budget, and/or technical problems can be addressed in a timely manner
- Coordinate with the PM to ensure compliance with the HSP
- Ensure compliance with the FSP and QAPP

- Coordinate field sampling efforts, and provide and maintain sampling equipment and materials shipping and packing materials
- Supervise the completion of chain of custody (COC) records, the handling and shipping of samples, and the completion of the field notebooks
- Implement the required field QA/QC measures and ensure that the sampling team follows all approved policies and field procedures

Source Material Operable Unit 4
Distal Zone 8 Remedial Action
Tar Creek Superfund Site
Ottawa County, Oklahoma

CATHOLIC 40
Organizational Flow Chart

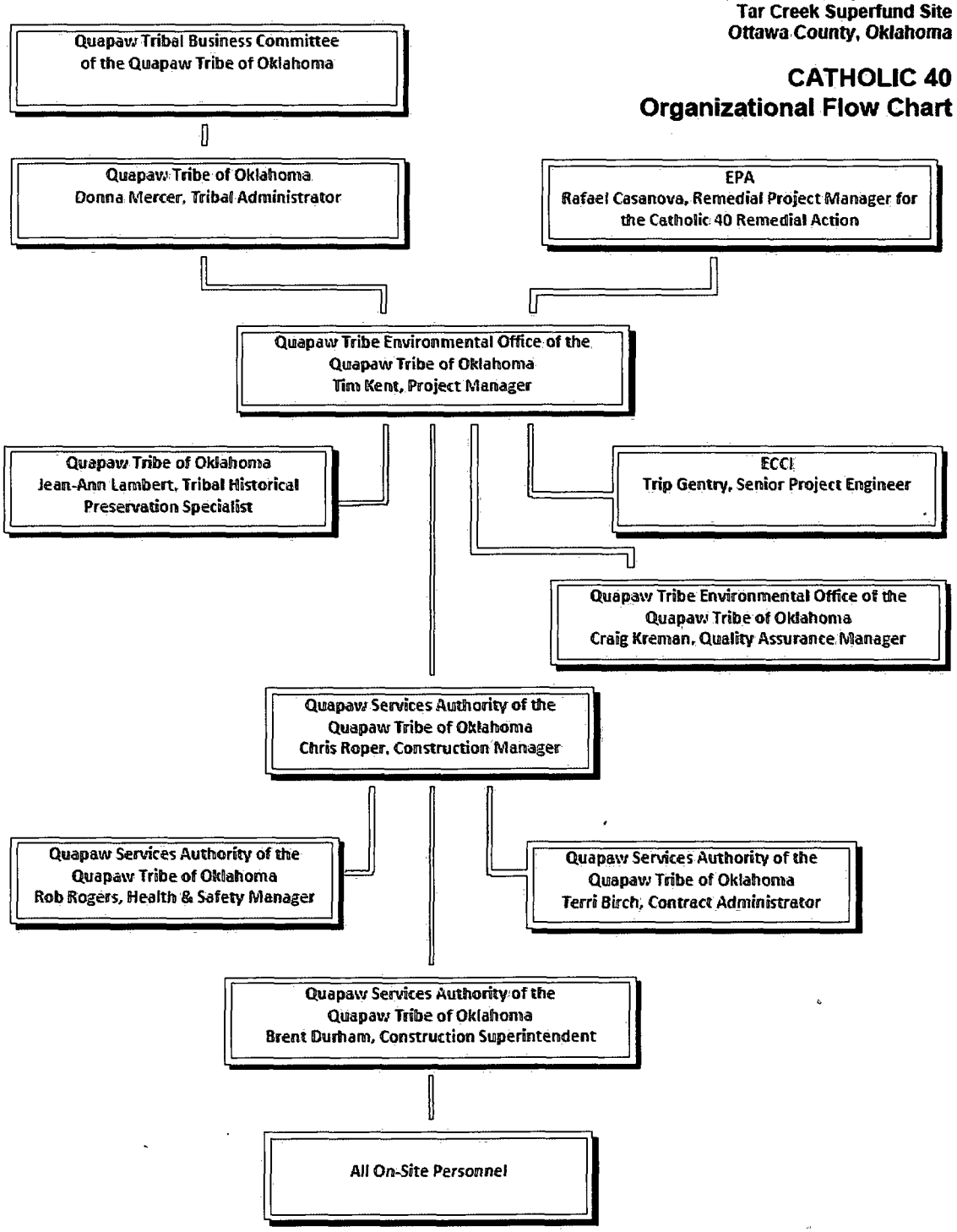

Figure 1.1 Organizational Chart **Quapaw Tribe of Oklahoma**

Table 1.1 Project Personnel and Telephone Numbers

Name	Role	Telephone Number
Rafael Casanova	EPA Region 6 OU4 Distal 8 Remedial Project Manager	214-789-1633
Janetta Coats	EPA Community Involvement Coordinator	214-665-7308
Donna Mercer	Quapaw Tribe Tribal Administrator	918-542-1853
Tim Kent	Quapaw Tribe Environmental Office Project Manager	918-533-2592
Craig Kreman	Quapaw Tribe Quality Assurance Manager	918-533-3085
Robert Rogers	Quapaw Tribe Health and Safety Manager	620-387-9614
Ardie Blair	Quapaw Tribe Senior Procurement Specialist	918-540-4515
Trip Gentry	ECCI Senior Project Engineer	501-975-8100
Chris Roper	Quapaw Tribe Construction Manager	918-919-6153
Brent Durham	Quapaw Tribe Construction Superintendent	573-465-3588
Terri Birch	Quapaw Tribe Contract Administrator	918-919-6190
Jean-Ann Lambert	Quapaw Tribe Historical Preservation Specialist	918-542-1853

1.3 Problem Definition/Background

The Tar Creek Superfund Site is located in the extreme northeastern corner of Oklahoma in Ottawa County and encompasses the towns of North Miami, Picher, Cardin, Quapaw, and Commerce. Approximately 30,000 people currently live in the area.

The rich deposits of lead and zinc in the region began to be mined around 1890. The mining industry prospered in the Tri-State Mining District, and by the early 1900's the Tar Creek area was a major producer of lead and zinc for the country. Meanwhile, the various mills were producing large amounts of chat and flotation tailings, a mining waste that remains after the milling of the lead and zinc ore. The chat material, some of which contained substantial concentrations of lead, was discarded in nearby piles. The flotation tailings, also containing high concentrations of lead, were discarded in nearby ponds.

By the 1960's, most major mining facilities in the area had ceased operations, leaving behind the enormous piles of chat waste material. The cessation of the mining pumps' de-watering activities allowed the mines to begin filling with ground water. The water reacted with the mine contents and slowly became acidic, dissolving substantial concentrations of heavy metals into solution. The acidic mine water eventually began contaminating the rest of the Boone Aquifer and began discharging at the surface and into Tar Creek around 1979.

The EPA added Tar Creek to the National Priorities List (NPL) of Superfund sites in 1981. The initial project, Operable Unit 1 (OU1), began in 1982, and focused on the surface water contamination in Tar Creek and in the underlying Roubidoux Aquifer, which is the primary source of ground water used as a drinking water supply in the area.

In 1994, EPA began investigating the chat waste piles as a source of contamination. According to historical information, locals utilized the chat as alley and road-building material, surface for driveways, and general fill material for residential areas. This usage of chat may have inadvertently spread lead contamination throughout the area, which could potentially threaten human health or the environment. In 1997 the OU2 ROD was signed which addressed the investigation and remediation of contaminated soil at residential properties throughout the Site.

In 2000 it was estimated that 50 million tons of chat waste remained in Ottawa County posing a potential threat to human health and the environment. OU4 includes the chat piles, mine and mill waste, smelter waste, and tailings

ponds within the Site. The Remedial Investigation / Feasibility Study (RI/FS) for OU4 was completed in 2007 and the ROD for OU4 was signed by EPA in February 2008 (EPA, 2008). Work is still currently ongoing on the RD.

The purpose of the RA is to implement the remedial strategies as listed in the ROD and designed in the RD. "The 2008 ROD requires that source material accumulations be removed (for reuse if possible), and affected transition zone (TZ) soil present up to 12 inches below final grade adjacent to or beneath those source material accumulations be remediated where the following remediation goals (RGs) are exceeded:

- Cadmium — 10 milligrams per kilogram (mg/kg)
- Lead — 500 mg/kg
- Zinc — 1100 mg/kg

1.4 Project/Task Description

This QAPP applies to data collection efforts in support of the Source Material RA. OU4 Source Material RA field activities at the Site will include:

- Sampling of chat material for evaluation of marketability for potential reuse[1], sampling of accumulated stormwater[2], collection of soil samples for agricultural parameter analysis[3], and collection of samples of suspected asbestos-containing building materials (ACBM)[4] encountered on the Site for characterization purposes.
- Chat samples will be analyzed for lead, specific gravity, and grain size composition through sieve analysis.
- Transition zone soil samples will be analyzed for total lead (dried and sieved), cadmium, and zinc by an off-site laboratory, using inductively-coupled plasma atomic emission spectrometry (ICP-AES) analysis. Soil samples may be analyzed for other parameters (*e.g.*, agricultural parameters), depending upon the task being performed.
- Surface water and stormwater samples will be analyzed by the off-site laboratory for total and dissolved concentrations of lead, cadmium, and zinc, as well as other analytes, depending upon the specific task.
- Samples of suspected ACBM will be analyzed by polarized light microscopy (PLM) to assess the asbestos content of the material.

If modifications to the activities described in the FSP or in this QAPP are made during the field effort, changes will be documented in the sampling logbook and the FTL will communicate all changes to the QTEO for inclusion in the report of results.

1.5 Quality Objectives and Criteria for Measurement Data

The primary objective of the OU4 Source Material RA is to implement the remedial strategies as described in the ROD. Catholic 40 chat piles, bases, and fine tailings will be removed and confirmation samples of the underlying soil will be collected and analyzed in the laboratory to determine if lead, cadmium, or zinc are present at concentrations exceeding ROD remediation goals.

These project objectives have been used to develop specific DQOs, which are qualitative and quantitative statements that describe the type and quality of analytical data needed to meet project objectives. The DQO process used for this project follows the EPA QA/G4 guidance (EPA, 2006) and uses the seven-step DQO development process. The DQOs provide a basis for the investigation activities to be performed, and they ensure that data collected during the investigation will be of sufficient and adequate quality for their intended use. A detailed summary of the DQOs are listed in Table 1.2.

1.5.1 Step 1: State the Problem

Chat, washed fines, and flotation tailings material represent a continuing potential source of contamination and could potentially threaten human health and the environment. This has led to impact of native soil beneath the chat

1 Chat characterization samples were collected from CB011 for grain size and total lead concentration analysis. The results of chat characterization samples are posted on the chat sales website at http://projects.ch2m.com/TCOU4chat, and discussed directly with the potential chat processors in the area (CH2M Hill, 2012).

2 No site-specific discharge points are present on the Catholic 40 site for stormwater analysis. The QTEO monthly samples surface water from Beaver Creek at Catholic 40 for various water quality parameters. The QTEO will continue to monitor surface water quality at the Catholic 40 Beaver Creek site in accordance with the approved water monitoring QAPP.

3 The QTEO will utilize the OSU Extension Services prior knowledge and experience of area sites to incorporate the proper site soil amendments to enhance the soil's ability to support vegetation if needed.

4 If asbestos-containing building material (ACBM) is suspected and/or encountered at the site, work will stop and proper measures taken to address ACBM issue.

piles. Catholic 40 chat piles, bases, and fine tailings must be excavated and removed to protect human health and the environment. The chat may be suitable for reuse off-site, depending on its specific characteristics. Excavation activities could potentially cause particulate lead to be present in the air at concentrations that could pose a risk to human health.

TZ soil adjacent to and beneath source material accumulations may contain metals at concentrations that exceed the RGs. This soil must be remediated to a maximum depth of 12 inches. Following removal of the source materials and TZ soils, the remaining site soils may be evaluated for agronomic parameters, depending upon the use of the soil for site restoration purposes. Stormwater that accumulates in excavations may need to be sampled to determine disposal options. Debris encountered on-site may include potential ACBM. The potential ACBM must be evaluated to determine the asbestos content to allow proper disposition of the material.

1.5.2 Step 2: Identify the Goals of the Study

To address the problems stated above several questions must be answered:

- Are the lead concentrations and quantity/size gradation of chat material acceptable for reuse?
- Is lead (dried and sieved through a #60 sieve), cadmium, or zinc present in soil up to a depth of 12 inches beneath and adjacent to source material accumulations at concentrations exceeding RGs?
- Is Site soil agronomically sound for use in Site restoration following source material and TZ soil removal?
- Do lead, cadmium, and zinc concentrations in stormwater that has accumulated in excavations during remedy implementation exceed their respective National Pollutant Discharge Elimination System General Permit benchmark values?
- Does debris encountered on-site include ACBM, which may require special disposition procedures?

1.5.3 Step 3: Identify Information Inputs

Historical information and data obtained from previous investigations have provided a significant amount of data regarding the site. Lead concentrations and size gradation of chat material will be determined through collection of chat samples. If necessary, these chat samples will be provided to chat owners, potential chat users, and chat processors who will determine its marketability for potential reuse. If necessary, the size gradation will be determined through "American Association of State Highway and Transportation Officials" (AASHTO, T2-92/ASTM D75-03; Standard Test Method for Sampling of Aggregates).

Soil samples collected from adjacent to and beneath source material accumulations will be analyzed off-site by ICP for lead (dried and sieved through a #60 sieve), cadmium, and zinc. The concentrations of lead, cadmium, and zinc detected in these soil samples will be compared to RGs. The RGs for lead (sieved through #60 sieve) = 500 mg/kg; cadmium = 10 mg/kg; and zinc = 1,100 mg/kg; and the results will dictate whether remediation of the TZ soil is performed.

Site soils remaining following source material and TZ soil removal will be sampled and analyzed for agronomic parameters, if required and depending upon site restoration requirements.

Samples will be collected of stormwater that accumulates in excavations where source material and/or contaminated soil removal is being performed, and in what would be the receiving water, should the accumulated stormwater be discharged. Samples of the stormwater will be analyzed for lead, cadmium, zinc and hardness. Because the allowable concentrations of lead, cadmium, and zinc for discharge are dependent upon the hardness of the receiving water, the sample of the receiving water will be analyzed for hardness. If the requirements of the NPDES General Permit (EPA, 2008b) and the Oklahoma Water Resources Board (OAC 2011) are met, stormwater may be discharged on-site.

Samples of suspected ACBM that is encountered on-site will be analyzed for asbestos content utilizing Polarized Light Microscopy (PLM) methods.

1.5.4 Step 4: Define the Boundaries of the Study

Analytical data obtained must not only be complete and of high quality, but must also achieve reporting limits that are sufficiently low enough to be compared with associated action levels. The QC requirements specified in this QAPP and the standard operating procedures (SOPs) attached to the FSP will be followed to aid in the establishment of analytical quality. All analytical data will be obtained utilizing EPA approved methodology designed to provide

sufficient analytical sensitivity. Data reviews performed by QTEO will be conducted in accordance with SOPs, and EPA's *National Functional Guidelines for Inorganic Superfund Data Review* (EPA, 2010).

The entire Site, as defined by the ROD, encompasses nearly 40 square miles in the northern part of Ottawa County, located in the extreme northeastern corner of Oklahoma. This area is the Oklahoma portion of the former Tri-State Mining District. The focus of the Remedial Action under this QAPP, and FSP, is the Distal 8 (Catholic 40) chat base (CB 011) located in the SE Distal Zone of Operable Unit 4. In accordance with the ROD, soil samples will be collected only from within the first 12 inches below ground's surface.

TZ soil that exceeds RGs will be identified through pre-excavation composite soil sampling from grids designed to be about 1 acre in size located within the source material footprint (sampled after source material removal) and extending outward from the source material edge (possibly sampled prior to source removal) until a grid with a composite soil sample from both 0 to 6 and 6 to 12 inches below native ground surface demonstrates concentrations below RGs (or the average concentrations from the two depth intervals for all three constituents are below RGs), unless a physical boundary such as a road or creek is encountered. The sampling grids are designed to be about 1 acre in size to simulate the anticipated exposure area of the short-tail shrew, one of the more sensitive ecological receptors identified for the Site. In each grid, a composite soil sample will be collected with a hand auger from 0 to 6 inches and from 6 to 12 inches below the soil surface from five locations within the grid, and mixed prior to analysis.

If necessary for Site restoration activities, soil will be sampled for agronomic parameters in order to identify what amendments, if any, may be applied to Site soil to enhance the soil's ability to support vegetation. Agronomic soil samples are collected as composite samples from the Site area, and then submitted to the Oklahoma State University (OSU) Extension Office or directly to the OSU Soil Testing Laboratory for analysis. Based upon the analytical results, the OSU Extension Service will provide recommendations for application of soil amendments for the area sampled. Site soils that will be utilized in the construction of berms or embankments as part of the Site's restoration activities will be sampled and analyzed for geotechnical parameters such as Proctor analysis, Atterberg limits, grain size distribution, moisture content, or other analyses, as appropriate. Geotechnical samples are generally collected as grab samples from a representative area of the soil material.

Stormwater, and suspected ACBM samples will be collected as grab samples.

1.5.5 Step 5: Develop the Analytical Approach

New analytical data will be used to implement the remediation of impacted soil. The decision regarding whether or not chat present on a property to be remediated is marketable based on data collected will be made by processors in the area. In addition to the analytical results, the processors will be offered a Site visit to view conditions that may impact marketability.

For TZ soil, the concentrations of lead (dried and sieved through a #60 sieve prior to digestion/analysis), cadmium, and zinc in TZ soil samples will be compared to RGs. If one or more RGs are exceeded for either the 0 to 6 or the 6 to 12 inch depth interval, the average concentrations of lead, cadmium, and zinc for the two intervals will be compared to RGs. If the average concentration exceeds one or more RGs, the corresponding grid from which the samples were collected will be designated for remediation. If the average concentrations are below RGs, remediation of soils in that grid is not necessary.

Agronomic data obtained for Site soil during Site restoration activities will be evaluated by the OSU Extension Service. The OSU Extension Service will then provide recommendations for application of soil amendments (*e.g.*, fertilizer, organic material, etc.) to improve the ability of the soil to support vegetation. Geotechnical data for Site soils used in the construction of berms and embankments during Site restoration will be reviewed by the QTEO, and the results taken into consideration during the design/construction of the structure. Testing of chat material for use in commercial applications will be utilized to confirm that any proposed uses of chat comply with the chat use rule. Additionally, if the quantity and gradation of the chat analyzed does not meet reuse requirements the chat will be disposed of as waste.

Samples collected of stormwater that has accumulated in excavations where source material and/or TZ soil removal is being performed will be compared to NPDES General Permit requirements (EPA 2008), and if permit requirements are met, the stormwater may be discharged on-site.

Samples of suspected ACBM that are found to contain over 1% asbestos are considered to be ACBM. Disposition of ACBM material is then dependent upon further physical classification of the material as friable, Category I non-friable, or Category II non-friable.

1.5.6 Step 6: Specify Performance or Acceptance Criteria

The analytical results obtained in the investigation will be reviewed to ensure that the extent of the excavation sufficiently implements the remedial strategy. The analytical data obtained must, therefore, be of sufficient completeness and quality.

Random and/or systematic errors may be introduced during sample collection, sample handling and storage, sample analysis, data reduction, and data reporting. The QC measures specified in this QAPP and the procedures outlined in the FSP will be followed to aid in the establishment of analytical data quality and to minimize these errors. Each member of the field team must follow the same procedures in order to minimize field errors. Appropriate EPA approved analytical and field methods will be used to ensure sufficient analytical sensitivity.

Field QC samples such as field duplicates, equipment/rinsate blanks, and project-specific MS/MSDs will be used to monitor the accuracy and precision of the sampling activity as well as the analytical process and are discussed in Section 2.5.

All analytical data obtained will be reviewed for quality based on criteria and limits presented in the SOPs and the EPA's *National Functional Guidelines* to determine if the data meet project DQOs. Based on a comparison of analytical data to these criteria results may be qualified to indicate the limitations of the data. In cases where data are deemed of insufficient quality to satisfy project DQOs, the data will be rejected and will not be used to support project decisions. Data validation is discussed further in Section 4.

1.5.7 Step 7: Develop the Plan for Obtaining Data

The OU4 Source Material RA activities are designed to collect enough data to support project objectives, avoiding any unnecessary sample collection or field activities.

The target list for confirmation soil samples has been restricted to only the metals of concern at the site – cadmium, lead, and zinc. Analytical work will be performed by a local, NELAC and Oklahoma State certified, laboratory. This provides the most cost-efficient data that will meet project quality and turn-around-time requirements.

The FSP (QTEO, 2013), further describes the sampling approach. The FSP describes the field procedures utilized to collect data in the field and the protocol for documenting field activities and data management requirements.

Table 1.2 Project Quality Data Objectives and Associated Investigation Tasks

Problem Statement	Decision to be Made	Inputs to the Decision	Investigative Tasks	Decision Rule	Analyses	Data Deliverable Level
Chat						
Chat found in piles or bases may be marketable for potential reuse, depending on its characteristics.	Are lead concentrations and quantity/size gradation of chat material acceptable for reuse as aggregate for highway projects?	Lead concentrations and size gradation of chat material will be determined through collection of chat samples, and provided to chat owners, potential chat users, and chat processors who will determine its marketability for potential reuse	Chat samples will be collected from each chat pile or base using a backhoe to obtain representative sample aliquots. For chat piles, multiple grab samples will be obtained from different areas of the pile. For chat bases, composite samples will be collected from multiple 200 ft by 200 ft grids. Each chat sample will be tested in accordance with AASHTO T2-91/ASTM D75-03; Standard Test Method for Sampling of Aggregates and for total lead. Samples should be made up of at least three increments taken from the top 1/3, the midpoint, and the bottom 1/3 of chat pile/base.	Sample results will be compiled into a characterization report for each chat pile and base. These reports will be made available to processors and posted on the chat sales website. The processors will determine if chat material is marketable for reuse.	AASHTO T2-91/ASTM D75-03; Standard Test Method for Sampling of Aggregates. Total Lead Particle Size Distribution Specific Gravity (coarse fraction) Specific Gravity (fine fraction)	Tier IV subcontract laboratory: Level II

Problem Statement	Decision to be Made	Inputs to the Decision	Investigative Tasks	Decision Rule	Analyses	Data Deliverable Level
Transition Zone Soil						
TZ soil adjacent to and beneath source material accumulations may contain metals at concentrations that exceed the RGs. This soil must be remediated to a maximum depth of 12 inches.	Is lead, cadmium, or zinc present in TZ soil up to 12 inches below ground surface at concentrations that exceed remediation goals (RGs)?	Soil samples collected from adjacent to and beneath source material accumulations, up to a maximum depth of 12 inches below ground surface, will be analyzed by an offsite laboratory by ICP for lead (dried and sieved through a #60 sieve), cadmium, and zinc.	Areas beneath and adjacent to source material accumulations will be divided into one acre size grids. Five-point composite soil samples will be collected from each grid from 0 to 6 and 6 to 12 inches below ground surface, and analyzed for lead, cadmium, and zinc by offsite laboratory.	Concentrations of lead (dried and sieved through a #60 sieve prior to digestion/analysis), cadmium, and zinc in TZ soil samples collected from both depth intervals will be compared to RGs, and if one or more RGs are exceeded, the average concentration for the two intervals will be compared to RGs. If the average exceeds RGs, the corresponding grid from which the samples were collected will be designated for remediation.	Lead, cadmium, and zinc by ICP-AES.	Tier IV subcontract laboratory: 90% to be Level III data deliverables 10% to be Level IV data deliverables
Site Native Soil (Restoration)						
Site soils remaining after source material and TZ soil removal may not be suitable "as is" for restoration activities	Does the site soil meet geotechnical and agronomic property requirements for the planned restoration?	Geotechnical and agronomic properties of site soils	Soil samples will be collected from the site and analyzed for geotechnical and agronomic parameters.	Sample results will be compared with project requirements to determine if they meet geotechnical criteria, and will be compared to OSU extension office criteria to determine soil amendments needed to support vegetative growth	Geotechnical parameters: Moisture, Grain Size, Standard Proctor, Atterberg Limits, USCS classification Agronomic parameters: Organic Matter, Potassium, Phosphorus, pH, Buffer Index,	Tier IV subcontract laboratory: Level II

Problem Statement	*Decision to be* Made	*Inputs to the* Decision	Investigative Tasks	Decision Rule	Analyses	Data Deliverable Level
					Nitrate-Nitrogen, Sulfate, Sulfur, Zinc, Manganese, Iron	
Accumulated Stormwater						
Elevated metals concentrations may be present in stormwater that has accumulated in excavations containing source material.	Is cadmium, lead, or zinc present in the accumulated stormwater at concentrations that exceed the applicable discharge criteria (benchmark values)?	Analytical data obtained from excavation water sample and hardness of receiving water (or mean stream segment hardness provided in OAC 2011 if no receiving water is present) (OAC Title 785. Chapter 45. OK Water Quality Standards Appendix G, Table 2). Numerical Criteria are hardness dependent.	A sample will be collected from the stormwater accumulated in the excavation and analyzed for total cadmiun, lead, and zinc. Hardness of the receiving water will be determined. In the absence of receiving water, hardness of the accumulated stormwater will be determined.	Sample results for lead, cadmium, zinc, and hardness will be compared to benchmark values. If cadmium, lead, and zinc concentrations are below the benchmark values then the accumulated stormwater can be discharged.	Total cadmium, lead, and zinc. Hardness of receiving water and accumulated stormwater.	Tier IV subcontract laboratory: Level IV

Problem Statement	Decision to be Made	Inputs to the Decision	Investigative Tasks	Decision Rule	Analyses	Data Deliverable Level
Potential ACM						
Debris encountered onsite may include potential ACM. The potential ACM must be evaluated to determine the asbestos content to allow proper disposition of the material.	Does debris encountered onsite include ACM, which may require special disposition procedures?	Analytical data obtained from samples of suspected ACM.	Collect grab samples of suspected ACMs	Is asbestos contect >1%? Is the ACM friable or can it become friable?	Polarized light microscopy	Tier IV subcontract laboratory: Level I

1.6 Measurement Performance Criteria

Project DQOs require that certain measurement performance criteria be met, including the following:

- Peer and senior review of data and documents
- Quality control standards
- Management controls

The analytical data shall undergo three levels of review – an initial review by the contract laboratory, a subsequent review by The QTEO QAM or designee, and a final data quality review by the QTEO PM.

All documents pertaining to the quality standards of the project are drafted and reviewed internally by QTEO staff with relevant technical experience.

All analytical data must meet the QC standards set forth in the applicable SOPs, this QAPP, and the applicable analytical methods. If these standards are not met, the data will be appropriately qualified during the data review process. In cases where the data is deemed of insufficient quality to satisfy project DQOs, the data will be rejected and will not be used to support project decisions.

While performing field activities, the FTL will manage the field activities to ensure that SOPs are followed.

1.7 Special Training/Certifications

Project team members have been chosen with the necessary experience and technical skills to perform required project tasks. The only additional training required is a mandatory review of the project specific HSP. All field staff for the site, including subcontractors, must meet the requirements specified in the Work Plan and the HSP.

1.8 Documentation and Records

The following sections describe the documentation and record keeping requirements for the project.

1.8.1 Field Sampling Documentation

Field team members will keep a daily record of significant events, observations, and measurements during sampling. The required contents of the field logbook are specified in the FSP. A bound field logbook with numbered pages will be initiated at the start of field activities and maintained to record onsite activities during all sampling events. The field logbook will be supplemented by sampling LCOC forms and/or notes recorded onto site maps or field forms. All documents generated during the field effort are controlled documents that become part of the project file. All entries in the field logbooks shall be signed and dated. If a logbook entry is recorded in error, personnel shall not obliterate the mistake. Personnel shall mark a single line through the mistake and initial and date the cross-out. Field logbooks will contain the following information:

- Name and title of author, field crew, and site visitors present
- Weather and environmental conditions during the field activity
- Date and time of sample collection and/or logbook entry
- Location of sampling activity, including survey or GPS coordinates if available
- Sample media (*e.g.*, soil)
- Sample collection method
- Number of sample taken
- Sample identification numbers (IDs)
- Field observations and measurements (*e.g.*, pH, temperature, water levels, core description, etc.)

1.8.2 Sample Identification System

Unique sample IDs will be assigned to all samples collected according to the protocol presented in the FSP and this QAPP to prevent sample ID duplication in the project database. A record of the unique sample ID and time and date of sampling will be maintained in the field sampling logbooks, and within applicable LCOC records as specified in Section 9 of the FSP. This information shall also be recorded on container labels.

1.8.3 Hard Copy Analytical Records

Hardcopy data shall include all applicable items listed in Table 1.3 (Summary of Deliverables for Laboratory Analytical Reports). Any deviations from the analytical method or this QAPP shall be fully detailed in the case

narrative, along with a description of any corrective actions taken. The case narrative will address the following aspects of the analysis at a minimum:

- Sample receipt conditions and completeness
- Holding times
- Blank samples
- Matrix spikes and matrix spike duplicates
- Laboratory control samples

Table 1.3 Summary of Deliverables for Laboratory Analytical Reports

All Analytical Fractions	Level I	Level II	Level III	Level IV
Case Narrative - A detailed case narrative per analytical fraction is required and will include explanation of any non-compliance and/or exceptions and corrective action. Exceptions will be noted for receipt, holding times, methods, preparation, calibration, blanks, spikes, surrogates (if applicable), and sample exceptions.	X	X	X	X
Sample ID Cross Reference Sheet (Lab ID's and Client ID's)	X	X	X	X
Completed Chain of Custody and any sample receipt information	X	X	X	X
Copies of non-conformance memos and corrective actions	X	X	X	X
Geotechnical and Agronomic Fractions	Level I	Level II	Level III	Level IV
Sample Results	X	X	X	X + raw data
Initial and Continuing Calibration Summary			X	X + raw data
Initial and Continuing Calibration Blanks and Method Blanks Summary		X	X	X + raw data
Pre-digestion Matrix Spike Recoveries Summary		X	X	X + raw data
Native Duplicate or MS/MSD Precision Summary		X	X	X + raw data
Laboratory Control Sample Recovery Summary		X	X	X + raw data
Instrument or Method Detection Limit Summary		X	X	X + raw data
Metals Fractions	Level I	Level II	Level III	Level IV
Sample Results	X	X	X	X + raw data
Initial and Continuing Calibration Summary			X	X + raw data
Initial and Continuing Calibration Blanks and Method Blanks Summary		X	X	X + raw data
Interference Check Standard Summary			X	X + raw data
Pre-digestion Matrix Spike Recoveries Summary		X	X	X + raw data
Native Duplicate or MS/MSD Precision Summary		X	X	X + raw data
Laboratory Control Sample Recovery Summary		X	X	X + raw data
Method of Standard Addition (if necessary)			X	X + raw data
Serial Dilution			X	X + raw data
Instrument or Method Detection Limit Summary		X	X	X + raw data
Linear Range Summary			X	X + raw data
Preparation Log Summary			X	X + raw data
Analytical Run Sequence and GFAA Post-spike Recovery Summary			X	X + raw data

MS/MSD = Matrix Spike/Matrix Spike Duplicate

GFAA = Graphite Furnace Atomic Adsorption

1.8.4 Electronic Analytical Records

QTEO requires subcontract laboratories to submit an electronic data deliverable (EDD) in a comma-delimited text file (.txt) or comma-separated value (.csv) file. Electronic data deliverables (EDDs) shall include all items specified in Section 3 of the FSP. The laboratories' QC Officer or appointed deputy shall verify that the hard copy and electronic deliverable match each other prior to delivering the analytical results to the QTEO. The product of this activity is accurate and complete analytical information ready for data evaluation and database entry.

1.8.5 Project Record Maintenance and Storage

Each project team member is responsible for filing all project information in accordance with the QTEO QMP (QTEO, 2011). Individual team members may maintain separate files or notebooks for individual tasks but must provide such files to the main project file upon completion of each task. The QTEO shall maintain a database including all laboratory electronic data deliverables (EDDs). A general project file shall contain the following categories:

- Correspondence
- Original Unbound Reports
- Field Data
- Data Evaluation and Calculations
- Site Reports from Others
- Bound Report Copies
- Photographs
- Insurance Documentation
- Laboratory Analytical Data and associated Documents/Memos
- Regulatory Submittals, Licensing, and Permitting Applications
- Site and Reference Material
- Health and Safety Plans or Other Site Plans
- Figures and Drawings

2.0 DATA GENERATION AND ACQUISITION

Section 2.0 of the QAPP describes the procedures for the measurement, acquisition, handling, review, and management of data that are to be performed in support of the Operable Unit 4 source material RA remediation activities. This section addresses the following aspects of measurement and data acquisition:

- Sampling process design
- Sampling method requirements
- Sample handling and custody requirements
- Laboratory analytical methods requirements
- Laboratory QC requirements
- Field and laboratory instrument calibration and frequency
- Inspection and acceptance requirements for supplies and consumables
- Data acquisition requirements
- Data management
- Field and laboratory instrument and equipment testing, inspection, and maintenance requirement
- Figures and Drawings

2.1 Sampling Process Design

The FSP provides the analytical sampling requirements and design for this project. Sample media to be collected from the site and analyzed for this project will include transition zone soil.

The planned sampling locations, rationale for selection, and analytical parameters for each location are detailed in the FSP. It should be noted that the exact sample locations and the total number of samples might change from those described in the FSP, depending on the field conditions encountered.

2.2 Sampling Methods

Specific procedures for some field sampling protocols are contained in the FSP. The list of potential sampling procedures that will be used in this project are below:

- Chat sampling
- Surface/stormwater sampling
- QC sample collection procedure (field duplicates, equipment rinsate blanks, MS/MSDs)
- Personnel and equipment decontamination
- Asbestos material sampling
- Agronomic sampling

2.3 Sample Handling and Custody

Specific procedures for handling and custody are listed in Table 5.1 (Analyses, Sample, Containers, and Preservatives) of the FSP.

Sample Custody

Sample custody procedures include the use of field logbooks, sample labels, custody seals, and COC forms/traffic reports. Each person involved with sample handling shall be familiar with COC procedures prior to the start of field operations. The COC form must accompany the samples during shipment from the field to the laboratory. A sample is considered to be in one's custody under the following circumstances:

- It is in one's actual possession
- It is in one's view, after being in one's physical possession
- It was in one's physical possession and that person locks it up to prevent tampering
- It is in a designated and identified secure area

Sample Shipping and Chain of Custody

Proper sample handling, shipment, and maintenance of a COC are key components of the quality system designed to obtain data that can be used to make project decisions. It is very important that all sample handling protocols and COC requirements be followed completely, accurately, and consistently. A properly completed COC form/traffic report (TR) must accompany all samples to the laboratory.

The unique sample IDs and descriptive information (*e.g.*, sample location, date, time, etc.) will be listed on the appropriate COC. Individuals relinquishing or receiving possession of samples will sign, and note the time on the COC in the "relinquished by" or "received by" box. The signed COC documents the transfer of sample custody from the sampler to the laboratory.

Field samples will be sealed in individual plastic Ziploc bags and positioned within the cooler to prevent damage and maintain sample integrity. Hard plastic coolers or ice chests will be used for shipping samples. A signed COC will be placed in a plastic bag and taped to the inside of the lid in each cooler and then the cooler is closed and secured with strapping tape and custody seals for shipment to the laboratory. The preferred procedure involves attaching custody seals to two sides of the cooler and then covering the seals with clear plastic tape. The cooler is then strapped shut with strapping tape in at least two locations and shipped by priority overnight delivery service (Federal Express or equivalent) to the laboratory for analysis. If Saturday delivery is required the receiving laboratory must be notified by no later than 2:00 PM Central Time on Friday in order to schedule receipt. Typical labeling requirements are shown in Figure 2.1 (Proper Labeling of Sample Coolers).

When samples are relinquished to the delivery service for transport, the shipping air bill number will be recorded on the COC form. Commercial carriers are not required to sign off on the custody form as long as the custody forms are sealed inside the sample cooler and the custody seals remain intact.

The COC record identifying the contents will accompany all shipments. The original record will accompany the shipment, with field copies being retained by the sampler. The FTL shall fax a copy of the completed COCs to the QTEO's designee on a daily basis to allow for sample tracking and resolving any questions from the analytical laboratory regarding that day's sample shipment.

Upon receipt of field samples, the analytical laboratory representative will sign the COC to accept custody of the samples and will then properly store them to await analysis.

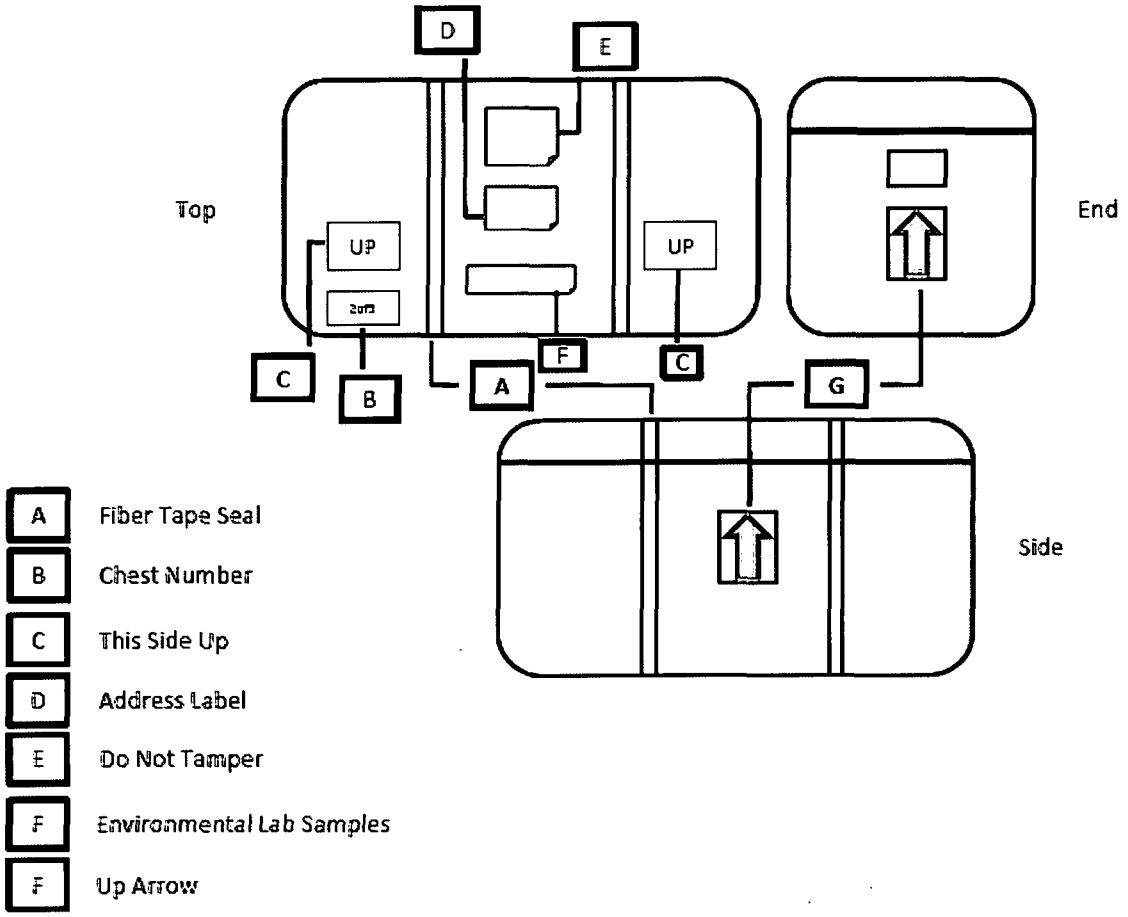

Figure 2.1 Proper Labeling of Sample Coolers **Quapaw Tribe of Oklahoma**

2.4 Analytical Methods

Samples collected in support of this project will be analyzed in the laboratory using only EPA-approved methods from SW-846 Test Methods for Evaluating Solid Waste (2008).

Total Metals by ICP-AES

Confirmation soil samples and other soil samples and possibly stormwater samples will be collected and sent to an off-site laboratory for total metals analysis by ICP-AES per SW-846 method 6010B (and cold vapor atomic absorption by SW-846 method 7470A for the water samples). Confirmation soil samples will be analyzed for total lead (dried and sieved through #60 sieve), cadmium, and zinc. The laboratory quantitation limits must be below the associated screening levels listed in Table 2.1 (Total Metals Action Limits/Reporting Limits).

Agronomic Analysis

Soil samples from potential cover material (transition zone soil) may be collected and sent to an off-site laboratory for agronomic analysis. The samples will be analyzed for Organic Matter, Potassium, Phosphorus, pH, Buffer Index, Nitrate-Nitrogen, Sulfate Sulfur, Zinc, Manganese, Magnesium, Iron, Calcium, Copper, Boron, and salinity.

Hardness by Titimetry

Water samples will be collected and sent to an off-site laboratory for titrimetric analysis of hardness by EPA Method 130.2 or SM 2340B.

Bulk Asbestos by Polarized Light Microscopy (PLM)
Samples may be sent to an off-site laboratory for analysis of bulk asbestos by PLM method EPA 600/M4-82-020. The samples will be evaluated for homogeneity by low-power stereomicroscopy. Asbestos fibers will then be identified by PLM and dispersion staining through the determination of the required optical properties including: morphology, color, pleochroism, refractive indices, birefringence, extinction and sign of elongation.

The laboratory detection limits must be at or below the associated remedial action limits listed in Table 2.1.

Table 2.1 Total Metals Action Limits/Reporting Limits

Analyte	Soil Screening Level (mg/kg)	Water Screening Level (ug/L)
Aluminum	-	36,500
Antimony	-	14.6
Arsenic	-	1
Barium	-	7,300
Beryllium	-	73
Cadmium	10	18.2
Calcium	-	5,000
Chromium	-	54,750
Cobalt	-	730
Copper	-	1,356
Iron	-	25,550
Lead	500	15
Magnesium	-	5,000
Manganese	-	1703
Mercury	-	0.63
Nickel	-	730
Potassium	-	5,000
Selenium	-	182.5
Silver	-	182.5
Sodium	-	5,000
Thallium	-	2.56
Vanadium	-	182.5
Zinc	1,100	10,950

2.5 Quality Control

All project members will adhere to this QA Program to ensure the reliability and validity of the activities being performed. The QA Program includes a wide variety of QC measures, one of which is the analysis of various field QC samples. Applicable QC samples are discussed below and the field procedures for obtaining them are presented in the FSP. Field QC samples are collected for those samples submitted for chemical analysis only.

2.5.1 Quality Control Samples

2.5.1.1 Field Duplicates (FD)

Field duplicates (FDs) are samples that are collected at the same time and location in an effort to duplicate the collection of a particular sample. FDs are used to monitor the precision of the field sampling process. The identity of the duplicate samples will be recorded in the field-sampling logbook, and this information is forwarded to the data quality evaluation team to aid in the review and evaluation of the data. It is expected that FDs will be collected at a rate of 1 per 20 field samples, or 5 percent, per matrix for all analyses.

2.5.1.2 Equipment/Rinsate Blanks (RB)

After the sampling equipment is fully decontaminated, it is rinsed with deionized water and a subsample of this rinsate is collected as the equipment/rinsate blank (RB). The RB is preserved, handled, and stored in the same manner as the field samples. The RB is then sent to the lab and analyzed for the same analytical parameters as the corresponding soil samples that were taken with that equipment that day. The RB is used to monitor potential cross-contamination caused by improper equipment decontamination. RBs will be collected at a rate of 1 per day per matrix for samples that do not involve dedicated or disposable sampling equipment and thus are at risk for cross-contamination.

2.5.1.3 Field Blanks (FB)

One field blank will be collected for each sampling day. Field blanks will be collected to evaluate whether contaminants have been introduced during sampling due to contamination from sample containers. Field blank samples will be obtained by pouring deionized water into a sampling container at the sampling point.

2.5.1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

A matrix spike (MS) is a field sample that is spiked by the analytical laboratory with a known concentration of target analyte(s) prior to sample preparation and then carried through the entire preparatory and analytical procedure. The matrix spike duplicate (MSD) is an intra-laboratory split of the same sample used for the MS and is also spiked with identical concentrations of target analyte(s) and treated just as the MS sample. MS/MSDs are used to monitor and document possible bias for a given analytical method in a given sample matrix. MS/MSDs are also used to measure the precision of the laboratory analytical procedure. MS/MSDs shall be analyzed at a frequency of 5%, or one MS/MSD per analytical batch.

2.5.2 Field and Laboratory Corrective Action

The following sections discuss the field and laboratory corrective action requirements.

2.5.2.1 Field Corrective Action

Any project team member may initiate a field corrective action process. The corrective action process consists of identifying a problem, acting to eliminate the problem, monitoring the effectiveness of the corrective action, verifying that the problem has been eliminated, and documenting the corrective action. A copy of the Quality Control Exception Report (QCER) form is attached in Appendix A.

Field corrective actions may include such activities as correcting COC forms, solving problems associated with sample collection, re-packing samples to ensure sample integrity, correcting an entry in a field logbook, or providing a team member with additional training in sampling collection procedures. More extensive corrective actions may involve re-sampling or evaluating and revising sampling procedures. The FTL will summarize the problem, establish possible causes, and designate the person responsible for a corrective action. The FTL will then verify that the initial action has been taken and that it appears to be effective. Finally, the FTL will follow up at a later time to verify that the problem has been resolved. If a corrective action could potentially impact the quality of the analytical process, the FTL must notify the QTEO immediately regarding the situation.

2.5.2.2 Laboratory Corrective Action

The analytical laboratories analyze samples according to specific methods with required QC standards. All analytical data is reviewed to ensure that the required QC measures are taken and that all specified QC standards are met. Some examples of situations that may require laboratory corrective action include:

- QC data are outside the control limit ranges for precision and accuracy established for laboratory samples
- Blanks contain target analytes above acceptable levels
- Deficiencies are detected by the laboratory QA director during internal or external audits, or from the results of performance evaluation samples
- Undesirable trends are detected in QC data
- There are unusual changes in detection limits
- Inquiries concerning data quality are received
- If the bench analyst identifies a QC violation, then corrective action is taken immediately. The analyst immediately notifies his or her supervisor of the problem and the investigation being performed. Some examples of analyst-level corrective action can include:

- Recalculating mathematical calculations
- Reanalyzing suspect samples
- Recalibrating analytical instruments
- Recalibrating with new standards

If the problem persists or cannot be identified, the matter must be referred to the laboratory supervisor and QA/QC officer for further investigation. All laboratory QC problems that will affect the quality of the final data must be discussed with the QTEO as part of the corrective action process. Some examples of managerial-level corrective action include:

- Evaluating and amending sub-sampling or analytical procedures
- Re-sampling and analyzing new samples
- Qualifying or rejecting the data

Once resolved, full documentation of the corrective action in a corrective action form must be included with the applicable data package submitted to the QTEO.

2.6 Instrument/Equipment Testing, Inspection, and Maintenance

The FTL is responsible for overseeing the proper operation of all field equipment. Field equipment testing, inspection, and maintenance will be performed in accordance with the SOPs and the manufacturers' specifications. Any field equipment malfunction shall be reported to the QTEO to determine if a corrective action is necessary. A detailed list of field equipment that will be utilized for this project is available in Section 6.1 of the FSP.

Laboratory equipment testing, inspection, and maintenance will be in accordance with the laboratory's Quality Assurance Plan (QAP). The laboratory QAP will discuss the schedule, procedures, criteria, and documentation for verifying that all analytical equipment is operating in an accurate and precise manner. Any laboratory equipment malfunction that will impact sample analysis shall be reported to the QTEO or his designee immediately to determine corrective action.

2.7 Instrument/Equipment Calibration and Frequency

Any field instruments used will be calibrated in accordance with manufacturers' specifications before the beginning of sampling activities and at specified intervals thereafter. For field instruments calibrated by the manufacturer, calibration will be verified daily. If a field instrument cannot be properly calibrated, the instrument must not be used and must be replaced with a functioning instrument.

All laboratory instruments will be calibrated in accordance with manufacturers' directions, method requirements, and SOP specifications.

2.8 Inspection/Acceptance of Supplies and Consumables

Any purchased supplies or other subcontract service must meet the project scope, specified levels of quality, and the submittal schedule. Project contractors should have contractual arrangements with their suppliers of materials.

2.9 Non-direct Measurements

This subsection discusses types of data that will be used to make project decisions that are obtained from non-direct measurement sources. Project objectives were outlined and summarized in Section 1 of this QAPP. The data needed to achieve the project objectives include site maps, sampling location selection and sample identifiers, laboratory method selection, detection limit verification, analytical parameter lists and critical values, field parameter measurement list, and a project schedule. This information is included in several project documents such as the project Work Plan, FSP, and this QAPP.

The product of this activity is a database containing complete and accurate analytical information that can be used for project decision-making and report production.

2.10 Data Management

All field activities shall be documented on chains of custody and field notebooks. Copies of field data sheets will be provided to the QTEO. Field and laboratory data shall be reviewed as per the QTEO Inorganic Data Verification

and Validation standard operating procedure (Appendix C). The QTEO shall maintain a database including all laboratory electronic data deliverables (EDDs).

2.10.1 Data Types
Activities performed during site investigations will involve accessing a number of different types of data. Contents of the project database are described below.

2.10.1.1 Screening Data
Screening data may be collected for this project and generally includes field measurements that are analyzed with a minimal level of QC to produce approximate numbers for screening purposes. Screening data are generally used based upon very limited QA/QC and documentation in contrast to the rigorous review of data quality required for the definitive data sets.

The FTL or PC will normally review the screening data and accept or reject them. Unusual readings are recorded in the field logbook, along with the rationale for accepting or rejecting the data. The following types of field data are generally recorded in the site logbooks for the FTL's review:

- Instrument identification
- Calibration information and/or verification (standards used and results)
- Date and time of calibration and sample measurement
- Sample results
- Supporting information (such as temperature for pH reading)

2.10.1.2 Definitive Data
Definitive data are data of known quality with a substantial level of associated QA/QC. The definitive data results undergo an extensive quality system of data review and data evaluation. Definitive data can be used for the following:

- Investigate the nature and extent of site-related constituents
- Show that an area has or has not been affected by Site-related constituents

Definitive data can be generated by various measurements, ranging from on-site field analyses to laboratory analyses. All data collected for this project will constitute definitive data.

2.10.2 Data Tracking and Management

2.10.2.1 Hardcopy
Measurements made during field data collection activities will be recorded in field logbooks and on field forms. Field data will be reduced, summarized, and stored along with the field logbooks. Photocopies of this field data will be provided to the QTEO for entry into the project database as needed unless alternate electronic delivery of the data has been provided.

All hardcopy analytical laboratory data will be stored. This may include COC forms, case narratives, analytical bench sheets and reports, instrument printouts, certificates of analyses, CLP-like forms, and QA/QC report summaries.

2.10.2.2 Data Input Procedures
Sampling information shall be entered into the project database as needed. Analytical data in the form of an electronic deliverable (EDD) shall be added to the project database.

One hundred percent of the final electronic deliverable uploaded to the project database will be verified against the original hardcopy reports to ensure the accuracy of the EDD and of any manual transcription. All data entry evaluation procedures and results will be appropriately documented. The product of this activity is an accurate and complete project database ready to support project data evaluation. Qualifiers assigned by the QAM or designee during data validation, shall be manually entered into the project database by the QAM or his designee. Please reference QTEO Inorganic Data Verification and Validation procedure for a detailed description of the evaluation process.

2.10.3 Computer Database

The QTEO shall maintain a database including laboratory analytical data as well as pertinent field data. The database shall be protected from unauthorized access, tampering, accidental deletions/additions, and data or program loss resulting from power outages or hardware failure.

2.10.4 Documentation

Documentation of data management activities is critical because it provides:

- A record of project data management activities
- Reference information critical for database users
- Evidence that the activities have been properly planned, executed, and verified
- Continuity of data management operations when personnel changes occur

Additional documentation will be maintained to document specific issues such as database structure definitions, database inventories, database maintenance, user requests, database issues and problems, and client contact.

2.10.5 Presentation of Analytical Data

Data presentation will vary depending on the data user needs. Some examples of data presentation formats are the following:

- Tabulated results of data summaries or raw data
- Figures showing concentration isopleths or location-specific concentrations
- Tables providing statistical evaluation results or calculation results

3.0 ASSESSMENT AND OVERSIGHT

3.1 Assessments and Response Actions

Assessment and oversight activities are performed to determine whether the QC measures identified in the FSP and this QAPP are implemented and documented as required. The PM, QAM, HSM, and FSTL will perform assessment and oversight activities to monitor conformance to plans. For example, during a field review, the FSP may be checked to verify that field QC samples were collected at the appropriate frequency. Additional checks may address the questions:

- Is the FSP being followed?
- Are non-conformance issues identified, resolved, and documented with a process or system?
- Are identified deficiencies being corrected?
- Are sampling operations being performed as stated in the FSP?
- Are the sample labels being filled out completely and accurately?
- Are the COC records complete and accurate?
- Are the field notebooks being filled out completely and accurately?
- Are the documents generated during assessment activities being stored as described in the QAPP?

The need for a check can be determined independently by the PM, or assigned by the PM to another team member. Assessment activities may include surveillance, inspection, peer review, management system review, performance evaluation, and data quality assessment. The results of the assessment and oversight activities will be reported to the PM, who will be responsible for ensuring that the corrective action response is completed, verified, and documented.

3.2 Reports to Management

Effective communication among all project team members shall be established and maintained throughout the course of the project. The PM will coordinate status reports to the EPA RPM as necessary. Status reports will discuss current activities, problems encountered and their resolution, and planned work.

4.0 DATA VALIDATION AND USABILITY

4.1 Data Review, Verification, and Validation

Data review or validation is the process by which data generated in support of a project are reviewed against the data QA/QC requirements. For this project, the QA/QC requirements are those specified by applicable EPA methods, SOPs, this FSP, and EPA's *National Functional Guidelines for Inorganic Superfund Data Review* (EPA, 2010). In cases where the data is deemed of insufficient quality to satisfy project DQOs, the data will be rejected and will not be used to support project decisions. After the data review is completed a data quality evaluation memorandum will be prepared to document the findings.

The analytical results obtained in the investigation will be reviewed to ensure that the extent of the excavation sufficiently implements the remedial strategy. The analytical data obtained must therefore, be of sufficient completeness and quality in order to satisfy project DQOs. A graded approach combining contract compliance verification (CCV) and data validation shall be used for the determination of "valid data" as described below in Sub-section 4.1.3.

Several key statistical QC measurements that may be used in the data review are discussed below.

4.1.1 Precision

Precision is a measure of the agreement or reproducibility of a set of replicate results obtained from duplicate analyses made under identical conditions. Precision is estimated from analytical data and cannot be measured directly. The precision of a duplicate determination can be expressed as the relative percent difference (RPD), as calculated as:

$$RPD = \frac{|S - D|}{(S + D)/2} x100$$

Where,

RPD	=	Relative Percent Difference
S	=	Sample Result (original)
D	=	Duplicate Result

Precision acceptance criteria for the data validation are provided in the QTEO SOP and EPA's National Functional Guidelines.

4.1.2 Accuracy

Accuracy is a measure of the agreement between an experimental determination and the true value of the parameter being measured. Accuracy is estimated through the use of known reference materials or matrix spikes. It is calculated from analytical data and is not measured directly. Spiking of reference materials into a sample matrix is the preferred technique because it provides an assessment of the matrix effects on analytical accuracy. Accuracy, defined as percent recovery (%R), is calculated as:

$$\%R = \frac{SSR - SR}{SA} x100$$

Where,

SSR	=	Spiked Sample Result
SR	=	Sample Result
SA	=	Spike Added

NOTE: When the sample concentration is < Method Detection Limit (MDL), use SR = 0 only for the purpose of calculating the %R Accuracy acceptance criteria for the data validation are provided in the QTEO SOP and EPA's National Functional Guidelines.

4.1.3 Completeness

The completeness of the field and laboratory-generated analytical data will be assessed for compliance with the amount of data required for decision-making. The calculation for determining completeness is:

$$\%Completeness = \frac{Valid\ Data\ Obtained}{Total\ Data\ Obtained} x100$$

The completeness goal for the project data set is 95 percent (95%).

4.1.4 Sensitivity

Sensitivity is a measure of how low of a concentration an analysis can reliably detect and report a particular analyte. Higher sensitivities allow the laboratory to establish method detection limits (MDLs) and reporting limit (RLs) at sufficiently low levels so that the project DQOs can be achieved.

4.2 Laboratory Data Deliverables

QTEO shall require a minimum Analytical Support Level (ASL) III for all laboratory deliverables. ASL III deliverables shall be used to determine contract compliance verification (CCV). QTEO shall require ASL IV laboratory deliverables for those data undergoing validation. Analytical Support Levels and their associated laboratory deliverables are listed in Table 1.3.

4.3 Data Review, Verification, and Validation

The data validation or data review process is conducted to assess the effect of sampling and analytical processes on the usability of the data. There are two areas of review: laboratory performance evaluation, and the effect of matrix interference or sampling error. Evaluation of laboratory performance is a relatively straightforward examination. This evaluation determines whether or not the laboratory met the QC requirements of the analytical methods and other stated protocol requirements. The assessment of potential matrix effects and sampling error consists of an evaluation of the analytical results for the samples, as well as a number of QC measures such as blank samples, duplicates, MS/MSDs, LCSs, etc., and then assessing if this could affect the usability of the data.

All analytical data will be supported by a data package. Before the laboratory will release each data package, the laboratory QA officer (or the analytical section supervisor) must carefully review the sample and laboratory performance QC data to verify sample identity, the completeness and accuracy of the sample and QC data, and compliance with method specifications.

Analytical data will be evaluated against the analytical QC standards set forth in the applicable SOPs, this QAPP, and applicable methods. If these standards are not met, the data is appropriately qualified during the validation process. In cases where the data is deemed of insufficient quality to satisfy project DQOs, the data will be rejected and will not be used to support project decisions.

All analytical data obtained in support of this project shall be reviewed by the QAM or his designee in accordance with criteria analogous to that presented in the EPA's *National Functional Guidelines for Inorganic Superfund Data Review* (EPA, 2010). Sample results will then be assigned data qualifiers as needed to express the degree of usability based upon overall data quality. After the completion of the data validation effort, a data quality evaluation technical memorandum will be prepared to discuss the findings of the review.

The QTEO's project team will review the data quality evaluation to assess how the data, as qualified by the data validation, can be used on the project.

4.4 Reconciliation with User Requirements

The final data evaluation task is to assess whether the data meet the project DQOs. The final verified and/or validated analytical results, which may have been modified during the data validation process, will be checked against the DQOs. An assessment will be made as to whether or not the data are of sufficient quality to support them. If the data are deemed sufficient to achieve project objectives, the project database will be updated with the newly validated data and any qualifiers or comments that were applied during the course of the review. The PM will then summarize the data based upon the user needs of the project team.

Appendix A

QUAPAW TRIBE ENVIRONMENTAL OFFICE

QTEO Quality Control Exception Report

[See Attached]

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Quality Control Exception Report

Originator: _____ Date: _____

Problem Description:

_____

_____

_____

_____

_____

_____

Disposition:

_____

_____

_____

_____

_____

_____

Corrective Action Outcome:

_____

_____

_____

_____

_____

_____

Initial Approval by: _____ Date: _____

Close-out Approval by: _____ Date: _____

Copies to: Originator, Field Team Leader, Quality Assurance Manager, Project Manager

Appendix B

QUAPAW TRIBE ENVIRONMENTAL OFFICE

QTEO Field Sampling Plan (FSP)

[See Attached]

Field Sampling Plan (Version 2.1)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
December 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

FIELD SAMPLING PLAN (FSP)
Version 2.1
APPROVAL SHEET

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Prepared by: Quapaw Tribe Environmental Office (QTEO) Date: December 2013

Approved by:

_____ _____
Rafael Casanova, P.G. Date
U.S. EPA, Region 6, Remedial Project Manager

_____ _____
Tim Kent, P.G. Date
QTEO, Project Manager

_____ _____
Craig Kreman Date
QTEO, Quality Assurance Manager

USEPA QTRAK #: ____

FIELD SAMPLING PLAN (FSP)
Version 2.1
DISTRIBUTION LIST

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Copies of this FSP have been distributed to the following people:

Rafael Casanova, P.G. - U.S. EPA, Region 6, Remedial Project Manager

Tim Kent, P.G. - QTEO, Environmental Director / Project Manager

Craig Kreman - QTEO, Quality Assurance Manager

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Acronyms

ASTM	American Society of Testing and Materials
ASL	Analytical Support Level
ARARs	Applicable or Relevant and Appropriate Requirements
BIA	United States Bureau of Indian Affairs
bgs	below ground surface
C	Celsius
CLP	Contract Laboratory Program
COC	Chain-of-Custody
DMP	Data Management Plan
DO	Dissolved Oxygen
DQE	Data Quality Evaluation
DQO	Data Quality Objective
EDMS	Electronic Document Management System
EPA	U.S. Environmental Protection Agency
ERB	Equipment Rinsate Blank
ESAT	Environmental Services Assistance Team
FB	Field Blank
FD	Field Duplicate
FSP	Field Sampling Plan
FSTL	Field Sampling Team Leader
GPS	Global Positioning System
HCWP	Hydrogeologic Characterization Work Plan
HI	Hazard Index
HSP	Health and Safety Plan
ID	Identification
IDW	investigation-derived waste
LOAEL	Lowest observed adverse effect level
MCL	Maximum Contaminant Level
MS/MSD	Matrix Spike/ Matrix Spike Duplicate
NAD83	North American Datum of 1983
ODEQ	Oklahoma Department of Environmental Quality
ORP	Oxidation Reduction Potential
OWRB	Oklahoma Water Resources Board
PC	Project Chemist
PCR	Property Control Representative
PM	Project Manager
PPE	Personal Protective Equipment
PVC	Polyvinyl Chloride
OU	Operable Unit
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RA	Remedial Action
RAOs	Remedial Action Objectives
RGs	Remediation Goals
RD	Remedial Design
ROD	Record of Decision
RPLS	Registered Public Land Surveyor
RSCC	Regional Sample Control Coordinator
FSP	Sampling and Analysis Plan
SDG	Sample Delivery Group

SMO	Sample Management Officer
SMP	Site Management Plan
SOP	Standard Operating Procedure
SPLP	Synthetic Precipitation Leaching Procedure
TAL	Toxic Analyte List
TAT	Turn-around-time
TDS	Total Dissolved Solids
TM	Task Manager
TOC	Total Organic Carbon
TR	Traffic Report
TZ	Transition Zone
UIC	Underground Injection Control
USACE	United States Army Corps of Engineers
USDW	Underground Source of Drinking Water
USGS	United States Geological Survey

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1.0 INTRODUCTION

This Field Sampling Plan (FSP) has been prepared for the U.S. Environmental Protection Agency (EPA) in support of the Source Material Remedial Action (RA) for Operable Unit (OU) 4, Distal Zone 8, the "Catholic 40 Site", at the Tar Creek Superfund Site, Ottawa County, Oklahoma. As a result of mining and milling operations, large quantities of mining wastes were deposited on the surface in piles. The large surface piles contain tailings, known locally as chat, produced from the gravity separation milling process. The chat pile or source material, located on Distal Zone 8, is labeled as Chat Base 11 (CB011). Distal Zone 8 is approximately 40 acres in size and includes one (1) chat base and one (1) known mine shaft. CB011 is located adjacent to an historic and culturally significant complex of ruins that comprised a Catholic church, school, and other supporting buildings.

This FSP includes applicable procedures, forms, and guidelines for the performance of field sampling, analyses, QA/QC measures and documentation activities in support of the RA.

The sampling activities described by this plan include: (1) soil sampling associated with the remediation and restoration of Chat Base 011 (CB 011, Catholic 40), (2) sampling of chat material for evaluation of marketability for potential reuse (if necessary)[1], (3) sampling of surface water (such as accumulated storm water in excavations requiring dewatering)[2], (3) agronomic soil sampling, if needed during Site restoration[3], and (4) sampling for determination of the presence of asbestos-containing building materials (ACBM)[4] in waste materials found and excavated in the process of removal of source materials and transition zone (TZ) soil.

1.1 Site Name

Distal Zone 8, CB011, is commonly known as the Catholic 40.

1.2 Site Name Location

CB011 is located within the north half of Section 6 Township 28 North (T28N), Range 24 East (R24E), and more specifically, within Ottawa County Parcel 0000-06-028-024-0-001-00. An east-west running property line divides CB011 into two sections: CB011 North on non-restricted fee land and CB011 South on tribal trust land owned by the Quapaw Tribe of Oklahoma. CB011 North is not included within the scope of this remedial response. Hereafter, CB011 is named to refer to the CB011 South portion of the chat base.

1.3 Responsible Agency

The Quapaw Tribe Environmental Office (QTEO) will serve as the lead agency during implementation of field activities and will subcontract specific laboratory analytical services to an off-site laboratory.

1.4 Project Organization

EPA Region 6 Remedial Project Manager:

Mr. Rafael Casanova is the EPA Region 6 Remedial Project Manager (RPM) for this project. Mr. Casanova serves as the EPA liaison for the project and has the ultimate responsibility for overall EPA management of the project. Any significant changes to the planned activities, site access issues, public outreach issues, or significant problems encountered will be reported to the RPM by the Project Manager (PM) or designee. Any changes in the systems defined in the site-specific plans for this project must be approved by the RPM.

Tar Creek Superfund Stakeholders:

Representatives for the stakeholders for the Tar Creek Superfund Site include the Quapaw Tribe of Oklahoma, Ms. Jonna Polk/Bureau of Indian Affairs (BIA), Mr. David Cates/Oklahoma Department of Environmental Quality (ODEQ), and Mr. Dennis Datin/ODEQ.

---

1 Chat characterization samples were collected from CB011 for grain size and total lead concentration analysis. The results of chat characterization samples are posted on the chat sales website at http://projects.ch2m.com/TCOU4chat, and discussed directly with the potential chat processors in the area.

2 No site-specific discharge points are present on the Catholic 40 site for stormwater analysis. The QTEO monthly samples surface water from Beaver Creek at Catholic 40 for various water quality parameters. The QTEO will continue to monitor surface water quality at the Catholic 40 Beaver Creek site in accordance with the approved water monitoring QAPP.

3 The QTEO will utilize the OSU Extension Services prior knowledge and experience of area sites to incorporate the proper site soil amendments to enhance the soil's ability to support vegetation if needed.

4 If asbestos-containing building material (ACBM) is suspected and/or encountered at the site, work will stop and proper measures taken to address ACBM issue.

QTEO Project Manager:
Mr. Tim Kent serves as the PM for this project. The PM functions as the primary interface between the RPM and the project team and is responsible for achieving technical, financial, and scheduling objectives. The PM will be the central point of contact for all matters concerning the project. The PM site management responsibilities include:

- Ensure proper management of EPA/Tribe Superfund Cooperative Agreement (SFCA) grant related to this RA
- Define project objectives and develop a detailed Work Plan and schedule
- Establish project policies and procedures to address the specific needs of the project as a whole, as well as the objectives of each task
- Advise the RPM of technical progress, program needs, potential problems, and recommended solutions
- Arrange, organize, monitor, direct, and control staff and other resources needed to execute the task order within budget and schedule restraints, and establish clear lines of communication within the QTEO organization
- Familiarize field leaders and support staff with the project's special considerations
- Review the work performed and overall task performance for quality, responsiveness timeliness, and budgetary considerations
- Oversee subcontractor management
- Review external reports (deliverables) before submission to the EPA
- Represent the project team at meetings with the EPA and other project stakeholders

QTEO Quality Assurance Manager:
Mr. Craig Kreman serves as the Quality Assurance Manager (QAM) for this project. The QAM provides quality management support to the PM. The QAM responsibilities include:

- Create and approve the Program Quality Management Plan (PQMP), the Quality Assurance Project Plan (QAPP), and the Field Sampling Plan (FSP)
- Review program level quality work instructions and procedures
- Monitor the scope, quality and completeness of project reviews and deliverables
- Guides the QC process by serving as a technical resource and counselor to the PM
- Monitor and manage the flow of data throughout the project
- Create and maintain the project database which will contain project analytical data
- Act as project liaison to the analytical laboratories to address any technical chemistry issues or problems encountered by the laboratories or by data reviewers
- Perform or oversee the validation of all analytical data obtained and assess its usability in achieving project DQOs and supporting project decisions

QTEO Health and Safety Manager:
Mr. Robert Rogers serves as the QTEO Health and Safety Manager (HSM). The HSM responsibilities include:

- Serve as a resource and contact point for all QTEO team members regarding issues/concerns related to QTEO health and safety
- Provide review of the QTEO HSP and subsequent addenda
- Conduct field audits if necessary in accordance with QTEO policies and procedures
- Determine the cause and implement necessary corrective action in the event of an accident.

QTEO Senior Procurement Specialist:
Ms. Ardie Blair serves as the QTEO Senior Procurement Specialist. The Senior Procurement Specialist is responsible for the management of any subcontract documents created in support of this project. Specific responsibilities of the Senior Procurement Specialist include:

- Administer the contractor in accordance with program and legal requirements
- Procure equipment and materials from vendors necessary for QTEO to administer/manage the SFCA grant
- Resolve any subcontract disputes

Field Sampling Team Leader:
A qualified staff member from the QTEO will serve as the Field Sampling Team Lead (FSTL). The Field Sampling Team Lead (FSTL) is responsible for all onsite activities during the field investigation including sample collection, field analysis, and direction of any other field sampling subcontractor activities. Other responsibilities include:

- Coordinate the day-to-day sampling activities of the project team and subcontractors
- Maintain close contact with the PM and QAM so that potential schedule, budget, and/or technical problems can be addressed in a timely manner
- Coordinate with the PM to ensure compliance with the HSP
- Ensure compliance with the FSP and QAPP
- Coordinate field sampling efforts, and provide and maintain sampling equipment and materials shipping and packing materials
- Supervise the completion of chain of custody (COC) records, the handling and shipping of samples, and the completion of the field notebooks
- Implement the required field QA/QC measures and ensure that the sampling team follows all approved policies and field procedures

Source Material Operable Unit 4
Distal Zone 8 Remedial Action
Tar Creek Superfund Site
Ottawa County, Oklahoma

CATHOLIC 40
Organizational Flow Chart

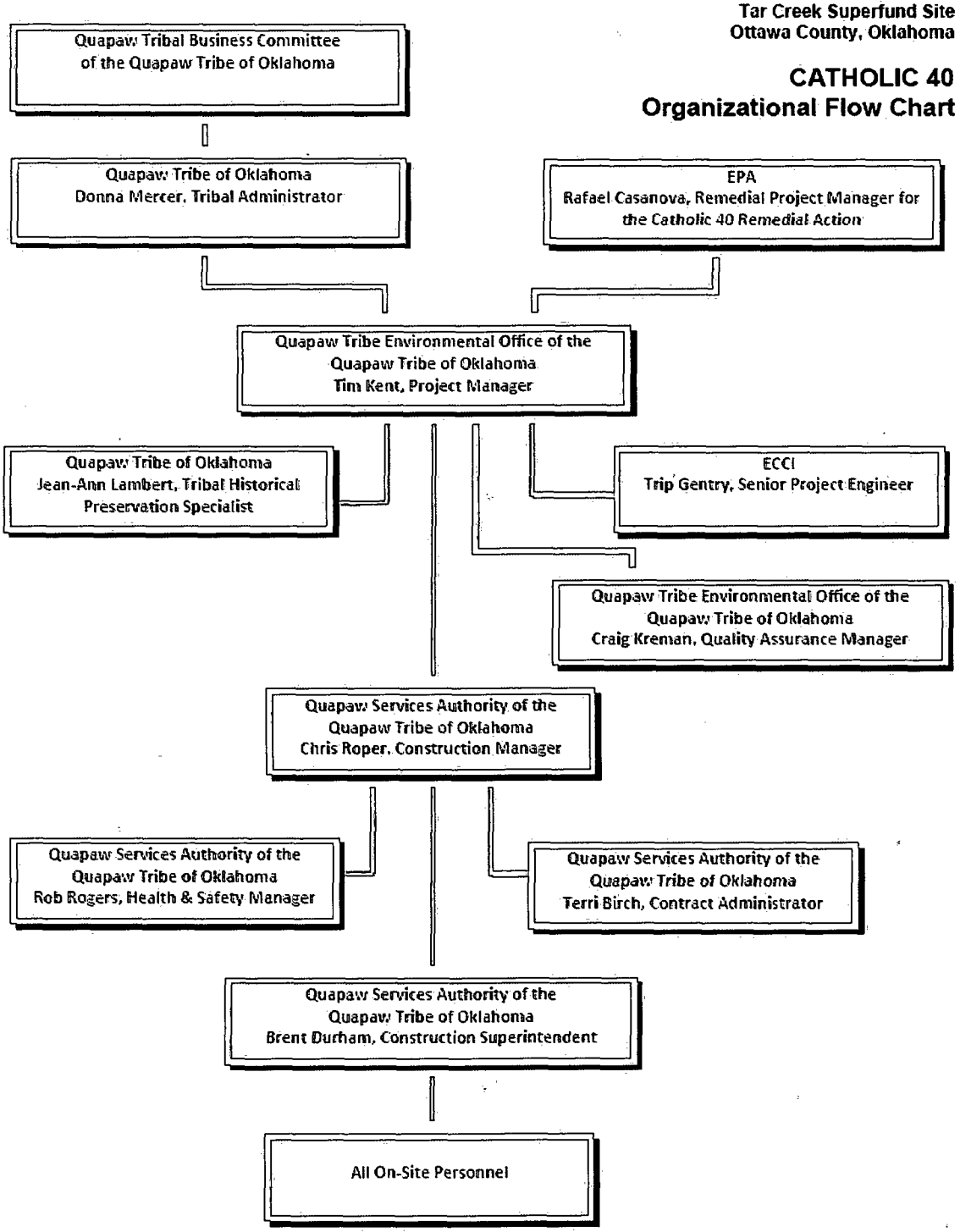


Figure 1.1 Organizational Chart **Quapaw Tribe of Oklahoma**

Table 1.1 Project Personnel and Telephone Numbers

Name	Role	Telephone Number
Rafael Casanova	EPA Region 6 OU4 Distal 8 Remedial Project Manager	214-789-1633
Janetta Coats	EPA Community Involvement Coordinator	214-665-7308
Donna Mercer	Quapaw Tribe Tribal Administrator	918-542-1853
Tim Kent	Quapaw Tribe Environmental Office Project Manager	918-533-2592
Craig Kreman	Quapaw Tribe Quality Assurance Manager	918-533-3085
Robert Rogers	Quapaw Tribe Health and Safety Manager	620-387-9614
Ardie Blair	Quapaw Tribe Senior Procurement Specialist	918-540-4515
Trip Gentry	ECCI Senior Project Engineer	501-975-8100
Chris Roper	Quapaw Tribe Construction Manager	918-919-6153
Brent Durham	Quapaw Tribe Construction Superintendent	573-465-3588
Terri Birch	Quapaw Tribe Contract Administrator	918-919-6190
Jean-Ann Lambert	Quapaw Tribe Historical Preservation Specialist	918-542-1853

1.5 Statement of the Specific Problem

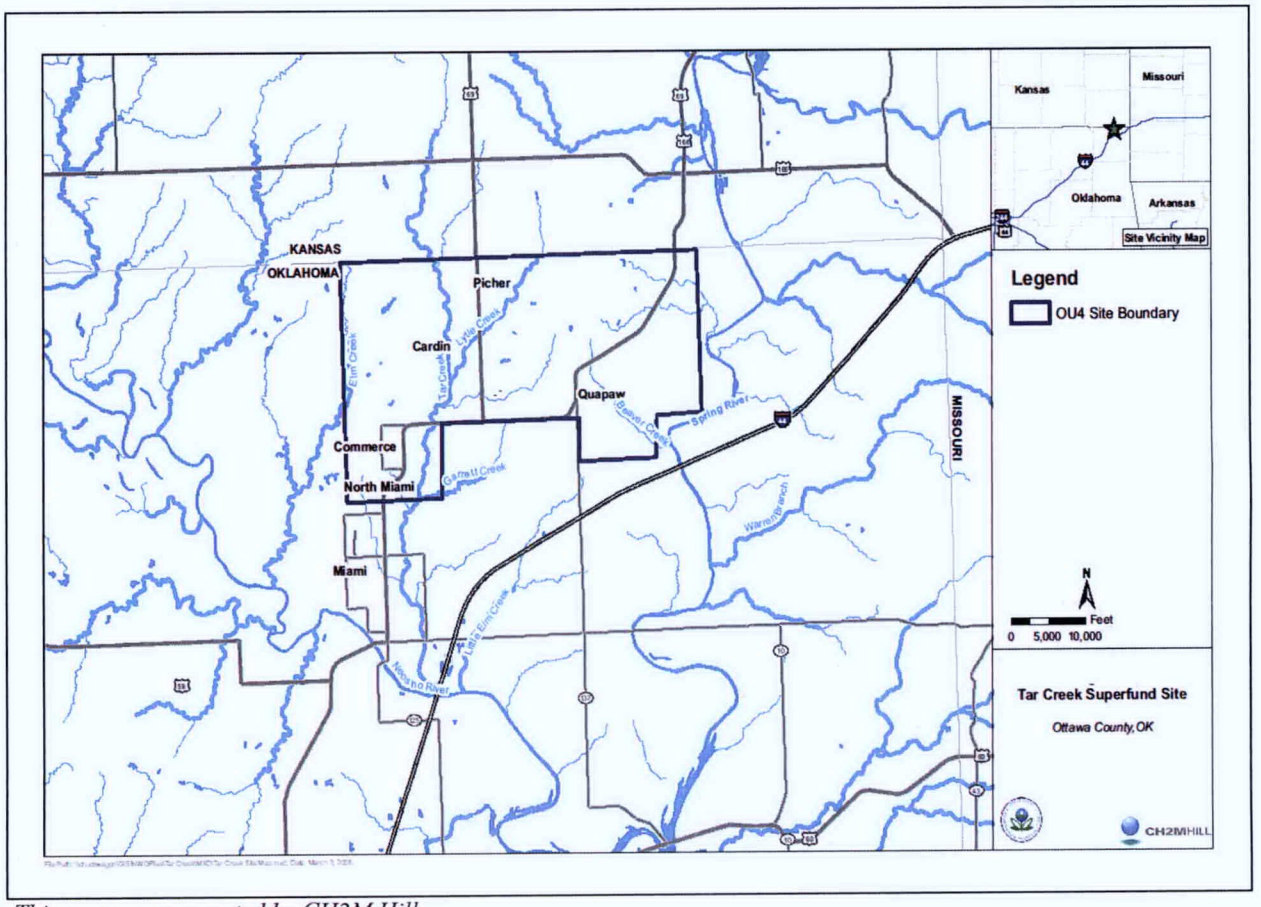
As a result of mining and milling operations, large quantities of mining wastes were deposited on the surface in the form of chat material. The Catholic 40 or CB011 is located within the north half of T28N R24E, Tar Creek Source Material Operable Unit 4 (OU4) and has been assigned to the remediation group designated as Distal Group 8. The chat at CB011 has been sampled, and source material areas have been delineated during a previous site reconnaissance performed by an EPA contractor.

The purpose of this plan is to identify and describe the methods and procedures used during implementation of sampling activities. The primary objective of the activities defined in this FSP is to collect samples to confirm the extent of excavation required sufficient to demonstrate that Remedial Action Objectives (RAOs) and Remediation Goals (RGs) have been met for distal area chat bases. The sampling area has been sub-divided into 200 by 200 foot remediation and confirmation sampling grids. After the removal of source material, confirmation sampling for cadmium, lead, and zinc shall be performed on the underlying transition zone soil, to determine the need for additional excavation.

2.0 BACKGROUND

2.1 Sampling Area Description

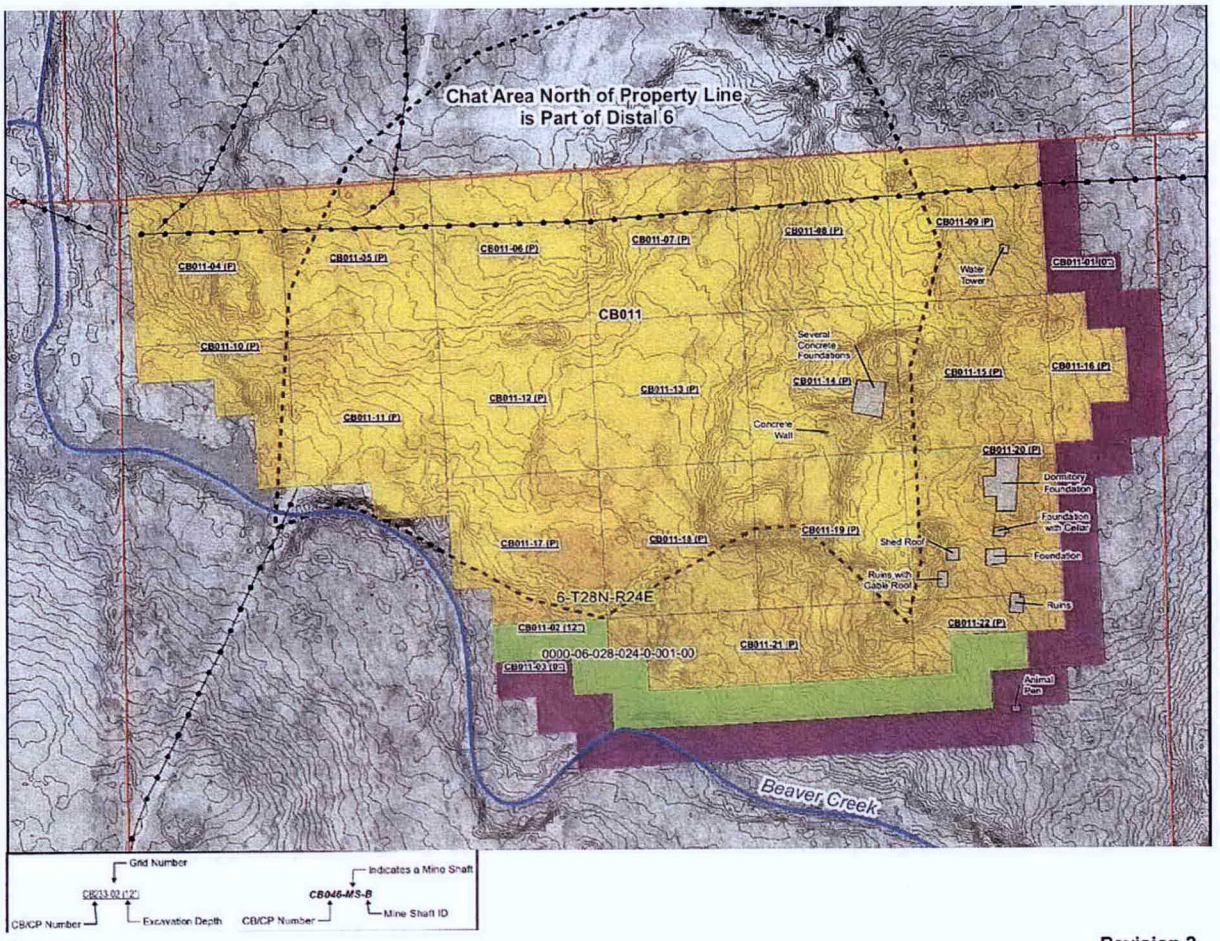
The Tar Creek Superfund Site is located in the extreme northeastern corner of Oklahoma in Ottawa County, as shown in Figure 2.1. The CB011 sampling area occupies approximately forty (40) acres in an undeveloped area. The sampling area is bordered on the north by East 50 Road, on the west by 620 Road, on the south by 57 Road, and on the east by 630 Road. Figure 2.2, utilizing the Geographic Information System (GIS) database established for the project, consists of a grid system of approximate 200 foot by 200 foot grid blocks for the chat base and the immediately surrounding area. During sampling, several contiguous 200 foot by 200 foot grid blocks will be selected, based on field conditions, to make up the approximately 40,000 square foot sampling grid blocks. After identifying the sampling grid blocks, the composite soil samples are collected from depths of 0 to 6 inches and from 6 to 12 inches bgs from each sampling grid block.



This map was generated by CH2M Hill

Figure 2.1 Tar Creek Superfund Site

Quapaw Tribe of Oklahoma



Legend

- Section
- Chat Bases
- Property Boundaries
- Building/Structure
- Creek
- Non-Permanent Clean Limestone Rd
- Improved Chat Rd
- Existing/Historic Chat Roads (Not used as HR)

Revision 2
Distal 8 Site Location
Tar Creek Superfund Site
Operable Unit No. 4
Ottawa County, Oklahoma

N

0 75 150 300 Feet

This map was generated by CH2M Hill

Figure 2.2 CB011 Sampling Area

Quapaw Tribe of Oklahoma

2.2 Operational History

Chat base CB011 is located on property that includes historic and culturally significant ruins, important to the Quapaw Tribe of Oklahoma. A number of these structures are located along the eastern portion of the sampling site. The identified structures are associated with a Catholic Church and school that provided educational opportunities to the Quapaw Tribe of Oklahoma and the surrounding community. The church was established on the property in 1893 and the associated school house was constructed in 1894. Buildings were added to the property over a period of years as the number of students increased. The school had both resident and day students and dormitories were constructed to house the resident students. Additionally, male students were expected to learn agriculture and animal husbandry skills. Outbuildings for the associated farm animals and farming equipment occupied portions of the property. Funding was discontinued and the school closed in 1927. After closure, some wood-frame buildings were removed, while others were allowed to fall into ruins.

Mining began at the site in 1936 and waste in the form of chat piles and tailings cover a large portion of Distal Zone 8. Cadmium, lead, and zinc were identified in the RI/FS and the ROD as the contaminants of interest. According to a 2000 study submitted to Governor Frank Keating's Tar Creek Superfund Task Force, cadmium and lead concentrations were above the maximum concentration of contaminants for D-listed wastes, (40CFR 261,24). Transition soil concentrations of cadmium, lead, and zinc are expected to be significantly lower than the maximum contaminant levels (MCL).

Mining waste may cover remnants of the historic buildings and other features associated with the church and school. Preservation specialists will be available to assess the grids for evidence of historical or culturally significant artifacts and/or ruins. Once, the grids have been "cleared", confirmation sampling may proceed.

2.3 Environmental and/or Human Impact

At the Catholic 40 site, galena (PbS) and sphalerite (ZnS), acid-producing minerals, were exposed through mining, but limestone and dolomite in the geological substrate were capable of neutralizing the acidity, resulting in discharge of alkaline water high in metal ion concentrations. Other impacts from mining at the Catholic 40 site include changes in topography and exposure of large volumes of waste rock to wind and water, leading to problems with erosion.

Waters impacted by mine drainage are expected to show a decrease in species richness and diversity of fish and macroinvertebrate populations. Polluted waters should also show a shift towards a more pollution tolerant species distribution. Plants that are not tolerant to heavy metals cannot grow easily on metal-contaminated soil or mine wastes. Heavy metal toxicity in these plants causes a decrease in photosynthesis, transpiration, growth, and reproduction. Plant cover is expected to be sparse because of metal toxicity along with the physical properties of the soil or chat, such as pH, organic content, moisture content, nutrients, and substrate particle size (Gibson, 1981a; 1981b).

Lead poses a risk to human receptors, while cadmium and zinc pose a risk to ecological receptors. Although all three metals may not necessarily be toxicants when acting alone, they can act synergistically to produce health problems for people who live in the area.

Based on several epidemiological studies, there is sufficient evidence that cadmium and cadmium compounds have human carcinogenic effects. Cadmium enters the blood via absorption from ingestion and inhalation. Usually only 1-5% of what is ingested is absorbed, while 30-50% of what is inhaled is absorbed (Robbins et al., 1989). Chronic cadmium poisoning manifests itself with bone pain, radiological decreases in bone density, high calcium concentrations in the urine, and renal stones (Gosselin et al., 1994). Pulmonary effects of prolonged exposure to cadmium are emphysema, and other lung diseases (USEPA, 1981). Long-term exposure to levels of 0.1 mg/m3 of cadmium through inhalation or ingestion may increase the risk of lung disease or kidney damage.

Most of the zinc contamination enters the environment as the result of anthropogenic activities such as mining. In the air, zinc is present as fine dust particles, and in water most zinc settles in the sediments. Zinc enters the body through inhalation and ingestion. Harmful effects begin at levels in the range of 100 to 250 mg/day. Zinc causes short-term lung irritations and has not been classified as a human carcinogen. Ingestion of high levels can cause pancreas damage (Robbins et al., 1989).

Cadmium and zinc have similar structures and functions inside the human body. The zinc-cadmium ratio in the human body is extremely important since cadmium toxicity and storage is greatly increased with zinc deficiency (Robbins et al., 1989). Cadmium is known to compete with zinc for binding sites and can therefore interfere with enzyme reactions and uptake and utilization of nutrients.

Lead enters the human body through ingestion and inhalation. Airborne lead particles have an approximate aerodynamic diameter of 0.1 – 1.0 um, with a predicted airway deposition of 35% (Friberg et al., 1996). Once in the body, lead is distributed to the liver and kidneys and is subsequently stored in the bones. Lead affects the red blood cells and can cause damage to the liver, kidneys, heart, reproductive systems, and immune system. Reduced IQ, learning, and behavior problems can manifest in children with elevated lead concentrations in their bodies. Elevated lead levels in the body of a pregnant woman can cross the placental-fetal barrier causing a reduced birth weight, reduced motor activity, and skeletal deformity. These malformations have shown a tendency to be compounded by the presence of cadmium (Robbins et al., 1989).

3.0 PROJECT DATA QUALITY OBJECTIVES

3.1 Project Task and Problem Definition

The primary objective of the activities defined in this FSP is to collect samples to confirm the extent of excavation necessary to meet the remedial action objectives (RAOs) and remedial goals (RGs) at CB 011.

To meet the RAOs and associated RGs defined for Operable Unit 4, the Record of Decision (ROD) requires that: (1) source materials be removed, and (2) TZ soil that exceeds the RGs be excavated to a depth no greater than 12 inches below the final grade. TZ soil is defined in the ROD as the "soil found around and under the chat piles, chat bases, and tailings pond extending outward from the piles or ponds.

The objective of the TZ soil sampling is to assess concentrations of lead, cadmium, and zinc within TZ soil. Specifically, the sampling is to determine whether soil present from 0 to 6 inches or 0 to 12 inches below native ground surface contains concentrations of lead, cadmium, and zinc exceeding the RGs for those contaminants using a depth averaging approach. Table 3.1 (Total Metals Action Limits/Reporting Limits) lists the RGs or cleanup levels for lead, cadmium, and zinc in addition to potential stormwater sample analytes.

The specific objective of the sampling of source material (*i.e.*, chat) is to evaluate the marketability of the chat material (if required). Samples will be collected for analysis of grain size composition through sieve analysis, specific gravity, and for lead concentrations. This data will be provided to the chat owners, potential chat users, and the chat processors, who will then make a determination as to the chat's marketability for potential reuse. This determination will dictate the disposition of the material.

The specific objective of the sampling of waste material encountered during remediation of source materials is to determine the presence of ACBM (if suspected and/or encountered). Debris encountered on-site during Remedial Action activities that is suspected of being ACBM will be sampled and analyzed for asbestos content. This analysis will dictate the disposition of the material. Debris that is found to be ACBM will be disposed at a properly permitted landfill, rather than being disposed at the Site's repository.

The objective of agronomic soil sampling is to characterize Site soil for its ability to support vegetation (if needed). The results of the analysis will be utilized to determine what amendments, if any, will be required during the Site's restoration phase to allow the soil to support vegetative growth.

Sampling of the accumulated surface water or stormwater (if required) will be performed in accordance with the procedures outlined in this FSP. The purpose of the surface water and stormwater sampling is to characterize the accumulated water to assess discharge or disposal options.

Table 3.1 Total Metals Action Limits/Reporting Limits

Analyte	Soil Screening Level (mg/kg)	Water Screening Level (ug/L)
Aluminum	-	36,500
Antimony	-	14.6
Arsenic	-	1
Barium	-	7,300
Beryllium	-	73
Cadmium	10	18.2
Calcium	-	5,000
Chromium	-	54,750
Cobalt	-	730
Copper	-	1,356
Iron	-	25,550
Lead	500	15
Magnesium	-	5,000
Manganese	-	1703
Mercury	-	0.63
Nickel	-	730
Potassium	-	5,000
Selenium	-	182.5
Silver	-	182.5
Sodium	-	5,000
Thallium	-	2.56
Vanadium	-	182.5
Zinc	1,100	10,950

3.2 Data Quality Objectives (DQOs)

The project remediation objectives were used to develop the specific DQOs for this project. The DQOs describe the type and quality of the data needed to support the RD activities. The DQOs and project objectives (Table 3.2), provide a basis for the field sampling activities described in this FSP and ensure that the data collected will be of sufficient quality for the intended use of the data. A detailed discussion of the DQOs may be found in the project specific QAPP.

New analytical data will be obtained from excavation confirmation soil samples – analyzed by an off-site laboratory for total lead (dried and sieved through a #60 sieve), cadmium, and zinc. Remediation goals from the ROD will be used to evaluate the confirmation soil samples, (Cadmium = 10 mg/kg, lead (sieved through #60 sieve) = 500 mg/kg, and zinc = 1,100 mg/kg). If the soil concentrations of lead, cadmium, and zinc in the confirmation soil samples collected from 0 to 6" and 6" to 12" from the transition zone soils is less than the Remediation Goals (RG) for the Site, then no excavation is required.

The investigation described by this FSP includes (1) sampling of TZ soil beneath and adjacent to Chat Base 011 to be remediated, (2) sampling of site soil for evaluation of agronomic parameters (if needed), (3) sampling of chat material for evaluation of marketability (if needed), (4) collection of surface water from accumulated storm water in excavation areas, and (5) collection of potential ACBM.

Other related support activities include site reconnaissance activities, layout of sample locations, investigation-derived waste (IDW) and remediation waste management, and mobilization/demobilization activities. Support activities are discussed in another section of this FSP.

Table 3.2 Project Quality Data Objectives and Associated Investigation Tasks

Problem Statement	Decision to be Made	Inputs to the Decision	Investigative Tasks	Decision Rule	Analyses	Data Deliverable Level
Chat						
Chat found in piles or bases may be marketable for potential reuse, depending on its characteristics.	Are lead concentrations and quantity/size gradation of chat material acceptable for reuse as aggregate for highway projects?	Lead concentrations and size gradation of chat material will be determined through collection of chat samples, and provided to chat owners, potential chat users, and chat processors who will determine its marketability for potential reuse	Chat samples will be collected from each chat pile or base using a backhoe to obtain representative sample aliquots. For chat piles, multiple grab samples will be obtained from different areas of the pile. For chat bases, composite samples will be collected from multiple 200 ft by 200 ft grids. Each chat sample will be tested in accordance with AASHTO T2-91/ASTM D75-03; Standard Test Method for Sampling of Aggregates and for total lead. Samples should be made up of at least three increments taken from the top 1/3, the midpoint, and the bottom 1/3 of chat pile/base.	Sample results will be compiled into a characterization report for each chat pile and base. These reports will be made available to processors and posted on the chat sales website. The processors will determine if chat material is marketable for reuse.	AASHTO T2-91/ASTM D75-03; Standard Test Method for Sampling of Aggregates. Total Lead Particle Size Distribution Specific Gravity (coarse fraction) Specific Gravity (fine fraction)	Tier IV subcontract laboratory: Level II

Problem Statement	Decision to be Made	Inputs to the Decision	Investigative Tasks	Decision Rule	Analyses	Data Deliverable Level
Transition Zone Soil						
TZ soil adjacent to and beneath source material accumulations may contain metals at concentrations that exceed the RGs. This soil must be remediated to a maximum depth of 12 inches.	Is lead, cadmium, or zinc present in TZ soil up to 12 inches below ground surface at concentrations that exceed remediation goals (RGs)?	Soil samples collected from adjacent to and beneath source material accumulations, up to a maximum depth of 12 inches below ground surface, will be analyzed by an offsite laboratory by ICP for lead (dried and sieved through a #60 sieve), cadmium, and zinc.	Areas beneath and adjacent to source material accumulations will be divided into one acre size grids. Five-point composite soil samples will be collected from each grid from 0 to 6 and 6 to 12 inches below ground surface, and analyzed for lead, cadmium, and zinc by offsite laboratory.	Concentrations of lead (dried and sieved through a #60 sieve prior to digestion/analysis), cadmium, and zinc in TZ soil samples collected from both depth intervals will be compared to RGs, and if one or more RGs are exceeded, the average concentration for the two intervals will be compared to RGs. If the average exceeds RGs, the corresponding grid from which the samples were collected will be designated for remediation.	Lead, cadmium, and zinc by ICP-AES.	Tier IV subcontract laboratory: 90% to be Level III data deliverables 10% to be Level IV data deliverables
Site Native Soil (Restoration)						
Site soils remaining after source material and TZ soil removal may not be suitable "as is" for restoration activities	Does the site soil meet geotechnical and agronomic property requirements for the planned restoration?	Geotechnical and agronomic properties of site soils	Soil samples will be collected from the site and analyzed for geotechnical and agronomic parameters.	Sample results will be compared with project requirements to determine if they meet geotechnical criteria, and will be compared to OSU extension office criteria to determine soil amendments needed to support vegetative growth	Geotechnical parameters: Moisture, Grain Size, Standard Proctor, Atterberg Limits, USCS classification Agronomic parameters: Organic Matter, Potassium, Phosphorus, pH, Buffer Index,	Tier IV subcontract laboratory: Level II

Problem Statement	Decision to be Made	Inputs to the Decision	*Investigative Tasks*	*Decision Rule*	*Analyses*	Data *Deliverable* Level
					Nitrate-Nitrogen, Sulfate, Sulfur, Zinc, Manganese, Iron	
Accumulated Stormwater						
Elevated metals concentrations may be present in stormwater that has accumulated in excavations containing source material.	Is cadmium, lead, or zinc present in the accumulated stormwater at concentrations that exceed the applicable discharge criteria (benchmark values)?	Analytical data obtained from excavation water sample and hardness of receiving water (or mean stream segment hardness provided in OAC 2011 if no receiving water is present) (OAC Title 785. Chapter 45. OK Water Quality Standards Appendix G, Table 2). Numerical Criteria are hardness dependent.	A sample will be collected from the stormwater accumulated in the excavation and analyzed for total cadmiun, lead, and zinc. Hardness of the receiving water will be determined. In the absence of receiving water, hardness of the accumulated stormwater will be determined.	Sample results for lead, cadmium, zinc, and hardness will be compared to benchmark values. If cadmium, lead, and zinc concentrations are below the benchmark values then the accumulated stormwater can be discharged.	Total cadmium, lead, and zinc. Hardness of receiving water and accumulated stormwater.	Tier IV subcontract laboratory: Level IV

Problem Statement	Decision to be Made	Inputs to the Decision	Investigative Tasks	Decision Rule	Analyses	Data Deliverable Level
Potential ACM						
Debris encountered onsite may include potential ACM. The potential ACM must be evaluated to determine the asbestos content to allow proper disposition of the material.	Does debris encountered onsite include ACM, which may require special disposition procedures?	Analytical data obtained from samples of suspected ACM.	Collect grab samples of suspected ACMs	Is asbestos contect >1%? Is the ACM friable or can it become friable?	Polarized light microscopy	Tier IV subcontract laboratory: Level I

3.3 Data Quality Indicators (DQIs)

Precision is the degree of mutual agreement between or among independent measurements of a similar property (usually reported as a standard deviation [SD] or relative percent difference [RPD]). This indicator relates to the analysis of duplicate laboratory or field samples. Typically field precision is assessed by co-located samples, field duplicates, or field splits and laboratory precision is assessed using laboratory duplicates, matrix spike duplicates, or laboratory control sample duplicates). An RPD of <35% for TZ conformation soils shall be considered acceptable for this project data set.

Accuracy is the degree of agreement of a measurement with a known or true value (percent recovery [%R]). To determine accuracy, a laboratory or field value is compared to a known or true concentration. Accuracy is determined by such QC indicators as: matrix spikes, surrogate spikes, laboratory control samples (blind spikes) and performance samples. Accuracy acceptance criteria for the data validation are provided in the EPA's National Functional Guidelines.

Completeness is expressed as percent of valid usable data actually obtained compared to the amount that was expected. Due to a variety of circumstances, sometimes either not all samples scheduled to be collected can be collected or else the data from samples cannot be used (for example, samples lost, bottles broken, instrument failures, laboratory mistakes, etc.). The completeness goal for this project data set is 95 percent.

Comparability expresses the confidence with which one dataset can be compared to another. The use of EPA methods allows the data to be compared facilitating evaluation of trends or changes in a site. Comparability also refers to the reporting of data in comparable units so direct comparisons are simplified. All data for Distal Zone 8 shall be reported on a dry-weight basis.

Sensitivity is a measure of how low of a concentration an analysis can reliably detect and report a particular analyte. Higher sensitivities allow the laboratory to establish method detection limits (MDLs) and reporting limit (RLs) at sufficiently low levels so that the project DQOs can be achieved. Table 3.1 depicts the soil and water screening levels that will be evaluated for this project.

3.4 Data Review, Verification, and Validation

The data validation or data review process is conducted to assess the effect of sampling and analytical process on the usability of the data. There are two areas of review: laboratory performance evaluation; and the effect of matrix interference or sampling error. Evaluation of laboratory performance is a relatively straightforward examination. This evaluation determines whether or not the laboratory met the QC requirements of the analytical methods and other stated protocol requirements. The assessment of potential matrix effects and sampling error consists of an evaluation of the analytical results for the samples, as well as a number of QC measures such as blank samples, duplicates, MS/MSDs, LCSs, etc. and then assessing if this could affect the usability of the data.

Before the laboratory will release each data package, the laboratory QA officer (or the analytical section supervisor) must carefully review the sample and laboratory performance QC data to verify sample identity, the completeness and accuracy of the sample and QC data, and compliance with method specifications.

All laboratory analytical data obtained in support of this project shall be reviewed by the QTEO Quality Assurance Manager or his designee in accordance with the QTEO Standard Operating Procedure for Inorganic Analytical Data Review and criteria analogous to that presented in EPA's *National Functional Guidelines*. Sample results will then be assigned data qualifiers as needed to express the degree of usability based upon overall data quality. After the completion of the data validation effort, a data quality evaluation technical memorandum will be prepared to discuss the findings of the review.

The analytical results obtained in the investigation will be reviewed to ensure that the extent of the excavation sufficiently implements the remedial strategy. The analytical data obtained must therefore, be of sufficient completeness and quality in order to satisfy project DQOs. A graded approach combining contract compliance verification (CCV) and data validation shall be used.

Data verification is defined as a systematic process which results in evaluation of the completeness, correctness, consistency, and compliance of a data set against a standard or contract. Verification includes two separate activities. The first activity entails inventory of the data package to ensure compliance with the contract and

statement of work, in terms of the required deliverables. The second activity entails various checks of the quality of the data, the purpose of which is to alert the validator that a non-correctable problem has occurred and that data may need qualification. The QTEO staff shall perform a CCV on one hundred percent (100%) of the received analytical data.

Analytical data validation, including field and laboratory data review, is a systematic process, performed external from the data generator, which applies a defined set of performance-based criteria to a body of data. Validation may result in qualification of the data. Data validation provides a level of assurance, based on a technical evaluation, that an analyte is present or absent. If present, the level of uncertainty associated with the measurement is evaluated prior to drawing a conclusion from a body of data. Analytical data validation includes a technical review of a laboratory data package covering the evaluation of quality control samples, the identification and quantitation of analytes, and the effect of deficiencies in quality on analytical sample data. The QTEO staff shall perform data validation, including record qualification, on a minimum of ten percent (10%) of the received analytical data as per the QTEO Inorganic Data Verification and Validation standard operating procedure

QTEO shall require a minimum Analytical Support Level (ASL) III for all laboratory deliverables. QTEO shall require ASL IV laboratory deliverables for those data undergoing validation. Analytical Support Levels and their associated laboratory deliverables are listed in Table 3.3.

Table 3.3 Summary of Deliverables for Laboratory Analytical Reports

All Analytical Fractions	Level I	Level II	Level III	Level IV
Case Narrative - A detailed case narrative per analytical fraction is required and will include explanation of any non-compliance and/or exceptions and corrective action. Exceptions will be noted for receipt, holding times, methods, preparation, calibration, blanks, spikes, surrogates (if applicable), and sample exceptions.	X	X	X	X
Sample ID Cross Reference Sheet (Lab ID's and Client ID's)	X	X	X	X
Completed Chain of Custody and any sample receipt information	X	X	X	X
Copies of non-conformance memos and corrective actions	X	X	X	X
Geotechnical and Agronomic Fractions	Level I	Level II	Level III	Level IV
Sample Results	X	X	X	X + raw data
Initial and Continuing Calibration Summary			X	X + raw data
Initial and Continuing Calibration Blanks and Method Blanks Summary		X	X	X + raw data
Pre-digestion Matrix Spike Recoveries Summary		X	X	X + raw data
Native Duplicate or MS/MSD Precision Summary		X	X	X + raw data
Laboratory Control Sample Recovery Summary		X	X	X + raw data
Instrument or Method Detection Limit Summary		X	X	X + raw data
Metals Fractions	Level I	Level II	Level III	Level IV
Sample Results	X	X	X	X + raw data
Initial and Continuing Calibration Summary			X	X + raw data
Initial and Continuing Calibration Blanks and Method Blanks Summary		X	X	X + raw data
Interference Check Standard Summary			X	X + raw data
Pre-digestion Matrix Spike Recoveries Summary		X	X	X + raw data
Native Duplicate or MS/MSD Precision Summary		X	X	X + raw data
Laboratory Control Sample Recovery Summary		X	X	X + raw data
Method of Standard Addition (if necessary)			X	X + raw data
Serial Dilution			X	X + raw data
Instrument or Method Detection Limit Summary		X	X	X + raw data
Linear Range Summary			X	X + raw data
Preparation Log Summary			X	X + raw data
Analytical Run Sequence and GFAA Post-spike Recovery Summary			X	X + raw data

MS/MSD = Matrix Spike/Matrix Spike Duplicate

GFAA = Graphite Furnace Atomic Adsorption

3.5 Data Management

Commercial Laboratory Sample Management

All collection information for samples destined for a commercial laboratory will be managed in the field using the laboratory's CoC forms, either in hard copy or electronic form. The Scribe software may also be used. The FTL will forward a photocopy or an electronic image of the CoCs generated for that day to the Quality Assurance Manager (QAM) or the designee. This will serve as notification to the QAM of samples being shipped to the subcontracted laboratory. If the subcontracted laboratory does not formally acknowledge receipt of the samples in writing, the QAM will contact the laboratory to confirm sample receipt. The QAM will contact the laboratory as required to monitor the status of samples sent to the laboratory. In addition, the QAM will monitor laboratory performance with regard to the project-specified turnaround times.

Data Storage

Prior to the initiation of sampling activities, an electronic data management system (EDMS) will be set up and configured to organize the project's analytical and field data. The EDMS will be the foundation for the overall data management approach for the project. The EDMS will maintain the analytical and field data in a secure and structured environment and will minimize the potential for data errors as the project transitions between the various phases of activity. Information and physical records pertaining to project activities that are produced in hard-copy form (*e.g.*, log books, reports, maps, photographs, etc.) will be maintained in the project files. The electronic information from the EDMS for Chat Base 011 will be easily transferred to the existing EDMS for the Tar Creek Operable Unit 4 Remedial Action.

Data Collection

The data collection approach for this effort will be consistent with the end data-use objectives. Prior to sample collection, the Sample IDs, sampling locations, matrix, and test method information will be compiled into a field sampling kit consisting of a sampling schedule, sample labels, CoC, and field data collection forms. The sample labels will specify the destination laboratory, Sample ID, Station ID, test method, and other pertinent information as appropriate.

The FTL will distribute and review each site sample plan and kit with the field team. If modifications to the approved plan are made during the field effort, the FTL will be responsible for adjusting the station/sample identifications and sampling plan. Changes made in the field will be documented in the sampling logbook and the changes will be updated in the EDMS.

Upon completion of sample collection each day, the FTL will gather the sample collection information from the sampling personnel and provide the information to the designee. The designee will then add the sampling date, time, depth, and other relevant comments to the EDMS database on a daily basis.

Analytical laboratory data will be imported into the EDMS. Where duplicate records exist, only one result (the highest detection if one or more of the duplicates are detection, or the lowest non-detect if all the duplicate results are non-detect) will be imported into the EDMS.

When necessary the field team will collect horizontal coordinate information for each sample location using hand-held GPS units. The coordinate information will be presented in latitude and longitude and entered into the EDMS as it becomes available.

When applicable, other types of field data may be entered into the EDMS as defined by the project requirements: soil descriptions, field measurements, etc. The FTL will provide the designee with photocopies of all field parameter documentation. The designee will then enter the field parameter information into the database as it is made available.

Sample Management

Once sampling information is entered into the EDMS, the designee will track the status of samples sent to each lab by means of several sample-tracking tools and reports. In general, once a sample label is generated, the laboratory receipt of samples, delivery of laboratory data, uploading of the electronic data deliverable and data validation steps are tracked and documented. In addition to tracking the progress of a sample, laboratory performance will be reported with respect to sample receipt and turnaround time. In the event that the laboratory fails to meet the project-specified turnaround time, the QAM will be notified and the laboratory invoice will be modified as appropriate.

In addition to the unique Sample ID generated for each sample, a unique analytical reporting batch number or SDG number will be generated by the laboratory for each group of samples. The analytical data will be delivered in a predefined electronic format from the laboratory as specified by the PC or designee, with a reference to each applicable batch number or SDG and Sample ID. The QAM or designee will review the laboratory deliverable to verify that the electronic information matches the hard-copy lab reports. As the electronic data is loaded into the EDMS, the QAM or designee will verify that the appropriate analytical tests were performed by the lab as specified on the CoC forms. In addition, several automated diagnostic checks are run on the laboratory deliverable to evaluate the validity, integrity, and completeness of the electronic deliverable prior to loading it into the EDMS.

Data Reporting

Following upload of all EDDs, completion of data validation, and entry of data qualifiers applied during the validation, the end result will be a complete and validated database. The EDMS data reporting tool set will be used to access the project analytical and field information in order to generate data summary tables, criteria comparison tables, and other analytical data deliverables in support of the project. A working database will be developed and maintained with the best values reported for each sample. The database will be available for project staff to utilize in the development of project deliverables (*e.g.*, the Remedial Action Report for Chat Base 011 [Catholic 40]).

3.6 Assessment Oversight

The quality assurance program shall be implemented as outlined in the site specific Quality Assurance Project Plan (QAPP). Random and/or systematic errors may be introduced during sample collection, sample handling and storage, sample analysis, data reduction, and data reporting. The QC measures and the procedures identified below will be followed to aid in the establishment of analytical data quality and to minimize these errors. Each member of the field team must follow the same procedures in order to minimize field errors. Appropriate EPA-approved analytical and field methods will be used to ensure sufficient sampling and analytical quality. Field QC samples such as field duplicates, field blanks, equipment rinsate blanks, and project-specific MS/MSDs will be used to monitor the accuracy and precision of the sampling activity as well as the analytical process.

4.0 SAMPLING RATIONALE

The specific field activities covered by the FSP will include:

1. Collection of composite TZ soil samples around and below CB011 to be remediated to determine the extent of TZ soil removal needed.
2. Collection of chat material samples for evaluation of marketability for potential reuse (if required).
3. Collection of surface water samples from accumulated storm water in excavations.
4. Collection of soil samples for agronomic analysis and characterization, to assist in the determination of necessary amendments during site restoration activities.
5. Collection of samples of potential ACBM observed in waste materials found and excavated in the process of removal of source materials and TZ soil.

4.1 Detailed Description of Field Activities

This section provides a detailed description of the field activities including: (1) sampling of TZ soil beneath and adjacent to Chat Base 011, (2) sampling of Site soil for evaluation of agronomic parameters (if needed), (3) sampling of chat material for evaluation of marketability (if needed), (4) collection of surface water from ponded water in excavation areas; and (5) collection of potential ACBM. The procedures for these activities are described in the following sections. Modifications to the activities described below should be discussed with the EPA prior to their implementation, and these changes will be documented in the sampling logbook.

1. Transition Zone Soil Sampling

As the remediation of Chat Base 011 progresses, soil sampling will be performed to assess whether the concentrations of lead, cadmium, and zinc in the TZ soil are below the RGs for those respective contaminants. The ROD requires that TZ soil that exceeds the RGs be excavated to a depth no greater than 12 inches below the final grade established in the Remedial Design (RD). TZ soil is defined in the ROD as the "soil found around and under the chat piles, chat bases, and tailings pond extending outward from the piles or ponds." The final grade established in the RD is the in situ or undisturbed grade of the land outside the source material footprint.

During remediation, after the source material is removed and native soil is encountered, the chat base footprint and base area and the immediately surrounding area will be subdivided into approximately 40,000 square foot (200 by 200 foot, or equivalent) grids. Two composite soil samples will be collected from each grid block, one from a depth of 0 to 6 inches bgs and one from a depth of 6 to 12 inches bgs. Soil in areas immediately surrounding the chat base may be sampled prior to the initiation of the source material removal activities by dividing the area into sampling grid blocks of approximately 40,000 square feet (typically about 800 feet by 50 feet), and collecting composite soil samples from each grid block from depths of 0 to 6 inches and 6 to 12 inches bgs. The composite soil collection approach is described below.

Grids will be laid out in advance of sampling, utilizing the Geographic Information System (GIS) database established for the project, based on input from the field team. A grid system consisting of 50 foot by 50 foot grid blocks will be developed for the chat base and the immediately surrounding area. The GIS will provide an overlay file of the grid system, to be loaded into handheld GPS units utilized during sampling to identify the sample location coordinates. During sampling, several contiguous 50 foot by 50 foot grid blocks will be selected, based on field conditions, to make up the approximately 40,000 square foot sampling grid blocks. After identifying the sampling grid blocks, the composite soil samples are collected from depths of 0 to 6 inches and from 6 to12 inches bgs from each sampling grid block. The sample team then reports to the GIS which of the 50 foot by 50 foot blocks make up each of the sampling grid blocks.

Each soil sample will be composited from five sub-samples (aliquots) collected using a stainless steel hand auger from five locations within a given sampling grid block. Grids will be laid out by the field team using the figures, GPS coordinates, and tape measures. Each soil sample will be composited from five sub-samples (aliquots) collected using a stainless steel hand auger. Wherever possible, the five aliquots will be collected approximately at the four corners and center of the 200 by 200 foot grid. Sampling locations may need to be offset due to field conditions. Any such change will be determined in the field and documented in the field logbook.

At each aliquot sample location, surface vegetation, roots and debris will be removed with a trowel before sample collection. The hand auger will then be utilized to collect soil from the 0 to 6 inch depth interval and from the 6 to 12 inch depth interval. The soil removed from each interval will be placed into separate new sealing plastic bags. Each bag will be marked with the corresponding sample identification number, sample date and time, and the depth of sample collection. All of the sample aliquots from the same depth interval within the same grid will be placed into the same plastic bag. The soil material in each bag will then be thoroughly mixed and homogenized to form the composite sample. For each grid, one composite sample will be collected from a depth of 0 to 6 inches bgs, and one composite sample will be collected from a depth of 6 to 12 inches bgs.

After the soil material for each sample has been homogenized, the soil material will be placed into an appropriate sample container, properly labeled, and placed into sealed plastic bags. The sealed plastic bags containing the samples will be placed inside a cooler containing sufficient ice to cool samples to 4°C (±2 degrees). All sampling information, including analysis requested, times and date of sample collection, sampler initials, site name and information, and other required information will be recorded onto the CoC or traffic report form, which will be maintained with the samples at all times until received by the analytical laboratory.

If the soil beneath the chat is too soft and/or saturated to support the excavation equipment after chat removal, then TZ soil samples may be collected by excavating shallow test holes through the remaining chat to expose native soil. The samples will then be collected using hand augers, as normally performed. Alternatively, if interstitial water present within the chat floods the test hole, a length of polyvinyl chloride (PVC) pipe will be driven through the chat until native soil is reached, then the hand auger will be used to remove chat from the pipe and to collect the native

soil beneath the chat. Waiting until the visible chat and source materials have been removed from the chat base before collecting the TZ soil samples is preferred to sample collection using test holes or through pipe driven into the chat.

2. Transition Zone Soil Grid Remediation Determination

A depth averaging approach will be used for interpreting TZ soil sample analytical results and determining the extent of TZ soil remediation. The first step of the approach is to compare the analytical results of the TZ soil samples from each depth interval (*i.e.*, 0 to 6 inches bgs and 6 to 12 inches bgs) for each grid to the RGs. If the analytical results from both intervals within a given grid are below the RGs, no excavation of TZ soil is required for that grid. If the analytical results from both intervals within a given grid exceed the RGs, soil excavation and removal to 12 inches bgs is required. If an exceedance of one or more RGs was reported for only one of the depth intervals in a grid, the analytical results in both depth intervals are averaged for each contaminant to calculate average concentrations for the grid for the 0- to 12-inch depth interval. The average concentration for each contaminant is then compared to the respective RG.

If the average concentrations for the 0 to 12 inch bgs interval are below RGs, no excavation of TZ soil is required for that grid. If the average concentrations exceed one or more RGs, but only the 0- to 6-inch sample originally exceeded the RGs, then only the 0- to 6-inch interval is excavated and removed for that grid. If the average concentrations exceed one or more RGs, but only the 6- to 12-inch sample originally exceeded the RGs, then both the 0- to 6-inch and the 6- to 12-inch depth intervals are excavated and removed from that grid, because it would be impracticable to remove only the 6- to 12-inch depth interval.

3. Soil Sampling for Evaluation of Agronomic Parameters

During the Site's restoration phase of the RA activities, amendments may be applied to Site soil to enhance the soil's ability to support vegetation. Soil samples are collected for analysis of agronomic parameters to determine what amendments, if any, may be required.

Agronomic samples will be collected as composite samples, with one composite sample for every approximately 40 acres of area being restored. If soil conditions are found to vary considerably within the 40 acre area, the 40 acre area can be subdivided into smaller sampling areas to reflect the variations in site soil conditions, with a composite sample collected from each of the smaller areas. The composite sample will be prepared by collecting aliquots of soil from the 0- to 6-inch depth interval from at least 20 locations within each area being sampled. The aliquots will be collected into a clean bucket or similar container, using a shovel, hand auger, scoop, soil probe, or other suitable tool. After all the aliquots of soil have been collected into the bucket, the soil with be thoroughly mixed to homogenize the soil material. If the soil is too wet to mix, the soil will be allowed to dry until the soil can be more easily mixed.

A portion of the homogenized soil will then be placed into a cloth sample bag obtained from the local Oklahoma State University (OSU) Extension Office. The sample bag should be filled in order to provide sufficient material for analysis. The sample will be submitted to the OSU Extension Office or directly to the OSU Soil Testing Laboratory for analysis of Routine Nutrients (nitrate-nitrogen, potassium, phosphorus, pH, and buffer index), Secondary Nutrients (sulphate-sulphur, magnesium, and calcium), Micronutrients (iron, zinc, boron, copper, and manganese), Organic Matter, and Salinity. Based upon the analytical results, the OSU Extension Service will provide recommendations for application of soil amendments for the area sampled.

4. Chat Sampling for Evaluation of Marketability

Prior to initiation of chat removal activities, samples of the chat present in the chat base may be collected to evaluate the marketability, for future beneficial reuse, of the chat material. The chat base will be sampled in accordance with "AASHTO T2-92 Sampling of Aggregates/American Society of Testing and Materials (ASTM) D75-03 Standard Practice for Sampling of Aggregates." The sample will be properly labeled in accordance with the requirements set forth in the FSP for collection of soil samples for off-site laboratory analysis. A second portion of the sample will be placed into a properly labeled sample jar. The location of each sample location will be measured using a GPS unit.

The chat base area will be divided into approximately 200 by 200 foot grids, and a five-point composite sample will be prepared for each grid block. The five-point composite sample will be prepared by excavating (with a backhoe or other suitable equipment) test holes near the center and each corner of the grid block. The surface of the chat at each test hole will be scraped to remove the top 1 or 2 inches of material, which may have become segregated. The test hole will then penetrate the total thickness of the chat, to the native soil beneath the chat. The thickness of chat at each test hole will be measured and recorded, and the location of each test hole will be recorded using a handheld GPS unit. A sample of the chat will then be collected using the backhoe to scoop from the side of the test hole, taking care to collect material from the entire thickness of the chat. Chat removed from each test hole will be mixed with chat collected from the other test holes within the same grid block to prepare the composite sample for that grid block. The composite sample will then be collected into a large sealing plastic bag or a 5-gallon bucket. The sample will be properly labeled in accordance with the requirements set forth in the FSP for collection of soil samples for off-site laboratory analysis. A second portion of the composite sample will be placed into a properly labeled jar.

The bagged (or bucket) chat samples will be submitted to a geotechnical laboratory for analysis of grain size distribution (ASTM C-136) and specific gravity (ASTM C-127 [for coarse aggregate] and C-128 for [for fine aggregate]). The jar sample will be submitted to an analytical laboratory for analysis of total lead by EPA Method SW846-6010B.

5. Storm and Surface Water Sample Collection and Analysis

During RA activities, it may be necessary to remove accumulated storm water from an excavation area. The water must be characterized for site contaminants to assess options for management of the water.

Samples of the accumulated storm water will be collected and analyzed for total concentrations of lead, cadmium, zinc and hardness. A sample of the receiving water will also be collected and analyzed for hardness. The samples will be collected by using a stainless steel container (such as a bowl or pitcher) to dip water from the pond/excavation area and the receiving water. The samples for total lead, cadmium, zinc and hardness analysis will be prepared by transferring the water directly into the appropriate laboratory-supplied, properly labeled, sample container. Samples for dissolved lead, cadmium, and zinc may also be collected. To prepare the dissolved sample, water will be poured into a disposable filter container equipped with a 0.45 micron filter, and a vacuum pump used to filter the samples.

The sample containers, preservatives, and holding times for each analysis/test are included in Table 5.1 (Analyses, Sample Containers, and Preservatives). Sample containers will be ordered and shipped to the Site by the PC and will be pre-preserved with the appropriate preservatives (if required). All samples will be managed and shipped to the off-site laboratory in accordance with the requirements of the FSP. The laboratory analytical and testing methods are specified in Site's Quality Assurance Project Plan. New disposable latex or nitrile gloves will be used for collecting each sample. Non-dedicated and non-disposable sampling equipment will be decontaminated after each use in accordance with the FSP.

Each sample will be placed into a sealed plastic bag, then into a cooler containing sufficient ice to cool samples to 4°C (±2 degrees). All sampling information, including analysis requested, times and date of sample collection, sampler initials, site name and information, and all other required information will be recorded onto the CoC or tracking form, which will be maintained with the samples at all times until received by the analytical laboratory. All sampling activities, including any field parameters measured, will be recorded in the field log book. Deviations from this FSP will be documented in the field notes, including an explanation for the deviation.

6. Field Quality Control Sample Collection and Analysis

Quality Assurance/Quality Control (QA/AC) samples to be collected during the field investigation, as well as laboratory QC requirements to be performed, are provided in the Site's QAPP. QA/QC samples to be collected in the field include Field Duplicates (FD), Field Blanks (FB), Equipment Rinsate Blanks (ERB), and Matrix Spike/Matrix Spike Duplicates (MS/MSD).

7. Potential Asbestos Containing Building Materials

It is possible that discarded construction or demolition debris that includes building materials found on-site may include ACBMs. ACBMs cannot be
disposed at the Site's repository. Suspected ACBMs will be sampled to characterize the material for proper disposal.

If a material is suspected of being an ACBM, a sample will be collected into a sealing plastic bag. It is preferred that the material not be broken during sampling and an existing fragment small enough to fit into the sample bag should be selected. The bag will be labeled with the sample ID number, sample date and time, and the sampler's initials. The bag should also be labeled as being potential ACBM. The sample will then be placed into a small chest or other suitable container for shipment to the laboratory. The chest should be filled with sufficient packing to prevent the sample from being damaged during shipment. The sample will be shipped under chain of custody documentation for analysis of asbestos by the polarizing light microscopy method. The laboratory used will be accredited for that analytical method by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.0 REQUEST FOR ANALYSES

5.1 Analyses Narrative

As enumerated in Table 5.1, twenty-two (22) composite soil samples at 0 to 6 inches (bgs) and twenty-two (22) composite soil samples at 6 to 12 inches (bgs) will be taken at twenty-two (22) grid locations. Duplicate composite soil samples at 0 to 6 inches (bgs) and 6 to 12 inches (bgs) will be collected at four (4) grid locations. In addition, four (4) water field blanks and four (4) equipment/rinse blanks will be collected.

As shown in Table 5.1, each composite soil sample (including laboratory QC samples) will be divided in half. The first soil composite aliquot will be analyzed for total cadmium and zinc. The second soil composite aliquot will be sieved with a #60 sieve and analyzed for lead. In addition, each field and equipment/rinse blank will be analyzed for total cadmium, lead, and zinc. One soil composite per Sample Delivery Group (SDG) shall be analyzed as an MS/MSD for total, zinc and sieved lead. All metals results will be reported on a dry weight basis.

Laboratory turn-around-times (TATs) will be assigned using a graded approach. Most of the composites will require a five (5) day TAT, while the final SDG will require a three (3) day TAT. Requested TATs are listed on Table 5.1.

Table 5.1 Analyses, Sample, Containers, and Preservatives

Analysis	Method	Maximum Hold Time	Preservation/Storage	Container
Chat Samples				
Total Lead	6010B	180 days	NA	(1) 8 oz jar
Soil Samples				
Total Lead (dried and sieved through #60 sieve), Cadmium, and Zinc	6010B	180 days	2 deg C	(1) 8 oz jar
Water Samples				
Total TAL Metals	6010B, 6020, 7470A	28 days (Hg) 180 days (other metals)	pH<2 HNO3, 4 deg C	(1) 1000 mL HDPE
Dissolved TAL Metals	6010B, 6020, 7470A	28 days (Hg) 180 days (other metals)	Field-filtered, pH<2 HNO3, 4 deg C	(1) 1000 mL HDPE
Sulfide	376.1	7 days	pH<9 w/NaOH, ZnOAc, 4 d C	(1) 1000 mL HDPE
TOC	SM5310B	28 days	pH<2 H2SO4, 4 deg C	(1) 1000 mL HDPE
Ammonia	350.1	28 days	pH<2 H2SO4, 4 deg C	(1) 1000 mL HDPE
Nitrate, Nitrite	353.2	48 hours	4 deg C	(1) 1000 mL HDPE (unp)
Hardness	130.2	180 days	pH<2 HNO3, 4 deg C	(1) 1000 mL HDPE
Total Dissolved Solids (TDS)	SM2540C	7 days	4 deg C	(1) 1000 mL HDPE
Sulfate, Chloride, Fluoride	300A	28 days	4 deg C	(1) 1000 mL HDPE
Total Alkalinity	SM2320B	14 days	4 deg C	(1) 1000 mL HDPE
Asbestos-containing Material				
Asbestos content (PLM)	EPA 600/M4-82-020	NA	NA	(1) Ziploc bag with a fragment of the material

6.0 FIELD METHODS AND PROCEDURES

6.1 Field Equipment

The field sampling task will be performed by an approved contractor with oversight by QTEO. It is the responsibility of the subcontractor to provide the appropriate supplies. Field equipment and supplies to be used for this project include, but are not restricted to, the following: sample bags, jars, and bottles, decontamination supplies, GPS units, field vehicles, PPE, and stainless steel hand augers.

6.2 Surface Soil Sampling

After all the source material is removed and native soils are encountered, each chat pile footprint and base area and the associated 50-foot TZ will be subdivided into approximately 40,000 square foot (200 by 200 foot, or equivalent) grids. Grids will be laid out by the field team using the figures, GPS coordinates, and tape measures. Two composite samples will be collected from each grid block, one from 0 to 6 inches and one from 6 to 12 inches (bgs) as noted in Section 4 and Table 5.1. Field samplers are required to don the proper PPE for their tasks.

Each soil sample will be composited from five grab sub-samples (aliquots) collected using a stainless steel hand auger. Wherever possible, the five aliquots will be collected at the four corners and center of the grid. Sampling locations may need to be offset due to field conditions; any such change will be determined in the field and documented in the field logbook. The field sampling personnel shall take GPS readings at the five sub-sample locations and record the readings in the field logbook. At each aliquot sample location, surface vegetation, roots and debris will be removed with a trowel before sample collection. The five aliquots from the desired sample depth will be placed together into a new plastic bag and thoroughly homogenized to form the composite sample. An initial portion of the composite sample will be removed from the plastic bag, placed in a sample jar and labeled for "Total Cadmium and Zinc analyses". The second portion of the composite sample will be removed from the plastic bag, placed in a sample jar and labeled "Total Lead". The samples designated for lead analyses will be sieved through a #60 sieve prior to digestion and analyses.

After each sample is collected, placed in jars, and labeled according to the requirements set forth in the Field Sampling Plan (FSP), the samples will be placed inside a cooler containing sufficient ice to cool samples to 4°C or less. All sampling information, including analyses requested, times and date of sample collection, sampler initials, site name and information, and other required information will be recorded onto the COC, which will be maintained with the samples at all times until received by the analytical laboratory. Sample jars will be placed inside plastic bags and sealed. Sample ID numbers will be assigned to each sample in accordance with the procedures in Section 9.2.

In certain circumstances, the soil beneath the chat may not support operation of excavation equipment after chat removal. In those circumstances, the confirmation samples may be collected by excavating shallow test holes through the remaining chat to expose native soil, then collecting the samples using hand augers, as normally performed. Alternatively, if interstitial water present within the chat floods the test hole, a length of PVC pipe may be driven through the chat until native soil is reached, then the hand auger will be used to remove chat from the pipe and to collect the native soil beneath the chat.

6.3 Decontamination Procedure

Decontamination of all non-dedicated sampling equipment/materials/instruments shall be performed before sampling in a subsequent grid block. The field sampling task will be performed by the contractor with QTEO oversight. Data review of equipment/rinsate blanks shall serve as system quality control for the decontamination process.

All equipment that contacts potentially contaminated soil or water will be decontaminated to prevent cross-contamination of samples. All sampling equipment must be decontaminated prior to the start of project work and between work activities at individual sampling locations. The decontamination procedures that will be followed shall be in accordance with approved QAPP procedures. Disposable equipment intended for one time use will not be decontaminated, but will be packaged for appropriate disposal. All decontamination fluids will be contained and disposed in accordance with the waste management procedures detailed in the Site's Waste Management Plan and Site Management Plan.

A clean work area shall be established for the decontamination process and placement of wash equipment. Plastic sheeting shall be placed on the ground surface, as necessary, to prevent sampling equipment from coming into contact with the ground's surface. Caution will be exercised since plastic sheeting can be slippery when wet. Equipment will be scrubbed with brushes using an Alconox/potable water wash solution and rinsed with potable water until all visible signs of dirt are removed. Additional rinsing will follow with potable water and a final rinse of distilled water. The equipment will be allowed to air dry and prevent exposure to potentially contaminating substances. Following decontamination, clean sampling equipment and utensils will be placed into plastic bags or wrapped in aluminum foil to protect the equipment from contamination prior to use.

6.4 Field Quality Control Samples

Field QC samples collected as part of the sampling program shall include field duplicate samples, field blanks and equipment/rinsate blanks. Field duplicate composite samples are collected simultaneously with a parent sample. A duplicate sample shall be treated independently of its parent in order to assess laboratory performance through comparison of the results. Field blanks are defined as DI water poured into preserved bottles prior to arrival in the field. Field blanks accompany the samples in the field and are submitted to the laboratory for analysis. An equipment/rinse blank is the DI water collected in a sample bottle after it was poured over decontaminated sampling equipment.

7.0 SAMPLE CONTAINERS, PRESERVATION, AND HANDLING

The number of sample containers, volumes, and materials are listed in Section 5.0, Table 5.1. The containers are pre-cleaned and will not be rinsed prior to sample collection. Preservatives, if required, will be added by the contracted laboratory to the containers prior to shipment of the samples to the laboratory

7.1 Surface Soil Samples

Surface soil samples to be analyzed for metals will be homogenized and transferred from the sample-dedicated homogenization container into 8-oz, wide-mouth glass jars. One wide-mouth 8-oz glass jar will be collected for each discrete sample.

8.0 DISPOSAL OF RESIDUAL MATERIALS

In the process of collecting environmental samples at the Catholic 40 site, the sampling team will generate different types of potentially contaminated IDW that include the following:

- Used personal protective equipment (PPE)
- Disposable sampling equipment
- Decontamination fluids

Used PPE and disposable equipment will be double bagged and placed in a municipal refuse dumpster. These wastes are not considered hazardous and can be sent to a municipal landfill. Any PPE and disposable equipment that is to be disposed of which can still be reused, will be rendered inoperable before disposal in the refuse dumpster.

Decontamination fluids that will be generated during the sampling event will consist of deionized water, residual contaminants, and water with non-phosphate detergent. The volume and concentration of the decontamination fluid will be sufficiently low to allow disposal at the site or sampling area. The water (and water with detergent) will be poured onto the ground.

9.0 SAMPLE DOCUMENTATION AND SHIPMENT

9.1 Field Notes

9.1.1 Field Logbooks

Field logbooks are used to document where, when, how, and from whom any vital project information was obtained. Logbook entries will be complete and accurate enough to permit reconstruction of field activities. Logbooks will have consecutively numbered pages. All entries shall be legible, written in black ink, and signed by the individual making the entries.

Field logbooks will contain the following information:

- Name and title of author, field crew, and site visitors present
- Weather and environmental conditions during the field activity
- Date and time of sample collection and/or logbook entry
- Location of sampling activity, including survey or GPS coordinates if available
- Sample media (*e.g.*, soil)
- Sample collection method
- Number of sample taken
- Sample identification numbers (IDs)

Field observations and measurements (*e.g.*, pH, temperature, water levels, core description, etc.)
In addition to the sampling information, the following specific information will also be recorded in the field logbook for each sampling day:

1. Summary of any meetings or discussions with tribal, contractor, or federal agency personnel
2. Time of arrival on site and time of departure
3. Deviations from sampling plans, site safety plans, and QAPP procedures

Suggested items to be recorded in a logbook are included in Appendix A.

9.1.2 Photographs
Photographs shall be taken at the sampling locations and at other areas of interest around the sampling area. They will serve to verify information entered in the field logbook. For each photograph taken, the following information will be written in the logbook:

1. Time, date, location, and weather conditions
2. Description of the subject photographed
3. Name of person taking the photograph

9.2 Sample Designation
All field samples will be labeled in a clear and precise way for proper identification in the field and for tracking in the laboratory. An example copy of the sample label is included in Appendix C. The samples will have pre-assigned, identifiable, and unique numbers. At a minimum, the sample labels will contain the following information: station location, date of collection, analytical parameter(s), and method of preservation. Every sample will be assigned a unique sample number.

The following naming convention will be used to identify all subsamples, composites, field duplicates, field blanks, and equipment/rinsate blanks taken during field activities:

1. Chat Base and Transition Zone Sampling

The Station ID prefix will be "AA###" to match the chat base designation, followed by a two digit number assigned to each grid on that property. The chat base designation will match its CB designation. For example, the Station ID prefix at CB 011 will be "CB011," and the Station ID for grid 5 would be "CB011-05." The field team will assign a number to each grid in the field (each grid will be documented on a map/figure).

The sample ID will consist of the Station ID followed by a two-digit number signifying the sample collection depth. For a sample collected from 0-6 inches below ground surface the number will be "01." For a sample collected from 6-12 inches below ground surface the number will be "02." For example, a sample collected from the 6-12 inch depth interval in grid 5 at chat base CB011 would be, "CB011-05-02" (if needed, additional depth intervals will be signified by "03", "04", etc. in 6-inch intervals).

2. Soil Sampling for Agronomic Parameters

The Station ID prefix will be "AA###" to match the chat base designation, followed by the designation "AG" to signify an agronomic soil sample. For example, the Station ID prefix for an agronomic soil sample at CB 011 will be "CB011," and the Station ID would be "CB011-AG."

The sample ID will consist of the Station ID followed by a sequential two-digit number assigned to each agronomic sample collected at that chat base area. For example, the second agronomic soil sample collected from chat base CB 011 would have the sample ID number, "CB011-AG-02."

3. Chat Sampling for Evaluation of Marketability

The Station ID prefix will be "AA###" to match the chat base designation at that base. For example, the Station ID for chat samples collected at CB 011 will be "CB011."

The sample ID will be a two-digit sequential number corresponding to the sample grid from which the sample was collected at that particular chat base. For example, the chat characterization sample from grid 5 at CB 011 will have the sample ID "CB011-05."

4. Storm Water Samples

The Station ID prefix will be "AA###" to match the designation of the chat base where the water sample point is located, followed by a sequential two digit number assigned to each grid on that property. For example, the Station ID for a water sample collected from storm water accumulated in grid number 05 in the excavation at CB 011 would be "CB011-05." A suffix for the sample ID number will be appended to the Station ID to complete the full sample ID number.

The sample ID will be "W##." The "W" indicates that the sample is a water sample, and "##" is a two digit sequential number for the water samples collected at the chat base. For example, the full sample ID number for the first sample of storm water accumulated in grid 05 in the excavation at CB 011 would be "CB011-05-W01" for the unfiltered (total) analysis. For a sample collected for dissolved (*i.e.*, filtered) analysis, the letter "F" will be appended to the end of the sample ID number, such as "CB011-05-W01F."

5. Potential ACBM Samples

The Station ID prefix will be "AA###" to match the chat base designation, followed by the designation "ACBM" to signify a sample of potential ACBM. For example, the Station ID prefix for an ACBM sample at CB 011 will be "CB011," and the Station ID would be "CB011-ACBM."

The sample ID will consist of the Station ID followed by a sequential two-digit number assigned to each ACBM sample collected at that chat base area. For example, the second ACBM sample collected from chat pile CB 011 would have the sample ID number, "CB011-ACBM-02."

6. Field Quality Control Samples

Field QC samples collected as part of the sampling program will include field duplicate samples and equipment rinsate blanks.

Field duplicate samples will receive the same Sample ID as the parent sample with the addition of "FD" at the end to indicate it as a field duplicate sample.

The nomenclature for Station ID and Sample ID values for the parent samples has been discussed above. However, for field QC samples other than field duplicate samples that were collected previous to 2007, the following format for the Sample ID value was followed:

aabbb

The first two characters (*aa*) indicated the type of field QC sample collected.

EB = Equipment Rinsate Blank

The next three characters (***bbb***) was a three-digit, zero-justified sequential number.

001 = The first field QC sample collected.

For example, a sample with the Sample ID value "EB004" would be the fourth equipment rinsate blank sample collected.

All field QC samples that are not field duplicate samples are assigned the Station ID "FIELDQC".

9.3 Chain of Custody Procedures
The following Chain of Custody procedures shall be followed for clarification and consistency:

1. Sample Tracking

The sample information (*e.g.*, location, depth, type, etc.) will be entered into the site logbook and used to prepare a traffic report or CoC form immediately upon collection of each sample, including field QA/QC samples. An example copy of a COC is found in Appendix B.

The CoC form is used to track the custody of the sample from the time of collection through transport, sample receipt, preparation, analysis and storage, data generation and reporting, and sample disposal. A sample is defined as being under a person's custody if any of the following conditions exist: (1) it is in their possession, (2) it is in their view after being in their possession, (3) it was in their possession and they locked it up or, (4) it is in a designated secure area after being in their possession. The following minimum information concerning the sample shall be documented on the CoC form:

- Unique sample identification including Station ID and Sample ID
- Date and time of sample collection
- Analyses required
- Name of collector(s)
- Pertinent field data
- Serial numbers of custody seals and transportation cases
- Custody transfer signatures and dates and times of sample transfer from the field to transporters and to the laboratory(s)
- Transporter tracking number (if applicable)

2. Record Keeping

All field observations are to be recorded with indelible ink on a permanently bound notebook with sequentially numbered pages. Each page of notes must be dated. Each day's notes must begin with a record of each on-site person's name and company and must end with a signature of the logger. These records shall be archived in an easily accessible form and made available to the EPA or authorized representative upon request. In addition to the daily logbook, pertinent sampling information shall be recorded onto the appropriate sample forms pertaining to the type of sampling being conducted. The following information should be recorded in the daily logbooks:

- Dates and time of specific activities (such as sample collection, mobilization, lunch breaks, etc.) performed.
- Weather conditions.
- Names and affiliations of personnel on the Site, including visitors.
- Specific details regarding the activities performed, such as procedures or techniques for sampling, descriptions of sampling locations, sample IDs, sampling depths, etc.
- Sample descriptions.
- Problems encountered or unusual conditions and means of resolution.

- Model numbers and serial numbers of field equipment used, as well as calibration data.
- Field measurements, including units.
- Sample numbers boxed in with list of analytes sampled for.

3. Sample Analysis

The chat base and transition zone soil samples will be analyzed for cadmium, lead, and zinc. The aliquot of soil to be analyzed for lead in chat base transition zones will be dried and passed through a #60 sieve prior to analysis.

Source material (chat) samples to be evaluated for marketability (if required) will be analyzed for:

- Grain Size Distribution (ASTM C-136)
- Specific Gravity (ASTM C-127 [for coarse aggregate and C-128 [for fine aggregate])
- Total lead

Storm water samples will be analyzed for total lead, cadmium, zinc and hardness. Receiving water samples will also be analyzed for hardness.

Material suspected of being ACBM will be analyzed for asbestos content using polarizing light microscopy methods.

Soil samples collected for agronomic evaluation will be analyzed for:

- Routine Nutrients (nitrate-nitrogen, potassium, phosphorus, pH, and buffer index)
- Secondary Nutrients (sulphate-sulphur, magnesium, and calcium)
- Micronutrients (iron, zinc, boron, copper, and manganese)
- Organic Matter
- Salinity

9.4 Packaging and Shipment

All sample containers will be placed in a strong-outside shipping container (a steel-belted cooler). The following list outlines the packaging guidelines that will be followed for low concentration samples.

1. When ice is used, pack it in zip-locked, double plastic bags. Seal the drain plug of the cooler with fiberglass tape to prevent melting ice from leaking out of the cooler.
2. The bottom of the cooler should be lined with bubble wrap to prevent breakage during shipment.
3. Check screw caps for tightness and, if not full, mark the sample volume level of liquid samples on the outside of the sample bottles with indelible ink.
4. Secure bottle/container tops with clear tape and custody seal all container tops.
5. Affix sample labels onto the containers with clear tape.
6. Wrap all glass sample containers in bubble wrap to prevent breakage.
7. Seal all sample containers in heavy duty plastic zip-lock bags. Write the sample numbers on the outside of the plastic bags with indelible ink.
8. Place samples in a sturdy cooler(s) lined with a large plastic trash bag. Enclose the appropriate COC(s) in a zip-lock plastic bag affixed to the underside of the cooler lid.
9. Fill empty space in the cooler with bubble wrap or Styrofoam packing peanuts to prevent movement and breakage during shipment.
10. Ice used to cool samples will be double sealed in two zip-lock plastic bags and placed on top and around the samples to chill them to the correct temperature.
11. Each ice chest will be securely taped shut with fiberglass strapping tape, and custody seals will be affixed to the front, right and back of each cooler.

Alternate packaging procedures may be used as long as the integrity and custody of samples are preserved. Alternate packaging procedures require QTEO SMO approval.

10.0 QUALITY CONTROL

10.1 Field Quality Control (QC) Samples

Field QC samples collected as part of the sampling program will include field duplicate samples, field blanks, and equipment/rinsate blanks. The naming convention used for field QC samples is explained above in Section 9.2.

Field quality control samples are used to help evaluate conditions resulting from field activities and are intended to accomplish two primary goals, assessment of field contamination and assessment of sampling variability. The former identifies analytes that are introduced in the field due to environmental or sampling equipment and is assessed using blanks of different types. The latter includes variability due to sampling technique and instrument performance as well as variability possibly caused by the heterogeneity of the matrix being sampled and are assessed using replicate sample collection. The following sections address the assessment of field QC.

10.1.1 Assessment of Field Contamination (Blanks)

Field contamination is usually assessed through the collection of different types of blanks. They provide the best overall means of assessing contamination arising from the equipment, ambient conditions, sample containers, transit, and the laboratory.

10.1.1.1 Equipment/Rinsate Blanks (RB)

One equipment/rinsate blank will be collected per matrix each day that sampling equipment is decontaminated in the field. Equipment/rinsate blanks will be collected to evaluate field sampling and decontamination procedures. Equipment/rinsate blanks will be obtained by passing water through or over the decontaminated sampling devices used that day. The equipment/rinsate blanks that are collected will be analyzed for total cadmium, lead, and zinc.

Equipment/rinsate blanks should be collected when reusable, non-disposable sampling equipment (e.g., trowels and hand augers) are being used for the sampling event. The equipment rinsate blanks shall be preserved, separate sample number and station number will be assigned to each sample, and it will be submitted blind to the laboratory.

10.1.1.2 Field Blanks (FB)

One field blank will be collected for each sampling day. Field blanks will be collected to evaluate whether contaminants have been introduced during sampling due to contamination from sample containers. Field blank samples will be obtained by pouring deionized water into a sampling container at the sampling point. The field blanks that are collected will be analyzed for total cadmium, lead, and zinc.

The field blanks shall be preserved, packaged, and sealed in the manner described for the environmental samples. A separate sample number and station number (Section 9.2), will be assigned to each field blank, and submitted blind to the laboratory.

10.1.2 Assessment of Field Duplicates (FD)

Field duplicate composite samples are collected simultaneously with a parent composite sample from the same source, under identical conditions, into separate sample containers. A duplicate sample shall be treated independently of its parent in order to assess laboratory performance through comparison of the results. Duplicate composite soil samples at 0 to 6 inches (bgs) and 6 to 12 inches (bgs) will be collected at four (4) grid locations as indicated in Table 5.1. Field duplicate sample collection locations shall be assigned by the QTEO QAM by written communication to the QTEO field sampling team.

Duplicate samples will be preserved, packaged, and sealed in the same manner as other samples of the same matrix. A separate sample number and station number (Section 9.2), will be assigned to each field duplicate, and submitted blind to the laboratory.

10.2 Laboratory Matrix Quality Control Samples (MS/MSD)

Laboratory matrix quality control (QC) samples are analyzed as part of standard laboratory practice. The laboratory monitors the precision and accuracy of the results of its analytical procedures through analysis of QC samples. Inorganic laboratory QC samples include a matrix spike/matrix spike duplicate (MS/MSD). The term "matrix" refers to use of the actual media collected in the field (e.g., soil samples). Laboratory matrix QC samples are an aliquot (subset) of the field sample. They are not a separate sample, but a special designation of an existing sample.

At a minimum, one laboratory QC sample is required per 14 days or one per 20 samples (including blanks and duplicates), whichever is greater. If the sample event lasts longer than 14 days or involves collection of more than 20 samples per matrix, additional QC samples will be designated. A routinely collected soil sample (a full 8-oz sample jar) contains sufficient volume for both routine sample analysis and additional laboratory QC analyses. Therefore, a separate soil sample for laboratory QC purposes will not be collected.

11.0 FIELD VARIANCES

As conditions in the field may vary, it may become necessary to implement minor modifications to sampling as presented in this plan. When appropriate, a written approval (QCER) will be obtained before implementing the changes (see Section 3.6). Modifications to the approved plan will be documented in the QCER.

12.0 FIELD HEALTH AND SAFETY PROCEDURES

The field sampling activities will be performed by the QTEO. It is the responsibility of the QTEO to provide project-specific health and safety procedures that must be followed in the field, including safety equipment and clothing that may be required, explanation of potential hazards, and route to the nearest medical treatment facility.

13.0 SUPPORT ACTIVITIES

Several activities will be completed in support of the field activities. The following sections provide details regarding these support activities.

1. Site Reconnaissance — Prior to initiating sample collection and analysis activities, members of the field team will mobilize to the Site for Site reconnaissance. The current Site conditions will be assessed, Site access for necessary equipment will be evaluated, and a field sketch will be prepared as appropriate. The Site reconnaissance may occur in the same mobilization as the sampling activities.

2. Mobilization/Demobilization — Mobilization will include the identification, procurement, shipment, delivery, and set-up of material, equipment, and labor necessary to conduct the RA field activities. Equipment and supplies needed during implementation of the field activities may be stored in the field team vehicles, at the QTEO project office, or other location approved by the QTEO. Sufficiently prior to investigation or sampling efforts the necessary equipment and supplies will be ordered and shipped to the Site.

3. Utility Clearance — Prior to the initiation of intrusive activities, excavation locations will be finalized in the field and appropriately marked, and utility clearance will be obtained. Utility clearances and safe operation near utilities are the responsibility of the QTEO's excavation crew. Specific utility clearance requirements and procedures are provided in the SMP and the HSP.

4. Field Event Preparation — Field event preparation activities consist of coordination with the team and conducting a field team kick-off meeting to discuss the specific scope of work to be accomplished during each sampling event. Field event preparation also includes the acquisition of all required field supplies and equipment.

Prior to each field sampling event, the field team leader (FTL) will coordinate the organization of the field team and preparations for field activities. The FTL or project chemist (PC) will contact the analytical laboratory to notify the laboratory of the planned sampling and arrange for the delivery of the appropriate type and number of sample containers. The FTL will also facilitate a pre-field planning meeting prior to each field event. The purpose of the planning meeting will be to ensure that field team members understand the specific scope of work to be accomplished during the field effort. Specific roles and responsibilities for each field team member will also be addressed during this meeting. Action items that need to be accomplished prior to each event will be identified and assigned for completion during this meeting.

5. Field Equipment and Supplies — Work on this project may require the procurement and rental of supplies and equipment. It is the responsibility of the FTL or designee to ensure that all appropriate supplies and equipment are ordered and shipped to the Site. Additional field supplies may be required depending on the exact scope, nature, and duration of the sampling event. In addition to field supplies and equipment, the field team shall also be provided

with copies of the Site's plans (*i.e.*, FSP, QAPP, SMP, and HSP, etc.), blank field forms, and sample paperwork (*e.g.*, labels, chain-of-custody (CoC) forms, etc).

The field work will involve the use of field instruments and equipment. All instruments will be maintained according to the manufacturer's specifications in the manuals provided with the instruments. Prior to use, all equipment and supplies will be inspected to verify that the items are suitable for use. Instruments that require calibration will be calibrated prior to use according to the manufacturer's specifications in the manuals provided with the instrument.

Field equipment and supplies that may be used for this project include (but are not restricted to) the following: sample bottles, multi-parameter water quality meters, calibration fluids, decontamination supplies, GPS units, field vehicles, pumps, and stainless steel hand augers.

6. Surveying — Surveying for horizontal control of sampling locations will be performed using a GPS unit. Each location will be marked in the field prior to collection of GPS data. Northing and easting to an accuracy of +/- one meter using the "Oklahoma State Plane Coordinate System, North American Datum of 1983 (NAD83)" to establish horizontal control, will be recorded. In addition to sample locations, the locations of other features (apparent mine shafts, cased boreholes, rock piles) will also be recorded using the GPS unit.

7. Management of Investigation-Derived Waste and Remediation Waste — The investigation-derived waste (IDW) generated during the investigation will consist of used consumable goods (*e.g.*, gloves, towels, etc.), excess soil sample material, and decontamination wastewater. Remediation-derived waste will consist of excavated source materials, water from excavation de-watering, wood waste and vegetative debris, and miscellaneous debris such as domestic and office waste. Procedures for management of IDW and remediation waste are described in the Waste Management Plan and Site Management Plan.

******

Field Sampling Plan History
Version / Revision Date / Revision Reason
Version 1.0 10/01/2013 SAP drafted
Version 2.0 11/20/2013 Changed to FSP from SAP
Version 2.1 12/03/2013 Plan approved / implemented

Appendix A

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Logbook Instructions

[See Attached]

SUGGESTED ITEMS TO BE RECORDED IN A LOGBOOK:

1. Logbooks are **permanent records** in project files. The purpose of a logbook is to document that the **scope of work** is being carried out as stated in the contract.
2. **WRITE IT NOW!** Do not delay or procrastinate recording logbook information. Do not wait until you are back in the office to write events and information.
3. Label the logbook cover with the following information:
    - Project Name and Number
    - Your Last Name
    - Date: Month/Year
4. Fill in the inside cover with your name, office address, and phone number.
5. Fill in the table of contents page with the project ID and the page number.
6. The first page of each day: write the **day of the week** and the date (for example, Monday, Feb. 26, 2013.) **BOX IT IN.** The subsequent pages of that day only need the date ex, Feb. 26, 2013. That makes the first page of each day of the week stand out.

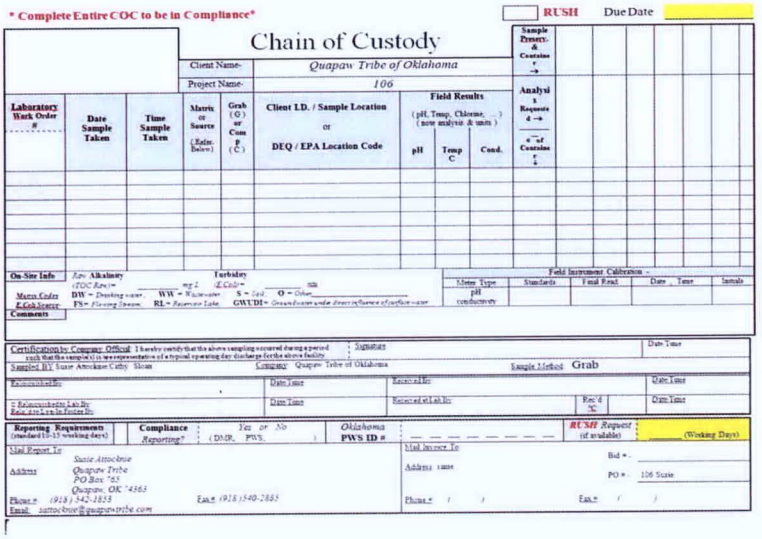
PRINT AND USE BLUE OR BLACK INDELIBLE INK

7. Fill in the following information at the top of the logbook daily: scribe: (if self, state this), other people onsite.
8. If you make a **mistake** in your entry, draw a single line through the error, initial and date the change.
9. Write down the anticipated **weather** and any weather activity during the previous night.
10. List **objectives**. At the end of the day check the list to be sure you completed them.
11. Enter EVERYTHING that goes on at the site that is **not subjective. State factual details!** Do not include extraneous information.
12. Underline **every** well or boring ID. It makes the IDs standout in the logbook.
13. List how you decontaminate equipment.
14. Use a 24-hour time format (military time).
15. Document review of **HASP** and that the subcontracts signed that they understood the plan.
16. Document **daily tailgate Health and Safety meetings** and topics discussed. If there is an accident, project managers use the logbook to confirm that Health and Safety topics were presented daily.
17. When collecting samples, **ALWAYS** provide the following information:
    - Sample ID (**BOX IN** so it stands out)
    - Sample location
    - Sample description
    - Analytical parameters/methods
    - Bottles
    - Preservatives
18. Write which laboratory the samples are being sent to. Record that a COC was filled out. Enter the time the samples were relinquished to shipper or hand delivered samples.
19. If information is recorded in a separate log sheet be sure to record in the field logbook where this information can be found.
20. If **photographs** are take, state this in the logbook.
21. **Document any damage** done to the property.
22. **Document conversations** (in person or by phone)
23. **Sign and date** each page.

Appendix B

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Chain of Custody Form



* Complete Entire COC to be in Compliance*

RUSH Due Date

Chain of Custody

Client Name- *Quapaw Tribe of Oklahoma*

Project Name- *106*

Laboratory Work Order #	Date Sample Taken	Time Sample Taken	Matrix or Source (Refer. Below)	Grab (G) or Comp (C)	Client I.D. / Sample Location or DEQ / EPA Location Code	Field Results (pH, Temp, Chlorine, ...) (now analysis & units) pH	Temp C	Cond.	Sample Preserv. & Container →	Analysis Requested →	# of Container ↓

On-Site Info: Raw Alkalinity (TOC Raw)= _____ mg/L Turbidity (E.Coli)= _____ ntu

Matrix Codes: DW = Drinking water, WW = Wastewater, S = Soil, O = Other _____

E.Coli Source: FS= Flowing Stream, RL= Reservoir Lake, GWUDI= Groundwater under direct influence of surface water

Comments

Field Instrument Calibration -

Meter Type	Standards	Final Read	Date , Time	Initials
pH conductivity				

Certification by Company Official: I hereby certify that the above sampling occurred during a period such that the sample(s) is an representative of a typical operating day discharge for the above facility. Signature _____ Date Time _____

Sampled BY: Susie Attockine Cathy Sloan Company: Quapaw Tribe of Oklahoma Sample Method: Grab

Relinquished By: _____ Date Time _____ Received By: _____ Date Time _____

Relinquished by Lab By: _____ Date Time _____ Received at Lab By: _____ Rec'd °C _____ Date Time _____

Reporting Requirements (standard 10-15 working days) Compliance Reporting? Yes or No (DMR, PWS,) Oklahoma PWS ID # _____ RUSH Request (if available) _____ (Working Days)

Mail Report To:

Address: Susie Attockine, Quapaw Tribe, PO Box 765, Quapaw, OK 74363

Phone # (918) 542-1853 Fax # (918) 540-2885

Email: sattockine@quapawtribe.com

Mail Invoice To:

Address: same

Phone # ( ) Fax # ( )

Bid # -

PO # - 106 Susie

Appendix C

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Sample Label

	Specialty Cleaned Sample Container
Date:	Time:
Collected By:	
Sampling Site:	
Sample ID:	
Sample Type:	
Required Analysis:	Preservative:

Appendix C

QUAPAW TRIBE ENVIRONMENTAL OFFICE

QTEO Inorganic Analytical Data Review (SOP)

[See Attached]

Standard Operating Procedure for Inorganic Analytical Data Review (Version 1.0)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
October 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

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1.0 PURPOSE

The purpose of this procedure is to define the process for the review and validation of analytical data obtained from the analysis of environmental media, construction debris, operational process materials, and operational process waste collected for a variety of purposes including; characterization, assessment, feasibility study, risk assessment, waste disposal, and other as necessary. Validation of analytical data ensures that the accuracy and precision of the validated data set are known and provides a measure of the reliability and the defensibility of decisions made based upon the validated data set. A glossary of all pertinent terms is provided in Appendix A of this Standard Operating Procedure. This procedure is analogous to EPA's *National Functional Guidelines for Inorganic Superfund Data Review* and should be used in conjunction with this document during inorganic analytical data review.

The primary goal of data validation is to provide an independent examination of the data to verify completeness and accurately represented, either as stand-alone data, or in the context of a larger data set generated under similar conditions; e.g., temporal period, material sampled, sample collection techniques, analytical protocols, Data Quality Objectives (DQO). This procedure provides direction on the validation of metals analytical data packages received by the Quapaw Tribe Environmental Office (QTEO).

2.0 SCOPE

This procedure provides requirements for developing and implementing a validation methodology for inorganic analytical methods (Inductively Coupled Plasma – Atomic Emissions Spectroscopy) primarily for analytes in aqueous and soil/sediment matrices. It is flexible enough to allow evaluation of data usability for project-specific DQO. The general validation strategy outlined in this document should be applicable for all verification and validation support levels (VSL).

This validation procedure will aid the data reviewer in establishing (a) if the data meets the specific technical and quality control criteria established in the request for analytical services, and (b) the usability and extent of bias of any data not meeting the specific technical and quality criteria. It must be understood by the reviewer that acceptance/rejection of data is based upon many factors including, but not limited to site-specific technical requirements, need to facilitate the progress of specific projects, and availability for re-sampling. To make an informed judgment at this level requires the reviewer to have a complete understanding of the intended use of the data.

The reviewer is strongly encouraged to establish a dialogue with the user prior to and after data review to discuss any usability issues and to answer questions regarding the review. Data that doesn't meet the requirements of the specific method or task order will be flagged using validation qualifiers as outlined in this procedural document and appendices.

3.0 DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the national qualifiers assigned to results in the data review process. If the QTEO chooses to use additional qualifiers, a complete explanation of those qualifiers should accompany the data review.

U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit..
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

4.0 PRELIMINARY REVIEW

To use this document effectively, the reviewer should have an understanding of the analytical method and a general overview of the Sample Delivery Group (SDG) or sample Case at hand. The exact number of samples, their assigned numbers, their matrix, and the number of laboratories involved in the analysis are essential information.

It is suggested that an initial review of the data package be performed, taking into consideration all information specific to the sample data package. The reviewer should also have a copy of the Quality Assurance Project Plan (QAPP) for the project for which the samples were analyzed.

The chain-of-custody (COC) documentation includes sample descriptions and date(s) of sampling. The reviewer must consider lag times between sampling and start of analysis when assessing technical sample holding times. The laboratory's SDG Narrative is another source of general information. Notable problems with matrices, insufficient sample volume for analysis or reanalysis, samples received in broken containers, preservation, and unusual events should be documented in the SDG Narrative. The reviewer should also inspect any email or telephone/communication logs detailing any discussion of sample or analysis issues between the laboratory, and the QTEO.

5.0 DATA REVIEW NARATIVE

A Data Review Narrative, including the Inorganic Data Review Summary form (see Appendix B), must accompany the laboratory data forwarded to the intended data recipient (QTEO) or user, to promote communication.

The Data Review Narrative should include comments that clearly identify the problems associated with a Case or SDG and state the limitations of the data. Documentation should also include the Sample Number, analytical method, extent of the problem, and assigned qualifiers.

6.0 ICP-AES DATA REVIEW

The inorganic data requirements for Inductively Coupled-Plasma-Atomic Emissions Spectroscopy (ICP-AES) to be reviewed during validation are described in the following sections.

This section contains data validation requirements and procedures for metals analysis by inductively coupled plasma – atomic emission spectroscopy (ICP-AES). Validation criteria and appropriate actions are provided in the following sections.

6.1 PRESERVATION AND HOLDING TIMES

A. Review Items:

Chain of Custody (COC) documentation, instrument run logs, CLP-like forms, raw data, and the Sample Delivery Group (SDG) Narrative checking for: pH; cooler temperature; holding time; and other sample conditions.

B. Objective:

The objective is to ascertain the validity of the analytical results based on the sample condition, and the holding time of the sample from the date of collection to the date of analysis.

C. Criteria:

1. The technical holding time criteria for aqueous/water metal samples is 180 days, preserved (with nitric acid) to pH ≤ 2. The addition of nitric acid to adjust the pH is only required for aqueous/water samples.

2. The technical holding time criteria for soil/sediment metal samples is 180 days, based on the technical holding time criteria for aqueous/water samples.

3. Aqueous/water and soil/sediment samples shall be maintained at 4°C (±2°C) until preparation. Wipe and air filter samples may be maintained at room temperature until preparation.

D. Evaluation:

Technical holding times are established by comparing the sampling date(s) on the COC documentation with the dates of analysis from the instrument run logs and the raw data. Information contained in the Complete SDG File (CSF) should also be considered in the determination of holding times. Verify that the analysis dates on the instrument run logs and the raw data are identical. Review the SDG Narrative and raw data preparation logs to determine if samples were properly preserved. If there is an indication that there were problems with the samples, the integrity of the samples may be compromised and professional judgment should be used to evaluate the effect of the problem on the sample results.

E. Action:

NOTE: Apply the action to each sample for which the preservation or holding time criteria was not met.

1. If the pH of aqueous/water metal samples is > 2 at the time of sample receipt, determine if the laboratory adjusted the pH of the sample to ≤ 2 at the time of sample receipt. If not, use professional judgment to qualify the samples based on the pH of the sample and the chemistry of the metal(s) of interest. Qualify results that are ≥ Method Detection Limit (MDL) as estimated low (J-), and qualify non-detects as unusable (R).

2. If technical holding times are exceeded, use professional judgment to determine the reliability of the data, based on the magnitude of the additional time compared to the technical requirement and whether the samples were properly preserved. The expected bias would be low. Qualify results that are ≥ MDL as estimated low (J-), and qualify non-detects as unusable (R).

3. Due to limited information concerning holding times for soil/sediment, it is left to the discretion of the data reviewer whether to apply aqueous/water holding time criteria to soil/sediment samples. If they are applied, it must be clearly documented in the Data Review Narrative.

4. When the holding times are exceeded, the reviewer should comment in the Data Review Narrative on any possible consequences for the analytical results.

Table 1. Technical Holding Time Actions for ICP-AES Analysis

Preservation & Holding Time Results	Action for Samples
Aqueous/water metals samples received with pH > 2 and pH not adjusted	Use professional judgment Qualify results that are ≥ MDL as estimated low (J-) Qualify non-detects as unusable (R)
Aqueous/water and soil/sediment metals samples not maintained at 4°C (±2°C)	Use professional judgment Qualify results that are ≥ MDL as estimated low (J-) Qualify non-detects as unusable (R)
Technical Holding Time exceeded: Aqueous/water Metals > 180 day	Use professional judgment Qualify results that are ≥ MDL as estimated low (J-) Qualify non-detects as unusable (R)
Technical Holding Time exceeded: Soil/sediment Metals > 180 days	Use professional judgment Qualify results that are ≥ MDL as estimated low (J-) Qualify non-detects as unusable (R)

6.0 CALIBRATION

A. Review Items:

Preparation logs, calibration standard logs, instrument run logs, instrument printouts, CLP-like forms, and raw data.

B. Objective:

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for the metals on the Inorganic Target Analyte List (TAL). Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

C. Criteria:

1. Initial Calibration

   a) The instruments shall be successfully calibrated each time the instrument is set up and after Continuing Calibration Verification (CCV) failure. The calibration date and time shall be included in the raw data.

   b) A blank and at least five calibration standards shall be used to establish each analytical curve. At least one of these standards shall be at or below the CRQL. All measurements shall be within the instrument working range where the interelement correction factors are valid. A minimum of three replicate exposures are required for standardization, all Quality Control (QC), and sample analyses. The average result of all the multiple exposures for the standardization, QC, and sample analyses shall be used. The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The curve must have a correlation coefficient ≥ 0.995. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL.

2. Initial and Continuing Calibration Verification (ICV and CCV)

   a) The acceptance criteria for the ICVs and CCVs are presented in Table 2.

Table 2. Acceptance Criteria for ICVs and CCVs

Analytical Method	Inorganic Analytes	ICV/CCV Low Limit (% of True Value)	ICV/CCV High Limit (% of True Value)
ICP-AES	Metals	90	110

   b) **Initial Calibration Verification (ICV)**
      1) Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for each target analyte by the analysis of an ICV solution(s). If the ICV %R falls outside of the control limits, the analysis should be terminated, the problem corrected, the instrument recalibrated, and all affected samples reanalyzed.
      2) Only if the ICV is not available from USEPA, analyses shall be conducted using a certified solution of the analytes from an independent commercial standard source, at a concentration level other than that used for instrument calibration, but within the calibrated range.
      3) The ICV solution shall be run at each analytical wavelength used for analysis.

   c) **Continuing Calibration Verification (CCV)**
      1) To ensure accuracy during the course of each analytical run, the CCV shall be analyzed and reported for each wavelength used for the analysis of each analyte.

2) The CCV standard shall be analyzed at a frequency of every two hours during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample.
3) The analyte concentration(s) in the CCV standard(s) shall be different than the concentration used for the ICV, and at a concentration equivalent to the mid-level of their respective calibration curves.
4) The same CCV standard solution shall be used throughout the analysis runs for a Sample Delivery Group (SDG).
5) The CCV shall be analyzed in the same fashion as an actual sample. If the %R of the CCV was outside of the control limits, the analysis should be terminated, the problem corrected, the instrument recalibrated, and all analytical samples analyzed since the last compliant CCV reanalyzed.

D. Evaluation:

1. Verify that the instrument was calibrated each time the instrument was set up, utilizing a blank and at least five calibration standards, one of which was at or below the CRQL.

2. Confirm that the measurements were within the working range, and were the average result of at least three replicate exposures.

3. Verify that the ICV and CCV standards were analyzed for each analyte at the proper frequency and at the appropriate concentration. Verify that acceptable %R results were obtained.

4. Recalculate one or more of the ICV and CCV %R using the following equation:

$$\%R = \frac{Found\ (value)}{True\ (value)} x100$$

Where,

Found (value) = Concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution

True (value) = Concentration (in ug/L) of each analyte in the ICV or CCVsource

E. Action:

NOTE: For initial calibrations or ICVs that do not meet the technical criteria, apply the action to all samples reported from the analytical run.

For CCVs that do not meet the technical criteria, apply the action to all samples analyzed between a previous technically acceptable analysis of the QC sample and a subsequent technically acceptable analysis of the QC sample in the analytical run.

1. If the instrument was not calibrated each time the instrument was set up, qualify the data as unusable (R). If the instrument was not calibrated with at least the minimum number of standards, or if the calibration curve does not include standards at required concentrations (e.g., a blank and at least one at or below CRQL), use professional judgment to qualify results that are ≥ Method Detection Limit (MDL) as estimated (J) or unusable (R), and non-detects as estimated (UJ) or unusable (R).

2. If the correlation coefficient is <0.995, percent differences are outside the ±30% limit, or the y-intercept ≥CRQL, qualify sample results that are ≥MDL as estimated (J) and non-detects as estimated (UJ).

3. If the ICV or CCV %R falls outside the acceptance windows, use professional judgment to qualify all associated data. If possible, indicate the bias in the review. The following guidelines are recommended:

a) If the ICV or CCV %R is < 75%, qualify non-detects as unusable (R). Use professional judgment to qualify all results that are ≥ MDL as estimated low (J-) or unusable (R).
b) If the ICV or CCV %R falls within the range of 75-89%, qualify sample results that are ≥ MDL as estimated low (J-), and qualify non-detects as estimated (UJ)
c) If the ICV or CCV %R falls within the range of 111-125%, qualify sample results that are ≥ MDL as estimated high (J+).
d) If the ICV or CCV %R is within the range of 111-125%, non-detects should not be qualified.
e) If the ICV or CCV %R is > 125%, use professional judgment to qualify results that are ≥ MDL as estimated high (J+) or unusable (R). Non-detects should not be qualified.
f) If the %R is > 160%, qualify all results that are ≥ MDL as unusable (R).

4. If the laboratory failed to provide adequate calibration information, the Region's designated representative should contact the laboratory and request the necessary information. If the information is not available, the reviewer must use professional judgment to assess the data.

5. Note the potential effects on the reported data due to exceeding the calibration criteria in the Data Review Narrative.

NOTE: For truly critical samples, a further in-depth evaluation of the calibration curve may be warranted to determine if additional qualification is necessary.

Table 3. Calibration Actions for ICP-AES Analysis

Calibration Results	Action for Samples
Calibration not performed	Qualify all results as unusable (R)
Calibration incomplete	Use professional judgment Qualify results that are ≥ MDL as estimated (J) or unusable (R) Qualify non-detects as estimated (UJ) or unusable (R)
Correlation coefficient <0.995; %D outside ±30%; y-intercept ≥CRQL	Qualify results that are ≥MDL as estimated (J) Qualify non-detects as estimated (UJ)
ICV/CCV %R < 75%	Qualify results that are ≥ MDL as estimated low (J-) or unusable (R) Qualify all non-detects as unusable (R)
ICV/CCV %R 75-89%	Qualify results that are ≥ MDL as estimated low (J-) Qualify non-detects as estimated (UJ)
ICV/CCV %R 111-125%	Qualify results that are ≥ MDL as estimated high (J+)
ICV/CCV %R > 125%	Qualify results that are ≥ MDL as estimated high (J+) or unusable (R)
ICV/CCV %R > 160%	Qualify results that are ≥ MDL as unusable (R)

6.3 BLANKS

A. Review Items:

Preparation logs, calibration standard logs, instrument run logs, CLP-like forms, and raw data.

B. Objective:

The objective of blank analysis results assessment is to determine the existence and magnitude of contamination resulting from laboratory (or field) activities. The criteria for evaluation of blanks apply to any blank associated with the samples (e.g., method blanks, calibration blanks, field blanks, etc.). If problems with any blank exist, all associated data must be carefully evaluated to determine whether or not there is an inherent variability in the data, or if the problem is an isolated occurrence not affecting other data.

C. Criteria:

1. No contaminants should be found in the blank(s).

2. The Initial Calibration Blank (ICB) shall be analyzed after the analytical standards, but not before analysis of the Initial Calibration Verification (ICV) during the initial calibration of the instrument.

3. A Continuing Calibration Blank (CCB) shall be analyzed at each wavelength used for the analysis, immediately after every Continuing Calibration Verification (CCV). The CCB shall be analyzed at a frequency of every two hours during the run. The CCB shall be analyzed at the beginning of the run, and again after the last CCV that was analyzed after the last analytical sample of the run. The CCB result (absolute value) shall not exceed the Contract Required Quantitation Limit (CRQL) of each analyte for which analysis is performed.

4. At least one Preparation Blank shall be prepared and analyzed for each matrix, with every Sample Delivery Group (SDG), or with each batch of samples digested, whichever is more frequent. The Preparation Blank consists of reagent water or a clean wipe or filter processed through the appropriate sample preparation and analysis procedure.

5. If any analyte concentration in the Preparation Blank is > CRQL, the lowest concentration of that analyte in the associated samples must be $\geq$ 10 times (10x) the Preparation Blank concentration. Otherwise, all samples associated with that Preparation Blank with the analyte's concentration < 10x the Preparation Blank concentration, and > CRQL, should be redigested and reanalyzed for that analyte (except for an identified field blank). The laboratory is not to correct the sample concentration for the blank value.

6. If the concentration of the Preparation Blank for a certain analyte is < (-CRQL) all samples reported < 10x the CRQL (associated with that analyte in that blank), should be redigested and reanalyzed.

D. Evaluation:

1. Verify that an ICB was analyzed after the calibration, the CCB was analyzed at the proper frequency and location during the run, and Preparation Blanks were prepared and analyzed as appropriate for the SDG (e.g., total number of samples, various types of matrices present, number of digestion batches, etc.).

2. Review the results reported on the Blank Summary, as well as the raw data for all blanks, and verify that the results were accurately reported.

3. Evaluate all of the associated blanks for the presence of target analytes. Verify that if target analytes were present in a Preparation Blank or if a concentration was < (-CRQL) the affected samples were redigested and reanalyzed. Verify that if target analytes were present in an ICB or a CCB, the analysis was terminated, the problem corrected, the instrument recalibrated, and the preceding 10 analytical samples or all analytical samples analyzed since the last compliant calibration blank reanalyzed.

E. Action:

NOTE: For ICBs that do not meet the technical criteria, apply the action to all samples reported from the analytical run.

For CCBs that do not meet the technical criteria, apply the action to all samples analyzed between a previous technically acceptable analysis of the CCB and a subsequent technically acceptable analysis of the CCB in the analytical run.

For Preparation Blanks that do not meet the technical criteria, apply the action to all samples prepared in the same preparation batch.

1. If the appropriate blanks were not analyzed with the correct frequency, the data reviewer should use professional judgment to determine if the associated sample data should be qualified. The reviewer may need to obtain additional information from the laboratory. The situation should then be recorded in the Data Review Narrative.

2. Action regarding unsuitable blank results depends on the circumstances and origin of the blank. The reviewer should note that in instances where more than one blank is associated with a given sample, qualification should be based upon a comparison with the associated blank having the highest concentration of contaminant.

3. Some general "technical" review actions include:

    a. Any blank (including Preparation Blanks) reported with a negative result, whose value is ≤ (-MDL) but ≥ (-CRQL), should be carefully evaluated to determine its effect on the sample data. The reviewer shall then use professional judgment to assess the data. For any blank (including Preparation Blanks) reported with a negative result, whose value is < (-CRQL) qualify results that are ≥ CRQL as estimated low (J-) and non-detects as estimated (UJ).
    b. The blank analyses may not involve the same weights, volumes, or dilution factors as the associated samples. The reviewer may find it easier to work with the raw data.

4. Specific "method" actions include:

    a. If the absolute value of an ICB or a CCB result is > CRQL, the analysis should be terminated. If the analysis was not terminated and the affected samples were not reanalyzed, report non-detects and results that are ≥ MDL, but ≤ CRQL as CRQL-U. For results that are > CRQL but < Blank Result, use professional judgment to qualify the data as unusable (R) or to report the results at the level of the blank with a "U" qualifier. Use professional judgment to qualify results that are > Blank Result. Note this in the Data Review Narrative.
    b. If the absolute value of the concentration of the Preparation Blank is ≤ CRQL, report non-detects and results that are ≥ MDL but ≤ CRQL as CRQL-U. Use professional judgment to quality results that are > CRQL.
    c. If any analyte concentration in the Preparation Blank is > CRQL, the lowest concentration of that analyte in the associated samples must be 10x the Preparation Blank concentration. Otherwise, all samples associated with that blank with concentrations < 10x the Preparation Blank concentration and > CRQL should be redigested and reanalyzed. Raise the CRQL to the concentration found in the Preparation Blank and report those samples that do not require redigestion (that are ≥ MDL but ≤ CRQL) as CRQL-U. Note in the Data Review Narrative if the laboratory failed to redigest and reanalyze the affected samples. The reviewer shall then use professional judgment to assess the data.

Table 4. Blank Actions for ICP-AES Analysis

Blank Type	Blank Result	Sample Result	Action for Samples
ICB/CCB	≥ MDL but ≤ CRQL	Non-detect	No action
		≥ MDL but ≤ CRQL	Report CRQL value with a "U"
		> CRQL	Use professional judgment
ICB/CCB	> CRQL	≥ MDL but ≤ CRQL	Report CRQL value with a "U"
		> CRQL but < Blank Result	Report at level of Blank Result with a "U" or qualify data as unusable (R)
		> Blank Result	Use professional judgment
ICB/CCB	≤ (-MDL) but ≥ (-CRQL)	≥ MDL, or non-detect	Use professional judgment
ICB/CCB	< (-CRQL)	< 10x the CRQL	Qualify results that are ≥ CRQL as estimated low (J-) Qualify non-detects as estimated (UJ)
Preparation Blank	> CRQL	≥ MDL but ≤ CRQL	Report CRQL value with a "U"
		> CRQL but < 10x the Blank Result	Use professional judgment to qualify results as unusable (R) or estimated high (J+)
		≥ 10x the Blank Result	No action
Preparation Blank	≥ MDL but #≤ CRQL	Non-detect	No action
		≥ MDL but #≤ CRQL	Report CRQL value with a "U"
		> CRQL	Use professional judgment
Preparation Blank	< (-CRQL)	< 10x the CRQL	Qualify results that are ≥ CRQL as estimated low (J-)
			Qualify non-detects as estimated (UJ)

6.4 INDUCTIVELY COUPLED PLASMA – INTERFERENCE CHECK SAMPLE (ICP-ICS)

A. Review Items:

Instrument printouts; CLP-like forms and raw data.

B. Objective:

The Inductively Coupled Plasma (ICP) - Interference Check Sample (ICS) verifies the analytical instrument's ability to overcome interferences typical of those found in samples.

NOTE: The laboratory should have analyzed and reported ICS results for all elements being reported from the analytical run and for all interferents (target and non-target) for these reported elements.

C. Criteria:

1. The ICS consists of two solutions: Solution A and Solution AB. Solution A consists of the interferents, and Solution AB consists of the analytes mixed with the interferents. An ICS analysis consists of analyzing both solutions consecutively, starting with Solution A, for all wavelengths used for each analyte reported by Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP-AES). The Initial Calibration Blank (ICB) shall be analyzed after the analytical standards, but not before analysis of the Initial Calibration Verification (ICV) during the initial calibration of the instrument.

2. An ICS must be run at the beginning of each sample analysis run. The ICS is not to be run prior to the Initial Calibration Verification (ICV), and is to be immediately followed by a Continuing Calibration Verification (CCV), which will be followed by a Continuing Calibration Blank (CCB). At least one Preparation Blank shall be prepared and analyzed for each matrix, with every Sample Delivery Group (SDG), or with each batch of samples digested, whichever is more frequent. The Preparation Blank consists of reagent water or a clean wipe or filter processed through the appropriate sample preparation and analysis procedure.

3. Results for the analysis of ICS Solution A must fall within the control limits of ± Contract Required Quantitation Limit (CRQL), or ± 20% of the true value (whichever is greater) for the analytes and interferents. If the concentration of the Preparation Blank for a certain analyte is < (-CRQL) all samples reported < 10x the CRQL (associated with that analyte in that blank), should be redigested and reanalyzed.

4. Results for the analysis of ICS Solution AB must fall within the control limits of ± CRQL, or ± 20% of the true value (whichever is greater) for the analytes and interferents included in the solution.

5. If the value of an ICS result exceeds ± CRQL, or ± 20% of true value (whichever is greater) criteria, the analysis shall be terminated, the problem corrected, the instrument recalibrated, the new calibration then reverified, and the affected samples reanalyzed.

6. The ICS should be obtained from USEPA if available, and analyzed according to the instructions supplied with the solutions. If the ICS is not available from USEPA, an independent ICS solution shall be prepared with the interferent and analyte concentrations at the levels specified in the method.

D. Evaluation:

1. Verify using the raw data (ICP instrument printout) that the ICS was analyzed at the proper frequency and location during the analytical run.

2. Evaluate the ICS raw data for results with an absolute value that is ≥ Method Detection Limit (MDL) for those analytes which are not present in the ICS solution.

3. Recalculate using the raw data and the following equation:

$$\%R = \frac{Found\ (value)}{True\ (value)} x100$$

Where,

Found (value) = Concentration (in ug/L) of each analyte interferent measured in the analysis of ICS Solution A or ICS Solution AB

True (value) = Concentration (in ug/L) of each analyte or interferent in ICS Solution A or ICS Solution AB

4. If the value of an ICS result exceeds the ± CRQL, or ± 20% of true value (whichever is greater) criteria, and the laboratory failed to terminate the analysis, and take the appropriate corrective action, and record in the Data Review Narrative. Use professional judgment to assess the data.

E. Action:

NOTE: For an ICS that does not meet the technical criteria, apply the action to all samples analyzed in the analytical run.

1. The raw data should, but may not, contain results for interferents. If not, the reviewer shall use professional judgment to qualify the data. If the data does contain results for interferents, the reviewer should apply the following actions to samples with concentrations of interferents that are comparable to, or greater than, their respective levels in the ICS:

    a. If the ICS %R for an analyte or interferent is > 120% (or greater than the true value + CRQL, as applicable) and the sample results are non-detects, the data should not be qualified.
    b. If the ICS %R for an analyte or interferent is > 120% (or greater than the true value + CRQL, as applicable) qualify sample results that are ≥ MDL as estimated high (J+). If the ICS %R (or true value) grossly exceeds the limits, use professional judgment to qualify the data.
    c. If the ICS %R for an analyte or interferent falls within the range of 50-79% (or less than the true value - CRQL, as applicable) qualify sample results that are ≥ MDL as estimated low (J-).
    d. If the ICS recovery for an analyte falls within the range of 50-79% (or less than the true value - CRQL, as applicable), the possibility of false negatives exists. Qualify sample non-detects as estimated (UJ).
    e. If the ICSAB %R for an analyte or interferent is < 50%, qualify all sample results that are ≥ MDL as estimated low (J-) and all sample non-detects as unusable (R).

2. If results that are ≥ MDL are observed for analytes that are not present in the ICS solution, the possibility of false positives exists. An evaluation of the associated sample data for the affected elements should be made. For samples with comparable or higher levels of interferents and with analyte concentrations that approximate those levels found in the ICS, qualify sample results that are ≥ MDL as estimated high (J+). Non-detects should not be qualified.

3. If negative results are observed for analytes that are not present in the ICS solution, and their absolute value is ≥ MDL, the possibility of false negatives in the samples exists. An evaluation of the associated sample data for the affected analytes should be made. For samples with comparable or higher levels of interferents, qualify non-detects for the affected analytes as estimated (UJ), and results that are ≥ MDL but < 10x the absolute value of the negative result as estimated low (J-).

4. In general, ICP-AES sample data can be accepted if the concentrations of Al, Ca, Fe, and Mg in the sample are found to be less than or equal to their respective concentrations in the ICS. If these elements are present at concentrations greater than the level in the ICS, or other elements are present in the sample at > 10 mg/L, the reviewer should investigate the possibility of other interference effects as given in the ICP-AES method or as indicated by the laboratory's interelement correction factors reported on CLP-like forms for that particular instrument. The analyte concentration equivalents presented in the method should be considered only as estimated values since the exact value of any analytical system is instrument-specific. Therefore,

estimate the concentration produced by an interfering element. If the estimate is > 2x the CRQL, and also > 10% of the reported concentration of the affected element, qualify the affected results as estimated (J).

5. If the raw data does not contain results for the interferents, note it in the Data Review Narrative.

6. Actions regarding the interpretation and/or the subsequent qualification of ICP data due to the ICS analytical results can be extremely complex. Use professional judgment to determine the need for the associated sample data to be qualified. The reviewer may need to obtain additional information from the laboratory. All interpretive situations should then be recorded in the Data Review Narrative.

Table 5. Interference Check Actions for ICP-AES Analysis

Interference Check Sample Results	Action for Samples
ICS %R > 120% (or greater than true value + CRQL)	Qualify results that are ≥ MDL as estimated high (J+)
ICS %R 50-79% (or less than true value - CRQL)	Qualify results that are ≥ MDL as estimated low (J-) Qualify non-detects as estimated (UJ)
ICSAB %R < 50%	Qualify results that are ≥ MDL as estimated low (J-) Qualify non-detects as unusable (R)
Potential false positives in field samples with interferents	Qualify results that are ≥ MDL as estimated high (J+)
Potential false negatives in field samples with interferents	Qualify results that are ≥ MDL but < 10x(|negative value|) as estimated low (J-) Qualify non-detects as estimated (UJ)

6.5 LABORATORY CONTROL SAMPLE (LCS)

A. Review Items:

Preparation logs, instrument printouts, CLP-like forms, and raw data.

B. Objective:

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation.

C. Criteria:

1. Aqueous/water, soil/sediment, wipe, and filter LCSs shall be analyzed for each analyte utilizing the same sample preparations, analytical methods, and Quality Assurance/Quality Control (QA/QC) procedures as employed for the samples.

    a. One LCS shall be prepared and analyzed for every group of aqueous/water or soil/sediment samples in a Sample Delivery Group (SDG), or with each batch of samples digested, whichever is more frequent. The LCS shall be spiked such that the final digestate contains each analyte at two times the CRQL for the associated matrix.
    b. All LCS Percent Recoveries (%R) must fall within the control limits of 70-130%, except for Sb and Ag which must fall within the control limits of 50-150%. If the %R for the aqueous/water and soil/sediment LCS falls outside of the control limits, the analysis should be terminated, the problem corrected, and the samples prepared with that LCS redigested and reanalyzed.
    c. One LCS shall be prepared and analyzed for each group of wipe or filter samples in an SDG, or with each batch of wipe or filter samples digested, whichever is more frequent. The wipe or filter LCS shall be spiked such that the final digestate contains each analyte at two times the CRQL for the associated matrix.
    d. All wipe or filter sample LCS %R shall fall within the control limits of 70-130%.

D. Evaluation:

1. Verify using CLP-like forms, and raw data that the appropriate number of required LCSs were prepared and analyzed for the SDG.

2. Verify that all results for each analyte fall within the established control limits.

    Recalculate one or more of the reported %Rs using the following equation:

$$\%R = \frac{Found\ (value)}{True\ (value)} x100$$

Where,

Found (value) = Concentration of each analyte (in ug/L, mg/kg, or ug) measured in the analysis of the LCS

True (value) = Concentration of each analyte (in ug/L, mg/kg, or ug) in the LCS

3. Verify that the LCS was prepared at the same time as the associated samples using the same procedures.

E. Action:

If the LCS criteria are not met, the laboratory performance and method accuracy are in question. Professional judgment should be used to determine if the data should be qualified or rejected. The following guidance is suggested for qualifying sample data associated with an LCS that does not meet the required criteria.

For an LCS that does not meet the technical criteria, apply the action to all samples in the same preparation batch.

1. **Aqueous/Water and Soil/Sediment LCS:**

    a. If the LCS %R falls within the range of 40-69% (20-49% for Ag and Sb), qualify sample results that are ≥ Method Detection Limit (MDL) as estimated low (J-). If the LCS %R is > 130% (150% for Ag and Sb), qualify sample results that are ≥ MDL as estimated high (J+).
    b. If the LCS recovery is > 130% (150% for Ag and Sb) and the sample results are non-detects, the data should not be qualified.
    c. If the LCS recovery falls within the range of 40-69% (20-49% for Ag and Sb), qualify non-detects as estimated (UJ).
    d. If LCS %R is < 40% (<20% for Ag and Sb), qualify all results that are ≥ MDL as estimated low (J-) and all non-detects as unusable (R).
    e. If the LCS %R is > 150% (170% for Ag and Sb), qualify all affected data (both detects and non-detects) as unusable (R).

2. Whenever possible, the potential effects on the data due to out-of-control LCS results, if a laboratory fails to analyze an LCS with each SDG, or if a laboratory consistently fails to generate acceptable LCS recoveries, note in the Data Review Narrative.

Table 6. Interference LCS Actions for ICP-AES Analysis

LCS Result	Action for Samples
Aqueous/Water and Soil/Sediment %R 40-69%	Qualify results that are ≥ MDL as estimated low (J-) Qualify non-detects as estimated (UJ)
Aqueous/Water and Soil/Sediment %R > 130%	Qualify results that are ≥ MDL as estimated high (J+)
Aqueous/Water and Soil/Sediment %R < 40%	Qualify results that are ≥ MDL as estimated low (J-) Qualify non-detects as unusable (R)
Aqueous/Water and Soil/Sediment %R > 150%	Qualify all results as unusable (R)

6.6 DUPLICATE SAMPLE ANALYSIS

A. Review Items:

Cover Page, instrument printouts, CLP-like forms, and raw data.

B. Objective:

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. Duplicate analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. However, aqueous/water samples are generally homogenous and most soil/sediment samples are homogenous within a factor of two or three.

C. Criteria:

1. Samples identified as field blanks or Performance Evaluation (PE) samples cannot be used for duplicate sample analysis.

2. At least one duplicate sample shall be prepared and analyzed from each group of samples of a similar matrix type (e.g., water or soil) or for each Sample Delivery Group (SDG). Duplicates are not required for wipe or filter samples. Additional duplicate sample analyses may be required by USEPA Regional request. Alternately, the Region may require that a specific sample be used for the duplicate sample analysis.

3. A control limit of 20% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL).

4. A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. The absolute value of the control limit (CRQL) shall be entered in the "Control Limit" column on CLP-like forms. If both samples are non-detects, the RPD is not calculated.

NOTE: The above control limits are **method requirements** for duplicate samples, regardless of the sample matrix type. However, it should be noted that laboratory variability arising from the sub-sampling of non-homogenous soil samples is a common occurrence. Therefore, for **technical review purposes only**, Regional policy or project Data Quality Objectives (DQOs) may allow the use of less restrictive criteria (e.g., 35% RPD, 2x the CRQL) to be assessed against duplicate soil samples.

D. Evaluation:

1. Verify from the Cover Page, CLP-like forms, and the raw data that the appropriate number of required duplicate samples were prepared and analyzed for the SDG.

2. Evaluate CLP-like forms and the raw data to verify that all duplicate results for each analyte and method fall within the established control limits.

3. Check the raw data and recalculate one or more of the RPD values using the following equation:

$$RPD = \frac{|S - D|}{(S + D)/2} x100$$

Where,

RPD	=	Relative Percent Difference
S	=	Sample Result (original)
D	=	Duplicate Result

E. Action:

NOTE: For a duplicate sample analysis that does not meet the technical criteria, apply the action to all samples of the same matrix if the reviewer considers the samples to be sufficiently similar. The reviewer will need to exercise professional judgment in determining sample similarity. The reviewer should make use of all available data when determining similarity, including: site and sampling documentation (e.g., location and type of sample, descriptive data, soil classification); field test data (e.g., pH, Eh, conductivity, chlorine); and laboratory data for other parameters [e.g., Total Suspended Solids (TSSs), Total Dissolved Solids (TDSs), Total Organic Carbon (TOC), alkalinity or buffering capacity, reactive sulfide, anions]. The reviewer should also use the sample data (e.g., similar concentrations of analytes) in determining similarity between samples in the SDG. The reviewer may determine that only some of the samples in the SDG are similar to the duplicate sample, and that only these samples should be qualified. Or, the reviewer may determine that no samples are sufficiently similar to the sample used for the duplicate, and thus that only the field sample used to prepare the duplicate sample should be qualified.

1. If the appropriate number of duplicate samples was not analyzed for each matrix using the correct frequency, use professional judgment to determine if the associated sample data should be qualified. The reviewer may need to obtain additional information from the laboratory. Note the situation in the Data Review Narrative.

2. If the results from a duplicate analysis for a particular analyte fall outside the appropriate control limits, qualify sample results that are ≥ Method Detection Limit (MDL) as estimated (J) and non-detects as estimated (UJ).

3. If a field blank or PE sample was used for the duplicate sample analysis, note this in the Data Review Narrative. All of the other Quality Control (QC) data must then be carefully checked and professional judgment exercised by the data reviewer when evaluating the data.

4. Note the potential effects on the data due to out-of-control duplicate sample results in the Data Review Narrative.

Table 7. Duplicate Sample Actions for ICP-AES Analysis

Duplicate Sample Results	Action for Samples
Both original sample and duplicate sample > 5x the CRQL and RPD > 20%*	Qualify those results that are ≥ MDL that professional judgment determines to be affected as estimated (J) and non-detects as estimated (UJ)
Original sample or duplicate sample ≤ 5x the CRQL (including non-detects) and absolute difference between sample and duplicate > CRQL*	Qualify those results that are ≥ MDL that professional judgment determines to be affected as estimated (J) and non-detects as estimated (UJ)

* These control limits are **method requirements** for duplicate samples, regardless of the sample matrix type. However, it should be noted that laboratory variability arising from the sub-sampling of non-homogenous soil samples is a common occurrence. Therefore, for **technical review purposes only**, Regional policy or project Data Quality Objectives (DQOs) may allow the use of less restrictive criteria (e.g., 35% RPD, 2x the CRQL) to be assessed against duplicate soil samples.

6.7 SPIKE SAMPLE ANALYSIS

A. Review Items:

Cover Page, instrument printouts, CLP-like forms, and raw data.

B. Objective:

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. Non-homogenous samples can impact the apparent method recovery. However, aqueous/water samples are generally homogenous and most soil/sediment samples are homogenous within a factor of two or three. If the spike is added to the sample before the digestion (e.g., prior to the addition of other reagents), it is referred to as a spiked sample, pre-digestion spike, or Matrix Spike. If the spike is added to the sample after the completion of the digestion procedures, it is referred to as a post-digestion spike, or analytical spike.

C. Criteria:

1. Samples identified as field blanks or Performance Evaluation (PE) samples cannot be used for spiked sample analysis.

2. At least one spiked sample (pre-digestion) shall be prepared and analyzed from each group of samples with a similar matrix type (e.g., water or soil), or for each Sample Delivery Group (SDG). Matrix Spikes are not required for wipe or filter samples.

3. When the Matrix Spike recovery falls outside of the control limits and the sample result is < four times (4x) the spike added, a post-digestion spike shall be performed for those analytes that do not meet the specified criteria. An aliquot of the remaining unspiked sample shall be spiked at 2x the indigenous level or 2x the Contract Required Quantitation Limit (CRQL), whichever is greater.

NOTE: Post-digestion spikes are not required for Ag.

4. The spike Percent Recovery (%R) shall be within the established acceptance limits. However, spike recovery limits do not apply when the sample concentration is ≥ 4x the spike added. In such an event, the data shall be reported unflagged, even if the %R does not meet the acceptance criteria.

5. If the spiked sample analysis was performed on the same sample that was chosen for the duplicate sample analysis, spike calculations shall be performed using the results of the sample designated as the "original sample". The average of the duplicate results cannot be used for the purpose of determining %R.

D. Evaluation:

1. Verify using the Cover Page, CLP-like forms, and raw data, that the appropriate number of required spiked samples were prepared and analyzed for the SDG.

2. Verify that a field blank or PE sample was not used for the spiked sample analysis.
3. Evaluate CLP-like forms and the raw data to verify that all pre-digestion spiked sample results for each required analyte fall within the established control limits. If not, verify that a post-digestion/post-distillation spike was prepared and analyzed.

4. Recalculate using the raw data, one or more of the %R using the following equation:

$$\%Recovery = \frac{SSR - SR}{SA} x100$$

Where,

SSR = Spiked Sample Result

SR = Sample Result
SA = Spike Added

NOTE: When the sample concentration is < Method Detection Limit (MDL), use SR = 0 only for the purpose of calculating the %R.

E. Action:

NOTE: For a Matrix Spike that does not meet the technical criteria, apply the action to all samples of the same matrix, if the reviewer considers the samples sufficiently similar. The reviewer will need to exercise professional judgment in determining sample similarity. The reviewer should make use of all available data, including: site and sampling documentation (e.g., location and type of sample, descriptive data, soil classification); field test data (e.g., pH, Eh, conductivity, chlorine); and laboratory data for other parameters [e.g., Total Suspended Solids (TSSs), Total Dissolved Solids (TDSs), Total Organic Carbon (TOC), alkalinity or buffering capacity, reactive sulfide, anions], in determining similarity. The reviewer should also use the sample data (e.g., similar concentrations of analytes) in determining similarity between samples in the SDG. The reviewer may determine that only some of the samples in the SDG are similar to the Matrix Spike sample, and that only these samples should be qualified. Or, the reviewer may determine that no samples are sufficiently similar to the sample used for the Matrix Spike, and thus that only the field sample used to prepare the Matrix Spike sample should be qualified.

1. If the appropriate number of Matrix Spike samples was not analyzed for each matrix using the correct frequency, use professional judgment to determine if the associated sample data should be qualified. The reviewer may need to obtain additional information from the laboratory. Note the situation in the Data Review Narrative.

2. If a field blank or PE sample was used for the spiked sample analysis, note this in the Data Review Narrative. All of the other Quality Control (QC) data must then be carefully checked and professional judgment exercised by the data reviewer when evaluating the data.

3. If the Matrix Spike recovery does not meet the evaluation criteria and a required post-digestion spike was not performed.

4. If the Matrix Spike %R is < 30%, verify that a post-digestion spike was analyzed (if required). If the post-digestion spike %R is < 75% or is not performed, qualify sample results that are ≥ MDL as estimated low (J-) and non-detects as unusable (R). If the post-digestion spike %R is ≥ 75%, qualify sample results that are ≥ MDL as estimated (J) and non-detects as estimated (UJ).

5. If the Matrix Spike %R is 30-74% and the sample results are ≥ MDL, verify that a post-digestion spike was analyzed (if required). If the %R for the post-digestion is also < 75% or is not performed, qualify the affected data as estimated low (J-). If the %R for the post-digestion spike is ≥ 75%, qualify the affected data as estimated (J).

6. If the Matrix Spike %R falls within the range of 30-74% and the sample results are non-detects, qualify the affected data as estimated (UJ).

7. If the Matrix Spike %R is > 125% and the reported sample results are non-detects, the sample data should not be qualified.

8. If the Matrix Spike %R is > 125% and the sample results are ≥ MDL, verify that a post-digestion spike was analyzed if required. If the %R for the post-digestion spike is also > 125% or is not performed, qualify the affected data as estimated high (J+). If the %R for the post-digestion spike is ≤ 125%, qualify the affected data as estimated (J).

9. Note the potential effects on the data due to out-of-control spiked sample results in the Data Review Narrative.

Table 8. Spike Sample Actions for ICP-AES Analysis

Spike Sample Results	Action for Samples
Matrix Spike %R < 30% Post-digestion spike %R < 75%	Qualify affected results that are ≥ MDL as estimated low (J-) and affected non-detects as unusable (R)
Matrix Spike %R < 30% Post-digestion spike %R ≥ 75%	Qualify affected results that are ≥ MDL as estimated (J) and affected non-detects as estimated (UJ)
Matrix Spike %R 30-74% Post-digestion Spike %R < 75%	Qualify affected results that are ≥ MDL as estimated low (J-) and affected non-detects as estimated (UJ)
Matrix Spike %R 30-74% Post-digestion spike %R ≥ 75%	Qualify affected results that are ≥ MDL as estimated (J) and affected non-detects as estimated (UJ)
Matrix Spike %R > 125% Post-digestion spike %R > 125%	Qualify affected results that are ≥ MDL as estimated high (J+)
Matrix Spike %R > 125% Post-digestion spike %R ≤ 125%	Qualify affected results that are ≥ MDL as estimated (J)
Matrix Spike %R < 30% No post-digestion spike performed	Qualify affected results that are ≥ MDL as estimated low (J-) and affected non-detects as unusable (R)
Matrix Spike %R 30-74% No post-digestion spike performed	Qualify affected results that are ≥ MDL as estimated low (J-) and non-detects as estimated (UJ)
Matrix Spike %R > 125% No post-digestion spike performed	Qualify affected results that are ≥ MDL as estimated high (J+) Non-detects are not qualified

6.8 ICP SERIAL DILUTION

A. Review Items:

Instrument printouts, CLP-like forms, and raw data.

B. Objective:

The serial dilution of samples quantitated by Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP-AES) determines whether or not significant physical or chemical interferences exist due to sample matrix.

C. Criteria:

1. An ICP Serial Dilution analysis shall be performed on a sample from each group of samples with a similar matrix type (e.g., water, soil, wipe, or filter) or for each Sample Delivery Group (SDG), whichever is more frequent.

2. Samples identified as field blanks or Performance Evaluation (PE) samples cannot be used for the ICP Serial Dilution analysis.

3. If the analyte concentration is sufficiently high [concentration in the original sample is > 50 times (50x) the Method Detection Limit (MDL)], the Percent Difference (%D) between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 10.

NOTE: The above criteria are **method requirements** for serial dilution samples, regardless of the sample matrix type. However, for **technical review purposes only**, Regional policy or project Data Quality Objectives (DQOs) may allow the use of less restrictive criteria (e.g., %D < 15) to be assessed against serial dilution soil samples.

D. Evaluation:

1. Verify that a field blank or PE sample was not used for the serial dilution analysis.

2. Check the raw data and recalculate the %D using the following equation:

$$\%Difference = \frac{|I - S|}{I} x100$$

Where,

I = Initial Sample Result
S = Serial Dilution Result

3. Check the raw data for any evidence of positive or negative interference (results from the diluted sample which are significantly different than the original sample), possibly due to high levels of dissolved solids in the sample, ionization effects, etc.

E. Action:

NOTE: For a serial dilution that does not meet the technical criteria, apply the action to all samples of the same matrix if the reviewer considers the samples sufficiently similar. The reviewer will need to exercise professional judgment in determining sample similarity. The reviewer should make use of all available data, including: site and sampling documentation (e.g., location and type of sample, descriptive data, soil classification); field test data (e.g., pH, Eh, conductivity, chlorine); and laboratory data for other parameters [e.g., Total Suspended Solids (TSSs), Total Dissolved Solids (TDSs), Total Organic Carbon (TOC), alkalinity or buffering capacity, reactive sulfide, anions], in determining similarity. The reviewer should also use the sample data (e.g., similar concentrations of analytes) in determining similarity between samples in the SDG. The reviewer may determine that only some of the samples in the SDG are similar to the serial dilution sample, and that only these samples should be qualified. Or, the reviewer may determine that no samples are sufficiently similar to the sample used for serial dilution, and thus that only the field sample used to prepare the serial dilution sample should be qualified.

1. If the required %D criteria are not met, qualify all affected results that are ≥ MDL as estimated (J) and all affected non-detects as estimated (UJ).

2. If evidence of positive or negative interference is found, use professional judgment to qualify the associated sample data. Note the potential effects on the reported data in the Data Review Narrative.

3. It should be noted in the Data Review Narrative if a field blank or PE sample was used for the serial dilution analysis.

Table 9. Serial Dilution Actions for ICP-AES Analysis

Serial Dilution Result	Action for Samples
Sample concentration > 50x MDL and %D > 10*	Qualify affected results that are ≥ MDL as estimated (J) Qualify affected non-detects as estimated (UJ)
Interferences present	Use professional judgment

* The above criteria are **method requirements** for serial dilution samples, regardless of the sample matrix type. However, for **technical review purposes only**, Regional policy or project Data Quality Objectives (DQOs) may allow the use of less restrictive criteria (e.g., %D < 15) to be assessed against serial dilution soil samples.

6.9 OVERALL ASSESSMENT

A. Review Items:

Entire sample data package, data review results, preparation logs, calibration standard logs, instrument logs, instrument printouts, and raw data (including any confirmation data).

B. Objective:

The objective is to ensure that the reported sample quantitation results are accurate. It is appropriate for the data reviewer to make professional judgments and express concerns, as well as to comment on the validity of the overall data for a Case. This is particularly appropriate when there are several Quality Control (QC) criteria that are outside of the specification parameters. The additive nature of QC factors that fall outside of specification parameters is difficult to assess in an objective manner, but the reviewer has a responsibility to inform the user of data quality and data limitations to assist that user to avoid inappropriate use of the data, while not precluding any consideration of the data. If qualifiers other than those used in this document are necessary to describe or qualify the data, it is necessary to thoroughly document/explain the additional qualifiers used. The data reviewer would be greatly assisted in this endeavor if the acceptance or performance criteria were provided. The Inorganic Review Summary (see Appendix B) and supplementary documentation must be included with the review.

C. Criteria:

1. Review all available materials to assess the overall quality of the data, keeping in mind the additive nature of analytical problems.

2. Reported analyte concentrations must be quantitated according to the appropriate analytical method, as listed in the method.

D. Evaluation:

Examine the raw data to verify that correct calculations of the sample results were reported by the laboratory. Digestion logs, instrument printouts, etc., should be compared to the reported sample results recorded on the appropriate Inorganic Summary Forms.

1. Evaluate any technical problems not previously addressed.

2. Examine the raw data for any anomalies (e.g., baseline shifts, negative absorbance, omissions, illegibility, etc.).

3. Verify that appropriate methods and amounts were used in preparing the samples for analysis. If reduced volumes were used, verify that the laboratory had received appropriate QTEO approval for the use of the reduced volume.

4. Verify that there are no transcription or reduction errors [e.g., dilutions, Percent Solids (%S), sample weights, etc.] on one or more samples.

5. Verify that results fall within the calibrated range(s) of the Inductively Coupled Plasma (ICP) instrument(s).

6. If appropriate information is available, the reviewer may assess the usability of the data to assist the data user in avoiding inappropriate use of the data. Review all available information, including the Quality Assurance Project Plan (QAPP), focusing specifically on the acceptance or performance criteria, the Standard Operating Procedure(s) (SOPs), and communication with the user concerning the intended use and desired quality of these data.

E. Action:

1. Use professional judgment to determine if there is any need to qualify data which were not qualified based on the QC criteria previously discussed.

2. Write a brief Data Review Narrative to give the user an indication of the analytical limitations of the data. Note any discrepancies between the data and the Sample Delivery Group (SDG) Narrative. If sufficient information on the intended use and required quality of the data is available, the reviewer should include an assessment of the data usability within the given context.

3. If any discrepancies are found, the laboratory may be contacted by the Region's designated representative to obtain additional information for resolution. If a discrepancy remains unresolved, the reviewer may determine that qualification of the data is warranted.

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SOP Revision History
SOP Version / Revision Date / Revision Reason
Version 1.0 10/07/2013 Plan approved / implemented

Appendix A

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Glossary

Analyte – The element of interest, ion, or parameter an analysis seeks to determine.

Analytical Sample – Any solution or media introduced into an instrument on which an analysis is performed excluding instrument calibration, Initial Calibration Verification (ICV), Initial Calibration Blank (ICB), Continuing Calibration Verification (CCV), and Continuing Calibration Blank (CCB). Note that the following are all defined as analytical samples: undiluted and diluted samples (USEPA and non-USEPA); Matrix Spike samples; duplicate samples; serial dilution samples, analytical (post-digestion/post-distillation) spike samples; Interference Check Samples (ICSs); Laboratory Control Samples (LCSs); and Preparation Blanks.

Associated Samples – Any sample related to a particular Quality Control (QC) analysis. For example, for Initial Calibration Verification (ICV), all samples run under the same calibration curve. For duplicates, all Sample Delivery Group (SDG) samples digested/distilled of the same matrix.

Blank – A sample designed to assess specific sources of contamination. See individual definitions for types of blanks.

Calibration – The establishment of an analytical curve based on the absorbance, emission intensity, or other measured characteristic of known standards. The calibration standards are to be prepared using the same type of reagents or concentration of acids as used in the sample preparation.

Calibration Blank – A blank solution containing all of the reagents in the same concentration as those used in the analytical sample preparation. This blank is not subject to the preparation method.

Calibration Curve – A plot of instrument response versus concentration of standards.

Calibration Standards – A series of known standard solutions used by the analyst for calibration of the instrument (i.e., preparation of the analytical curve). The solutions may or may not be subjected to the preparation method, but contain the same matrix (i.e., the same amount of reagents and/or preservatives) as the sample preparations to be analyzed.

Continuing Calibration Blank (CCB) – A reagent water sample that is run 2 hours (ICP-AES, ICP-MS) and designed to detect any carryover contamination.

Contract Compliance Screening (CCS) – A screening of electronic and hardcopy data deliverables for completeness and compliance with the contract.

Continuing Calibration Verification (CCV) – A single parameter or multi-parameter standard solution prepared by the analyst and used to verify the stability of the instrument calibration with time, and the instrument performance during the analysis of samples. The CCV can be one of the calibration standards. However, all parameters being measured by the particular system must be represented in this standard and the standard must have the same matrix (i.e., the same amount of reagents and/or preservatives) as the samples. The CCV should have a concentration in the middle of the calibration range and shall be run every 2 hours (ICP-AES, ICP-MS).

Contract Laboratory Program (CLP) – Supports the USEPA's Superfund effort by providing a range of state-of-the-art chemical analytical services of known quality. This program is directed by the Analytical Services Branch of the Office of Superfund Remediation and Technical Innovation of USEPA.

Contract Required Quantitation Limit (CRQL) – Minimum level of quantitation acceptable under the contract Statement of Work.

Duplicate – A second aliquot of a sample that is treated the same as the original sample in order to determine the precision of the method.

Field Blank – Any sample that is submitted from the field and identified as a blank. A field blank is used to check for cross-contamination during sample collection, sample shipment, and in the laboratory. A field blank includes trip blanks, rinsate blanks, bottle blanks, equipment blanks, preservative blanks, decontamination blanks, etc.

Field Duplicate – A duplicate sample generated in the field, not in the laboratory.

Holding Time – The maximum amount of time samples may be held before they are processed.

Technical – The maximum amount of time that samples may be held from the collection date until analysis.

Initial Calibration – Analysis of analytical standards for a series of different specified concentrations to define the quantitative response, linearity, and dynamic range of the instrument to target analytes.

Initial Calibration Blank (ICB) – The first blank standard run to confirm the calibration curve.

Initial Calibration Verification (ICV) – Solution(s) prepared from stock standard solutions, metals, or salts obtained from a source separate from that utilized to prepare the calibration standards. The ICV is used to verify the concentration of the calibration standards and the adequacy of the instrument calibration. The ICV should be traceable to National Institute of Standards and Technology (NIST) or other certified standard sources when USEPA ICV solutions are not available.

Internal Standard – A non-target element added to a sample at a known concentration after preparation but prior to analysis. Instrument responses to internal standards are monitored as a means of assessing overall instrument performance.

Interference Check Sample (ICS) – Verifies the contract laboratory's ability to overcome interferences typical of those found in samples.

Laboratory Control Sample (LCS) – A control sample spiked at known level(s). LCSs are processed using the same sample preparation, reagents, and analytical methods employed for the USEPA samples received.

Matrix – The predominant material of which the sample to be analyzed is composed. For the purposes of this document, the matrices are aqueous/water, soil/sediment, wipe, and filter.

Matrix Spike – Introduction of a known concentration of analyte into a sample to provide information about the effect of the sample matrix on the digestion and measurement methodology (also identified as a pre-distillation/digestion spike).

Method Detection Limit (MDL) – The concentration of a target parameter that, when a sample is processed through the complete method, produces a signal with 99 percent probability that it is different from the blank. For 7 replicates of the sample, the mean value must be 3.14s above the blank, where "s" is the standard deviation of the 7 replicates.

Narrative (SDG Narrative) – Portion of the data package which includes laboratory, contract, Case, Sample Number identification, and descriptive documentation of any problems encountered in processing the samples, along with corrective action taken and problem resolution.

Percent Difference (%D) – As used in this document and the Statement of Work, is used to compare two values. The difference between the two values divided by one of the values.

Performance Evaluation (PE) Sample – A sample of known composition provided by USEPA for contractor analysis. Used by USEPA to evaluate Contractor performance.

Post Digestion Spike – The addition of a known amount of standard after digestion or distillation (also identified as an analytical spike).

Preparation Blank – An analytical control that contains reagent water and reagents, which is carried through the entire preparation and analytical procedure.

Relative Percent Difference (RPD) – As used in this document and the Statement of Work to compare two values, the RPD is based on the mean of the two values, and is reported as an absolute value (i.e., always expressed as a positive number or zero).

Relative Standard Deviation (RSD) – As used in this document and the Statement of Work, the mean divided by the standard deviation, expressed as a percentage.

Sample – A single, discrete portion of material to be analyzed, which is contained in single or multiple containers and identified by a unique Sample Number.

Sample Delivery Group (SDG) – A unit within a sample Case that is used to identify a group of samples for delivery. An SDG is defined by the following, whichever is most frequent:

a. Each 20 field samples [excluding Performance Evaluation (PE) samples] within a Case; or
b. Each 7 calendar day period (3 calendar day period for 7-day turnaround) during which field samples in a Case are received (said period beginning with the receipt of the first sample in the SDG).
c. Scheduled at the same level of deliverable.

In addition, all samples and/or sample fractions assigned to an SDG must be scheduled under the same contractual turnaround time. Preliminary Results have **no impact** on defining the SDG. Samples may be assigned to SDGs by matrix (i.e., all soil/sediment samples in one SDG, all aqueous/water samples in another) at the discretion of the laboratory.

Serial Dilution – The dilution of a sample by a factor of five. When corrected by the Dilution Factor (DF), the diluted sample must agree with the original undiluted sample within specified limits. Serial dilution may reflect the influence of interferents [Inductively Coupled Plasma (ICP) only].

Appendix B

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Inorganic Data Review Summary

[See Attached]

APPENDIX B:
INORGANIC DATA REVIEW SUMMARY

CASE NO. _____ SITE _____

LABORATORY _____ NO. OF SAMPLES/MATRIX _____

MOD. REF. NO. _____ SDG NO. _____

SOW NO. _____ REGION _____

REVIEWER NAME _____ COMPLETION DATE _____

CLP PO: ACTION _____ FYI _____

REVIEW CRITERIA	METHOD/ANALYTE			
	ICP-AES	ICP-MS	Mercury	Cyanide
1. Preservation/Holding Time				
2. Calibration				
3. Blanks				
4. Interference Check Sample				
5. Laboratory Control Sample				
6. Duplicate Sample Analysis				
7. Spike Sample Analysis				
8. ICP Serial Dilution				
9. ICP-MS Tune Analysis				
10. ICP-MS Internal Standards				
11. Field Duplicates				
12. Overall Assessment				

Site Management Plan

Site Management Plan (Version 1.1)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
December 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

SITE MANAGEMENT PLAN (SMP)
Version 1.1
DISTRIBUTION SHEET

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Copies of this SMP have been distributed to the following people:

Rafael Casanova, P.G. - U.S. EPA, Region 6, Remedial Project Manager

Tim Kent, P.G. - QTEO, Environmental Director / Project Manager

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Appendices

Appendix A Waste Management Plan

References

EPA, U.S. Environmental Protection Agency , 2008. *Record of Decision, Operable Unit 4, Chat Piles, Other Mine and Mill Waste, and Smelter Waste, Tar Creek Superfund Site, Ottawa County, Oklahoma.* February 20, 2008.

Project Specifications, Tar Creek Superfund Site, Source Material Operable Unit 4 Remedial Action, SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40), Ottawa, County, Oklahoma.

QAPP (Quality Assurance Project Plan), Tar Creek Superfund Site, Source Material Operable Unit 4 Remedial Action, SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40), Ottawa, County, Oklahoma.

TCOU4RA_SMP, CH2M HILL, *Site Management Plan, Version 1.0, Tar Creek Superfund Site, Source Material Operable Unit 4, Remedial Action, Ottawa County, Oklahoma, Task Order No. 0053-RARA-06JW, Document Control No. 0053-02113*, March 2011. TCOU4RA_SMP_Ver1 0_2011-0304.pdf.

Work Plan, Quapaw Tribe of Oklahoma CERCLA, Section 104, Grant Application for Remedial Response Cooperative Agreement 10/1/2012 through 9/30/2014.

1.0 INTRODUCTION

This document will be used in conjunction with the Revised Catholic 40 Remedial Response Workplan, Health and Safety Plan, Field Sampling Plan, Quality Assurance Project Plan, Construction Quality Assurance Plan, Waste Management Plan, Storm Water Pollution Prevention Plan, the Transportation Plan, and the Project Specifications, each provided under separate cover, to specify the procedures to be used during the performance of this work (TCOU4RA_SMP, 1).

1.1 Purpose

The purpose of the RA activities is to perform removal of source material (mine and mill waste including chat, fine tailings, overburden, development rock, and other tailings) and affected soil from Chat Base 011. Source material that can be reused (primarily consisting of chat) will be transported to processors or other potential end-users. Source material that cannot be reused will be transported to the Site's repository for disposition.

1.2 Background

Through the EPA Region VI General Assistance Program (GAP), the Quapaw Tribe Environmental Office was established on October 1, 1997. In June of 1998, the Quapaw Tribal Chairman and the EPA Region VI Administrator signed a Tribal Environmental Agreement (TEA), which established a formal agreement between the Tribe and the EPA to address the issues raised regarding the environmental protection of the Quapaw Tribal land including without limitation land known as the Catholic 40. As a result of that process, the Tribal Environmental Office is working toward the remediation of Tribal land on the Tar Creek Superfund Site in such a manner which protects human health, the environment, and the cultural heritage of the Quapaw people (Workplan, 2).

The Quapaw Tribe is currently administering an EPA Superfund management assistance grant under an existing Superfund support agency cooperative agreement. The Tribe entered into this support agency cooperative agreement with EPA Region 6 in 2001. This management assistance grant has enabled the Tribe to provide 'meaningful and substantial involvement" in the decisions related to the development and implementation of the OU4 ROD. Working together with EPA and other stakeholders on Tar Creek issues over the past 12 years has enabled the QTEO to develop the technical capacity required to administer a remedial response cooperative agreement (Workplan, 2).

The Tar Creek Superfund Site is a former lead and zinc mining area in Ottawa County, Oklahoma, located within the Oklahoma portion of the Tri-State Mining District, which covers parts of Oklahoma, Kansas, and Missouri. The Tar Creek Superfund Site includes an area (approximately 40 square miles) in northern Ottawa County where lead and zinc mining operations were conducted and any area where a hazardous substance from mining or milling in Ottawa County has been stored or disposed. The Tar Creek Superfund Site also includes all suitable areas in close proximity to the contamination necessary for implementation of the response action. The Tar Creek Superfund Site is bound on the north by the Kansas state line and includes the communities of Cardin, Commerce, North Miami, Picher, and Quapaw, Oklahoma (Workplan, 3).

The Catholic 40 is located in Distal Group 8 (Distal 8) of the Tar Creek Superfund Site. Distal 8 represents only a small portion of the overall Tar Creek Superfund Site. Distal 8 includes one (1) chat base (CB011) and one (1) known mine shaft. CB011 is located within the north half of Section 6 Township 28 North (T28N) Range 24 East (R24E), and more specifically, within Ottawa County Parcel 0000-06-028-024-0-001-00 (see Site Location Map in Appendix B). An east-west running property line divides CB011 into two sections: CB011 North on non-restricted fee land and CB011 South on tribal trust land owned by the Quapaw Tribe. CB011 North is not included within the scope of this proposed remedial response. Hereafter, CB011 is named to refer to the CB011 South portion of the chat base. Contaminated mine and mill wastes, also known as source material, in the form of chat, fine tailings, flotation tailings, and development rock, all in varying amounts, have affected both soil and water at the Catholic 40. This proposed remedial response will address only source material and affected transition zone (TZ) soils. The contaminants of concern (COCs) at the Catholic 40 are lead, zinc, and cadmium (Workplan, 3).

Mining at the Catholic 40 has also impacted surface water quality at the Catholic 40 (ie. Beaver Creek). Chat-laden surface water runoff from the Catholic 40 has contributed to water quality impairment in Beaver Creek. While mine water discharges to the surface at multiple locations in the Beaver Creek watershed, no mine water discharges have

been identified at the Catholic 40 (Workplan, 3).

Ground water quality in the Beaver Creek watershed has also been impacted by mining. Of the two main aquifers in the region, the shallow Boone and the deeper Roubidoux, mining activities were confined to the overlying Boone. Thus, the Boone aquifer is the primary source of subsurface ground water contamination. Once the extensive network of mine workings filled with water, the water became acidic and laden with metals. The underlying Roubidoux aquifer is the principal source of drinking water or the region (Workplan, 3).

1.3 Remedial Action Data Collection Activities

The QTEO's QAPP was written according to guidelines set forth in *EPA Guidance for Quality Assurance Project Plans (EPAQA/G-5)* (EPA, 2002). The plan describes the Quapaw Tribe Environmental Office's (QTEO) program procedures in place to ensure the highest possible quality of environmental data collection and evaluation activities related to the Response Action Contract (RAC) and Task Order Scope of Work (QAPP, 10).

The primary objective of the OU4 Source Material RA is to implement the remedial strategies as described in the ROD. The Catholic 40 chat base will be removed and confirmation samples of the underlying soil will be collected and analyzed in the laboratory to determine if lead, cadmium, or zinc are present at concentrations exceeding ROD remediation goals.

The following data collection activities are defined for the Catholic 40 Remedial Action:

- Collection and analysis of soil samples beneath and adjacent to CB011 to determine if the transition zone soils contain lead, cadmium, or zinc at concentrations exceeding the remedial goals established in the ROD for Operable Unit 4.
- Collection and analysis of soil samples for agronomic analysis to assess soil amendment requirements for site restoration activities.
- Collection and analysis of chat material for evaluation of its marketability for potential reuse.
- Collection and analysis of samples of accumulated stormwater within excavation areas as needed to support the RA activities.
- Collection and analysis of samples of potential asbestos-containing material (ACM) to assess disposal requirements.
- Managing wastes generated during performance of these activities.

These project objectives have been used to develop specific DQOs, which are qualitative and quantitative statements that describe the type and quality of analytical data needed to meet project objectives. The DQO process used for this project follows the EPA QA/G4 guidance (EPA, 2006) and uses the seven-step DQO development process. The DQOs provide a basis for the investigation activities to be performed, and they ensure that data collected during the investigation will be of sufficient and adequate quality for their intended use (QAPP, 10).

For more information, see the QTEO's QAPP for this project.

1.4 Remedial Action Construction Activities

Chat Base 011 along with contaminated soil beneath and adjacent to the chat base will be excavated. The following primary construction activities will be completed in support of the remedial action activities:

- Pre-construction field reconnaissance
- Land survey, as needed throughout the stages of construction
- Mobilization and site preparation including installation of stormwater/erosion controls, security fences, security gates, warning signs and site utilities clearance
- Access road construction
- Removal of material in chat piles and bases and disposition of material to the designated locations
- Removal of affected soil beneath and adjacent to distal area chat piles and bases (TZ soil) and disposition of affected soil to the designated locations.
- Identification and closure of special features (mine shafts and cased boreholes)
- Land restoration and final grading activities
- Construction inspections (periodic, pre-final, and final)
- Demobilization

For more information, see the Project Specifications and CQAP for this project.

2.0 SITE MANAGEMENT PROCEDURES

The objectives of the SMP are to provide information regarding basic site management procedures, including management responsibilities, site access, site security, waste management, spill control procedures, and a pollution control and mitigation plan. Other important documents provided under separate cover, that specify particular subsets of site practices and protocols include (TCOU4A_SMP, 17):

- The HSP specifies employee training, protective equipment, medical surveillance requirements, standard operating procedures, and a contingency plan in accordance with 40 Code of Federal Regulations (CFR) 300.150 of the National Contingency Plan (NCP) and 29 CFR 1910.120 1(1) and (1)(2);
- The FSP and QAPP will be used to direct site activities pertaining to data collection, analysis, and evaluation.
- The CQAP provides procedures for inspecting and documenting the RA construction activities to ensure that the facilities to be constructed have met or exceeded design criteria.
- The SWPPP provides procedures for managing storm water during construction at the site.
- The Transportation Plan provides all the procedures required to transport source material on and around the site.

2.1 Management Responsibilities

The Source Material OU4 RA effort is being conducted by the Quapaw Tribe of Oklahoma under the direction of EPA. The roles and responsibilities and phone numbers of the key site management personnel are provided in the QTEO's QAPP and in the CQAP.

2.2 Site Access

The temporary southern site access road is located at the south bend of East 57 Road (see Catholic 40 Specifications Appendix A for access road specifications). The construction of the temporary southern access road will include repair of a wash-out at an unnamed tributary to Beaver Creek and road repair over Beaver Creek. Please reference the QTEO design drawings and maps for access road design details. The QTEO shall be responsible for constructing and maintaining the access road to render it operational based on specific site conditions (*Project Specifications, 7).*

2.3 Property/Site Access Control

During the RA activities, appropriate measures will be taken to prevent public exposure to environmental hazards or construction operations hazards. Implementation of work site exclusion zones as specified in the HSP will be performed during intrusive activities that have the potential to expose tribal personnel, leased operators, contractors or the public to chemical exposure hazards. Likewise, appropriate site control shall be implemented to avoid exposure to physical hazards. During site operations, it will be the responsibility of the Quapaw Tribe to institute site access controls to avoid intentional or unintentional site entry by the public. During non-working hours, work sites must be properly secured and/or monitored to remove the possibility that the public may be harmed by intentional or unintentional entry of the work site (TCOU4RA_SMP, 2-2).

If field staff observe a work site condition that does not appear to sufficiently limit or discourage work site entry by the public, or an unsafe condition that is left during non-working hours, the staff will immediately notify the Project Manager (PM), Construction Manager (CM), and/or site Health and Safety Manager (TCOU4RA_SMP, 2-2).

Tribal employees and operators shall be required to utilize the southern site access road. Signage will direct visitors to access entrance. All other access to the site will be gated and locked. The QTEO will coordinate the chat disposition determination and when the crews are permitted access to the properties for implementation of the RA activities (*Project Specifications, 5).*

2.4 Site Security

Site security will be accomplished in the following manner:

1. Employees shall be required to sign-in and out at the project trailer upon arrival for daily operations and departure at close-of-business.
2. All visitors shall be required to sign-in and out with the on-site Health and Safety Manager at the project trailer.
3. Every authorized visitor who is not remaining in the project trailer while on-site, will be issued a visitor's badge and personnel protective equipment (hard hat, safety goggles, hearing protection).
4. Authorized trucks will be decaled with site specific information.
5. Southern site access road will be gated and locked during non-operating hours.
6. All other site access roads will remain gated and locked during duration of RA.
7. Quapaw Tribal Marshal's office shall monitor project site during non-operating hours (evenings, weekends, and holidays), by use of random patrols.

2.4.1 Goals of Site Security

1. To protect the public from inadvertently or purposefully entering the project site and being injured.
2. To Ensure timely response of emergency responders in the event of an emergency call.
3. To secure on site materials and equipment
4. To support safe and efficient transportation of materials, equipment, and personnel on and off the project site.
5. To control site access and limit vehicular traffic thereby limiting the generation of dust.
6. To control unauthorized access to the site.

2.5 Utility Clearances

Utility clearances will be obtained prior to commencing intrusive activities. No later than ten days before commencement, the proposed location(s) for intrusive activities will be marked in the field using spray paint and/or flagging. Two to ten days before commencing intrusive activities, the tribe will call the Oklahoma One-Call System at 1-800-522-6543 to request utility location services. If a buried utility is found to be near a proposed excavation, hand digging shall be performed within a minimum of 4 feet from the buried utility (TCOU4RA_SMP, 2-3).

2.6 Noise Control

All activities will be required to comply with any applicable noise ordinances. All employees, drivers, and operators are required to assess and comply with applicable ordinances and implement any necessary noise control. The site Health and Safety Manager will monitor and enforce compliance with noise ordinances during RA activities.

During site activities, the QTEO will document subcontractor's assessment of noise control requirements and plans for implementing noise controls, if needed. The QTEO is responsible for complying with noise ordinances during RA activities and will perform testing to ensure compliance, if needed. The RA data collection and construction activities are not likely to require any type of noise control or suppression. In the event future activities differ from that currently planned, the applicable noise ordinances should be consulted to determine if noise control or modified working times are required.

2.7 Traffic Control

Traffic control is addressed in the Transportation Plan.

2.8Dust Abatement

Dust abatement is addressed in the Transportation Plan.

2.9Project Office Facilities

The Quapaw Tribe has established a project office within the project site. The project office supports the data collection and construction activities.

3.0 WASTE MANAGEMENT

Waste Management Plan for this project is attached hereto as Appendix A.

******

Plan Revision History

Plan Version / Revision Date / Revision Reason

Version 1.0 11/22/2013 EPA comments (11/27/2013) addressed and resubmitted

Version 1.1 12/02/2013 Plan approved and implemented

Appendix A

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Waste Management Plan (WMP)

[See Attached]

Waste Management Plan (Version 1.1)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
November 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

Waste Management Plan (WMP)
Version 1.1
DISTRIBUTION LIST

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Copies of this WMP have been distributed to the following people:

Rafael Casanova, P.G. - U.S. EPA, Region 6, Remedial Project Manager

Tim Kent, P.G. - QTEO, Environmental Director / Project Manager

Craig Kreman - QTEO, Quality Assurance Manager

Chris Roper – QSA, Construction Manager

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Appendices

Appendix A Waste Management Plan (WMP) Acknowledgment

References

Quapaw Bus. Committee Resolution No. 061194-C, June 11, 1994.

OSHA Lead in Construction Standard
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10641

EPA Lead Programs
http://www.epa.gov/opptintr/lead/index.html

1.0 POLICY OF THE QUAPAW TRIBE

"The Quapaw Tribe declares it to be the policy of the Nation that solid waste generated on lands under the jurisdiction of the Quapaw Tribe or imported from outside the Quapaw Tribe should be treated, stored, or disposed of so as to minimize the present and future threat to human health and the environment."

- Quapaw Bus. Comm. Res. No. 061194-C (June 11, 1994)

2.0 INTRODUCTION

This Waste Management Plan outlines the types of wastes likely to be generated during the implementation of the Remedial Action for CB 011 (Catholic 40) and provides procedures for the handling, storage, characterization, and disposal of these wastes. The National Contingency Plan (NCP) requires that waste be managed to comply with applicable or relevant and appropriate requirements (ARARs) to the extent practicable.

3.0 APPLICABILITY

All contractors shall comply with the project's construction Waste Management Plan (WMP). All contractor foremen shall sign the WMP Acknowledgment Sheet. Contractors who fail to comply with the Waste Management Plan will be subject to back charges or withholding of payment, as deemed appropriate. For instance, contractors who contaminate debris boxes that have been designated for a single material type will be subject to back charge or withheld payment, as deemed appropriate.

Requirements in Contracts and Leases Dealing With Solid Waste

All contracts and/or leases between citizens of the Quapaw Tribe or the Quapaw Tribe and waste disposal, recycling, and treatment firms must contain the following clause:

"By accepting this contract or lease, the parties acknowledge and submit to all provisions of the law of the Quapaw Tribe and the jurisdiction of its courts regardless of their status as Indian or non-Indian and acknowledge that Quapaw Tribe, state, or federal authorities may prosecute for violations of Quapaw Tribe, state, or federal environmental laws at the Quapaw Tribe's request."

- Quapaw Bus. Comm. Res. No. 061194-C (June 11, 1994)

4.0 ENFORCEMENT AUTHORITY

The Quapaw Environmental Protection Commission (QEPC) is hereby designated as the enforcement authority entrusted with the duty and responsibility of ensuring the proper handling, treatment, composting, and disposal of solid waste on lands of the Quapaw Tribe and of ensuring compliance by all persons with the tribe's Solid Waste Code. QEPC shall enforce all provisions and regulations of the code that pertain to the minimum standards for solid waste handling, treatment, composting, and disposal, all for the protection of the public health and safety and of land, air and water. The QEPC may request enforcement by federal, state, and local agencies of their respective laws governing solid waste handling, treatment, composting, and disposal. The QEPC shall keep and maintain records of its inspection, enforcement, and training programs.

Note: All handling, storage, and disposal of solid and liquid waste (including hazardous substances) shall conform to Quapaw Code Title 15, specifically, the Solid Waste Code and the Toxic and Hazardous Substance Control Code.

5.0 PROHIBITION OF OPEN DUMPS

The Quapaw Tribe in compliance with Federal law (42 U.S.C. § 6943) prohibits all open dumps on lands of the Quapaw Tribe and requires all solid waste disposal to be in sanitary landfills, facilities specifically created for the disposal of solid wastes which meets the criteria published under federal requirements at 42 U.S.C. § 6944.

6.0 REPOSITORY FACILITY OPERATIONS

The EPA approved OU4 Chat Repository located at the Central Mill Tailings Pond on E. 40 Rd. in Picher, OK is located on non-restricted fee land and is operated by EPA and its contractors. This repository has been receiving source material and TZ soils from other Distal Group remediation projects since 2009. This repository has more than adequate capacity to securely receive and dispose of all source material and TZ soils associated with the

remediation of the Catholic 40. The repository operator is responsible for the maintenance of and operation of the repository facility.

7.0 ANTICIPATED WASTE STREAMS

7.1 Source materials

Source material (mine and mill waste including chat, fine tailings, overburden, development rock, smelter waste, and other tailings) will be removed from chat pile, chat base, and fine tailings during RA activities. Source material that can be reused will be transported to the reuse facility (i.e. chat processor). Reusable source material may also be transported to consolidation locations for storage until the material can be reused later. Source material that cannot be reused will be transported to the repository for disposition. Transition zone soil will be transported to the repository. Procedures for the transportation and disposition of source material (e.g. chat) are described in the Transportation Plan.

7.1.1 Miscellaneous Domestic and Office Waste

Non-contaminated solid waste or debris from jobsite office (i.e. office paper, plastic, metal, and cardboard), shall be transported to a sanitary landfill, or recycled through the QTEO recycling program.

7.1.2 Construction Debris

Soil and fill that is derived from the property that meets the soil cleanup objectives established in this plan may be reused on-Site. Uncontaminated material that is excavated during the remedy, does not leave the property, and is relocated within the same property on comparable soil/fill material, may be reused on-Site. Organic matter (wood, roots, stumps, etc.) or other waste derived from clearing and grubbing of the Site will not be buried on-Site. Root balls will be transported to the repository.

7.1.3 Decontamination Fluids and Excavation Dewatering Fluids

Decontamination of excavation and reusable sampling equipment will be necessary during the performance of the work. Decontamination of onsite heavy equipment (*e.g.*, excavators, dozers, etc.) will generate decontamination fluids, typically water and soil. Decontamination of smaller items, including stainless steel spoons and bowls will generate decontamination fluids generally consisting of water, Alconox detergent, and soil. To the extent feasible, decontamination of equipment should be conducted at identified decontamination areas that can be allowed to discharge to the ground surface, with the QTEO's consent. If decontamination is performed in an area where source materials are not present on the ground surface, the decontamination fluids will be captured and used as onsite dust control only in areas where source material is still present, or contained and transported to the Site's repository for disposal.

Water that accumulates within excavated areas (*e.g.*, ground water seepage or storm water runoff) shall be handled as follows:

Case 1 — If the water accumulates within an area where source material and transition (TZ) soil removal has already been completed, the accumulated water is presumed to be uncontaminated and may be discharged onsite or utilized for onsite dust control measures.

Case 2 — If the water accumulates within an area where source material and/or TZ soil removal has not yet been completed, the water is assumed to be potentially contaminated.

Case 3 — If the water accumulates within an area where source materials and TZ soil removal has already been performed, but the water originated or flowed through an area where source material or TZ soil removal has not yet been completed, the accumulated water is presumed to be potentially contaminated and may not be discharged onsite. The potentially contaminated water may be utilized as onsite dust control (only in areas where source material or TZ soil removal has not yet been completed) or discharged onsite, after analytical testing for site constituents of concern, if it meets discharge criteria. To allow discharge onsite, the concentrations of lead, cadmium, and zinc must be below their respective benchmark values. Additional requirements, such as filtering or treatment, may be necessary for onsite discharge of accumulated water.

7.1.4 Waste Characterization

Storm water accumulated in excavation areas will require characterization prior to discharge onsite. The storm water will be sampled and analyzed for total and dissolved concentrations of lead, cadmium, zinc, and hardness. Benchmark values for lead, cadmium, and zinc depend on water hardness. Hardness of the receiving water shall also be determined to identify the applicable hardness range for determining the respective benchmark value applicable to each metal. In the absence of receiving waters, the hardness of the accumulated storm water will be used to determine the respective benchmark values for lead, cadmium, and zinc. Details of the sampling and analysis procedures are presented in the project's "Field Sampling Plan." If wastes requiring offsite disposal are encountered (*e.g.*, asbestos-containing material, stormwater that does not meet benchmark requirements, or spill-related petroleum-contaminated soils), then these wastes will be characterized using laboratory analysis and/or process knowledge.

7.1.5 Source Material Disposition

Transportation and disposition of source material will be performed in accordance with the Transportation Plan and Disposition Management Plan for Chat Base 011 (Catholic 40).

7.1.6 Used PPE and Disposable Sampling Equipment

Used PPE and disposable sampling equipment and materials will be generated during RA sampling and construction activities. Used PPE generated may include such items as nitrile gloves and earplugs. Disposable sampling equipment may include broken or unclean sample containers, paper towels, plastic sheeting and other miscellaneous items. Used PPE and disposable sampling equipment will be placed in double plastic bags, sealed, and contained for disposal in the municipal waste stream as non-regulated solid waste.

7.1.7 Spill-related Waste

For details on SPILL PREVENTION, CONTROL AND COUNTERMEASURES see Site Specific Spill Response Plan.

8.0 WASTE SEGREGATION AND MINIMIZATION

Waste prevention and recycling activities will be discussed at the beginning of weekly contractor meetings. As each new contractor comes on site, the Superintendent or the Health and Safety Manager will present him/her with a copy of this CWMP and provide a tour of the project site to identify materials to be salvaged and the procedures for handling project debris. All contractor foremen will acknowledge in writing that they have read and will abide by the CWMP. CWM Contractor Acknowledgement form is attached to this plan as Appendix A.

The following general guidelines will be followed in an effort to minimize the volume of wastes generated during field activities:

- Avoid contaminating materials unnecessarily, such as using only one set of sampling equipment per sampling location, taking care to store contaminated bowls and spoons away from uncontaminated or decontaminated equipment.
- Fill waste containers as full as possible without exceeding capacity requirements.
- Decontaminate sampling and other equipment in batches in order to minimize the amount of water and detergent solution needed.
- Avoid mixing potential or actual contaminated wastes with uncontaminated wastes.
- Avoid over-excavating beyond the planned sampling depths or areas.
- If drums or containers containing waste are generated, the following labeling requirements apply: each drum, roll-off box, or portable tank used to contain waste will be clearly labeled and include the contents of the container and type of waste, the location where the waste was generated, and the date(s) waste was first placed into the container.

8.1 Prevention and Management of Cross-contamination

Soils will be stored separately by type as to avoid cross contamination on site. Hazardous wastes derived from on-Site will be stored, transported, and disposed of in compliance with applicable laws and regulations.

Uncontaminated material that is excavated during the remedy, does not leave the property, and is relocated within the same property on comparable soil/fill material, may be reused on-Site; therefore, it will be segregated from other materials that are to be exported from the Site.

The following measures will be taken to prevent or minimize exposure to potentially contaminated materials:

- Do not walk through spilled materials
- Do not handle, touch, or smell sample media directly
- Make sure PPE has no cuts or tears prior to use
- Protect and cover any skin injuries
- Stay upwind of airborne dusts and vapors
- Do not eat, drink, chew gum or tobacco, or smoke in the work zones.

9.0 RECORD KEEPING

The Quapaw Tribe of Oklahoma will provide the Oklahoma Department of Environmental Quality (ODEQ) with written notification of off-site shipments of CERCLA waste from the Catholic 40 (tribal trust land) to the OU4 Chat Repository (non-restricted fee land), or at an approved chat processor's site, according to the requirements of 40 CFR Part 35 Subpart O, Section 35.6120. Weight scale tickets, reflecting tonnage of waste leaving the site, will be kept on site and in the QTEO office.

10.0 POLLUTION CONTROL AND MITIGATION PLAN

The following spill prevention measures will be followed during field activities: 1) Proper inspection of equipment prior to the start of any onsite activity including excavation and transportation to check for leaks and damaged lines, 2) Use of proper handling techniques such as awareness of weight restrictions, limited movement of full containers, use of proper equipment to move full containers, 3) Securing container tops tightly during movement and storage, and 4) Having absorbent materials readily available to contain and clean up equipment leaks and spills as soon as they are discovered to prevent further spread.

If loads leaving the site contain wet material capable of causing leakage from trucks, truck liners will be used. All loaded trucks leaving the site will be covered, in compliance with the other Site Specific Plans and with applicable laws and regulations, to prevent dust and odor. As necessary, spill control measures will be used to contain contaminated runoff that may enter into clean areas: plastic sheeting, hay bales, silt fencing. Liquid absorbent supplies (spill kits) shall be placed on site in case of chemical/fuel spills.

For details on SPILL PREVENTION, CONTROL AND COUNTERMEASURES see Site Specific Spill Response Plan. For more details on preventive measures of transportation, see Site Specific Transportation Plan.

11.0 DECONTAMINATION

Although lead dust tends to settle out of the air, dust that is continually disturbed and re-circulated has the potential to contaminate all objects and surfaces, including vehicles, clothing, food, etc. (see the Transportation Plan and Construction Quality Assurance Plan for dust control procedures). Some of this dust can then be inhaled and ingested; therefore, in order to prevent exposure to lead dust, a thorough decontamination is necessary to ensure that worker's families, other workers, and clean properties do not become contaminated. Specific procedures for proper decontamination of equipment, tools, and materials prior to their removal from lead hazard control containment areas shall be implemented.

Work clothing, work shoes, and tools should not be placed in a worker's automobile unless they have been placed in sealed bags. Durable equipment, such as power and hand tools, generators, and vehicles, should be cleaned prior to their removal from the site; the cleaning should consist of a thorough damp dusting, HEPA vacuuming when possible, and/or by washing.

All vehicles and equipment that have entered potentially contaminated areas will be visually inspected and decontaminated prior to leaving the area. Decontamination of all field vehicles is required before site departure. If the level of vehicle contamination is low, which is the expected level on this project, decontamination may be limited to "dry decon." Dry decon consists of brushing all of the vehicle tires off with a handheld bristle brush, and by removing any visible traces of chat or soil on vehicles which may have come into contact with contaminates and

therefore poses a possibility of cross contamination into clean areas or roadways. If the vehicle is significantly contaminated, pressure washing may be required. Large tools will be cleaned in the same manner. Small reusable sampling equipment, including bowls, spoon, and knives, will be rinsed, washed in phosphate-free detergent, and rinsed again.

The following supplies will be available to perform decontamination activities:

- 6 to 8" wide stiff bristle brushes for Dry Decon
- Wash and rinse buckets with scrub brushes for Wet Decon
- Water and phosphate-free detergent (i.e., Alconox)
- Pump with pressurized freshwater hose
- Pressure washer (if needed)
- Paper towels and plastic garbage bags.

Rinsate from all wet decontamination activities will be collected for proper disposal within a waste water holding pit. Pit will be lined with a 40mil plastic liner and disposed of at the close-out of the project.

Decontamination of equipment and tools will take place within the Contamination Reduction Zone (CRZ).

The following procedure is required when using high-pressure washing equipment for decontamination purposes:

- Wear modified Level D protection, including a face shield and safety goggles.
- Ensure that other personnel are out of the area prior to decontamination.
- Secure the area around the decontamination pad with cones, caution tape, or barricades.
- Ensure that safe work practices and precautions are taken to minimize the potential for physical injury from high-pressure water spray. Follow the manufacturer's operating instructions.
- The pressure washer wand must be equipped with a safety release handle.
- Ensure that the area is clean after equipment is decontaminated.

NOTE: Barricades, cones, or caution tape must be left in place and secured at all times.

The HSM will ensure that all site personnel are familiar with personnel decontamination procedures as listed below. All personnel wearing PPE in an Exclusion Zone/Hot Zone (EZ) work area must undergo decontamination prior to entering the Support Zone/Clean Zone (SZ).

Personnel will perform the following decontamination procedures:

- Wash and rinse outer gloves and boots in portable buckets to remove gross contamination while the surface of the site is contaminated with waste materials that will stick to boots. If disposable boot covers are used, they will be removed at this station. NOTE: Disposable boot covers will be used if terrain and ground conditions are such that the use of disposable boot covers does not present a slipping hazard. If disposable boot covers are not used, particular attention must be applied to decontaminating boots thoroughly.
- If suit is heavily soiled, rinse it off.
- Remove outer gloves; inspect and discard if damaged. Leave inner gloves on. Personnel will remove their outer garment and gloves, dispose of them, and properly label container or drum.
- Personnel will then decontaminate their hard hats with an aqueous solution of detergent or other appropriate cleaning solution. These items then will be hand-carried to the next station.
- Remove protective suit and then inner gloves.
- Thoroughly wash hands and face before leaving CRZ.

******

Plan Revision History
Plan Version / Revision Date / Revision Reason
Version 1.0 09/01/2013 Plan drafted
Version 1.1 11/20/2013 Plan approved / implemented

Appendix A

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Waste Management Plan Acknowledgement

[See Attached]

WASTE MANAGEMENT PLAN (WMP) ACKNOWLEDGMENT

Project Name: _____

Job Number: _____

Project Manager: _____

Waste Hauling Company: _____

WMP Acknowledgment
The Foreman for each new Subcontractor that comes on site is to receive a copy of the Waste Management Plan and complete this Acknowledgment Form. I have read the Waste Management Plan for the project. I understand the goals of this plan and agree to follow the procedures described in this plan.

DATE	SUBCONTRACTOR COMPANY	FOREMAN NAME	SIGNATURE

Transportation Plan

Transportation Plan (Version 1.1)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
November 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

Transportation Plan (TP)
Version 1.1
DISTRIBUTION LIST

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Copies of this TP have been distributed to the following people:

Rafael Casanova, P.G. - U.S. EPA, Region 6, Remedial Project Manager

Tim Kent, P.G. - QTEO, Environmental Director / Project Manager

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Appendix A Truck Transport Routes

1.0 APPLICABILITY

This TP applies to all tribal operators, leased drivers, contractors and tiered subcontractors working on the Catholic 40 project site. This TP will be kept onsite during field activities and will be reviewed as necessary. The TP will be amended or revised as project activities or conditions change or when supplemental information becomes available. In addition, the TP may adopt procedures from the project Work Plan and any governing regulations. If there is a contradiction between this TP and any governing regulation, the more stringent and protective requirement shall apply.

The purpose of the TP is to provide details for the transportation of source materials and affected surface soils to a designated processing facility or the Site's Central Mill Repository. The Remedial Action activities specifically covered by this plan are:

- Transport of purchased marketable chat from Chat Base 011, from within the Southeast Distal Area, to chat processors.
- Transport of un-purchased chat and other source materials (*e.g.*, development rock or chat-based haul routes) or transition zone (TZ) soil from Chat Base 011 to the Central Mill Repository and/or other consolidation areas, including subsidence features and mineshafts.

This plan presents procedures for transporting source materials within or from Operable Unit 4 (Chat Base 011, Catholic 40), transporter licensing and certification requirements, health and safety compliance, and emergency response procedures. In addition, the locations of major roads that will be used for material transportation are discussed. The plan provides the process used to select the initial haul routes and modify existing haul routes. All haul routes are coordinated with the Ottawa County Commissioner.

2.0 SITE MANAGEMENT

2.1 Inspections

Operators shall inspect and document water trucks, haul trucks, and heavy equipment daily prior to work to ensure that they have an automatic backup alarm, that all lights are in working order, that the DOT approved power-operated tarpaulin is in good working condition, and that the truck beds have been cleaned. Operator shall reject trucks that do not meet these minimum requirements.

2.2 Equipment Decontamination

All equipment used for cleanup work will be inspected and washed, if needed, before it leaves the Site. Trucks will be cleaned at a decontamination pad on the property before leaving the Site.

2.3 Housekeeping

Locations where trucks enter or leave the Site will be inspected every day and cleaned regularly to ensure that they are free of dirt and other materials from the Site.

2.4 Access Road, Site Layout, and Staging

2.4.1 Access Roads

Re-establish roadway from intersection of E 57 Road and S 620 Road, going back to the north from said intersection to job site. Roadway and road base will be constructed to a width of 25 ft to sustain safe two-way truck traffic. Roadway will tie into jobsite loading area and scale area.

2.4.2 Site Layout

Jobsite will be laid out so that haul trucks can enter the site in a loop system beginning by traveling east after crossing Beaver Creek, and continuing in a counter-clockwise direction to get loaded, then cross the Decontamination pad, travel back across Beaver Creek, and finally, enter the clean scale area on west side of the access road in a safe manner. This will eliminate the need for trucks to ~~from~~ back~~ing~~ up in the jobsite area. Material to be hauled off site will be stockpiled along the loading operation loop. This should keep stockpiling ~~for loading operations, by doing this stockpiling should be kept~~ to a minimum. Contaminated soils will be stored separately by type as to avoid cross contamination on site.

2.4.3 Staging

Haul trucks will have safe staging areas on access road for safety meetings etc. Equipment will be staged in a safe area in the exclusion zone. Material will be staged along a loop road for safe loading operations and to minimize stockpiling.

3.0 OFF-SITE MATERIALS TRANSPORT

Whenever possible, the haul vehicles shall use the following roadways listed in descending order of priority: (1) US 69; (2) Hwy 69A, OK 137; (3) E 40 Road, E 50 Road, E 57 Road, S 560 Road, S 565 Road and S 620 Road. The selected route may not necessarily provide the most direct route, but will be selected to provide the safest, and least disruptive (to local traffic) route from the remediation site to the repository or destination. In addition, the schedule for the transportation of source material will be planned to minimize interference with the normal traffic pattern in the area, including school bus traffic. Also, loads will be staggered to omit the need of a staging area for waiting trucks. If staging becomes necessary, trucks will be directed to a pre-defined staging area. Haul routes (including return routes) are set up with concurrence of local officials and take into consideration intersections and areas that have been found to exhibit increased or special hazards, such as areas with low weight limits, decreased visibility, and high-speed oncoming traffic. The base map for the haul routes was generated with assistance from county personnel.

Heavy construction equipment, such as excavators, backhoes, and other support vehicles will remain at the site, to the extent practicable, for the duration of the project to reduce unnecessary mobilization and demobilization. This equipment will remain at the work area until they are no longer needed. Vehicles used by commuting workers will be parked in designated areas.

Prior to initiating hauling activities, specific haul routes to be used at each project site are reviewed, changes made if necessary, and final haul routes are distributed to the public along those routes prior to the start of construction activities.

3.1 Haul Routes

Truck Transport routes are included as **Appendix A.** APPROVAL RECEIVED FROM COUNTY COMMISSIONER JOHN CLARK, October 4, 2013. A. 1) Transportation Route Overview depicts both empty and loaded routes between the project site and the repository. A. 2) Site Map Overview gives a closer view of the project site, access road, and layout. A. 3) Repository Overview gives a closer view of the entrance and exit at the repository.

3.2 Pre-approved Loaded Route

1. Exit site onto E 57 county road, traveling west to OK 137
2. Turn right onto OK 137, traveling north to E 50 county road
3. Turn left onto E 50 county road, traveling west onto State Hwy 69A. *USING EXTREME CAUTION AT THIS INTERSECTION*
4. Continue west on State Hwy 69A for 3 miles
5. Turn right onto S 560 county road, traveling north, merge right onto S 565 county road
6. Turn right onto E 40 county road, traveling east to Repository

3.3 Pre-approved Empty Route

1. Exit Repository onto E 40 county road, traveling east to US 69
2. Turn right onto US 69, traveling south to State Hwy 69A
3. Turn left onto State Hwy 69A / E 50 county road, traveling east to S 620 county road
4. Turn right onto S 620 county road, traveling south to E 57 county road
5. Turn left onto E 57 county road, traveling east to site entrance

3.4 Trucks and Covers

All loaded trucks leaving the Site will be covered in compliance with applicable laws and regulations to prevent dust and odor. Trucks will be properly recorded in logs and records and placarded in compliance with applicable City, County, State, and Federal laws, including those of the State Department of Transportation. If loads contain wet

material that can leak, truck liners will be used. All transport of materials will be performed by licensed truckers and in compliance with all laws and regulations.

3.5 Dust Abatement

The Quapaw Tribe will apply dust abatement measures to the roads used by haul trucks and during loading of trucks, grading, material handling, dumping, and compaction operations as necessary for alleviation or prevention of nuisance dust. However, care will be taken to keep the soil unsaturated; thus minimizing the accumulation of dirt, mud, or debris tracked or dropped onto the roads. The Tribe shall provide a sufficient number of water trucks (with site-derived stormwater and potable water) for dust control use as needed. Storm water that is derived from dewatering active excavation areas
may be used for dust control at the repository and in areas where affected soils are located. Only potable water will be used on roads and areas where there is no existing source material.

To alleviate dust blowing from trucks, loaded trucks will be required to tarp their loads and be appropriately decontaminated prior to leaving a site. Decontamination procedures will be detailed in the site specific documents and will address wet and dry conditions as they vary throughout site activities. Additional best management practices for construction activities are detailed in the SWPPP.

3.6 Wet Material

If loads contain wet material capable of causing leakage from trucks, truck liners will be used. Queuing of trucks will be performed on-Site, when possible in order to minimize off Site disturbance. Off-Site queuing will be minimized.

3.7 Truck Routing

Truck routes have been selected to: (a) limit transport through residential areas and past sensitive nearby properties; (b) maximize use of city-mapped truck routes; (c) limit total distance to major highways; (d) promote safety in entry to highways; (e) promote overall safety in trucking; and (f) minimize off-Site line-ups (queuing) of trucks entering the property. Operators of loaded trucks leaving the Site will be instructed not to stop or idle unnecessarily. Drivers shall only use the county approved haul route(s). Approved haul routes may change anytime during project implementation. Any route revisions can be initiated by QTEO. Revisions may be temporary or permanent depending on the specific situation.

3.8 Traffic Safety Measures

To expedite the passage of traffic through or around the work area including haul routes, the QTEO will require the installation and maintenance of the necessary signs and temporary barricades for the convenience, safety, and direction of personnel. During non-construction periods, non-applicable signs will be temporarily removed or covered. Some of these signs may include but are not limited to "directional arrow" (signs for drivers hauling source materials), "flagger ahead," "trucks entering and exiting the highway ahead," and "road closure ahead" signage. Signage will include electronic message boards located on both sides of an intersection on State roads.

The QTEO will evaluate haul routes for impacts due to inclement weather, road degradation, or changes in community use and will determine need to reroute or suspend hauling operations. These evaluations will be conducted each day prior to the start of operations and throughout the day.

If necessary, as determined by the QTEO, during periods of source material hauling, the QTEO will direct the furnishing of competent flagmen whose main duty will be to direct the movement of traffic through or around the work area and to give adequate warning to drivers of any dangerous conditions to be encountered. Flagmen will also monitor the identity and speed of haul trucks and report any unsafe driving incidents observed or any incident in which a driver is ticketed by law enforcement for a driving violation. The QTEO may elect to prevent drivers from returning to the site who have been observed or documented committing unsafe actions while driving. Flagmen and drivers are required to report to the QTEO driving violations ticketed by law enforcement.

The Quapaw Tribe will coordinate with the repository management on the truck routes to and from the repository to ensure the flow of truck traffic to the repository and in the repository is maintained in an effective manner. Once a schedule for site activities is determined, it shall also be shared with other local contractors, for purposes of route coordination with any other existing projects in the immediate area.

4.0 MATERIALS DISPOSAL OFF-SITE

All impacted soil/fill or other waste excavated and removed from the Site will be managed as regulated material and will be disposed in accordance with applicable laws and regulations. Waste characterization will be performed for off-Site disposal in a manner required by the receiving facility and in conformance with its applicable permits. Waste characterization sampling and analytical methods, sampling frequency, analytical results and QA/QC will be documented per QAPP. A manifest system for off-Site transportation of exported materials will be employed and documented. Hazardous wastes derived from on-Site will be stored, transported, and disposed of in compliance with applicable laws and regulations.

5.0 MATERIALS REUSE ON-SITE

Soil and fill that is derived from the property that meets the soil cleanup objectives established in this plan may be reused on-Site. Uncontaminated material that is excavated during the remedy, does not leave the property, and is relocated within the same property ~~and~~ on comparable soil/fill material, will be reused. Therefore it will ~~and are to~~ be segregated from other materials that are to be exported from the Site.

Organic matter (wood, roots, stumps, etc.) or other waste derived from clearing and grubbing of the Site will not be buried on-Site. Soil or fill excavated from the site for grading or other purposes will not be reused within a cover soil layer or within landscaping berms.

6.0 TRAFFIC CONTROLS

Traffic controls will be used to provide for the efficient completion of truck loading and source material transportation, while minimizing the impact to the normal traffic flow. Traffic controls may include, but will not be limited to the following:

- Loading and transportation of source materials preferably during off-peak hours.
- Apply proper design geometry to access points and all streets that will accommodate trucks and fire apparatus (i.e. especially at ingress and egress ramps transitioning from access roads to haul roads).
- Conduct a brief tailgate presentation and review of this transportation plan and emergency response procedures for all truck drivers prior to the start of work. A signed affidavit that the drivers understand this transportation plan and emergency response procedures will be kept onsite.
- Provide an adequate turning radius in all turning areas.
- Provide sufficient area to park all vehicles onsite.
- Maintain close coordination between the Superintendent, Health and Safety Manager, and Project Manager to ensure safety.
- Schedule transportation trucks to avoid queuing along major streets.
- Cones, flags, signs, and other traffic control measures will be used as needed to facilitate loading and unloading.
- Store material and equipment where it will not interfere with the free and safe passage of personnel.
- At the end of each day's work and when operations are suspended for any reason, the tribe shall remove all equipment and other obstructions from roadways.
- Interim driving distances between trucks and personally owned vehicles will be selected based on safe operating conditions.
- Electronic sign boards will be used on state and county roads to advertise and communicate trucking operations in the area.
- Flyers will be distributed through the community to advertise and communicate upcoming trucking operations in the area.
- Contact the local school operator to communicate activities and coordinate with their schedule of operations to prevent coincidental operation on narrow roadways.
- The drivers will adhere to all speed limit requirements.
- All project haul trucks are required to run with their headlights on at all hours to increase the visibility of the trucks.

- Project trucks shall avoid local school bus routes during the school bus travel hours typically prior to 8 AM and between 3:30-4:15 PM. In the event no alternate routes are available to avoid school bus route, a case by case determination will be made regarding what best safety practices should be incorporated.
- Intersections without necessary signage installed by county or state will be evaluated and additional traffic control measures will be utilized as necessary. This can include petitioning state and county agencies for implementation of additional features.

7.0 RELEASE PREVENTION, RESPONSE, AND REPORTING

7.1 Spill Prevention

The primary activities that may result in a spill include vehicle fueling and management of source material. Spill prevention practices for these activities are as follows:

- **Fueling** – Vehicles will be fueled and serviced prior to moving onto the site. Only mobile refuelers will be used at the sites. Onsite fueling of equipment will be conducted within a designated and controlled area located away from drainage courses to prevent migration of spills. Designated areas for mobile fueling will have secondary containment capable of holding 100 percent of fuel tank capacity No bulk quantities of fuel will be stored onsite unless approved by QTEO.

- **Material Transfer** – Source material transfer operations will only be conducted in areas predesignated for these activities. Spill equipment will be available at these areas for cleanup of source material spilled outside of these designated areas.

- **Source Material Hauling –** Source material will be properly containerized for transport. As such, source material will be placed into dump trucks and covered securely with a tarp prior to transport. Haul trucks will be inspected to ensure they are clean, have no holes, do not leak fuel or oil, have properly operating tailgates, are serviceable, and are weighed empty prior to use.

7.2 Spill Response

In the event of a release of source materials or vehicular fluids into the environment, the release will be contained and controlled. Drivers will have available shovels, 55-gallon drums, and other needed equipment and man power to address spills. Drivers will clean up any spill or release of source material that occurs during transportation or take such action as may be required or approved by federal, state, or local officials. Spilled source material will be immediately cleaned up from the outside of trucks, outside of containers, on the ground, and on the road surface. The spilled material will be returned to the original container if undamaged, but in any case the spilled material will be properly contained and disposed.

7.3 Spill/Release Reporting

See Spill Response Plan for information required and steps in reporting a spill/release.

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Plan Revision History

Plan Version / Revision Date / Revision Reason
Version 1.0 09/01/2013 Plan drafted
Version 1.1 11/21/2013 Plan approved and implemented

Appendix A

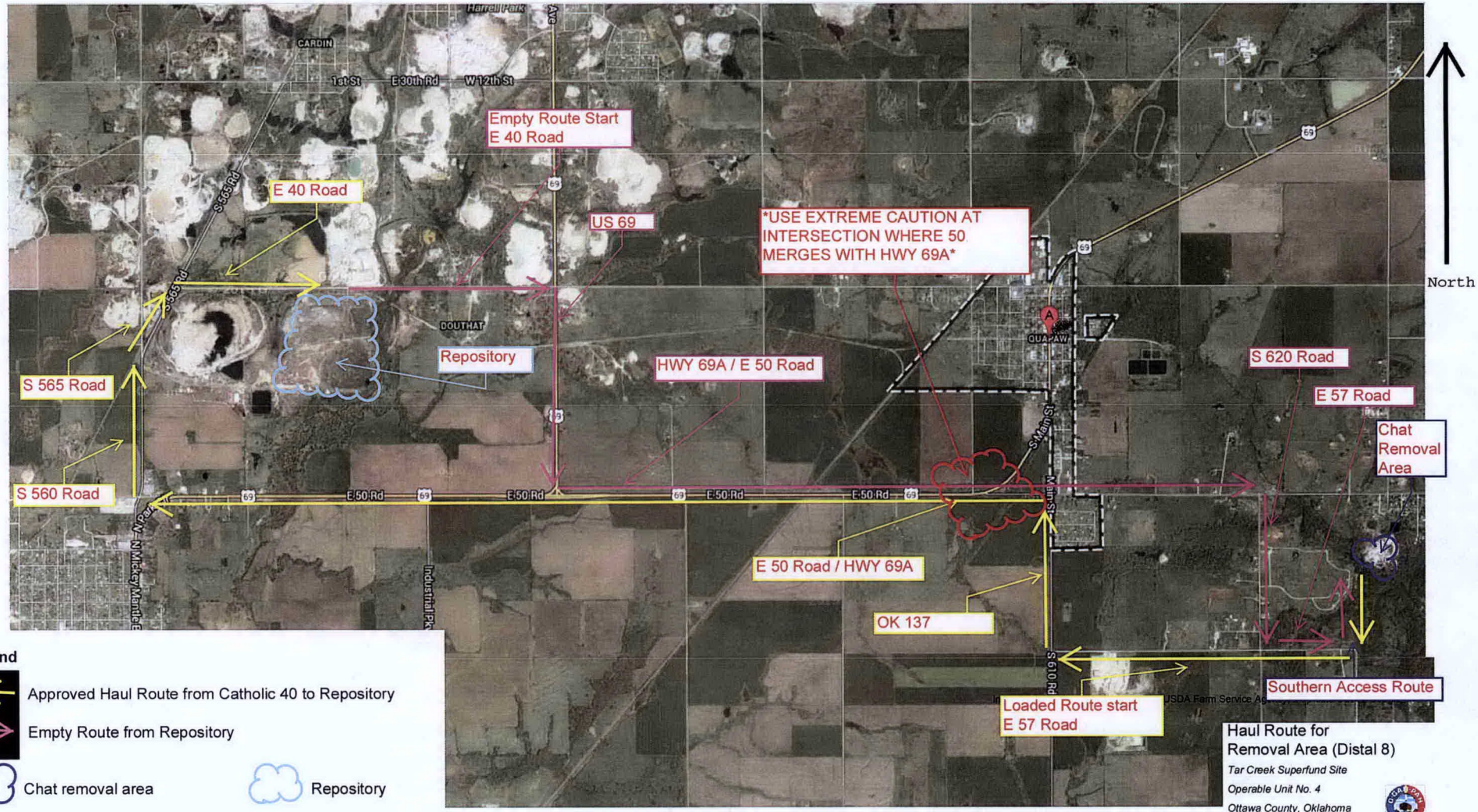
QUAPAW TRIBE ENVIRONMENTAL OFFICE

Truck Transport Routes

[See Attached]

Transportation Plan
Appendix A: Truck Transport Routes
1) Transportation Route Overview

Google



Legend

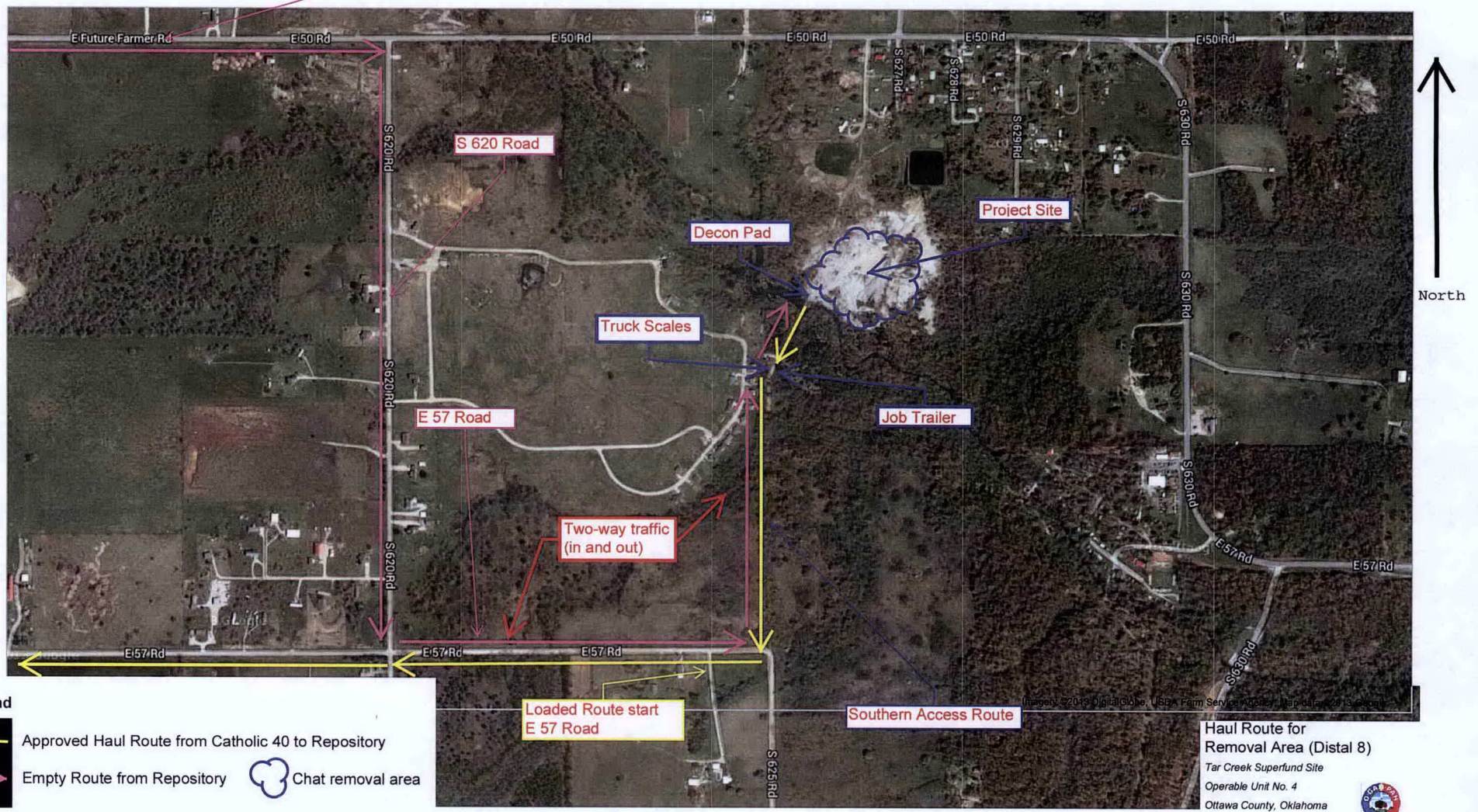
- Approved Haul Route from Catholic 40 to Repository
- Empty Route from Repository
- Chat removal area
- Repository

Haul Route for
Removal Area (Distal 8)
Tar Creek Superfund Site
Operable Unit No. 4
Ottawa County, Oklahoma

Quapaw Tribe of Oklahoma

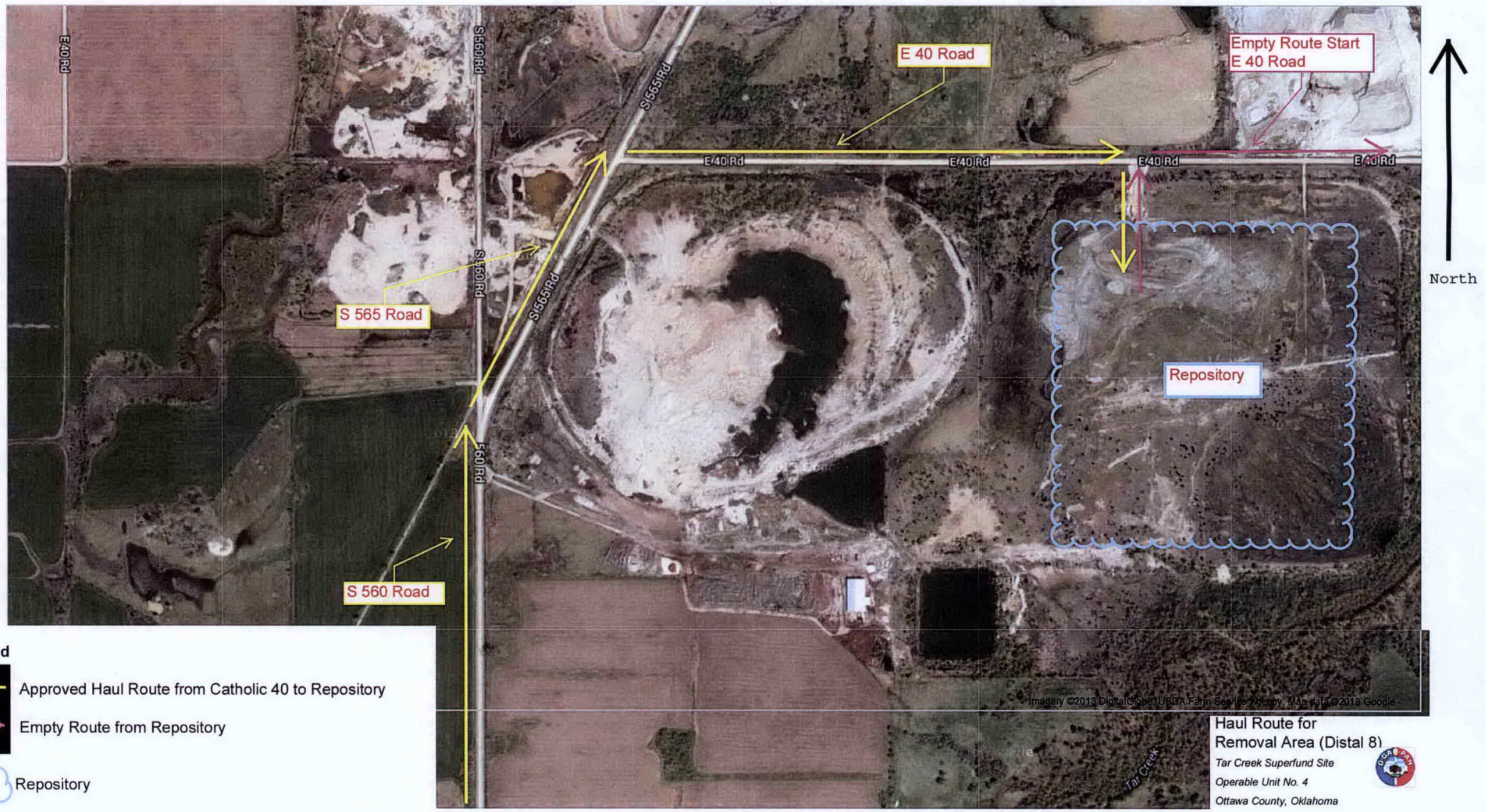
10/4/2013

Transportation Plan
Appendix A: Truck Transport Routes
2) Site Map Overview



Transportation Plan
Appendix A: Truck Transport Routes
3) Repository Overview

Google



Legend

- Approved Haul Route from Catholic 40 to Repository
- Empty Route from Repository
- Repository

Haul Route for
Removal Area (Distal 8)
Tar Creek Superfund Site
Operable Unit No. 4
Ottawa County, Oklahoma

Quapaw Tribe of Oklahoma

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
MIR10000I	Indian country within the State of Michigan
MNR10000I	Indian country within the State of Minnesota
WIR10000I	Indian country within the State of Wisconsin, except the Sokaogon Chippewa (Mole Lake) Community

B.6 EPA Region 6: AR, LA, OK, TX, NM (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands)

US EPA, Region 06
NPDES Stormwater Program
1445 Ross Ave, Suite 1200
Dallas, TX 75202-2733

The States of Louisiana, Oklahoma, and Texas are the NPDES Permitting Authority for the majority of discharges within their respective state. The State of Arkansas is the NPDES Permitting Authority for all discharges within its respective state.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
LAR12000I	Indian country within the State of Louisiana
NMR120000	State of New Mexico, except Indian country
NMR12000I	Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I.
OKR12000I	Indian country within the State of Oklahoma
OKR12000F	Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).
TXR12000F	Discharges in the State of Texas that are not under the authority of the Texas Commission on Environmental Quality (formerly TNRCC), including activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline.
TXR12000I	Indian country within the State of Texas

B.7 EPA Region 7: IA, KS, MO, NE (except see Region 8 for Pine Ridge Reservation Lands)

US EPA, Region 07
NPDES Stormwater Program
901 N 5th St
Kansas City, KS 66101

The States of Iowa, Kansas, and Nebraska are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Missouri is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
IAR12000I	Indian country within the State of Iowa
KSR12000I	Indian country within the State of Kansas
NER12000I	Indian country within the State of Nebraska, except Pine Ridge Reservation lands (see Region 8)

B.8 EPA Region 8: CO, MT, ND, SD, WY, UT (except see Region 9 for Goshute Reservation and Navajo Reservation Lands), the Ute Mountain Reservation in NM, and the Pine Ridge Reservation in NE.

US EPA, Region 08
NPDES Stormwater Program
999 18th St, Suite 300
(EPR-EP)
Denver, CO 80202-2466

The States of Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
COR12000F	Areas in the State of Colorado, except those located on Indian country, subject to construction activity by a Federal Operator
COR12000I	Indian country within the State of Colorado, as well as the portion of the Ute Mountain Reservation located in New Mexico
MTR12000I	Indian country within the State of Montana
NDR12000I	Indian country within the State of North Dakota, as well as that portion of the Standing Rock Reservation located in South Dakota (except for the portion of the lands within the former boundaries of the Lake Traverse Reservation which is covered under South Dakota permit SDR10000I listed below)
SDR12000I	Indian country within the State of South Dakota, as well as the portion of the Pine Ridge Reservation located in Nebraska and the portion of the lands within the former boundaries of the Lake Traverse Reservation located in North Dakota (except for the Standing Rock Reservation which is covered under North Dakota permit NDR10000I listed above)
UTR12000I	Indian country within the State of Utah, except Goshute and Navajo Reservation lands (see Region 9)
WYR12000I	Indian country within the State of Wyoming

B.9 EPA Region 9: CA, HI, NV, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Goshute Reservation in UT and NV, the Navajo Reservation in UT, NM, and AZ, the Duck Valley Reservation in ID, and the Fort McDermitt Reservation in OR.

US EPA, Region 09
NPDES Stormwater Program
75 Hawthorne St
San Francisco, CA 94105-3901

The States of Arizona, California and Nevada are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Hawaii is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
ASR120000	Island of American Samoa
AZR12000I	Indian country within the State of Arizona, as well as Navajo Reservation lands in New Mexico and Utah
CAR12000I	Indian country within the State of California
GUR120000	Island of Guam
JAR120000	Johnston Atoll
MPR120000	Commonwealth of the Northern Mariana Islands
MWR120000	Midway Island and Wake Island
NVR12000I	Indian country within the State of Nevada, as well as the Duck Valley Reservation in Idaho, the Fort McDermitt Reservation in Oregon and the Goshute Reservation in Utah

B.10 EPA Region 10: AK, WA, ID (except see Region 9 for Duck Valley Reservation Lands), and OR (except see Region 9 for Fort McDermitt Reservation).

US EPA, Region 10
NPDES Stormwater Program
1200 6th Ave (OW-130)
Seattle, WA 98101-1128
Phone: (206) 553-6650

The States of Oregon and Washington are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
AKR12000I	Indian country within the State of Alaska
AKR12-000F	Areas in the the Denali National Park and Preserve subject to construction by a Federal Operator
IDR120000	State of Idaho, except Indian country
IDR12000I	Indian country within the State of Idaho, except Duck Valley Reservation lands (see Region 9)
ORR12000I	Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9)
WAR12000F	Areas in the State of Washington, except those located on Indian country, subject to construction activity by a Federal Operator
WAR12000I	Indian country within the State of Washington

Appendix C - Small Construction Waivers and Instructions

These waivers are only available to stormwater discharges associated with small construction activities (i.e., 1-5 acres). As the operator of a small construction activity, you may be able to qualify for a waiver in lieu of needing to obtain coverage under this general permit based on: (A) a low rainfall erosivity factor, (B) a TMDL analysis, or (C) an equivalent analysis that determines allocations for small construction sites are not needed. Each operator, otherwise needing permit coverage, must notify EPA of its intention for a waiver. It is the responsibility of those individuals wishing to obtain a waiver from coverage under this general permit to submit a complete and accurate waiver certification as described below. Where the operator changes or another is added during the construction project, the new operator must also submit a waiver certification to be waived.

C.1 Rainfall Erosivity Waiver

Under this scenario the small construction project's rainfall erosivity factor calculation ("R" in the Revised Universal Soil Loss Equation) is less than 5 during the period of construction activity. The operator must certify to EPA that construction activity will occur only when the rainfall erosivity factor is less than 5. The period of construction activity begins at initial earth disturbance and ends with final stabilization. Where vegetation will be used for final stabilization, the date of installation of a stabilization practice that will provide interim non-vegetative stabilization can be used for the end of the construction period, provided the operator commits (as a condition of waiver eligibility) to periodically inspect and properly maintain the area until the criteria for final stabilization as defined in the construction general permit have been met. If use of this interim stabilization eligibility condition was relied on to qualify for the waiver, signature on the waiver with its certification statement constitutes acceptance of and commitment to complete the final stabilization process. The operator must submit a waiver certification to EPA prior to commencing construction activities.

> *Note: The rainfall erosivity factor "R" is determined in accordance with Chapter 2 of Agriculture Handbook Number 703, Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE), pages 21–64, dated January 1997; United States Department of Agriculture (USDA), Agricultural Research Service.*

EPA has developed an online rainfall erosivity calculator to help small construction sites determine potential eligibility for the rainfall erosivity waiver. You can access the calculator from EPA's website at:www.epa.gov/npdes/stormwater/lew. The R factor can easily be calculated by using the construction site latitude/longitude or address and estimated start and end dates of construction. This calculator may also be useful in determining the time periods during which construction activity could be waived from permit coverage. You may find that moving your construction activity by a few weeks or expediting site stabilization will allow you to qualify for the waiver. Use this online calculator or the Construction Rainfall Erosivity Waiver Fact Sheet (www.epa.gov/npdes/pubs/fact3-1.pdf) to assist in determining the R Factor for your small construction site.

If you are the operator of the construction activity and eligible for a waiver based on low erosivity potential, you can submit a rainfall erosivity waiver electronically via EPA's eNOI system (www.epa.gov/npdes/cgpenoi) or provide the following information on the waiver certification form in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The rainfall erosivity factor calculation that applies to the active construction phase at your project site; and
5. A statement, signed and dated by an authorized representative as provided in Appendix I, Subsection I.11, which certifies that the construction activity will take place during a period when the value of the rainfall erosivity factor is less than five.

You can access the waiver certification form from EPA's website at: (http://www.epa.gov/npdes/pubs/construction_waiver_form.pdf). Paper copies of the form must be sent to one of the addresses listed in Part C.4 of this section.

Note: If the R factor is 5 or greater, you cannot apply for the rainfall erosivity waiver, and must apply for NPDES permit coverage, unless you qualify for the Water Quality Waiver as described in section B below.

If your small construction project continues beyond the projected completion date given on the waiver certification, you must recalculate the rainfall erosivity factor for the new project duration. If the R factor is below five (5), you must update all applicable information on the waiver certification and retain a copy of the revised waiver as part of your records. The new waiver certification must be submitted prior to the projected completion date listed on the original waiver form to assure your exemption from permitting requirements is uninterrupted. If the new R factor is 5 or above, you must obtain NPDES permit coverage.

C.2 TMDL Waiver

This waiver is available if EPA has established or approved a TMDL that addresses the pollutant(s) of concern for the impaired water and has determined that controls on stormwater discharges from small construction activity are not needed to protect water quality. The pollutant(s) of concern include sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. Information on TMDLs that have been established or approved by EPA is available from EPA online at http://www.epa.gov/owow/tmdl/ and from state and tribal water quality agencies.

If you are the operator of the construction activity and eligible for a waiver based on compliance with an EPA-established or approved TMDL, you must provide the following information on the Waiver Certification form in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;

3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the waterbody(s) that would be receiving stormwater discharges from your construction project;
5. The name and approval date of the TMDL;
6. A statement, signed and dated by an authorized representative as provided in Appendix I, Subsection I.11, that certifies that the construction activity will take place and that the stormwater discharges will occur, within the drainage area addressed by the TMDL.

C.3 Equivalent Analysis Waiver

This waiver is available for non-impaired waters only. The operator can develop an equivalent analysis that determines allocations for his/her small construction site for the pollutant(s) of concern or determines that such allocations are not needed to protect water quality. This waiver requires a small construction operator to develop an equivalent analysis based on existing in-stream concentrations, expected growth in pollutant concentrations from all sources, and a margin of safety.

If you are a construction operator who wants to use this waiver, you must develop your equivalent analysis and provide the following information to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the waterbody(s) that would be receiving stormwater discharges from your construction project;
5. Your equivalent analysis;
6. A statement, signed and dated by an authorized representative as provided in Appendix I, Subsection I.11, that certifies that the construction activity will take place and that the stormwater discharges will occur, within the drainage area addressed by the equivalent analysis.

C.4 Waiver Deadlines and Submissions

1. Waiver certifications must be submitted prior to commencement of construction activities.
2. If you submit a TMDL or equivalent analysis waiver request, you are not waived until EPA approves your request. As such, you may not commence construction activities until receipt of approval from EPA.
3. Late Notifications: Operators are not prohibited from submitting waiver certifications after initiating clearing, grading, excavation activities, or other construction activities. The Agency reserves the right to take enforcement for any unpermitted discharges that occur between the time construction commenced and waiver authorization is granted.

Submittal of a waiver certification is an optional alternative to obtaining permit coverage for discharges of stormwater associated with small construction activity, provided you qualify for the waiver. Any discharge of stormwater associated with small construction activity not covered by either a permit or a waiver may be considered an unpermitted discharge under the Clean Water Act. As mentioned above, EPA reserves the right to take enforcement for any unpermitted discharges that occur between the time construction commenced and either discharge authorization is granted or a complete and accurate waiver certification is submitted. EPA may notify any operator covered by a waiver that they must apply for a permit. EPA may notify any operator who has been in non-compliance with a waiver that they may no longer use the waiver for future projects. Any member of the public may petition EPA to take action under this provision by submitting written notice along with supporting justification.

Complete and accurate Rainfall Erosivity waiver certifications not otherwise submitted electronically via EPA's eNOI system (www.epa.gov/npdes/cgpenoi) must be sent to one of the following addresses:

Regular U.S. Mail Delivery
EPA Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Overnight/Express Mail Delivery
EPA Stormwater Notice Processing Center
Room 7420
U.S. EPA
1201Constitution Avenue, NW
Washington, DC 20004

Complete and accurate TMDL or equivalent analysis waiver requests must be sent to the applicable EPA Region office specified in Appendix B.

Appendix D - Endangered Species Act Requirements

The purpose of this guidance is to assist you in complying with the requirements in Part 1.1.e of the permit requiring you to demonstrate that you meet one of the criteria listed in this appendix with respect to the protection of any and all species that are federally-listed as endangered or threatened under the Endangered Species Act (ESA) or of habitat that is federally-designated as "critical habitat" under the ESA in order to be eligible for coverage under this permit.

This guidance provides you information on the following:

- **Section D.1:** ESA Eligibility Criteria
- **Section D.2:** Guidance for Determining Which ESA Criteria Applies

D.1 ESA Eligibility Criteria

You must certify in your NOI that you meet one of the eligibility criteria listed below in order to be eligible for coverage under this permit. You must also specify in the NOI the basis for your selection of the applicable eligibility criterion.

> Note: (1) Regardless of the criterion selected, you must provide documentation in your SWPPP that is sufficient to support your determination that you satisfy the requirements of the particular criterion. (2) While coordination between you and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service (together, the "Services") is not necessarily required in all cases, EPA encourages you to coordinate with the Services and to do so early in the planning process prior to submitting your NOI.

Criterion A. No federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's "action area" as defined in Appendix A of this permit.

Criterion B. The construction site's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your action area under eligibility Criterion A, C, D, E, or F and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the "action area". To certify your eligibility under this Criterion, there must be no lapse of NPDES permit coverage in the other operator's certification. By certifying eligibility under this Criterion, you agree to comply with any effluent limitations or conditions upon which the other operator's certification was based. You must include in your NOI the tracking number from the other operator's notification of authorization under this permit. If your certification is based on another operator's certification under Criterion C, you must provide EPA with the relevant supporting information required of existing dischargers in Criterion C in your NOI form.

Criterion C. Federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in or near your site's "action area," and your site's discharges and discharge-related activities are not likely to adversely affect listed threatened or endangered species or critical habitat. This determination may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to adversely affect listed species and critical habitat. To make this certification, you must include the following in your NOI: 1) any federally listed species and/or designated habitat located in your "action area"; and 2) the distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site map with your NOI.

Criterion D. Coordination between you and the Services has been concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and must have resulted in a written concurrence from the relevant Service(s) that your site's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

Criterion E. Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded. The consultation must have addressed the effects of the construction site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat. The result of this consultation must be either:

i. a biological opinion that concludes that the action in question (taking into account the effects of your site's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species, nor the destruction or adverse modification of critical habitat; or

ii. written concurrence from the applicable Service(s) with a finding that the site's discharges and discharge-related activities are not likely to adversely affect federally-listed species or federally-designated habitat.

You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

Criterion F. Your construction activities are authorized through the issuance of a permit under section 10 of the ESA, and this authorization addresses the effects of the site's discharges and discharge-related activities on federally-listed species and federally-designated critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

You must comply with any applicable terms, conditions, or other requirements developed in the process of meeting the eligibility criteria in this section to remain eligible for coverage under this permit. Documentation of these requirements must be kept as part of your SWPPP (see Part 7.2.14.1).

D.2 Guidance for Determining Which Criterion Applies

Part 1.1.5 of the permit requires that you meet one of the six criteria listed above in order to be eligible for coverage under the permit.

You must follow the procedures in Steps 1through 6 to determine the ESA criterion under which your site is eligible for permit coverage.

D.2.1 Step 1 - Determine if Your Discharges and Discharge-Related Activities Were Already Addressed in Another Operator's Valid Certification that Included Your Action Area.

- **If your discharges and discharge-related activities <u>were</u> already addressed in another operator's valid certification that included your action area** (e.g., a general contractor or developer may have completed and filed an NOI for the entire action area with the necessary ESA certifications (Criterion A, C, D, E, or F)), *you may select eligibility Criterion B on your Notice of Intent form.*

  By certifying eligibility under Criterion B, you must comply with any terms and conditions imposed under the eligibility requirements of Criterion A, C, D, E, or F to ensure that your discharges and discharge-related activities are protective of listed species and/or critical habitat.

  > Note: If you are unable to meet these eligibility requirements, then you may either establish eligibility under one of the other criterion, or you may consider applying to EPA for an individual permit.

  Under Criterion B, you must provide documentation in your SWPPP of any of these terms and conditions, as well as the other operator's basis for establishing eligibility. You must also provide a description of the basis for your selection of Criterion B on your NOI form, including the eligibility criterion (A, C, D, E, or F) that was certified to by the previous operator, and must provide the Tracking Number from the other operator's notification of authorization under this permit.

  If your certification is based on another operator's certification under criterion C, you must provide the documentation required in the NOI for criterion C, namely: 1) what federally listed species and/or designated habitat are located in your "action area"; and 2) what is the distance between your site and the listed species or designated critical habitat (in miles).

- **If discharges and discharge-related activities from your site <u>were not</u> addressed in another operator's valid certification that included your action area,** you must follow the applicable procedures in Steps 2 through 5 below.

D.2.2 Step 2 - Determine if Listed Threatened or Endangered Species or their Designated Critical Habitat(s) are Likely to Occur in your Site's Action Area

You must determine, to the best of your knowledge, whether species listed as either threatened or endangered, or their critical habitat(s) (see definitions of these terms in Appendix A), are located in your site's action area. To make this determination, you should first determine if listed species and/or critical habitat are expected to exist in your county or township. The local offices of the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), and State or Tribal Heritage Centers often maintain lists of federally listed endangered or threatened species on their internet sites. For FWS

terrestrial and aquatic species information, you can use FWS' on-line mapping tool, the Information, Planning, and Consultation (IPAC) System, located at http://www.fws.gov/ipac/.

Note: To determine the field office that corresponds to your project site, visit http://www.fws.gov/endangered/regions/index.html and http://www.nmfs.noaa.gov/ (under the left tabe for "Regions").

In most cases, species and/or critical habitat lists allow you to determine if any such species or habitat exists in your county or township. You can also find critical habitat designations and associated requirements at 50 CFR Parts 17 and 226. http://www.access.gpo.gov.

- ***If there are listed species and/or critical habitat in your county or township***, you should contact your local FWS, NMFS, or State or Tribal Heritage Center to determine if the listed species are known to exist in your action area and if any critical habitat areas have been designated that overlap your action area.
    - If your local FWS, NMFS, or State or Tribal Heritage Center indicates that these species and/or critical habitat could exist in your action area, you must:
        - Do **one or more** of the following:
            - Conduct visual inspections. This method may be particularly suitable for construction sites that are smaller in size or located in non-natural settings such as highly urbanized areas or industrial parks where there is little or no natural habitat, or for construction activities that discharge directly into municipal stormwater collection systems.
            - Conduct a formal biological survey. In some cases, particularly for larger construction sites with extensive stormwater discharges, biological surveys may be an appropriate way to assess whether species are located in the action area and whether there are likely to be adverse effects to such species. Biological surveys are frequently performed by environmental consulting firms. A biological survey may in some cases be useful to conduct in conjunction with Steps Two, Three, or Four of these instructions.
            - If required, conduct an environmental assessment under the National Environmental Policy Act (NEPA). Some construction activities might require review under NEPA for specific reasons, such as federal funding or other federal involvement in the project. Note: Coverage under the CGP does not trigger such a review for individual projects/sites. EPA has complied with NEPA in the issuance of the CGP.

and

- Follow the instructions in Steps 3 – 5 below, as applicable. Note that many but not all measures imposed to protect listed species under these steps will also protect critical habitat. Thus, meeting the eligibility requirements of this CGP may require measures to protect critical habitat that are separate from those to protect listed species.

- ***If there are <u>no</u> listed species in your county or township and <u>no</u> critical habitat areas in your action area,*** *you may check eligibility criterion A on your NOI form.* You must also provide a description of the basis for the criterion selected on your NOI form and provide documentation supporting the criterion selected in your SWPPP.

D.2.3 Step 3 - Determine if the Construction Activity's Discharges or Discharge-Related Activities Are Likely to Adversely Affect Listed Threatened or Endangered Species or Designated Critical Habitat

If in Step 2 you determine based on communication with your local FWS, NMFS, or State or Tribal Heritage Center, or other determination, that listed species and/or critical habitat could exist in your action area, you must next assess whether your discharges or discharge-related activities are likely to adversely affect listed threatened or endangered species or designated critical habitat.

Potential adverse effects from discharges and discharge-related activities include:

- *Hydrological.* Stormwater discharges may cause siltation, sedimentation or induce other changes in receiving waters such as temperature, salinity or pH. These effects will vary with the amount of stormwater discharged and the volume and condition of the receiving water. Where a stormwater discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely. Construction activity itself may also alter drainage patterns on a site where construction occurs that can impact listed species or critical habitat.

- *Habitat.* Excavation, site development, grading, and other surface disturbance activities from construction activities, including the installation or placement of stormwater controls, may adversely affect listed species or their habitat. Stormwater may drain or inundate listed species habitat.

- *Toxicity.* In some cases, pollutants in stormwater may have toxic effects on listed species.

The scope of effects to consider will vary with each site. If you are having difficulty determining whether your project is likely to adversely affect listed species or critical habitat, or one of the Services has already raised concerns to you, you should contact the appropriate office of the FWS, NMFS or Natural Heritage Center for assistance.

- ***If adverse effects to listed threatened or endangered species or their critical habitat <u>are not</u> likely,*** *then you may select eligibility criterion C on the NOI form.* You must provide the following specific information on your NOI form: 1) what federally listed species and/or designated habitat are located in your "action area"; and 2) what is the distance between your site and the listed species or

designated critical habitat (in miles). You must also provide a copy of your site map with your NOI.

- ***If adverse effects to listed threatened or endangered species or their critical habitat <u>are</u> likely,*** you must follow Step 4 below.

D.2.4 Step 4 - Determine if Measures Can Be Implemented to Avoid Adverse Effects

If you make a preliminary determination in Step 3 that adverse effects from your construction activity's discharges or discharge-related activities are likely to occur, you can still receive coverage under eligibility criterion C of the CGP if appropriate measures are undertaken to avoid or eliminate the likelihood of adverse effects prior to applying for CGP coverage.

These measures may involve relatively simple changes to construction activities such as re-routing a stormwater discharge to bypass an area where species are located, relocating stormwater controls, or by modifying the "footprint" of the construction activity. If you are unable to ascertain which measures to implement to avoid the likelihood of adverse effects, you must coordinate or enter into consultation with the FWS and/or NMFS, in which case you would not be eligible for coverage under eligibility criterion C, but may instead be eligible for coverage under eligibility criterion D, E, or F (described in more detail in Step 5).

- **If you are able to install and implement appropriate measures to avoid the likelihood of adverse effects,** *then you may check eligibility criterion C on the NOI form.* The measures you adopt to avoid or eliminate adverse affects must be implemented for the duration of the construction project and your coverage under the CGP. You must also provide a description of the basis for the criterion selected , and the following specific information on your NOI form: 1) what federally listed species and/or designated habitat are located in your "action area"; and 2) what is the distance between your site and the listed species or designated critical habitat (in miles).

- **If you cannot ascertain which measures to implement to avoid the likelihood of adverse effects,** you must follow the procedures in Step 5.

D.2.5 Step 5 - Determine if the Eligibility Requirements of Criterion D, E, or F Can Be Met

If in Step 4 you cannot ascertain which measures to implement to avoid the likelihood of adverse effects, you must contact the FWS and/or NMFS. You may still be eligible for CGP coverage if any likely adverse effects can be addressed through meeting criterion D, E, or F.

- **Criterion D:** You have coordinated with the Services and have addressed the effects of your site's discharges on federally-listed threatened or endangered species and federally-designated critical habitat, which resulted in a written concurrence from the relevant Service(s) that your site's discharges are not likely to adversely affect listed species or critical habitat.

  If you have met the requirements of criterion D, *you may select eligibility criterion D on the NOI form.* You must provide a description of the basis for the criterion selected on your NOI form and must include copies of the correspondence between you and the applicable Service in your SWPPP.

- **Criterion E:** Formal or informal ESA section 7 consultation is performed with the FWS and/or NMFS and that consultation addresses the effects of your discharges and discharge-related activities on federally-listed and threatened species and designated critical habitat. In order to be eligible for coverage under this permit, consultation must result in a "no jeopardy opinion" or a written concurrence by the Service(s) on a finding that your stormwater discharge(s) and stormwater discharge-related activities are not likely to adversely affect listed species or critical habitat (For more information on consultation, see 50 CFR §402). If you receive a "jeopardy opinion," you may continue to work with the FWS and/or NMFS and your permitting authority to modify your project so that it will not jeopardize listed species or designated critical habitat.

  Note that most consultations are accomplished through informal consultation. When conducting informal ESA section 7 consultation as a non-federal representative, you must follow the procedures found in 50 CFR Part 402 of the ESA regulations. You must notify FWS and/or NMFS of your intention and agreement to conduct consultation as a non-federal representative.

  Consultation may occur in the context of another federal action at the construction site (e.g., where ESA section 7 consultation was performed for issuance of a wetlands dredge and fill permit for the project or where a NEPA review is performed for the project that incorporates a section 7 consultation). Any terms and conditions developed through consultations to protect listed species and critical habitat must be incorporated into the SWPPP. As noted above, operators may, if they wish, initiate consultation with the Services at Step Four.

  Whether ESA section 7 consultation must be performed with either the FWS, NMFS or both Services depends on the listed species that may be affected by the operator's activity. In general, NMFS has jurisdiction over marine, estuarine, and anadromous species. Operators should also be aware that while formal section 7 consultation provides protection from incidental takings liability, informal consultation does not.

  If you have met the requirements of criterion E, *you may select eligibility criterion E on the NOI form.* You must provide a description of the basis for the criterion selected on your NOI form and must include copies of the correspondence between yourself and the Services in your SWPPP.

- **Criterion F:** Your construction activities are authorized through the issuance of a permit under section 10 of the ESA, and that authorization addresses the effects of your discharge(s) and discharge-related activities on federally-listed species and designated critical habitat. You must follow FWS and/or NMFS procedures when applying for an ESA Section 10 permit (see 50 CFR §17.22(b)(1) for FWS and §222.22 for NMFS). Application instructions for section 10 permits for FWS and NMFS can be obtained by accessing the FWS and NMFS websites (http://www.fws.gov and http://www.nmfs.noaa.gov) or by contacting the appropriate FWS and NMFS regional office.

  If you have met the requirements of criterion F, *you may select eligibility criterion F on the NOI form.* You must provide a description of the basis for the criterion selected on your NOI form and must include copies of the correspondence between yourself and the Services in your SWPPP.

Appendix E – Historic Property Screening Process

Background

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of Federal "undertakings", such as the issuance of this permit, on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. To address any issues relating to historic properties in connection with the issuance of this permit, EPA has developed the screening process in this appendix that enables construction operators to appropriately consider the potential impacts, if any, of their installation of stormwater controls on historic properties and to determine whether actions can be taken, if applicable, to mitigate any such impacts. Although the coverages of individual construction sites under this permit do not constitute separate Federal undertakings, the screening process in this appendix provides an appropriate site-specific means of addressing historic property issues in connection with EPA's issuance of the permit.

Key Terms

Historic property- prehistoric or historic districts, sites, buildings, structures, or objects that are included in or eligible for inclusion in the National Register of Historic Places, including artifacts, records, and remains that are related to and located within such properties

SHPO – The State Historic Preservation Officer for a particular state

THPO or Tribal representative – The Tribal Historic Preservation Officer for a particular Tribe or, if there is no THPO, the representative designated by such Tribe for NHPA purposes

Instructions for All Construction Operators

You are required to follow the screening process in this appendix to determine if your installation of stormwater controls on your site has the potential to cause effects to historic properties, and whether or not you need to contact your SHPO, THPO, or other tribal representative for further information. You may not submit your NOI until you have completed this screening process. The following four steps describe how applicants can meet the historic property requirements under this permit:

Step 1 *Are you installing any stormwater controls that require subsurface earth disturbance?*

The first step of the screening process is to determine if you will install stormwater controls that cause subsurface earth disturbance. The installation of the following types of stormwater controls require subsurface earth disturbance:

- Dikes
- Berms
- Catch Basins
- Ponds
- Ditches
- Trenches
- Culverts
- Channels
- Perimeter Drains

- Swales

Note: This list is not intended to be exhaustive. Other stormwater controls that are not on this list may involve earth-disturbing activities and must also be examined for the potential to affect historic properties.

Note: You are only required to consider earth-disturbing activities related to the installation of stormwater controls in the NHPA screening process. You are not reqired to conside other earth-disturbing activities a the site. If you are installing one of the above stormwater controls or another type of control that requires subsurface earth disturbance, your project has the potential to have an effect on historic properties. If this is the case, then you must proceed to Step 2.

If you are not installing one of the above stormwater controls or another type of control that requires subsurface earth disturbance, then you may indicate this on your NOI, and no further screening is necessary. During the 14-day waiting period after submitting your NOI, the SHPO, THPO, or other tribal representative may request that EPA hold up authorization based on concerns about potential adverse impacts to historic properties. EPA will evaluate any such request and notify you if any additional measures to address adverse impacts to historic properties are necessary.

Step 2 *Have prior professional cultural resource surveys or other evaluations determined that historic properties do not exist, or have prior disturbances precluded the existence of historic properties?*

If you are installing a stormwater control that requires subsurface earth disturbance, you must next determine if it has already been determined that no historic properties exist on your site based on prior professional cultural resource surveys or other evaluations, or that the existence of historic properties has been precluded because of prior earth disturbances.

If prior to your project it has already been determined that no historic properties exist at your site based on available information, including information that may be provided by your applicable SHPO, THPO, or other tribal representative, then you may indicate this on your NOI, and no further screening steps are necessary. Similarly, if earth disturbances that have occurred prior to your project have eliminated the possibility that historic properties exist on your site, you may indicate this on your NOI, and no further screening steps are necessary. After submitting your NOI, and during the 14-day waiting period, the SHPO, THPO, or other tribal representative may request that EPA hold up authorization based on concerns about potential adverse impacts to historic properties. EPA will evaluate any such request and notify you if any additional measures to address adverse impacts to historic properties are necessary.

If neither of these circumstances exists for your project, you must proceed to Step 3.

Step 3 *If you are installing any stormwater controls that require subsurface earth disturbance, you must determine if these activities will have an effect on historic properties.*

If your answer to the questions in Steps 1 and 2 is "no", *then you must assess whether your earth-disturbing activities related to the installation of stormwater controls will have an effect on historic properties. This assessment may be based on historical sources, knowledge of the area, an assessment of the types of earth-disturbing activities you are engaging in, considerations of*

any controls and/or management practices you will adopt to ensure that your stormwater control-related earth-disturbing activities will not have an effect on historic properties, and any other relevant factors. If you determine based on this assessment that earth disturbances related to the installation of yous stormwater controls will not cause effects to historic properties, you may indicate this on your NOI, and document the basis for your determinatioin in your SWPPP and no further screening steps are necessary. In this case you must also attach a copy of your site map to your NOI. After submitting your NOI, and during the 14-day waiting period, the SHPO, THPO, or other tribal representative may request that EPA hold up authorization based on concerns about potential adverse impacts to historic properties. EPA will evaluate any such request and notify you if any additional measures to address adverse impacts to historic properties are necessary.

If none of the circumstances in Steps 1-3 exist for your project, you must proceed to Step 4.

Step 4: *If you are installing any stormwater controls that require subsurface earth disturbance and you have not satisfied the conditions in Steps 1-3, you must contact and consult with the appropriate historic preservation authorities.*

Where you are installing stormwater controls that require subsurface earth disturbance, and you cannot determine in Step 3 that these activities will not have effects on historic properties, then you must contact the relevant SHPO, THPO, or other tribal representative to request their views as to the likelihood that historic properties are potentially present on your site and may be impacted by the installation of these controls.

Note: Addresses for SHPOs and THPOs may be found on the Advisory Council on Historic Preservation's website (www.achp.gov/programs.html). In instances where a Tribe does not have a THPO you should contact the appropriate Tribal government office designated by the Tribe for this purpose when responding to this permit eligibility condition.

You must submit the following minimum information in order to properly initiate your request for information:

1. Project name (i.e., the name or title most commonly associated with your project);
2. A narrative description of the project;
3. Name, address, phone and fax number, and email address (if available) of the operator;
4. Most recent U.S. Geological Survey (USGS) map section (7.5 minute quadrangle) showing actual project location and boundaries clearly indicated; and
5. Sections of SWPPP site map (see Part 7.2.6) that show locations where stormwater controls that will cause subsurface earth disturbance will be installed (see Step 1).

Without submitting this minimum information, you will not have been considered to have properly initiated your request. You will need to provide the SHPO, THPO, or other tribal representative a minimum of15 calendar days after they receive these materials to respond to your request for information about your project. You are advised to get a receipt from the post office or other carrier confirming the date on which your letter was received.

If you do not receive a response within15 calendar days after receipt by the SHPO, THPO, or other tribal representative of your request, then you may indicate this on your NOI, and no further screening steps are necessary. Or, if the applicable SHPO, THPO, or other tribal representative responds to your request with an indication that no historic properties will be affected by the installation of stormwater controls at your site, then you may indicate this on your NOI, and no further screening steps are necessary. After submitting your NOI, and during the 14-day waiting period, the SHPO, THPO, or other tribal representative may request that EPA hold up authorization based on concerns about potential adverse impacts to historic properties. EPA will evaluate any such request and notify you if any additional measures to address adverse impacts to historic properties are necessary.

If within 15 calendar days of receipt of your request the applicable SHPO, THPO, or other tribal representative responds with a request for additional information or for further consultation regarding appropriate measures for treatment or mitigation of effects on historic properties caused by the installation of stormwater controls on your site, you must comply with this request and proceed to Step 5.

Step 5: *Consultation with your applicable SHPO, THPO, or other tribal representative.*

If, following your discussions with the appropriate historic preservation authorities in Step 4, the applicable SHPO, THPO, or other tribal represenative requests additional information or further consultation, you must respond with such information or to consult to determine impacts to historic properties that may be caused by the installation of stormwater controls on your site and appropriate measures for treatment or mitigation of such impacts. If as a result of your discussions with the applicable SHPO, THPO, or tribal representative, you enter into, and comply with, a written agreement regarding treatment and/or mitigation of impacts on your site, then you may indicate this on your NOI, and no further screening steps are necessary.

If, however, agreement on an appropriate treatment or mitigation plan cannot be reached between you and the SHPO, THPO, or other tribal representative within 30 days of your response to the SHPO, THPO, or other tribal representative's request for additional information or further consultation, you may submit your NOI, but you must indicate that you have not negotiated measures to avoid or mitigate such effects. You must also include in your SWPPP the following documentation:

1. Copies of any written correspondence between you and the SHPO, THPO, or other tribal representative; and
2. A description of any significant remaining disagreements as to mitigation measures between you and the SHPO, THPO, or other tribal representative.

After submitting your NOI, and during the 14-day waiting period, the SHPO, THPO, ACHP or other tribal representative may request that EPA place a hold on authorization based upon concerns regarding potential adverse effects to historic properties. EPA, in coordination with the ACHP, will evaluate any such request and notify you if any additional measures to address adverse effects to historic properties are necessary.

Appendix F - List of Tier 3, Tier 2, and Tier 2.5 Waters

EPA's CGP has special requirements for discharges to waters designated by a state or tribe as Tier 2/2.5 or Tier 3 for antidegradation purposes under 40 CFR 131.12(a). See Parts 1.2.3 and 3.3.

The list below is provided as a resource for operators who must determine whether they discharge to a Tier 2/2.5 or Tier 3 water. Only Tier 2/2.5 or Tier 3 waters specifically identified by a water quality standard authority (e.g., a state, territory, or tribe) are identified in the table below. Many authorities evaluate the existing and protected quality of the receiving water on a pollutant-by-pollutant basis and determine whether water quality is better than the applicable criteria that would be affected by a new discharge or an increase in an existing discharge of the pollutant. In instances where water quality is better, the authority may choose to allow lower water quality, where lower water quality is determined to be necessary to support important social and economic development. Permittees are not required to identify those waters which are evaluated on an individual basis.

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
MAR120000	**Commonwealth of Massachusetts, except Indian Country lands**	
	Tier 2 and Tier 2.5 waters are identified and listed in 314 CMR 4.06 Basin Classification. (314 CMR 4 can be found at DEP's web page at http://www.mass.gov/dep/service/regulations/314cmr04.pdf)	
	Tier 2	Tier 2 waters are listed on a parameter-by-parameter basis.
	Tier 2.5	Tier 2.5 waters are listed as "outstanding resource waters" on the website: http://www.mass.gov/dep/water/laws/tblfig.pdf
NHR120000	**State of New Hampshire**	
	Tier 2/2.5	There is no list of Tier 2/Tier 2.5 waters. New dischargers should contact Ken Edwardson at Kenneth.Edwardson@des.nh.gov.
	Tier 3	Env-Ws 1708.05(a) Surface waters of national forests and surface waters designated as "natural" under RSA 483:7-a, I shall be considered outstanding resource waters (ORW). "Natural waters" are listed at http://www.gencourt.state.nh.us/rsa/html/L/483/483-15.htm. Surface waters of national forests are not included in an official list. For further questions, new dischargers should contact Thelma Murphy (EPA Region 1's stormwater coordinator) at murphy.thelma@epa.gov.
PRR120000	**Commonwealth of Puerto Rico**	
	Tier 3	Tier III waters are those which are classified as either Class SA or Class SE. Class SA waters are defined as "Coastal waters and estuarine waters of high quality and/or exceptional ecological or recreational value whose existing characteristics shall not be altered, except by natural causes, in order to preserve the existing natural phenomena." Class SA waters include bioluminiscent lagoons and bays such as La Parguera and Monsio José on the Southern Coast, Bahía de Mosquito in Vieques, and any other coastal or estuarine waters of exceptional quality of high ecological value or recreational which may be designated by Puerto Rico, through Resolution, as requiring this classification for protection of the waters. Class SE waters are defined

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		as "Surface waters and wetlands of exceptional ecological value, whose existing characteristics should not be altered in order to preserve the existing natural phenomena." Class SE waters include Laguna Tortuguero, Laguna Cartagena and any other surface water bodies of exceptional ecological value as may be designated by Puerto Rico through Resolution.
DCR120000	**District of Columbia**	
	Tier 2/2.5	Rock Creek and its tributaries and Battery Kemble Creek and its tributaries are considered Special Waters of the District of Columbia (SWDC) under its antidegradation program.
MNR12000I	**Fond du Lac Band of MN Chippewa**	
	Tier 3	Six lakes are presently identified as Tier 3: (1) Dead Fish, (2) Jaskari, (3) Miller (Mud), (4) Perch, (5) Rice Portage, (6) Wild Rice.
	Grand Portage Band of MN Chippewa	
	Tier 2/2.5	All waters, not already classified as Tier 3, are high quality Tier 2 waters. (see Grand Portage Reservation Water Quality Standards, Section VI & VII, Pages 14-16).
	Tier 3	"The portion of Lake Superior north of latitude 47 degrees, 57 minutes, 13 seconds, east of Hat Point, south of the Minnesota-Ontario boundary, and west of the Minnesota-Michigan boundary." (see Section VII, Page 16).
WIR12000I	**Lac du Flambeau Band of the Lake Superior Chippewa**	
	Tier 2	All named waters, including wetlands, not specified under an antidegradation classification.
	Tier 2.5	Bills Lake, Birch Lake, Bobidosh Lake, Bog Lake (SE SE Sec. 31, T40NR6E), Bolton Lake, Broken Bow Lake, Chewalah Lake, Clear Lake (Sec. 2, T39NR4E), Corn Great, Great, Corn Lake, Little "Least/Lesser", Crawling Stone Lake, Big, Crawling Stone Lake, Little, Crescent Lake, Crooked Lake, Big, David Lake, Ellerson Lake, Middle, Ellerson Lake, West, Elsie Lake "Boundary Lake", Fat Lake, Fence Lake, Gresham Creek, Green Lake (NW NW Sec. 19, T41R6E), Grey Lake, Gunlock Lake, Haskell Lake, Headflyer Lake (Sec. 19, T41NR5E), Highway Lake (NW NW Sec. 19, T41NR5E), Horsehead Lake (SE SW Sec. 9, T40NR5E), Hutton's Creek, Ike Walton Lake, Lily Lake (SE SW Sec. 35, T40NR5E), Little Ten Lake, Lodge Lake "L. Rice" (NW NW Sec. 8, T41NR6E), Lucy Lake, Mindys Lake (Sec. 8, T40NR5E), Minette Lake, Mitten Lake, Monk's Lake (Sec. 13, T40NR5E), Moving Cloud Lake, Mud Creek, Muskesin Lake, Patterson Lake, Placid Twin Lake (North), Placid Twin Lake (South), Plummer Lake, Poupart Lake, Prairie Lake (NE SW Sec. 13, T40NR4E), Raven Lake, Ross Allen Lake, Sand Lake, Little, Scott Lake (Sec. 22, T40N, R4E), Shishebogama Lake, Signal Lake, Snort Lake (Sec. 5, T41N, R6E), Spring Lake "Jerms", Squirrel Lake, Statenaker Lake "Hollow", Stearns Lake "Hourglass", Sugarbush "Hidden Lake" (NW NW Sec. 17, T41NR5E), Sugarbush Creek, Sugarbush Lake, Little, Sugarbush Lake, Lower, Sugarbush Lake, Middle, Sugarbush Lake, Upper, Sunfish Lake, Tippecanoe Lake, Tomahawk River, To-To Tom Lake, Toulish Lake, Trout River, Warrior Lake, White Sand Lake, Whitefish Lake

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		"Cattail Lake" (Sec. 34, T40N5R), Wishow Lake, Wyandock Lake
	Tier 3	Bear River (1st bridge to Reservation boundary), Big Springs (Sec. 25, T40NR4E), Black Lake, Cranberry Lake, Doud Lake, Eagle Lake, Gene Lake, Johnson Springs, Little Trout Lake, Lost Lake (Sect. 1, T41NR4E), Mishonagon Creek, Munnomin (Jesse, Duck) Lake, Negani (Hegani) Lake, Reservation Line Lake, Spring Creek, Tank Lake, Thomas Lake, Wild Rice Lake, Zee Lake
NMR120000	**State of New Mexico**	
	Tier 3	(1) Rio Santa Barbara, including the west, middle and east forks from. their headwaters downstream to the boundary of the Pecos Wilderness; and (2) the waters within the United States forest service Valle Vidal special management unit including: (a) Rio Costilla, including Comanche, La Cueva, Fernandez, Chuckwagon, Little Costilla, Holman, Gold, Grassy, LaBelle and Vidal creeks, from their headwaters downstream to the boundary of the United States forest service Valle Vidal special management unit; (b) Middle Ponil creek, including the waters of Greenwood Canyon, from their headwaters downstream to the boundary of the Elliott S. Barker wildlife management area; (c) Shuree lakes; (d) North Ponil creek, including McCrystal and Seally Canyon creeks, from their headwaters downstream to the boundary of the United States forest service Valle Vidal special management unit; and (e) Leandro creek from its headwaters downstream to the boundary of the United States forest service Valle Vidal special management unit. (3) the named perennial surface waters of the state, identified in Subparagraph (a) below, located within United States department of agriculture forest service wilderness. Wilderness are those lands designated by the United States congress as wilderness pursuant to the Wilderness Act. Wilderness areas included in this designation are the Aldo Leopold wilderness, Apache Kid wilderness, Blue Range wilderness, Chama River Canyon wilderness, Cruces Basin wilderness, Dome wilderness, Gila wilderness, Latir Peak wilderness, Pecos wilderness, San Pedro Parks wilderness, Wheeler Peak wilderness, and White Mountain wilderness. (a) The following waters are designated in the Rio Grande basin: (i) in the Aldo Leopold wilderness: Byers Run, Circle Seven creek, Flower canyon, Holden Prong, Indian canyon, Las Animas creek, Mud Spring canyon, North Fork Palomas creek, North Seco creek, Pretty canyon, Sids Prong, South Animas canyon, Victorio Park canyon, Water canyon; (ii) in the Apache Kid wilderness Indian creek and Smith canyon; (iii) in the Chama River Canyon wilderness: Chavez canyon, Ojitos canyon, Rio Chama; (iv) in the Cruces Basin wilderness: Beaver creek, Cruces creek, Diablo creek, Escondido creek, Lobo creek, Osha creek; (v) in the Dome wilderness: Capulin creek, Medio creek, Sanchez

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		canyon/creek; (vi) in the Latir Peak wilderness: Bull creek, Bull Creek lake, Heart lake, Lagunitas Fork, Lake Fork creek, Rito del Medio, Rito Primero, West Latir creek; (vii) in the Pecos wilderness: Agua Sarca, Hidden lake, Horseshoe lake (Alamitos), Jose Vigil lake, Nambe lake, Nat lake IV, No Fish lake, North Fork Rio Quemado, Rinconada, Rio Capulin, Rio de las Trampas (Trampas creek), Rio de Truchas, Rio Frijoles, Rio Medio, Rio Molino, Rio Nambe, Rio San Leonardo, Rito con Agua, Rito Gallina, Rito Jaroso, Rito Quemado, San Leonardo lake, Santa Fe lake, Santa Fe river, Serpent lake, South Fork Rio Quemado, Trampas lake (East), Trampas lake (West); (viii) in the San Pedro Parks wilderness: Agua Sarca, Cañon Madera, Cave creek, Cecilia Canyon creek, Clear creek (North SPP), Clear creek (South SPP), Corralitos creek, Dove creek, Jose Miguel creek, La Jara creek, Oso creek, Rio Capulin, Rio de las Vacas, Rio Gallina, Rio Puerco de Chama, Rito Anastacio East, Rito Anastacio West, Rito de las Palomas, Rito de las Perchas, Rito de los Pinos, Rito de los Utes, Rito Leche, Rito Redondo, Rito Resumidero, San Gregorio lake; (ix) in the Wheeler Peak wilderness: Black Copper canyon, East Fork Red river, Elk lake, Horseshoe lake, Lost lake, Sawmill creek, South Fork lake, South Fork Rio Hondo, Williams lake. (b) The following waters are designated in the Pecos River basin: (i) in the Pecos wilderness: Albright creek, Bear creek, Beatty creek, Beaver creek, Carpenter creek, Cascade canyon, Cave creek, El Porvenir creek, Hollinger creek, Holy Ghost creek, Horsethief creek, Jack's creek, Jarosa canyon/creek, Johnson lake, Lake Katherine, Lost Bear lake, Noisy brook, Panchuela creek, Pecos Baldy lake, Pecos river, Rio Mora, Rio Valdez, Rito Azul, Rito de los Chimayosos, Rito de los Esteros, Rito del Oso, Rito del Padre, Rito las Trampas, Rito Maestas, Rito Oscuro, Rito Perro, Rito Sebadilloses, South Fork Bear creek, South Fork Rito Azul, Spirit lake, Stewart lake, Truchas lake (North), Truchas lake (South), Winsor creek; (ii) in the White Mountain wilderness: Argentina creek, Aspen creek, Bonito creek, Little Bonito creek, Mills canyon/creek, Rodamaker creek, South Fork Rio Bonito, Turkey canyon/creek. (c) The following waters are designated in the Gila River basin: (i) in the Aldo Leopold wilderness: Aspen canyon, Black Canyon creek, Bonner canyon, Burnt canyon, Diamond creek, Falls canyon, Fisherman canyon, Running Water canyon, South Diamond creek; (ii) in the Gila wilderness: Apache creek, Black Canyon creek, Brush canyon, Canyon creek, Chicken Coop canyon, Clear creek, Cooper canyon, Cow creek, Cub creek, Diamond creek, East Fork Gila river, Gila river, Gilita creek, Indian creek, Iron creek, Langstroth canyon, Lilley canyon, Little creek, Little Turkey creek, Lookout canyon, McKenna creek, Middle Fork Gila river, Miller Spring canyon, Mogollon creek, Panther canyon, Prior creek, Rain creek, Raw Meat creek, Rocky canyon, Sacaton creek, Sapillo creek, Sheep Corral canyon, Skeleton canyon, Squaw creek, Sycamore canyon, Trail canyon, Trail creek, Trout creek, Turkey creek, Turkey Feather creek, Turnbo canyon,

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		West Fork Gila river, West Fork Mogollon creek, White creek, Willow creek, Woodrow canyon. (d) The following waters are designated in the Canadian River basin: in the Pecos wilderness Daily creek, Johns canyon, Middle Fork Lake of Rio de la Casa, Middle Fork Rio de la Casa, North Fork Lake of Rio de la Casa, Rito de Gascon, Rito San Jose, Sapello river, South Fork Rio de la Casa, Sparks creek (Manuelitas creek). (e) The following waters are designated in the San Francisco River basin: (i) in the Blue Range wilderness: Pueblo creek; (ii) in the Gila wilderness: Big Dry creek, Lipsey canyon, Little Dry creek, Little Whitewater creek, South Fork Whitewater creek, Spider creek, Spruce creek, Whitewater creek. (f) The following waters are designated in the Mimbres Closed basin: in the Aldo Leopold wilderness Corral canyon, Mimbres river, North Fork Mimbres river, South Fork Mimbres river. (g) The following waters are designated in the Tularosa Closed basin: in the White Mountain wilderness Indian creek, Nogal Arroyo, Three Rivers. (h) The wetlands designated are identified on the maps and list of wetlands within United States forest service wilderness areas designated as outstanding national resource waters published at the New Mexico state library and available on the department's website.

Appendix G – Buffer Guidance.

The purpose of this guidance is to assist you in complying with the requirements in Part 2.1.2.1 of the permit regarding the establishment of natural buffers or equivalent sediment controls. This guidance is organized as follows:

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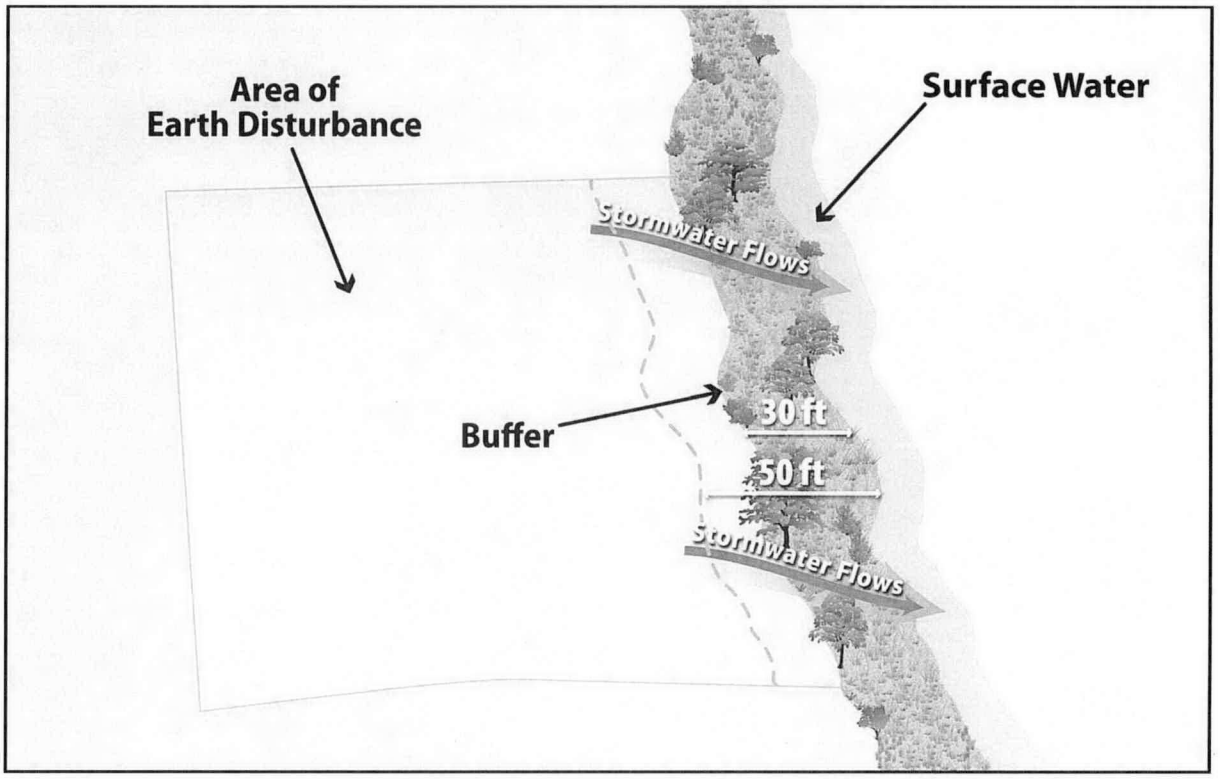
G.1 Sites That Are Required to Comply with Part 2.1.2.1

The purpose of this part is to help you determine if the requirements in Part 2.1.2.1 apply to your site.

G.1.1 Step 1 - Determine if Your Site is Within 50 Feet of a Surface Water

Part 2.1.2.1 applies to you only if your earth-disturbing activities will occur within 50 feet of a surface water that receives stormwater discharges from your site. Figure G – 1 illustrates when a site would be required to comply with the requirements in Part 2.1.2.1 due to their proximity to a surface water. If the surface water is not located within 50 feet of the earth-disturbing activities, Part 2.1.2.1 does not apply.

Figure G - 1. Example of earth-disturbing activities within 50 feet of a surface water.



If you determine that your earth-disturbing activities will occur within 50 feet of a surface water that receives stormwater discharges from your site, the requirements in Part 2.1.2.1 apply, except for certain circumstances that are described in Step 2.

Note that where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, or if a portion of area within 50 feet of the surface water is owned by another party and is not under your control, the buffer requirements in Part 2.1.2.1 still apply, but with some allowances.

Clarity about how to implement the compliance alternatives for these situations is provided in G.2.1.2 and G.2.2.2 below.

Note that EPA does not consider designed stormwater control features *(e.g., stormwater conveyance channels, storm drain inlets, stormwater basins)* that direct storm water to surface waters more than 50 feet from the disturbance to constitute surface waters for the purposes of determining if the buffer requirements apply.

G.1.2 Step 2 - Determine if Any Exceptions to the Requirements in Part 2.1.2.1 Apply

The following exceptions apply to the requirements in Part 2.1.2.1:

- If there is no discharge of stormwater to surface waters through the area between the disturbed portions of the site and any surface waters located within 50 feet of your site, you are not required to comply with the requirements in this Part. This includes situations where you have implemented controls measures, such as a berm or other barrier, that will prevent such discharges.
- Where no natural buffer exists due to preexisting development disturbances *(e.g., structures, impervious surfaces)* that occurred prior to the initiation of planning for the current development of the site, you are not required to comply with the requirements in this Part.

  Where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, you <u>are</u> required to comply with the requirements in this Part. For the purposes of calculating the sediment load reduction for either compliance alternative 2 or 3 below, you are not expected to compensate for the reduction in buffer function that would have resulted from the area covered by these preexisting disturbances. Clarity about how to implement the compliance alternatives for these situations is provided in G.2.1.2 and G.2.2.2 below.

  If during your project, you will disturb any portion of these preexisting disturbances, the area removed will be deducted from the area treated as natural buffer.
- For "linear construction projects" (see Appendix A), you are not required to comply with this requirement if site constraints *(e.g., limited right-of-way)* prevent you from complying with the requirements of the alternatives in Part 2.1.2.1a, provided that, to the extent practicable, you limit disturbances within 50 feet of the surface water and/or you provide supplemental erosion and sediment controls to treat stormwater discharges from earth disturbances within 50 feet of the surface water. You must also document in your SWPPP your rationale for why it is infeasible for you to comply with the requirements in Part 2.1.2.1a, and describe any buffer width retained and/or supplemental erosion and sediment controls installed.
- For "small residential lot" construction *(i.e., a lot being developed for residential purposes that will disturb less than 1 acre of land, but is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre)*, you have the option of complying with the requirements in Part G.2.3 of this appendix.
- The following disturbances within 50 feet of a surface water are exempt from the requirements in this Part:

  - Construction approved under a CWA Section 404 permit; or

- Construction of a water-dependent structure or water access areas *(e.g., pier, boat ramp, trail)*.

Note that you must document in your SWPPP if any disturbances related to any of the above exceptions occurs within the buffer area on your site.

G.2 COMPLIANCE ALTERNATIVES GUIDANCE

If in Part G.1 of this guidance you determine that the buffer requirements apply to your site, you have three compliance alternatives from which you can choose:

1. Provide and maintain a 50-foot buffer undisturbed natural buffer (Part 2.1.2.1a.i);[1] or
2. Provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer (Part 2.1.2.1a.ii);[1] or
3. If it is infeasible to provide and maintain an undisturbed natural buffer of any size, you must implement erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer (Part 2.1.2.1a.iii).[1]

The compliance alternative selected above must be maintained throughout the duration of permit coverage.

The following provides detailed guidance for how you can comply with each of the compliance alternatives. Part G.2.1 below provides guidance on how to provide and maintain natural buffers consistent with the alternatives 1 and 2, above. Part G.2.2 below provides guidance on how to comply with the requirement to provide a 50-foot buffer equivalent through erosion and sediment controls consistent with alternatives 2 and 3, above.

G.2.1 Guidance for Providing and Maintaining Natural Buffers

The following guidance is intended to assist you in complying with the requirements to provide and maintain a natural buffer during construction. This part of the guidance applies to you if you choose either alternative 1 (50-foot buffer) or alternative 2 (a buffer of < 50 feet supplemented by additional erosion and sediment controls that achieve the equivalent sediment load reduction as the 50-foot buffer), or if you are providing a buffer in compliance with one of the small residential lot compliance alternatives in Part G.2.3 below.

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[1] *For the compliance alternatives in 1 and 2, you are not required to enhance the quality of the vegetation that already exists in the buffer, or provide vegetation if none exists (e.g., arid and semi-arid areas). You only need to retain and protect from disturbance the natural buffer that existed prior to the commencement of construction. Any preexisting structures or impervious surfaces are allowed in the natural buffer provided you retain and protect from disturbance the natural buffer area outside the preexisting disturbance. Similarly, for alternatives 2 and 3, you are required to implement and maintain sediment controls that achieve the sediment load reduction equivalent to the undisturbed natural buffer that existed on the site prior to the commencement of construction. In determining equivalent sediment load reductions, you may consider naturally non-vegetated areas and prior disturbances. See Part G.2.2 of this Appendix for a discussion of how to determine equivalent reductions.*

G.2.1.1 *Buffer Width Measurement*

Where you are retaining a buffer of any size, the buffer should be measured perpendicularly from any of the following points, whichever is further landward from the water:

1. The ordinary high water mark of the water body, defined as the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, and/or the presence of litter and debris; or
2. The edge of the stream or river bank, bluff, or cliff, whichever is applicable.

Refer to Figure G – 2 and Figure G - 3. You may find that specifically measuring these points is challenging if the flow path of the surface water changes frequently, thereby causing the measurement line for the buffer to fluctuate continuously along the path of the waterbody. Where this is the case, EPA suggests that rather than measuring each change or deviation along the water's edge, it may be easier to select regular intervals from which to conduct your measurement. For instance, you may elect to conduct your buffer measurement every 5 to 10 feet along the length of the water.

Additionally, note that if earth-disturbing activities will take place on both sides of a surface water that flows through your site, to the extent that you are establishing a buffer around this water, it must be established on both sides. For example, if you choose alternative 1 above, and your project calls for disturbances on both sides of a small stream, you would need to retain the full 50 feet of buffer on both sides of the water. However, if your construction activities will only occur on one side of the stream, you would only need to retain the 50-foot buffer on the side of the stream where the earth-disturbance will occur.

Figure G - 2. This image shows buffer measurement from the ordinary high water mark of the water body, as indicated by a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, and/or the presence of litter/debris.

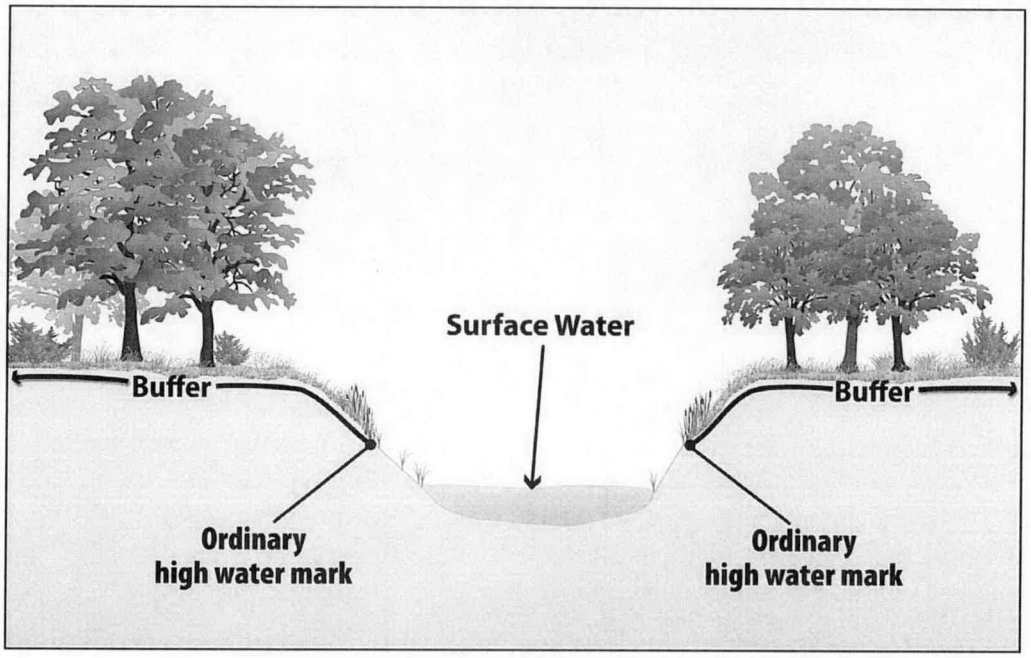
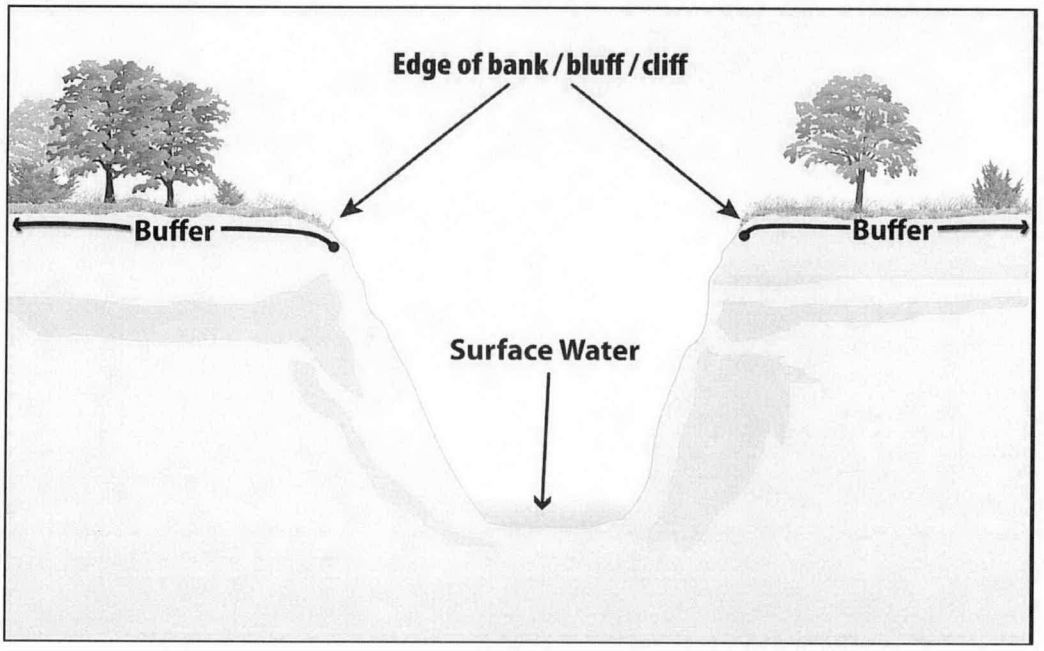


Figure G - 3. This image shows buffer measurement from the edge of the bank, bluff, or cliff, whichever is applicable.



G.2.1.2 *Limits to Disturbance Within the Buffer*

You are considered to be in compliance with this requirement if you retain and protect from construction activities the natural buffer that existed prior to the commencement of construction. If the buffer area contains no vegetation prior to the commencement of construction (e.g., sand or rocky surface), you are not required to plant any additional vegetation. As noted above, any preexisting structures or impervious surfaces are allowed in the buffer provided you retain and protect from disturbance the vegetation in the buffer outside the preexisting disturbance.

To ensure that the water quality protection benefits of the buffer are retained during construction, you are prohibited from conducting any earth-disturbing activities within the buffer during permit coverage. In furtherance of this requirement, prior to commencing earth-disturbing activities on your site, you must delineate, and clearly mark off, with flags, tape, or a similar marking device, the buffer area on your site. The purpose of this requirement is to make the buffer area clearly visible to the people working on your site so that unintended disturbances are avoided.

While you are not required to enhance the quality of the vegetation that already exists within the buffer, you are encouraged to do so where such improvements will enhance the water quality protection benefits of the buffer. (Note that any disturbances within the buffer related to buffer enhancement are permitted and do not constitute construction disturbances.) For instance, you may want to consider targeted plantings where limited vegetation exists, or replacement of existing vegetation where invasive or noxious plant species (see http://plants.usda.gov/java/noxiousDriver) have taken over. In the case of invasive or noxious species, you may want to remove and replace them with a diversity of native trees, shrubs, and herbaceous plants that are well-adapted to the climatic, soil, and hydrologic conditions on the site. You are also encouraged to limit the removal of naturally deposited leaf litter, woody debris, and other biomass, as this material contributes to the ability of the buffer to retain water and filter pollutants.

If a portion of the buffer area adjacent to the surface water is owned by another party and is not under your control, you are only required to retain and protect from construction activities the portion of the buffer area that is under your control. For example, if you elect alternative 1 above (provide and maintain a 50-foot buffer), but 10 feet of land immediately adjacent to the surface water is owned by a different party than the land on which your construction activities are taking place and you do not have control over that land, you must only retain and protect from construction activities the 40-foot buffer area that occurs on the property on which your construction activities are taking place. EPA would consider you to be in compliance with this requirement regardless of the activities that are taking place in the 10-foot area that is owned by a different party than the land on which your construction activities are taking place that you have no control over.

G.2.1.3 *Discharges to the Buffer*

You must ensure that all discharges from the area of earth disturbance to the natural buffer are first treated by the site's erosion and sediment controls (*for example, you must comply with the Part 2.1.2.2 requirement to establish sediment controls around the downslope perimeter of your site disturbances*), and if necessary to prevent erosion caused by stormwater flows within the buffer, you must use velocity dissipation devices. The purpose of this requirement is to decrease the rate of stormwater flow and

encourage infiltration so that the pollutant filtering functions of the buffer will be achieved. To comply with this requirement, construction operators typically will use devices that physically dissipate stormwater flows so that the discharge entering the buffer is spread out and slowed down.

G.2.1.4 *SWPPP Documentation*

You are required to document in your SWPPP the natural buffer width that is retained. For example, if you are complying with alternative 1, you must specify in your SWPPP that you are providing a 50-foot buffer. Or, if you will be complying with alternative 2, you must document the reduced width of the buffer you will be retaining (and you must also comply with the requirements in Part 2.1.2.1c to describe the erosion and sediment controls you will use to achieve an equivalent sediment reduction, as described in Part G.2.2 below). Note that you must also show any buffers on your site plan in your SWPPP consistent with Part 7.2.6.3. Additionally, if any disturbances related to the exceptions in Part 2.1.2.1e occur within the buffer area, you must document this in the SWPPP.

G.2.2 Guidance for Providing the Equivalent Sediment Reduction as the 50-foot Buffer

If you are selecting Alternative 2 (provide and maintain a buffer that is less than 50 feet that is supplemented by additional erosion and sediment controls that, together, achieve the equivalent sediment load reduction as the 50-foot buffer) or Alternative 3 (implement erosion and sediment controls that achieve the equivalent sediment load reduction as the 50-foot buffer), the following guidance is intended to assist you in demonstrating that you will achieve the equivalent sediment reduction as the 50-foot buffer.

G.2.2.1 *Determine Whether it is Feasible to Provide a Reduced Buffer*

EPA recognizes that there will be a number of situations in which it will be infeasible to provide and maintain a buffer of any width. While some of these situations may exempt you from the buffer requirement entirely (see G.1.2), if you do not qualify for one of these exemptions, there still may be conditions or circumstances at your site that make it infeasible to provide a natural buffer. For example, there may be sites where a significant portion of the property on which the earth-disturbing activities will occur is located within the buffer area, thereby precluding the retention of natural buffer areas. EPA believes there are likely to be other examples of situations that make it infeasible to provide any buffer area.

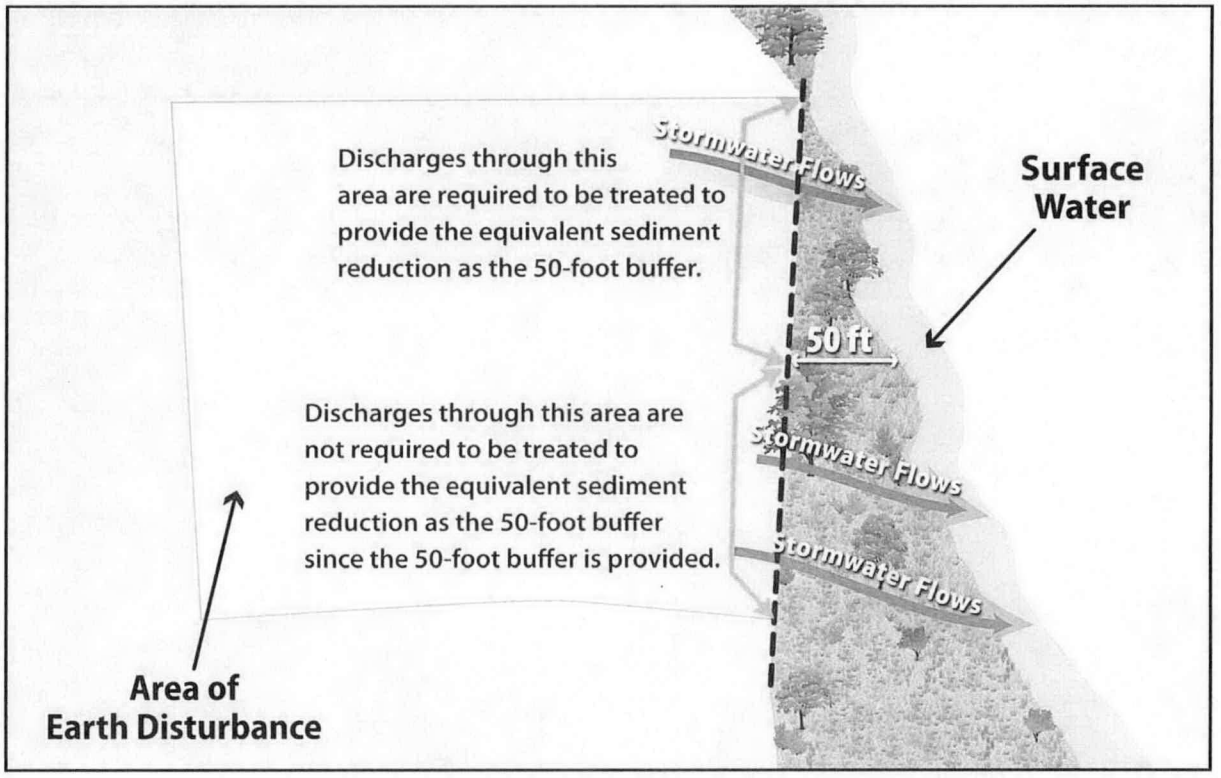
Therefore, in choosing between the 2 different compliance alternatives (Alternative 2 or 3), you should only elect to comply with Alternative 2 if it is feasible for you to retain any natural buffer on your site. (Note: For any buffer width retained, you are required to comply with the requirements in Part G.2.1, above, concerning the retention of vegetation and restricting earth disturbances.) Similarly, if you determine that it is infeasible to provide a natural buffer of any size during construction, you should elect to comply with Alternative 3. After making this determination, you should proceed to Part G.2.2.2 to determine how to provide controls that, together with any buffer areas that is being retained, if applicable, will achieve an equivalent sediment load reduction as the 50-foot buffer.

G.2.2.2 *Design Controls That Provide Equivalent Sediment Reduction as 50-foot Buffer*

You must next determine what additional controls must be implemented on your site that, alone or in combination with any retained natural buffer, achieve a reduction in sediment equivalent to that achieved by a 50-foot buffer.

Note that if only a portion of the natural buffer is less than 50 feet, you are only required to implement erosion and sediment controls that achieve the sediment load reduction equivalent to the 50-foot buffer for discharges through that area. You would not be required to provide treatment of stormwater discharges that flow through 50 feet or more of natural buffer. See Figure G - 4.

Figure G - 4 Example of how to comply with the requirement to provide the equivalent sediment reduction when only a portion of your earth-disturbances discharge to a buffer of less than 50-feet.



To comply with this requirement, you are required to do the following:

Step1 - Estimate the sediment reduction expected from your site if you had retained a 50-foot natural buffer;

Step 2 - Design controls that alone or in combination with any width of buffer retained achieve the equivalent sediment removal efficiency as that expected from the 50-foot buffer; and

Step 3 - Document in your SWPPP how your controls will achieve the equivalent sediment removal efficiency of the 50-foot buffer.

Guidelines to help you work through these requirements are provided below.

a. Step 1 - Estimate the Sediment Reduction from the 50-foot Buffer

In order to design controls that match the sediment removal efficiency of a 50-foot buffer, you first need to know what this efficiency is for your site. The sediment removal efficiencies of natural buffers vary according to a number of site-specific factors, including precipitation, soil type, land cover, slope length, width, steepness, and the types of sediment controls used to reduce the discharge of sediment prior to the buffer. EPA has simplified this calculation by developing buffer performance tables covering a range of vegetation and soil types for the areas covered by the CGP. See Attachment 1, Tables G - 8 through G - 15. Note: buffer performance values in Tables G - 8 through G - 15 represent the percent of sediment captured through the use of perimeter controls (e.g., silt fences) and 50-foot buffers at disturbed sites of fixed proportions and slopes.[2]

Using Tables G - 8 through G - 15 (see Attachment 1), you can determine the sediment removal efficiency of a 50-foot buffer for your geographic area by matching the vegetative cover type that best describes your buffer area and the type of soils that predominate at your site. For example, if your site is located in Massachusetts (Table G - 9), and your buffer vegetation corresponds most closely with that of tall fescue grass, and the soil type at your site is best typified as sand, your site's sediment removal efficiency would be 81 percent.

In this step, you should choose the vegetation type in the tables that most closely matches the vegetation that would exist naturally in the buffer area on your site regardless of the condition of the buffer. However, because you are not required to plant any additional vegetation in the buffer area, in determining what controls are necessary to meet this sediment removal equivalency in Step 2 below, you will be able to take credit for this area as a fully vegetated "natural buffer."

Similarly, if a portion of the buffer area adjacent to the surface water is owned by another party and is not under your control, you can treat the area of land not

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[2] EPA used the following when developing the buffer performance tables:

- The sediment removal efficiencies are based on the U.S. Department of Agriculture's RUSLE2 ("Revised Universal Soil Loss Equation 2") model for slope profiles using a 100-foot long denuded slopes.
- Sediment removal was defined as the annual sediment delivered at the downstream end of the 50-foot natural buffer (tons/yr/acre) divided by the annual yield from denuded area (tons/yr/acre).
- As perimeter controls are also required by the CGP, sediment removal is in part a function of the reduction due to a perimeter control (i.e., silt fence) located between the disturbed portion of the site and the upstream edge of the natural buffer and flow traveling through a 50-foot buffer of undisturbed natural vegetation.
- It was assumed that construction sites have a relatively uniform slope without topographic features that accelerate the concentration for erosive flows.
- It was assumed that vegetation has been removed from the disturbed portion of the site and a combination of cuts and fills have resulted in a smooth soil surface with limited retention of near-surface root mass

To represent the influence of soil, EPA analyzed 11 general soil texture classifications in its evaluation of buffer performance. To represent different types of buffer vegetation, EPA evaluated 4 or more common vegetative types for each state/territory covered under the permit. For each vegetation type evaluated, EPA considered only permanent, non-grazed and non-harvested vegetation, on the assumption that a natural buffer adjacent to the surface water will typically be undisturbed. EPA also evaluated slope steepness and found that sediment removal efficiencies present in Tables G -8 through G - 15 are achievable for slopes that are less than nine percent.

under control as having the equivalent vegetative cover and soil type that predominates on the portion of the property on which your construction activities are occurring.

> *For example, if your earth-disturbances occur within 50 feet of a surface water, but the 10 feet of land immediately adjacent to the surface water is owned by a different party than the land on which your construction activities are taking place and you do not have control over that land, you can treat the 10 foot area adjacent to the stream as having the equivalent soil and vegetation type as predominates in the 40 foot area under your control. You would then make the same assumption in Step 2 for purposes of determining the equivalent sediment removal.*

Alternatively, you may do your own calculation of the effectiveness of the 50-foot buffer based upon your site-specific conditions, and may use this number as your sediment removal equivalency standard to meet instead of using Tables G - 8 through G - 15. This calculation must be documented in your SWPPP.

b. <u>Step 2 - Design Controls That Match the Sediment Removal Efficiency of the 50-foot Buffer</u>

Once you have determined the estimated sediment removal efficiency of a 50-foot buffer for your site in Step 1, you will be required to select stormwater controls that will provide an equivalent sediment load reductions. These controls can include the installation of a single designed control, such as a sediment pond, additional perimeter controls, or other type of device. Alternatively, you may elect to install a combination of stormwater controls and to retain some amount of a buffer. Whichever control(s) you select, you must demonstrate in your SWPPP that the controls will provide at a minimum the same sediment removal capabilities as the 50-foot buffer (Step 1). You are allowed to take credit for the removal efficiencies of your required perimeter controls in your calculation of equivalency, because these were included in calculating the buffer removal efficiencies in tables G - 8 through G - 15. (Note: You are reminded that the controls must be kept in effective operating condition until you have completed final stabilization on the disturbed portions of the site discharging to the surface water.)

To make the determination that your controls and/or buffer area achieve an equivalent sediment load reduction as the 50-foot buffer, you will need to use a model or other type of calculator. As mentioned above, there are a variety of models available that can be used to support your calculation, including USDA's RUSLE-series programs and the WEPP erosion model, SEDCAD, SEDIMOT, or other models. A couple of examples are provided in Attachment 3 to help illustrate how this determination could be made.

If you are retaining a buffer of less than 50 feet, you may take credit for the removal that will occur from the reduced buffer and only need to provide additional controls to make up the difference between the removal efficiency of a 50 foot buffer and the removal efficiency of the narrower buffer. For example, if you are retaining a 30 foot buffer, you can account for the sediment removal provided by the 30-foot buffer retained, and you will only need to design controls to make up for the additional removal provided by the 20-foot of buffer that is not being provided. To do this, you would plug the width of the buffer that is

retained into RUSLE or another model, along with other stormwater controls that will together achieve a sediment reduction equivalent to a natural 50-foot buffer.

As described in Step 1 above, you can take credit for the area you have retained as a "natural buffer" as being fully vegetated, regardless of the condition of the buffer area.

> *For example, if your earth-disturbances occur 30 feet from a surface water, but the 10 feet of land immediately adjacent to the surface water is owned by a different party than the land on which your construction activities are taking place and you do not have control over that land, you can treat the 10-foot area as a natural buffer, regardless of the activities that are taking place in the area. Therefore, you can assume (for purposes of your equivalency calculation) that your site is providing the sediment removal equivalent of a 30-foot buffer, and you will only need to design controls to make up for the additional removal provided by the 20-foot of buffer that is not being provided.*

c. Step 3 - Document How Site-Specific Controls Will Achieve the Sediment Removal Efficiency of the 50-foot Buffer

In Steps 1 and 2, you determined both the expected sediment removal efficiency of a 50-foot buffer at your site, and you used this number as a performance standard to design controls to be installed at your site, which alone or in combination with any retained natural buffer, achieves the expected sediment removal efficiency of a 50-foot buffer at your site. The final step is to document in your SWPPP the information you relied on to calculate the equivalent sediment reduction as an undisturbed natural buffer.

EPA will consider your documentation to be sufficient if it generally meets the following:

- For Step 1, refer to the table in Attachment 1 that you used to derive your estimated 50-foot buffer sediment removal efficiency performance. Include information about the buffer vegetation and soil type that predominate at your site, which you used to select the sediment load reduction value in Tables G - 8 through G - 15. Or, if you conducted a site-specific calculation for sediment removal efficiency, provide the specific removal efficiency, and the information you relied on to make your site-specific calculation.
- For Step 2: (1) Specify the model you used to estimate sediment load reductions from your site; and (2) the results of calculations showing how your controls will meet or exceed the sediment removal efficiency from Step 1.

If you choose Alternative 3, you must also include in your SWPPP a description of why it is infeasible for you to provide and maintain an undisturbed natural buffer of any size.

G.2.3 Small Residential Lot Compliance Alternatives

In this part of Appendix G, EPA provides additional compliance alternatives for operators of small residential lots. In accordance with Part 2.1.2.1e.iv, operators of small residential lots who do not provide a 50-foot buffer are not required to make the demonstration outlined in Part G.2.2.2. Instead, qualifying operators can comply with the buffer requirement by choosing to implement a set of traditional sediment and erosion controls from the menu of practices provided in Part G.2.3.2.

> A **small residential lot** is a lot or grouping of lots being developed for residential purposes that will disturb less than 1 acre of land, but that is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre.

EPA has developed two different alternatives for compliance. The following steps describe how a small residential lot operator would achieve compliance with these 2 alternatives.

G.2.3.1 *Step 1 – Determine if You are Eligible for the Small Residential Lot Compliance Alternatives*

In order to be eligible for the small residential lot compliance alternatives, the following conditions must be met:

a. The lot or grouping of lots meets the definition of "small residential lot"; and

b. The operator must comply with all other requirements in Part 2.1.2.1, including:

i. Ensure that all discharges from the area of earth disturbance to the natural buffer are first treated by the site's erosion and sediment controls, and use velocity dissipation devices if necessary to prevent erosion caused by stormwater within the buffer;

ii. Document in the SWPPP the natural buffer width retained on the property, and show the buffer boundary on your site plan; and

iii. Delineate, and clearly mark off, with flags, tape, or other similar marking device, all natural buffer areas.

G.2.3.2 *Step 2 – Implement the Requirements of the Small Residential Lot Compliance Alternative Selected*

You must next choose from one of two small residential lot compliance alternatives and implement the stormwater control practices associated with that alternative.

Note: The compliance alternatives provided below are not mandatory. Operators of small residential lots can alternatively choose to comply with the any of the options that are available to other sites in Part 2.1.2.1a, described in Parts G.2.1 and G.2.2 in this appendix.

a. <u>Small Residential Lot Compliance Alternative 1</u>

Alternative 1 is a straightforward tiered- technology approach that specifies the controls that a small residential lot must implement based on the buffer width retained. To achieve compliance with Alternative 1, you must implement the

controls specified in Table G – 1 based on the buffer width to be retained. See footnote 3, below, for a description of the controls you must implement.

For example, if you are an operator of a small residential lot that will be retaining a 35-foot buffer and you choose Small Residential Lot Compliance Alternative 1, you must implement double perimeter controls between earth disturbances and the surface water.

In addition to implementing the applicable control, you must also document in your SWPPP how you will comply with Alternative 1.

Table G - 1. Alternative 1 Requirements[3]

Retain 50-foot Buffer	Retain <50 and >30 foot Buffer	Retain ≤ 30 foot Buffer
No Additional Requirements	Double Perimeter Controls	Double Perimeter Controls and 7-Day Site Stabilization

b. Small Residential Lot Compliance Alternative 2

Alternative 2 specifies the controls that a builder of a small lot must implement based on both the buffer width retained and their risk of sediment discharge. By incorporating the sediment risk, this approach may result in the implementation of controls that are more appropriate for the site's specific conditions.

Step 1 – Determine Your Site's Sediment Risk Level

To meet the requirements of Alternative 2, you must first determine your site's sediment discharge "risk level" based on the site's slope, location, and soil type. To help you to determine your site's sediment risk level, EPA has developed five different tables for different slope conditions. You must select the table that most closely corresponds to your site's average slope.

For example, if your site's average slope is 7 percent, you would use Table G – 4 to determine your site's sediment risk.

After you determine which table applies to your site, you must then use the table to determine the "risk level" (e.g., "low", "moderate", or "high") that corresponds to your site's location and predominant soil type.[4]

For example, based on Table G - 3, a site located in New Hampshire with a 4 percent average slope and with predominately sandy clay loam soils would fall into the "moderate" risk level.

[3] **Description of Additional Controls Applicable to Small Residential Lot Compliance Alternatives 1 and 2:**

- **No Additional Requirements:** If you implement a buffer of 50 feet or greater, then you are not subject to any additional requirements. Note that you are required to install perimeter controls between the disturbed portions of your site and the buffer in accordance with Part 2.1.2.2.
- **Double Perimeter Control:** In addition to the reduced buffer width retained on your site, you must provide a double row of perimeter controls between the disturbed portion of your site and the surface water spaced a minimum of 5 feet apart.
- **Double Perimeter Control and 7-Day Site Stabilization:** In addition to the reduced buffer width retained on your site and the perimeter control implemented in accordance with Part 2.1.2.2, you must provide a double row of perimeter controls between the disturbed portion of your site and the surface water spaced a minimum of 5 feet apart, and you are required to complete the stabilization activities specified in Parts 2.2.1.2a and/or 2.2.1.2b within 7 calendar days of the temporary or permanent cessation of earth-disturbing activities.

[4] One source for determining your site's predominant soil type is the USDA's Web Soil Survey located at http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

Table G - 2. Risk Levels for Sites with Average Slopes of ≤ 3 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	Moderate	Moderate	Moderate	Moderate	High
Puerto Rico	Moderate	Moderate	Moderate	Moderate	High
Virgin Islands	Low	Moderate	Low	Moderate	Moderate
American Samoa	Moderate	Moderate	Moderate	Moderate	High
Massachusetts and New Hampshire	Low	Moderate	Low	Low	Moderate
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Low	Low	Low	Low
Washington D.C.	Low	Moderate	Low	Low	Moderate

Table G - 3. Risk Levels for Sites with Average Slopes of > 3 Percent and ≤ 6 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	Moderate	Moderate	Moderate	Moderate	High
Puerto Rico	Moderate	Moderate	Moderate	Moderate	High
Virgin Islands	Moderate	Moderate	Moderate	Moderate	High
American Samoa	High	High	Moderate	High	High
Massachusetts and New Hampshire	Moderate	Moderate	Low	Moderate	High
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Low	Low	Low	Moderate
Washington D.C.	Moderate	Moderate	Moderate	Moderate	High

Table G - 4. Risk Levels for Sites with Average Slopes of > 6 Percent and ≤ 9 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	Moderate	High	Moderate	High	High
Puerto Rico	Moderate	High	Moderate	Moderate	High
Virgin Islands	Moderate	Moderate	Moderate	Moderate	High
American Samoa	High	High	High	High	High
Massachusetts and New Hampshire	Moderate	Moderate	Moderate	Moderate	High
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Low	Low	Low	Moderate
Washington D.C.	Moderate	Moderate	Moderate	Moderate	High

Table G - 5. Risk Levels for Sites with Average Slopes of > 9 Percent and ≤ 15 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	High	High	High	High	High
Puerto Rico	High	High	High	High	High
Virgin Islands	Moderate	High	Moderate	High	High
American Samoa	High	High	High	High	High
Massachusetts and New Hampshire	Moderate	Moderate	Moderate	Moderate	High
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Moderate	Low	Moderate	Moderate
Washington D.C.	Moderate	High	Moderate	Moderate	High

Table G - 6. Risk Levels for Sites with Average Slopes of > 15 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	High	High	High	High	High
Puerto Rico	High	High	High	High	High
Virgin Islands	High	High	High	High	High
American Samoa	High	High	High	High	High
Massachusetts and New Hampshire	High	High	Moderate	High	High
Idaho	Low	Low	Low	Low	Moderate
New Mexico	Moderate	Moderate	Moderate	Moderate	High
Washington D.C.	High	High	Moderate	High	High

Step 2 – Determine Which Additional Controls Apply

Once you determine your site's "risk level", you must next determine the additional controls you need to implement on your site, based on the width of buffer you plan to retain. Table G - 7 specifies the requirements that apply based on the "risk level" and buffer width retained. See footnote 3, above, for a description of the additional controls that are required.

> *For example, if you are the operator of a small residential lot that falls into the "moderate" risk level, and you decide to retain a 20-foot buffer, using Table G-7 you would determine that you need to implement double perimeter controls to achieve compliance with Part 2.1.2.1.*

You must also document in your SWPPP your compliance with Alternative 2.

Table G - 7. Alternative 2 Requirements[2]

Risk Level Based on Estimated Soil Erosion	Retain ≥ 50' Buffer	Retain <50' and >30' Buffer	Retain ≤30' and >10' Buffer	Retain ≤ 10' Buffer
Low Risk	No Additional Requirements	No Additional Requirements	Double Perimeter Control	Double Perimeter Control
Moderate Risk	No Additional Requirements	Double Perimeter Control	Double Perimeter Control	Double Perimeter Control and 7-Day Site Stabilization
High Risk	No Additional Requirements	Double Perimeter Control	Double Perimeter Control and 7-Day Site Stabilization	Double Perimeter Control and 7-Day Site Stabilization

ATTACHMENT 1

Sediment Removal Efficiency Tables[5]

EPA recognizes that very high removal efficiencies, even where theoretically achievable by a 50-foot buffer, may be very difficult to achieve in practice using alternative controls. Therefore in the tables below, EPA has limited the removal efficiencies to a maximum of 90%. Efficiencies that were calculated at greater than 90% are shown as 90%, and this is the minimum percent removal that must be achieved by alternative controls.

Table G - 8. Estimated 50-foot Buffer Performance in Idaho*

	Estimated % Sediment Removal				
Type of Buffer Vegetation**	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Tall Fescue Grass	42	52	44	48	85
Medium-density Weeds	28	30	28	26	60
Low-density Warm-season Native Bunchgrass (i.e., Grama Grass)	25	26	24	24	55
Northern Mixed Prairie Grass	28	30	28	26	50
Northern Range Cold Desert Shrubs	28	28	24	26	50

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 9. Estimated 50-foot Buffer Performance in Massachusetts and New Hampshire*

	Estimated % Sediment Removal				
Type of Buffer Vegetation**	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Warm-season Grass (i.e., Switchgrass, Lemongrass)	79	90	90	90	90
Cool-season Dense Grass (Kentucky Bluegrass, Smooth Bromegrass, Timothy)	78	90	90	90	90
Tall Fescue Grass	76	90	81	89	90
Medium-density Weeds	66	76	60	72	66

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

[5] The buffer performances were calculated based on a denuded slope upgradient of a 50-foot buffer and a perimeter controls, as perimeter controls are a standard requirement (see Part 2.1.2.2).

Table G - 10. Estimated 50-foot Buffer Performance in New Mexico*

	Estimated % Sediment Removal				
Type of Buffer Vegetation **	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Tall Fescue grass	71	85	80	86	90
Medium-density Weeds	56	73	55	66	78
Low-density Warm-season Native Bunchgrass (i.e., Grama Grass)	53	70	51	62	67
Southern Mixed Prairie Grass	53	71	52	63	50
Southern Range Cold Desert Shrubs	56	73	55	65	53

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 11. Estimated 50-foot Buffer Performance in Washington, DC*

	Estimated % Sediment Removal				
Type of Buffer Vegetation **	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Warm-season Grass (i.e., Switchgrass, Lemongrass)	82	90	90	90	90
Cool-season Dense Grass (Kentucky Bluegrass, Smooth Bromegrass, Timothy)	81	90	90	90	90
Tall Fescue Grass	79	90	83	89	90
Medium-density Weeds	71	79	66	75	74

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 12. Estimated 50-foot Buffer Performance in American Samoa*

	Estimated % Sediment Removal				
Type of Buffer Vegetation **	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Bahiagrass (Permanent cover)	82	90	90	90	83
Warm-season Grass (i.e., Switchgrass, Lemongrass)	82	90	90	90	85
Dense Grass	82	90	90	90	83
Tall Fescue Grass	82	89	82	89	79
Medium-density Weeds	70	73	62	75	59

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 13. Estimated 50-foot Buffer Performance in Guam*

	Estimated % Sediment Removal				
Type of Buffer Vegetation **	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Bahiagrass (Permanent cover)	80	90	90	90	89
Warm-season Grass (i.e., Switchgrass, Lemongrass)	80	90	90	90	90
Dense Grass	79	90	90	90	89
Tall Fescue Grass	76	90	80	88	87
Medium-density Weeds	63	73	53	68	61

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 14. Estimated 50-foot Buffer Performance in Puerto Rico*

	Estimated % Sediment Removal				
Type of Buffer Vegetation**	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Bahiagrass (Permanent cover)	83	90	90	90	90
Warm-season Grass (i.e., Switchgrass, Lemongrass)	83	90	90	90	90
Dense Grass	83	90	90	90	90
Tall Fescue Grass	82	90	84	90	89
Medium-density Weeds	72	78	65	76	64

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 15. Estimated 50-foot Buffer Performance in Virgin Islands*

Type of Buffer Vegetation**	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Bahiagrass (Permanent cover)	85	90	90	90	90
Warm-season Grass (i.e., Switchgrass, Lemongrass)	86	90	90	90	90
Dense Grass	85	90	90	90	90
Tall Fescue Grass	85	90	88	90	89
Medium-density Weeds	75	77	71	78	63

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

ATTACHMENT 2

Using the Sediment Removal Efficiency Tables – Questions and Answers

- *What if my specific buffer vegetation is not represented in Tables G - 8 through G - 15?* Tables G - 8 through G - 15 provide a wide range of factors affecting buffer performance; however, there may be instances where the specific buffer vegetation type on your site is not listed. If you do not see a description of the type of vegetation present at your site, you should choose the vegetation type that most closely matches the vegetation type on your site. You can contact your local Cooperative Extension Service Office (www.csrees.usda.gov/Extension) for assistance in determining the vegetation type in Tables G - 8 through G - 15 that most closely matches your site-specific vegetation.
- *What if there is high variability in local soils?* EPA recognizes that there may be a number of different soil type(s) on any given construction site. General soil information can be obtained from USDA soil survey reports (http://websoilsurvey.nrcs.usda.gov) or from individual site assessments performed by a certified soil expert. Tables G - 8 through G - 15 present eleven generic soil texture classes, grouping individual textures where EPA has determined that performance is similar. If your site contains different soil texture classes, you should use the soil type that best approximates the predominant soil type at your site.
- *What if my site slope is greater than 9 percent after final grade is reached?* As indicated in the buffer performance tables, the estimated sediment removal efficiencies are associated with disturbed slopes of up to 9 percent grade. Where your graded site has an average slope of greater than 9 percent, you should calculate a site-specific buffer performance.
- *How do I calculate my own estimates for sediment reduction at my specific site?* If you determine that it is necessary to calculate your own sediment removal efficiency using site-specific conditions (e.g., slopes at your site are greater than 9 percent), you can do so by choosing from a range of available mathematical models that are available to facilitate this calculation, including USDA's RUSLE-series programs and the WEPP erosion model, SEDCAD, SEDIMOT, or other equivalent models.
- *What is my estimated buffer performance if my site location is not represented by Tables G - 8 through G - 15?* If your site is located in an area not represented by Tables G - 8 through G - 15, you should use the table that most closely approximates conditions at your site. You may also choose to conduct a site-specific calculation of the buffer performance.
- *What if only a portion of my site drains to the buffer area?* If only a portion of your site drains to a surface water, where that water is within 50 feet of your construction activities, you are only required to meet the equivalency requirement for the stormwater flows corresponding to those portions of the site. See Example 2 below for an example of how this is expected to work.

ATTACHMENT 3

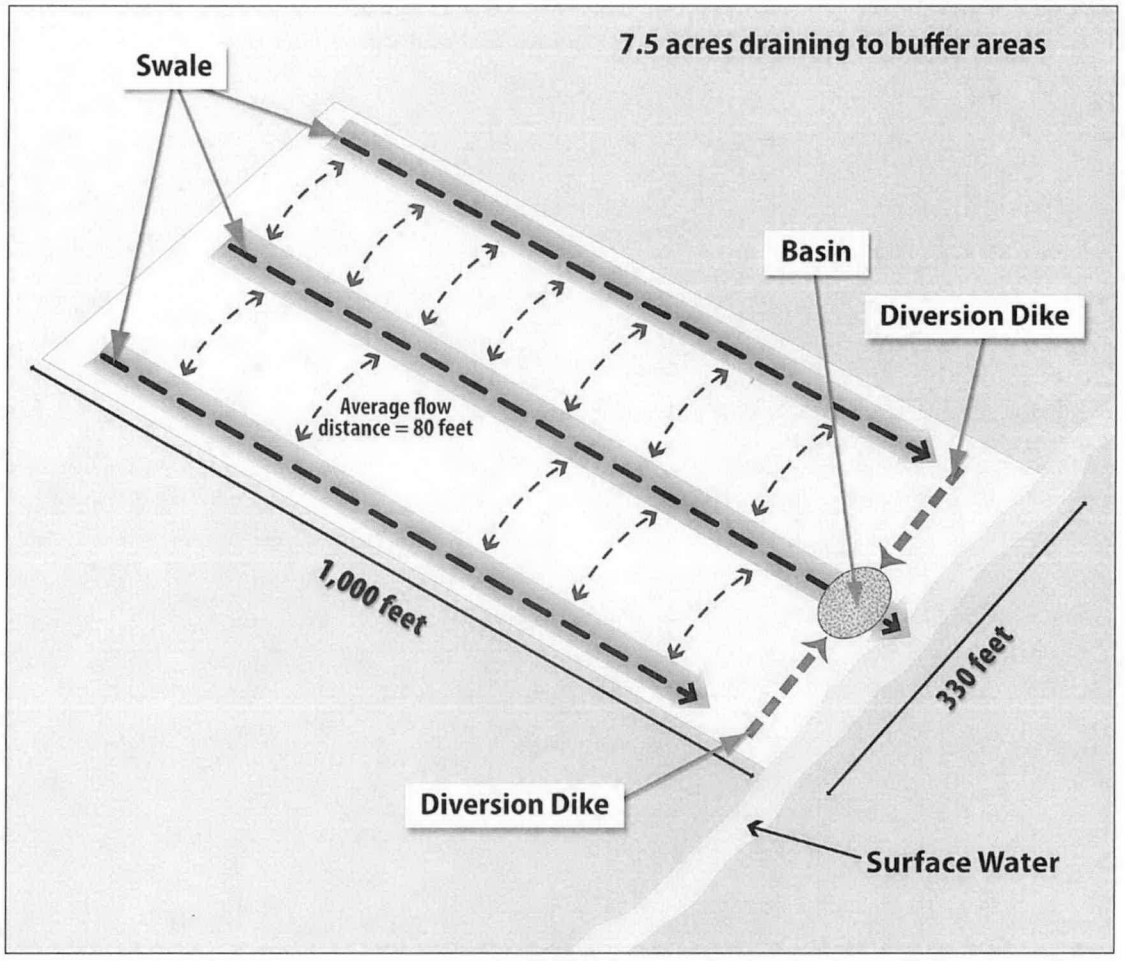
Examples of How to Use the Sediment Removal Efficiency Tables

Example 1. Comparatively Wet Location (7.5 acre site located in Massachusetts)

The operator of a 7.5-acre construction site in Massachusetts has determined that it is infeasible to establish a buffer of any size on their site, and is now required to select and install controls that will achieve an equivalent sediment load reduction as that estimated in G - 9 for their site conditions. The first step is to identify what percentage of eroded sediment is estimated to be retained from a 50-foot buffer. For this example, it is assumed that the site has a relatively uniform gentle slope (3 percent), so Table G - 9 can be used to estimate the 50-foot buffer sediment load reduction. If the site's buffer vegetation is best typified by cool-season dense grass and the underlying soil is of a type best described as loamy sand, the 50-foot buffer is projected to capture 90 percent of eroded sediment from the construction site.

The second step is to determine what sediment controls can be selected and installed in combination with the perimeter controls already required to be implemented at the site (see Part 2.1.2.2), which will achieve the 90 percent sediment removal efficiency from Table G - 9. For this example, using the RUSLE2 profile model, it was determined that installing a pair of shallow-sloped diversion ditches to convey runoff to a well-designed and maintained sediment basin provides 99 percent sediment removal. Because the estimated sediment reduction is greater than the required 90 percent that a 50-foot buffer provides, the operator will have met the buffer requirements. See Figure G - 5. The operator could also choose a different set of controls, as long as they achieve at least a 90 percent sediment removal efficiency.

Figure G - 5. Example 1 – Equivalent Sediment Load Reductions at a 7.5 ac Site in MA.



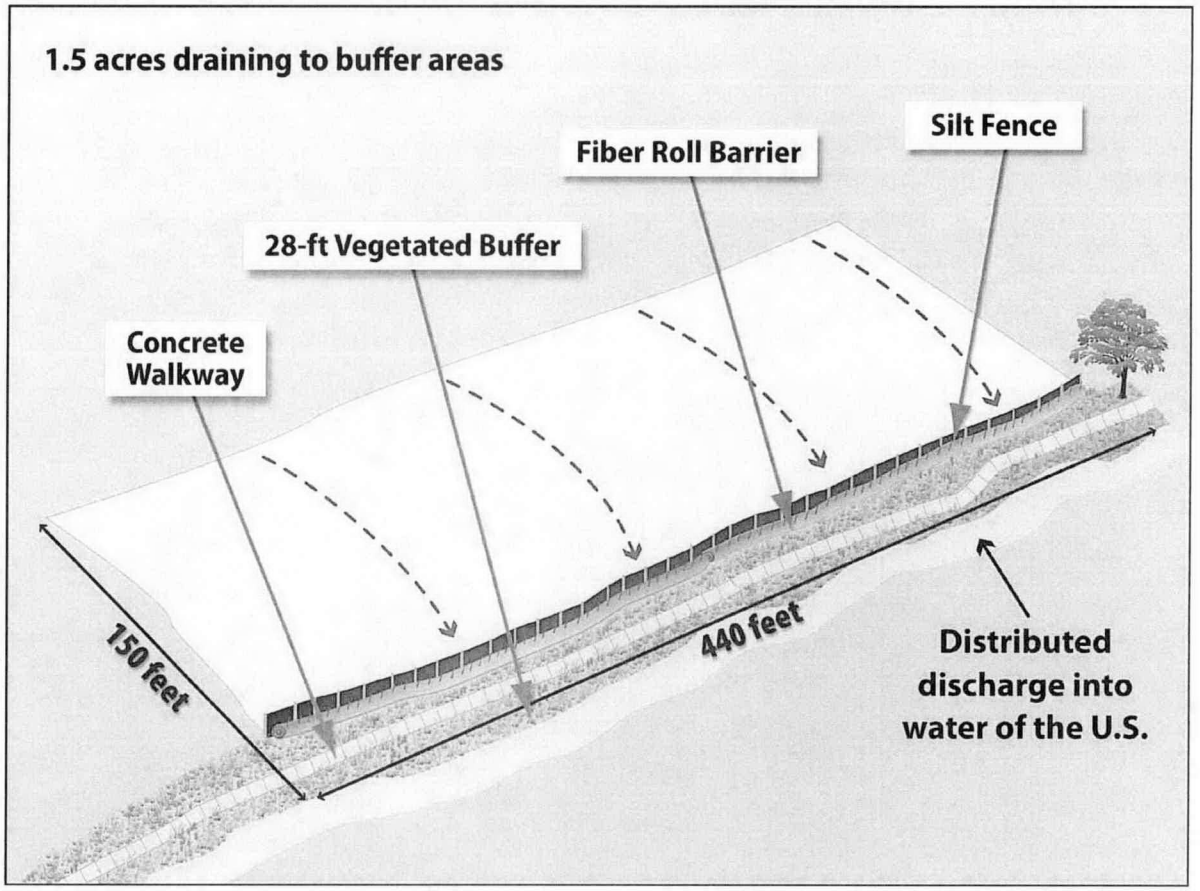
Example 2. Arid Location With Pre-existing Disturbances in the Natural Buffer (6.5 acre site located in New Mexico)

An operator of a site in New Mexico determines that it is not practicable to provide a 50-foot buffer, but a 28-foot buffer can be provided. Because the operator will provide a buffer that is less than 50 feet, the operator must determine which controls, in combination with the 28-foot buffer, achieve a sediment load reduction equivalent to the 50-foot buffer. In this example, the project will disturb 6.5 acres of land, but only 1.5 acres of the total disturbed area drains to the buffer area. Within the 28-foot buffer area is a preexisting concrete walkway. Similar to Example 1, the equivalence analysis starts with Step 1 (Part G.2.2.2) with a review of the New Mexico buffer performance (Table G - 10). The operator determines that the predominate vegetation type in the buffer area is prairie grass and the soil type is similar to silt, and that the site is of a uniform, shallow slope (e.g., 3 percent grade). Although the operator will take credit for the disturbance caused by the concrete walkway as a natural buffer in Step 2, here the operator can treat the entire buffer area as being naturally vegetated with prairie grass. Based on this information, the operator refers to Table G - 10 to estimate that the 50-foot buffer would retain 50 percent of eroded soil.

The second step is to determine, based on the 50 percent sediment removal efficiency found in Table G - 10, what sediment controls in combination with the 28-foot buffer area, can be

implemented to reduce sediment loads by 50 percent or more. The operator does not have to account the reduction in buffer function caused by the preexisting walkway, and can take credit for the entire 28-foot buffer being fully vegetated in the analysis. For this example, using the RUSLE2 profile model, the operator determined that installing a fiber roll barrier between the silt fence (already required by Part 2.1.2.2) and the 28-foot buffer will achieve an estimated 84 percent sediment removal efficiency. See Figure G - 6. Note that this operator is subject to the requirement in Part 2.1.2.1b.i to ensure that discharges through the silt fence, fiber roll barrier, and 28-foot buffer do not cause erosion within the buffer. The estimated sediment reduction is greater than the required 50 percent; therefore the operator will have met the buffer alternative requirement.

Figure G - 6. Example 2 – Equivalent Sediment Load Reductions at a 6.5 ac Site in NM.



Appendix H – 2-Year, 24-Hour Storm Frequencies

Part 2.1.3.2 of the permit indicates that if you install a sediment basin, one of the design requirements is to provide storage for either (1) the calculated volume of runoff from a 2-year, 24-hour storm, or (2) 3,600 cubic feet per acre drained. This appendix is intended to provide a guide to permittees to determine the volume of precipitation associated with their local 2-year, 24-hour storm event.

The permittee should start out by determining their local 2-year, 24-hour storm volume. The rainfall frequency atlases, technical papers, and the Precipitation Frequency Data Server (PFDS) developed by the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS) serve as national standards for rainfall intensity at specified frequencies and durations in the United States. Operators of construction projects subject to the numeric effluent limits can use these standards to determine their local 2-year, 24-hour storm. Table H-1 identifies methods for determining precipitation frequency based on permit area. EPA notes that permittees may also use alternative peer-reviewed data sources not listed in Table H - 1 to determine the 2-year, 24-hour storm for their site.

Table H -1 – Method to Determine Precipitation Frequency Based on Permit Area

PERMIT AREA	METHOD TO DETERMINE PRECIPITATION FREQUENCY
District of Columbia	PFDS; NOAA Atlas 14, Vol. 2
Idaho	NOAA Atlas 2, Vol. 5; Technical Paper 40
Massachusetts	Technical Paper 40
New Hampshire	Technical Paper 40
New Mexico	PFDS; Technical Paper 40
Selected Pacific Islands	PFDS; Technical Paper 40
Puerto Rico and the U.S Virgin Islands	PFDS; Technical Paper 40
Other	PFDS; Technical Paper 40; NOAA Atlas 2 or 14

How to Determine Your Local 2-year, 24-hour Storm Size

Projects located in the **District of Columbia, New Mexico, Puerto Rico, U.S. Virgin Islands, or Pacific Islands** can use the PFDS at http://hdsc.nws.noaa.gov/hdsc/pfds/index.html or use NOAA's Atlas 14 Volumes 2, 3, and 5, respectively at http://www.nws.noaa.gov/oh/hdsc/currentpf.htm to determine their precipitation frequency.

The PFDS is an easy to use, point-and-click interface to official U.S. precipitation frequency estimates and intensities. The opening PFDS screen is a clickable map of the United States. Upon clicking on a state, a state-specific interface appears. From this page the user selects the following:

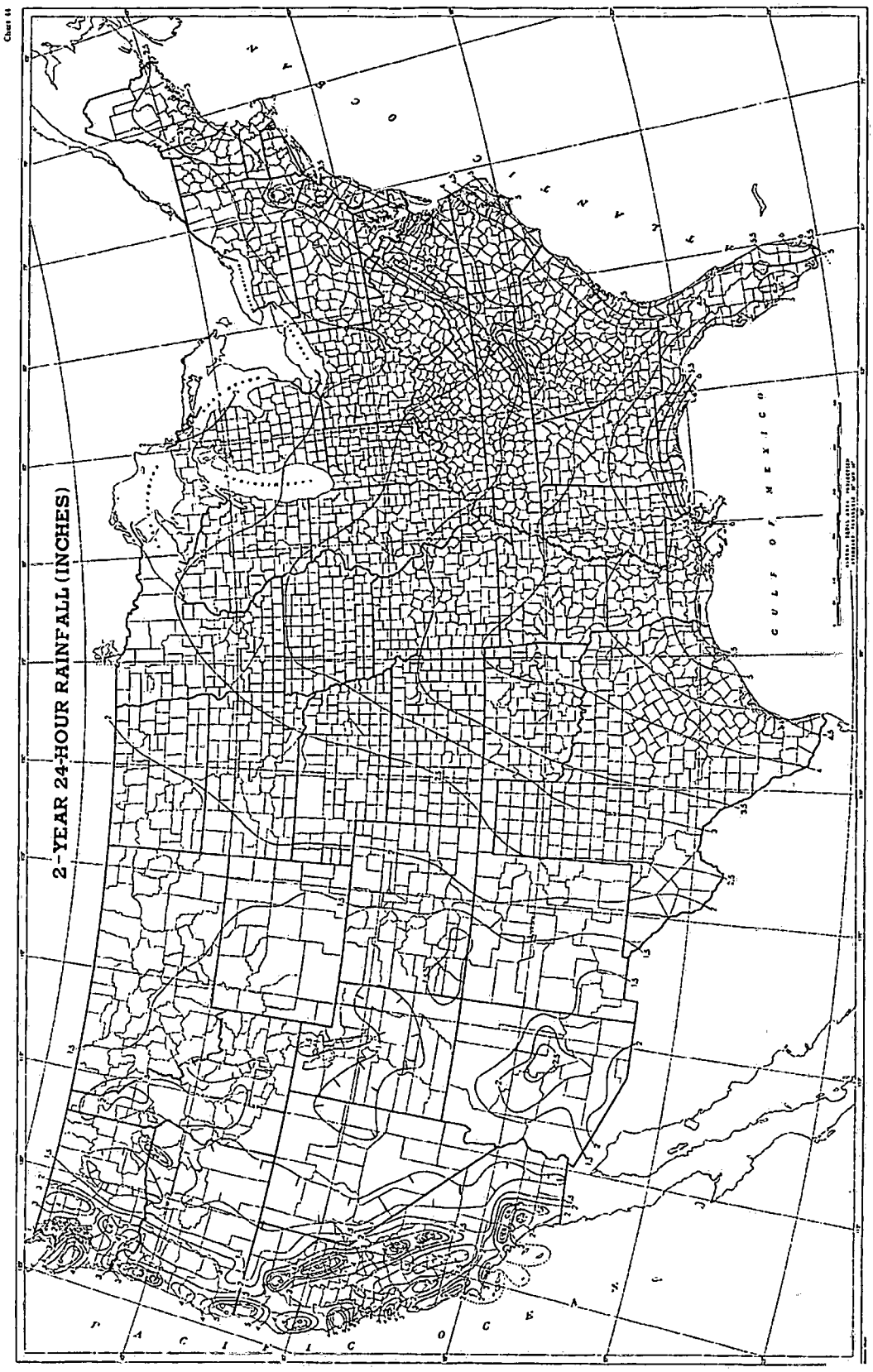
- A location: Either via clicking on the map or manually entering a longitude/latitude coordinate;
- Type of output: Depth-Duration Frequency (DDF) or Intensity-Duration-Frequency (IDF)
- Units: millimeters or inches; and
- Type of estimate: Point or areal.

Additionally, PFDS also serves as a tool for providing references and other information for other current precipitation frequency standards that are not yet updated.

Projects located in the **District of Columbia, Puerto Rico, U.S. Virgin Islands, or Pacific Islands** can use NOAA's Atlas 14 Volumes 2, 3, and 5, respectively at http://www.nws.noaa.gov/oh/hdsc/currentpf.htm or access the PFDS at http://hdsc.nws.noaa.gov/hdsc/pfds/index.html to determine their precipitation frequency.

Projects located in **Massachusetts and New Hampshire**, or other areas not covered by the PFDS or NOAA Atlases will need to use TP-40 to identify the precipitation frequency. TP-40 provides a map of the continental U.S. for the 2-year, 24-hour rainfall. TP40 can be accessed at http://www.nws.noaa.gov/oh/hdsc/PF_documents/TechnicalPaper_No40.pdf. (See also attached map of TP-40)

Projects located in **Idaho** can use the NOAA Atlas 2, Vol. 5 to determine their precipitation frequency. NOTE: Precipitation Frequencies on the NOAA Atlas 2, Vol. 5 are in tenths of an inch and will have to be converted to inches to determine precipitation frequency. NOAA Atlas 2, Vol. 5 can be accessed at http://www.nws.noaa.gov/oh/hdsc/PF_documents/Atlas2_Volume5.pdf. (See also attached map of NOAA Atlas 2, Vol. 5)


2-YEAR 24-HOUR RAINFALL (INCHES)
GULF OF MEXICO
PACIFIC OCEAN

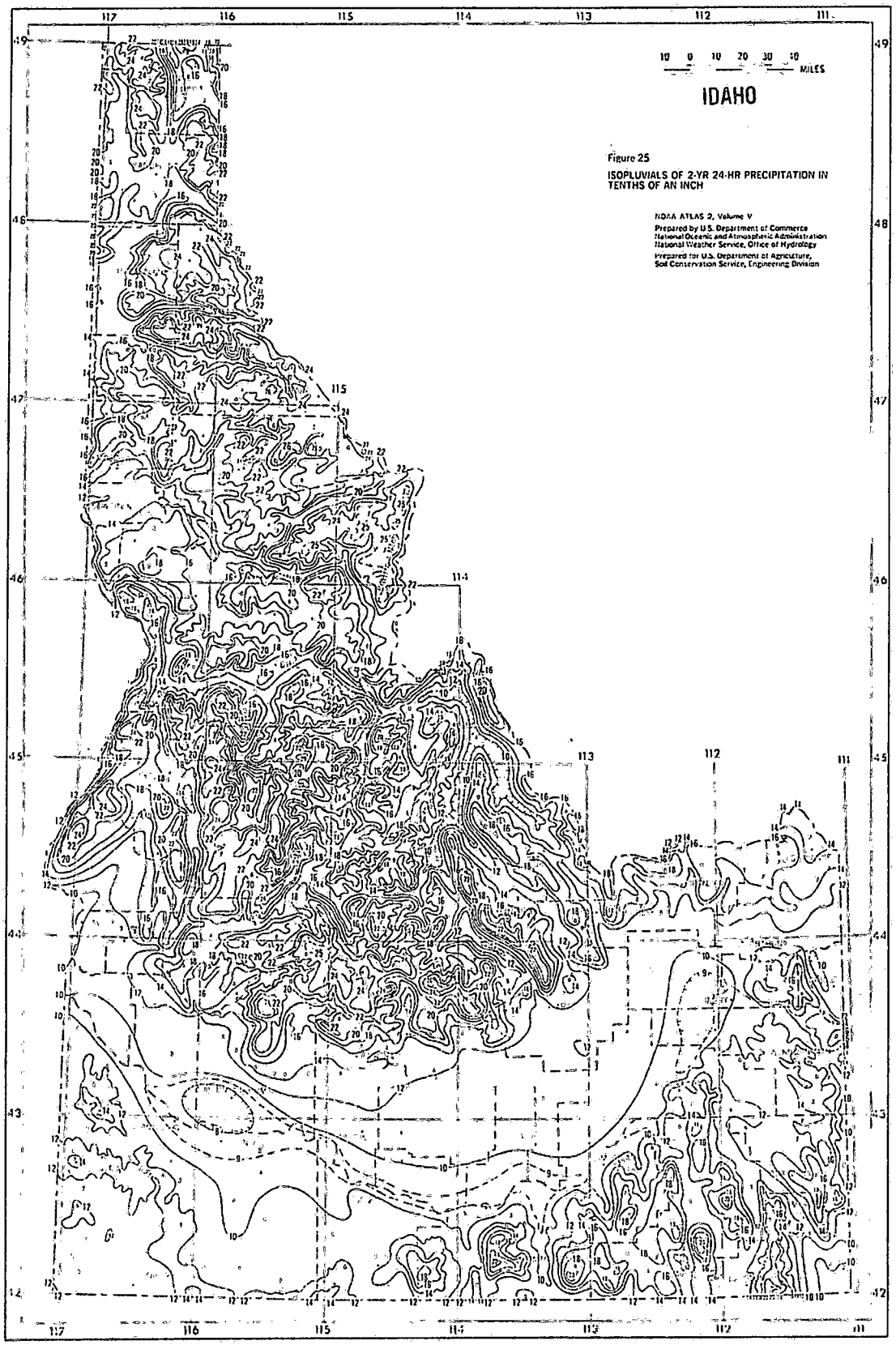


Figure 25

ISOPLUVIALS OF 2-YR 24-HR PRECIPITATION IN TENTHS OF AN INCH

NOAA ATLAS 2, Volume V
Prepared by U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Department of Agriculture,
Soil Conservation Service, Engineering Division

Appendix I - Standard Permit Conditions

Standard permit conditions in Appendix I are consistent with the general permit provisions required under 40 CFR 122.41.

I.1 Duty To Comply.

You must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

I.1.1 You must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards, even if the permit has not yet been modified to incorporate the requirement.

I.1.2 Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (61 FR 252, December 31, 1996, pp. 69359-69366, as corrected in 62 FR 54, March 20, 1997, pp.13514-13517) as mandated by the Debt Collection Improvement Act of 1996 for inflation on a periodic basis. This rule allows EPA's penalties to keep pace with inflation. The Agency is required to review its penalties at least once every 4 years thereafter and to adjust them as necessary for inflation according to a specified formula. The civil and administrative penalties following were adjusted for inflation starting in 1996.

I.1.2.1 *Criminal Penalties.*

a. *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than $2,500 nor more than $25,000 per day of violation, or imprisonment of not more than one year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than two years, or both.

b. *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

c. *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon

conviction of violating the imminent danger provision be subject to a fine of not more than $1,000,000 and can fined up to $2,000,000 for second or subsequent convictions.

d. *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

I.1.2.2 *Civil Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $37,500 per day for each violation).

I.1.2.3 *Administrative Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty, as follows

a. *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $16,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $37,500).

b. *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $177,500).

I.2 Duty to Reapply.

If you wish to continue an activity regulated by this permit after the expiration date of this permit, you must apply for and obtain authorization as required by the new permit once EPA issues it.

I.3 Need to Halt or Reduce Activity Not a Defense.

It shall not be a defense for you in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

I.4 Duty to Mitigate.

You must take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

I.5 Proper Operation and Maintenance.

You must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by you to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by you only when the operation is necessary to achieve compliance with the conditions of this permit.

I.6 Permit Actions.

This permit may be modified, revoked and reissued, or terminated for cause. Your filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

I.7 Property Rights.

This permit does not convey any property rights of any sort, or any exclusive privileges.

I.8 Duty to Provide Information.

You must furnish to EPA or an authorized representative (including an authorized contractor acting as a representative of EPA), within a reasonable time, any information that EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. You must also furnish to EPA or an authorized representative upon request, copies of records required to be kept by this permit.

I.9 Inspection and Entry.

You must allow EPA or an authorized representative (including an authorized contractor acting as a representative of EPA), upon presentation of credentials and other documents as may be required by law, to:

I.9.1 Enter upon your premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

I.9.2 Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

I.9.3 Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

I.9.4 Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

I.10 Monitoring and Records.

I.10.1 Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the monitored activity.

I.10.2 You must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date the permit expires or the date the permittee's authorization is terminated. This period may be extended by request of EPA at any time.

I.10.3 Records of monitoring information must include:

I.10.3.1 The date, exact place, and time of sampling or measurements;

I.10.3.2 The individual(s) who performed the sampling or measurements;

I.10.3.3 The date(s) analyses were performed

I.10.3.4 The individual(s) who performed the analyses;

I.10.3.5 The analytical techniques or methods used; and

I.10.3.6 The results of such analyses.

I.10.4 Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the permit.

I.10.5 The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

I.11 Signatory Requirements.

I.11.1 All applications, including NOIs, must be signed as follows:

I.11.1.1 For a corporation: By a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

I.11.1.2 For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

I.11.1.3 For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive

officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

I.11.2 Your SWPPP, including changes to your SWPPP, inspection reports, and any other compliance documentation required under this permit, must be signed by a person described in Appendix I, Subsection I.11.1 above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

I.11.2.1 The authorization is made in writing by a person described in Appendix I, Subsection I.11.1;

I.11.2.2 The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

I.11.2.3 The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

I.11.3 Changes to Authorization. If an authorization under Part 1.7 is no longer accurate because a different operator has responsibility for the overall operation of the construction site, a new NOI satisfying the requirements of Part 1.7 must be submitted to EPA. See Table 1 in Part 1.7.2 of the permit. However, if the only change that is occurring is a change in contact information or a change in the facility's address, the operator need only make a modification to the existing NOI submitted for authorization.

I.11.4 Any person signing documents in accordance with Appendix I, Subsections I.11.1 or I.11.2 above must include the following certification:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

I.11.5 For persons signing documents electronically, in addition to meeting other applicable requirements in Appenidx I, Subsection I.11, such signatures must meet the same signature, authentication, and identity-proofing standards set forth at 40 CFR § 3.2000(b) for electronic reports (including robust second-factor authentication).

I.11.6 The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

I.12 Reporting Requirements.

I.12.1 Planned changes. You must give notice to EPA as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

I.12.1.1 The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or

I.12.1.2 The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1).

I.12.2 Anticipated noncompliance. You must give advance notice to EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

I.12.3 Transfers. This permit is not transferable to any person except after notice to EPA. Where a facility wants to change the name of the permittee, the original permittee (the first owner or operators) must submit a Notice of Termination pursuant to Part 8. The new owner or operator must submit a Notice of Intent in accordance with Part 1.7 and Table 1. See also requirements in Appendix I, Subsections I.11.1 and I.11.2.

I.12.4 Monitoring reports. Monitoring results must be reported at the intervals specified elsewhere in this permit.

I.12.4.1 Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by EPA for reporting results of monitoring of sludge use or disposal practices.

I.12.4.2 If you monitor any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by EPA.

I.12.5 Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

I.12.6 Twenty-four hour reporting. In addition to reports required elsewhere in this permit:

I.12.6.1 You must report any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours from the time you become aware of the circumstances. A written submission must also be provided within five days of the time you become aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

I.12.6.2 The following shall be included as information which must be reported within 24 hours under this paragraph.

a. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR 122.41(m)(3)(ii))

b. Any upset which exceeds any effluent limitation in the permit

c. Violation of a maximum daily discharge limit for any numeric effluent limitation. (See 40 CFR 122.44(g).)

I.12.6.3 EPA may waive the written report on a case-by-case basis for reports under Appendix I, Subsection I.12.6.2 if the oral report has been received within 24 hours.

I.12.7 Other noncompliance. You must report all instances of noncompliance not reported under Appendix I, Subsections I.12.4, I.12.5, and I.12.6, at the time monitoring reports are submitted. The reports must contain the information listed in Appendix I, Subsection I.12.6.

I.12.8 Other information. Where you become aware that you failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Permitting Authority, you must promptly submit such facts or information.

I.13 Bypass.

I.13.1 Definitions.

I.13.1.1 Bypass means the intentional diversion of waste streams from any portion of a treatment facility See 40 CFR 122.41(m)(1)(i).

I.13.1.2 Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 CFR 122.41(m)(1)(ii).

I.13.2 Bypass not exceeding limitations. You may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Appendix I, Subsections I.13.3 and I.13.4. See 40 CFR 122.41(m)(2).

I.13.3 Notice.

I.13.3.1 Anticipated bypass. If you know in advance of the need for a bypass, you must submit prior notice, if possible at least ten days before the date of the bypass. See 40 CFR 122.41(m)(3)(i).

I.13.3.2 Unanticipated bypass. You must submit notice of an unanticipated bypass as required in Appendix I, Subsection I.12.6 (24-hour notice). See 40 CFR 122.41(m)(3)(ii).

I.13.4 Prohibition of bypass. See 40 CFR 122.41(m)(4).

I.13.4.1 Bypass is prohibited, and EPA may take enforcement action against you for bypass, unless:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. You submitted notices as required under Appendix I, Subsection I.13.3.

I.13.4.2 EPA may approve an anticipated bypass, after considering its adverse effects, if EPA determines that it will meet the three conditions listed above in Appendix I, Subsection I.13.4.1.

I.14 Upset.

I.14.1 Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. See 40 CFR 122.41(n)(1).

I.14.2 Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Appendix I, Subsection I.14.3 are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. See 40 CFR 122.41(n)(2).

I.14.3 Conditions necessary for a demonstration of upset. See 40 CFR 122.41(n)(3). A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

I.14.3.1 An upset occurred and that you can identify the cause(s) of the upset;

I.14.3.2 The permitted facility was at the time being properly operated; and

I.14.3.3 You submitted notice of the upset as required in Appendix I, Subsection I.12.6.2.b (24 hour notice).

I.14.3.4 You complied with any remedial measures required under Appendix I, Subsection I.4.

I.14.4 Burden of proof. In any enforcement proceeding, you, as the one seeking to establish the occurrence of an upset, have the burden of proof. See 40 CFR 122.41(n)(4).

I.15 Retention of Records.

Copies of the SWPPP and all documentation required by this permit, including records of all data used to complete the NOI to be covered by this permit, must be retained for at least three years from the date that permit coverage expires or is terminated. This period may be extended by request of EPA at any time.

I.16 Reopener Clause.

I.16.1 Procedures for modification or revocation. Permit modification or revocation will be conducted according to 40 CFR §122.62, §122.63, §122.64 and §124.5.

I.16.2 Water quality protection. If there is evidence indicating that the stormwater discharges authorized by this permit cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, you may be required to obtain an individual permit in accordance with Part 1.7.5 of this permit, or the permit may be modified to include different limitations and/or requirements.

I.16.3 Timing of permit modification. EPA may elect to modify the permit prior to its expiration (rather than waiting for the new permit cycle) to comply with any new statutory or regulatory requirements, such as for effluent limitation guidelines that may be promulgated in the course of the current permit cycle.

I.17 Severability.

Invalidation of a portion of this permit does not necessarily render the whole permit invalid. EPA's intent is that the permit is to remain in effect to the extent possible; in the event that any part of this permit is invalidated, EPA will advise the regulated community as to the effect of such invalidation.

Appendix J - Notice of Intent (NOI) Form and Instructions

Part 1.4.1 requires you to use the electronic NOI system, or "eNOI" system, to prepare and submit your NOI. However, if you are given approval by the EPA Regional Office to use a paper NOI form, and you elect to use it, you must complete and submit the following form.

NPDES FORM 3510-9	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF INTENT (NOI) FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER AN NPDES GENERAL PERMIT	Form Approved. OMB No. 2040-0004

Submission of this Notice of Intent (NOI) constitutes notice that the operator identified in Section II of this form requests authorization to discharge pursuant to the NPDES Construction General Permit (CGP) permit number identified in Section I of this form. Submission of this NOI also constitutes notice that the operator identified in Section II of this form meets the eligibility requirements of Parts 1.1 and 1.2 of the CGP for the project identified in Section III of this form. Permit coverage is required prior to commencement of construction activity until you are eligible to terminate coverage as detailed in Part 8 of the CGP. To obtain authorization, you must submit a complete and accurate NOI form. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage. Refer to the instructions at the end of this form.

I. Approval to Use Paper NOI Form

Have you been given approval from the Regional Office to use this paper NOI form*? ☐ YES ☐ NO

If yes, provide the reason you need to use this paper form, the name of the EPA Regional Office staff person who approved your use of this form, and the date of approval:

Reason for using paper form:

Name of EPA staff person:

Date approval obtained: / /

*** Note: You are required to obtain approval from the applicable Regional Office prior to using this paper NOI form.**

II. Permit Information

Tracking Number (EPA Use Only):

Permit Number: (see Appendix B of the CGP for the list of eligible permit numbers)

III. Operator Information

Name:

Phone: - - Ext. Fax (optional): - -

E-mail:

IRS Employer Identification Number (EIN): -

Point of Contact:

First Name, Middle Initial, Last Name:

Mailing Address:

Street:

City: State: Zip Code: -

NOI Preparer (Complete if NOI was prepared by someone other than the certifier):

Prepared by:

First Name, Middle Initial, Last Name:

Organization:

Phone: - - Ext. Fax (optional): - -

E-mail:

IV. Project/Site Information

Project/Site Name:

Project/Site Address:

Street/Location:

City: State: Zip Code: -

County or similar government subdivision:

For the project/site for you are seeking permit coverage, provide the following information:

Latitude/Longitude (Use one of three possible formats, and specify method):

Latitude 1. __ __° __ __' __ __" N (degrees, minutes, seconds)
2. __ __° __ __. __ __' N (degrees, minutes, decimal)
3. __ __. __ __ __ __° N (degrees decimal)

Longitude 1. __ __ __° __ __' __ __" W (degrees, minutes, seconds)
2. __ __ __° __ __. __ __' W (degrees, minutes, decimal)
3. __ __ __. __ __ __ __° W (degrees decimal)

Latitude/Longitude Data Source: ☐ U.S.G.S. topographic map ☐ EPA web site ☐ GPS ☐ Other: _____

If you used a U.S.G.S. topographic map, what was the scale? _____

Horizontal Reference Datum: ☐ NAD 27 ☐ NAD 83 or WGS 84 ☐ Unknown

Is your project/site located in Indian country lands? ☐ YES ☐ NO

If yes, provide the name of the Indian tribe associated with the area of Indian country (including name of Indian reservation, if applicable):

_____

Are you requesting coverage under this NOI as a "federal operator" as defined in Appendix A? ☐ YES ☐ NO

Estimated Project Start Date: / / Estimated Project Completion Date: / /

Estimated Area to be Disturbed (to the nearest quarter acre): .

Have earth-disturbing activities commenced on your project/site? ☐ YES ☐ NO

If yes, is your project an "emergency-related project? ☐ YES ☐ NO

Have stormwater discharges from your project/site been covered previously under an NPDES permit? ☐ YES ☐ NO

If yes, provide the Tracking Number if you had coverage under EPA's CGP or the NPDES permit number if you had coverage under an EPA individual permit:

V. Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? ☐ YES ☐ NO

Are there any surface waters within 50 feet of your project's earth disturbances? ☐ YES ☐ NO

Receiving Waters and Wetlands Information: (Attach a separate list if necessary)

Provide the name(s) of the first surface water that received stormwater directly from your site and/or from the MS4:

Provide the names of any impaired waters to which you discharge and the pollutant(s) for which they are impaired	
Surface water name:	Pollutant(s) causing the impairment:

Provide the names of any waters to which you discharge for which there is an EPA approved or established TMDL, the name of the TMDL, and the pollutant(s) for which there is a TMDL		
Surface water name:	TMDL name:	Pollutant(s) for which there is a TMDL:

Impaired Waters

Describe the methods you used to complete the above table:

Are any of the surface waters to which you discharge designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) or as a Tier 3 water (Outstanding Natural Resource Water)? (See Appendix F).

☐ YES ☐ NO

If yes, name(s) of receiving water(s) and its designation (Tier 2, Tier 2.5 or Tier 3):

VI. Chemical Treatment Information

Will you use polymers, flocculants, or other treatment chemicals at your construction site? ☐ YES ☐ NO

If yes, will you use cationic treatment chemicals at your construction site*? ☐ YES ☐ NO

If yes, have you been authorized to use cationic treatment chemicals by your applicable EPA Regional Office in advance of filing your NOI*? ☐ YES ☐ NO

If you have been authorized to use cationic treatment chemicals by your applicable EPA Regional Office, attach a copy of your authorization letter and include documentation of the appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

Please indicate the treatment chemicals that you will use:

* Note: You are ineligible for coverage under this permit unless you notify your applicable EPA Regional Office in advance and the EPA office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

VII. Stormwater Pollution Prevention Plan (SWPPP) Information

Has the SWPPP been prepared in advance of filing this NOI? ☐ YES ☐ NO

SWPPP Contact Information:

First Name, Middle Initial Last Name:

Organization Name:

Phone: - - Ext. Fax (optional): - -

E-mail:

VIII. Endangered Species Protection

Using the instructions in Appendix D of the CGP, under which criterion listed in Appendix D are you eligible for coverage under this permit (only check 1 box)?

☐ A ☐ B ☐ C ☐ D ☐ E ☐ F

Provide a brief summary of the basis for criterion selection listed in Appendix D (e.g., communication with U.S. Fish and Wildlife Service or National Marine Fisheries Service, specific study):

If you select criterion B, provide the Tracking Number from the other operator's notification of authorization under this permit:

If you select criterion C, you must attach a copy of your site map (see Part 7.2.6 of the permit), and you must answer the following questions:

What federally-listed species or federally-designated critical habitat are located in your "action area":

What is the distance between your site and the listed species or critical habitat (miles):

If you select criterion D, E, or F, attach copies of any letters or other communications between you and the U.S. Fish and Wildlife Service or National Marine Fisheries Service.

IX. Historic Preservation

If your project/site is not located in Indian country lands, is your project/site located on a property of religious or cultural significance to an Indian tribe?

☐ YES ☐ NO

If yes, provide the name of the Indian tribe associated with the property: _____

Are you installing any stormwater controls as described in Appendix E that require subsurface earth disturbance? (Appendix E, Step 1) ☐ YES ☐ NO

If yes, have prior surveys or evaluations conducted on the site have already determined historic properties do not exist, or that prior disturbances have precluded the existence of historic properties? (Appendix E, Step 2) ☐ YES ☐ NO

If no, have you determined that your installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties? (Appendix E, Step 3) ☐ YES ☐ NO

If no, did the SHPO, THPO, or other tribal representative (whichever applies) respond to you within the 15 calendar days to indicate whether the subsurface earth disturbances caused by the installation of stormwater controls affect historic properties? (Appendix E, Step 4) ☐ YES ☐ NO

If yes, describe the nature of their response:

- ☐ Written indication that adverse effects to historic properties from the installation of stormwater controls can be mitigated by agreed upon actions
- ☐ No agreement has been reached regarding measures to mitigate effects to historic properties from the installation of stormwater controls
- ☐ Other:

X. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

First Name, Middle Initial, Last Name: _____ _____ _____

Title: _____

Signature: _____ Date: ___/___/_____

Email: _____

Instructions for Completing EPA Form 3510-9

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

NPDES Form Date (2/16) This Form Replaces Form 3510-9 (11/08) Form Approved OMB No. 2040-0004

Who Must File an NOI Form

Under the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et. seq.; the Act), federal law prohibits stormwater discharges from certain construction activities to waters of the U.S. unless that discharge is covered under a National Pollutant Discharge Elimination System (NPDES) permit. Operator of construction sites where one or more acres are disturbed, smaller sites that are part of a larger common plan of development or sale where there is a cumulative disturbance of at least one acre, or any other site specifically designated by the Director, must submit an NOI to obtain coverage under an NPDES general permit. Each person, firm, public organization, or any other entity that meets either of the following criteria must file this form: (1) they have operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (2) they have day-to-day operational control of those activities at the project necessary to ensure compliance with the permit conditions. If you have questions about whether you need a NPDES stormwater permit, or if you need information to determine whether EPA or your state agency is the permitting authority, refer to www.epa.gov/npdes/stormwater/cgp or telephone EPA's NOI Processing Center at (866) 352-7755.

Completing the Form

Obtain and read a copy of the 2012 Construction General Permit, viewable at www.epa.gov/npdes/stormwater/cgp. To complete this form, type or print uppercase letters, in the appropriate areas only. Please place each character between the marks (abbreviate if necessary to stay within the number of characters allowed for each item). Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions on this form, refer to www.epa.gov/npdes/stormwater/cgp or telephone EPA's NOI Processing Center at (866) 352-7755. Please submit the original document with signature in ink - do not send a photocopied signature.

Section I. Approval to Use Paper NOI Form

You must indicate whether you have been given approval by the EPA Regional Office to use a paper NOI. Note that you are not authorized to use this paper NOI form unless the Regional Office has approved its use. Verbal approval from the Regional Office is sufficient. Where you have obtained approval to use this form, indicate the reason you need to use this form, the name of the EPA Regional Office staff person who provided approval for use of this form, and the date that approval was provided. See www.epa.gov/npdes/stormwater/contacts for a list of EPA Regional Office contacts.

Section II. Permit Number

Provide the number of the permit under which you are applying for coverage (see Appendix B of the general permit for the list of eligible permit numbers).

Section III. Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application. Refer to Appendix A of the permit for the definition of "operator". Provide the employer identification number (EIN from the Internal Revenue Service; IRS), also commonly referred to as your taxpayer ID. If the applicant does not have an EIN enter "NA" in the space provided. Also provide a point of contact, the operator's mailing address, telephone number, fax number (optional) and e-mail address (to be notified via e-mail of NOI approval when available). Correspondence for the NOI will be sent to this address.

If the NOI was prepared by someone other than the certifier (for example, if the NOI was prepared by the facility SWPPP contact or a consultant for the certifier's signature), include the full name, organization, phone number and email address of the NOI preparer.

Section IV. Project/Site Information

Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for permit coverage to be granted.

Provide the latitude and longitude of your facility either in degrees, minutes, seconds; degrees, minutes, decimal; or degrees decimal format. The latitude and longitude of your facility can be determined in several different ways, including through the use of global positioning system (GPS) receivers, U.S. Geological Survey (U.S.G.S.) topographic or quadrangle maps, and EPA's web-based siting tools, among others. Refer to www.epa.gov/npdes/stormwater/cgp for further guidance on the use of these methodologies. For consistency, EPA requests that measurements be taken from the approximate center of the construction site. Applicants must specify which method they used to determine latitude and longitude. If a U.S.G.S. topographic map is used, applicants are required to specify the scale of the map used. If known, enter the horizontal reference datum for your latitude and longitude. The horizontal reference datum used on USGS topographic maps is shown on the bottom left corner of USGS topographic maps; it is also available for GPS receivers. If you use EPA's web siting tool, or if you are unsure of the horizontal reference datum for your site, please check the "unknown" box.

Indicate whether the project is in Indian country lands, and if so, provide the name of the Indian tribe associated with the area of Indian country (including name of Indian reservation, if applicable).

Indicate whether you are seeking coverage under this permit as a "federal operator" as defined in Appendix A.

Enter the estimated construction start and completion dates using four digits for the year (i.e., 10/06/2012). Indicate to the nearest quarter acre the estimated area to be disturbed.

Indicate whether earth-disturbing activities have already commenced on your project/site. If earth-disturbing activities have commenced on your site because stormwater discharges from the site have been previously covered under a NPDES permit, you must provide the CGP Tracking Number or the NPDES permit number if coverage was under an individual permit.

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

NPDES Form Date (2/16) This Form Replaces Form 3510-9 (11/08) Form Approved OMB No. 2040-0004

Section V. Discharge Information

Indicate whether discharges from the site will enter into a municipal separate storm sewer system (MS4), as defined in Appendix A.

Also, indicate whether any surface waters (as defined in Appendix A) exist either on or within 50 feet from your site. Note that if "yes", you are required to comply with the requirement in Part 2.1.2.1 of the permit to provide natural buffers or equivalent sediment controls.

You must specify the names of any surface waters that receive stormwater directly from your site and/or from the MS4 to which you discharge. You must also specify the names of any surface waters that you discharge to that are listed as "impaired" as defined in Appendix A, including any waters for which there is an approved or established TMDL, and the pollutants for which the water is impaired or for which there is a TMDL. This information will be used to determine if the site discharges to an impaired waterbody, which triggers additional requirements in Part 3.2.2 of the permit. Applicants must specify which method they used to determine whether or not their site discharges to impaired waters. Also, if a TMDL has been approved or established, identify the title or reference of the TMDL document.

Indicate whether discharges from the site will enter into a surface water that is designated as a Tier 2, Tier 2.5, or Tier 3 water. A list of Tier 2, 2.5, and 3 waters is provided as Appendix F. If the answer is "yes", name all waters designated as Tier 2, Tier 2.5, or Tier 3 to which the site will discharge.

Section VI. Chemical Treatment Information

Indicate whether the site will use polymers, flocculants, or other treatment chemicals. Indicate whether the site will employ cationic treatment chemicals. If the answer is "yes" to either question, indicate which chemical(s) you will use. Note that you are not eligible for coverage under this permit to use cationic treatment chemicals unless you notify your applicable EPA Regional Office in advance and the EPA office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards. If you have been authorized to use cationic treatment chemicals by your applicable EPA Regional Office, attach a copy of your authorization letter and include documentation of the appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards. Examples of cationic treatment chemicals include, but are not limited to, cationic polyacrylamide (C-PAM), PolyDADMAC (POLYDIALLYLDIMETHYLAMMONIUM CHLORIDE), and chitosan.

Section VII. Stormwater Pollution Prevention Plan (SWPPP) Information

All sites eligible for coverage under this permit are required to prepare a SWPPP in advance of filing the NOI, in accordance with Part 7. Indicate whether the SWPPP has been prepared in advance of filing the NOI.

Indicate the street, city, state, and zip code where the SWPPP can be found. Indicate the contact information (name, organization, phone, fax (optional), and email) for the person who developed the SWPPP for this project.

Section VIII. Endangered Species Information

Using the instructions in Appendix D, indicate under which criterion (i.e., A, B, C, D, E, or F) of the permit the applicant is eligible with regard to protection of federally listed endangered and threatened species and designated critical habitat. A description of the basis for the criterion selected must also be provided.

If criterion B is selected, provide the Tracking Number for the other operator who had previously certified their eligibility under criterion A, C, D, E, or F. The Tracking Number was assigned when the operator received coverage under this permit, and is included in the notice of authorization.

If criterion C is selected, you must attach copies of your site map. See Part 7.2.6 of the permit for information about what is required to be in your site map. You must also specify the federally-listed species or federally-designated critical habitat that are located in the "action area" of the project, and provide the distance between the construction site and any listed endangered species or their critical habitat.

If criterion D, E, or F is selected, attach copies of any communications between you and the U.S. Fish and Wildlife Service and National Marine Fisheries Service.

Section IX. Historic Preservation

If the project is not located in Indian country lands, indicate whether the project is located on a property of religious or cultural significance to an Indian tribe, and if so, provide the name of the Indian tribe associated with the property. Use the instructions in Appendix E to complete the questions on the NOI form regarding historic preservation.

Section X. Certification Information

All applications, including NOIs, must be signed as follows:

For a corporation: By a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall

operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA). Include the name and title of the person signing the form and the date of signing. An unsigned or undated NOI form will not be considered eligible for permit coverage.

Modifying Your NOI

If after submitting your NOI you need to correct or update any fields on this NOI form, you may do so by submitting a paper modification form, which you can obtain at the following link: http://www.epa.gov/npdes/pubs/cgp_modify.pdf

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 3.7 hours. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch 2136, U.S. Environmental Protection, Agency, 1200 Pennsylvania Avenue, NW, Washington, D.C. 20460. Include the OMB control number on any correspondence. Do not send the completed form to this address.

Submitting Your Form

Submit your NOI form by mail to one of the following addresses:

For Regular U.S. Mail Delivery:
Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:
Stormwater Notice Processing Center
EPA East Building - Room 7420
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

Visit this website for instructions on how to submit electronically:
www.epa.gov/npdes/stormwater/cgpenoi

Appendix K - Notice of Termination (NOT) Form and Instructions

Part 8.3 requires you to use the electronic NOI system, or "eNOI" system, to prepare and submit your NOT. However, where your EPA Regional Office specifically authorizes you to use a paper NOT form, you are required to complete and submit the following form.

NPDES FORM 3510-13	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF TERMINATION (NOT) FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER AN NPDES GENERAL PERMIT	Form Approved. OMB No. 2040-0004

Submission of this Notice of Termination constitutes notice that the operator identified in Section II of this form is no longer authorized discharge pursuant to the NPDES Construction General Permit (CGP) from the site identified in Section III of this form. All necessary information must be included on this form. Refer to the instructions at the end of this form.

I. Approval to Use Paper NOT Form

Have you been given approval from the Regional Office to use this paper NOT form*? ☐ YES ☐ NO

*** Note: You must have been given approval by the Regional Office prior to using this paper NOT form.**

II. Permit Information

NPDES Stormwater General Permit Tracking Number:

Reason for Termination (Check only one):

- ☐ You have completed earth-disturbing activities at your site, and you have met all other requirements in Part 8.2.1.
- ☐ Another operator has assumed control over all areas of the site and that operator has submitted an NOI and obtained coverage under the CGP.
- ☐ You have obtained coverage under an individual permit or another general NPDES permit addressing stormwater discharges from the construction site.

III. Operator Information

Name:

IRS Employer Identification Number (EIN): -

Mailing Address:

Street:

City: State: Zip Code: -

Phone: - - Ext. Fax (optional): - -

E-mail:

IV. Project/Site Information

Project/Site Name:

Project/Site Address:

Street/Location:

City: State: Zip Code: -

County or similar government subdivision:

V. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

First Name, Middle Initial, Last Name:

Title:

Signature: _____ Date: / /

Email:

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

NPDES Form Date (2/16) This Form Replaces Form 3510-13 (12/08) Form Approved OMB No. 2040-0004

Who May File an NOT Form

Permittees who are presently covered under the EPA-issued 2012 Construction General Permit (CGP) for Stormwater Discharges Associated with Construction Activity may submit an NOT form when: (1) earth-disturbing activities at the site are completed and the conditions in Parts 8.2.1.1 thru 8.2.1.5 are met; or (2) the permittee has transferred all areas under its control to another operator, and that operator has submitted and obtained coverage under this permit; or (3) the permittee has obtained coverage under a different NPDES permit for the same discharges.

Completing the Form

Type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, refer to www.epa.gov/npdes/stormwater/cgp or telephone EPA's NOI Processing Center at (866) 352-7755. Please submit original document with signature in ink - do not send a photocopied signature.

Section I. Approval to Use Paper NOT Form

You must indicate whether you have been given approval by the EPA Regional Office to use a paper NOT. Note that you are not authorized to use this paper NOT form unless the Regional Office has approved its use.

Section II. Permit Number

Enter the existing NPDES Stormwater General Permit Tracking Number assigned to the project by EPA's Stormwater Notice Processing Center. If you do not know the permit tracking number, refer to http://www.epa.gov/npdes/stormwater/cgp or contact EPA's NOI Processing Center at (866) 352-7755.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box. Check only one:

You have completed earth-disturbing activities at your site and, if applicable, construction support activities covered by this permit (see Part 1.6.3) and you have met all other requirements in Part 8.2.1.

Another operator has assumed control over all areas of the site and that operator has submitted an NOI and obtained coverage under the CGP.

You have obtained coverage under an individual permit or another general NPDES permit addressing stormwater discharges from the construction site.

Section III. Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application and is covered by the permit tracking number identified in Section I. Refer to Appendix A of the permit for the definition of "operator". Provide the employer identification number (EIN from the Internal Revenue Service; IRS). If the applicant does not have an EIN enter "NA" in the space provided. Enter the complete mailing address, telephone number, and email address of the operator. Optional: enter the fax number of the operator.

Section IV. Project/Site Information

Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for termination of permit coverage to be valid.

Section V. Certification Information

All applications, including NOIs, must be signed as follows:

For a corporation: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

Include the name, title, and email address of the person signing the form and the date of signing. An unsigned or undated NOT form will not be considered valid termination of permit coverage.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 0.5 hours per notice, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Include the OMB number on any correspondence. Do not send the completed form to this address.

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

NPDES Form Date (2/16) This Form Replaces Form 3510-13 (12/08) Form Approved OMB No. 2040-0004

Submitting Your Form:
Submit your NOI form by mail to one of the following addresses:

For Regular U.S. Mail Delivery:
Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:
Stormwater Notice Processing Center
EPA East Building - Room 7420
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

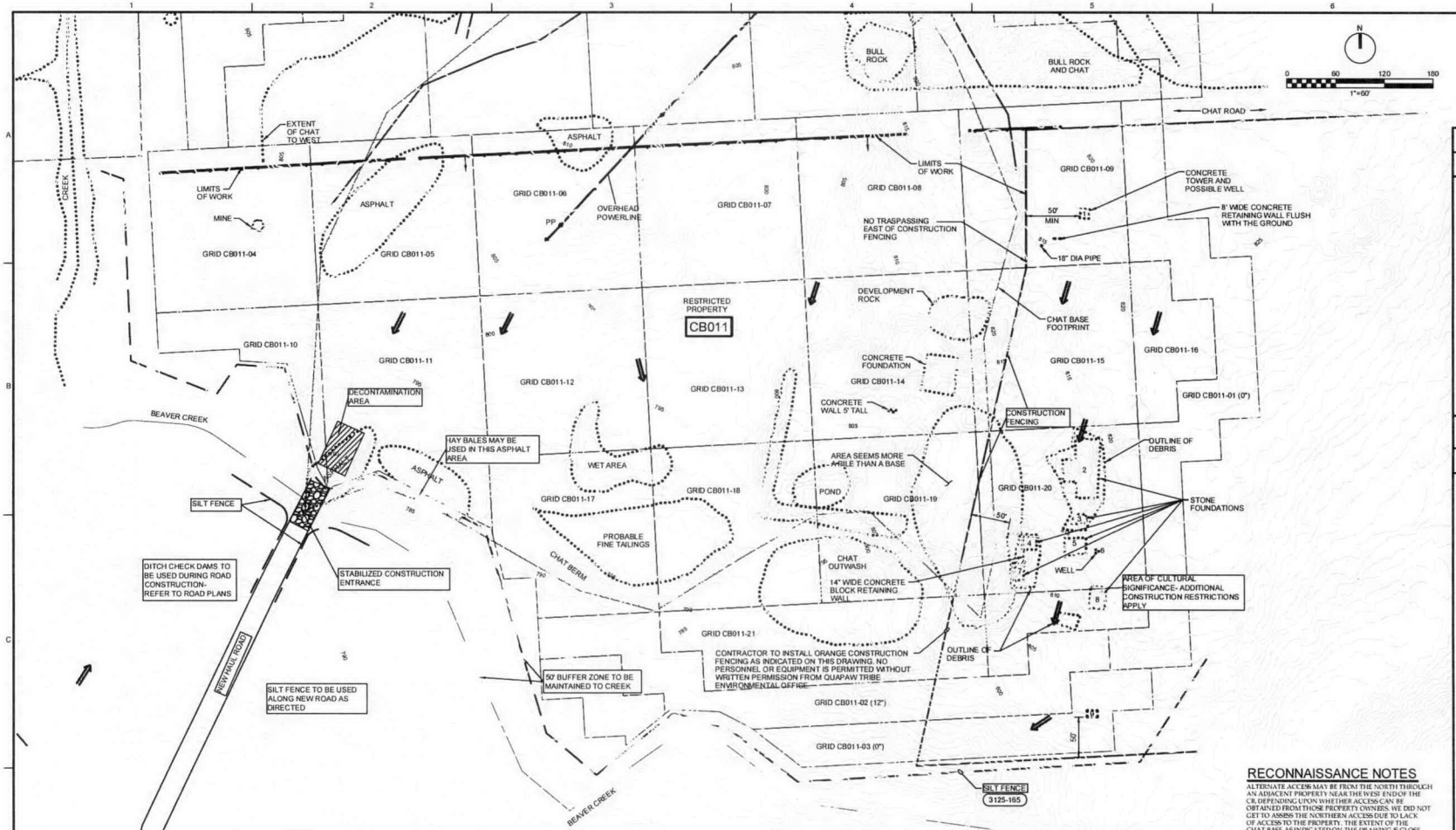
Visit this website for instructions on how to submit electronically:
www.epa.gov/npdes/stormwater/cgpenoi

Appendix B

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Stormwater Drainage Map with Erosion Controls

[See Attached]



NOTES:

1. STRAW BALES OR FIBER ROLLS MAY BE USED AS NEEDED ALONG WITH THE SILT FENCING TO PROVIDE ADDITIONAL POLLUTANT REMOVAL.
2. A 50-FOOT BUFFER ZONE WILL BE MAINTAINED FROM THE CREEK BED.
3. ROCK CHECK DAMS, STRAW WADDLES, OR EROSION CONTROL BLANKETS WILL BE USED ON STEEP SLOPES AS APPLICABLE.
4. A SPECIFIC AREA WILL BE ESTABLISHED FOR EQUIPMENT MAINTENANCE AND FUELING. THIS AREA WILL BE ADDED TO THE PLAN WHEN ESTABLISHED.
5. EROSION CONTROL MEASURES SPECIFIC TO THE ROAD CONSTRUCTION ARE SHOWN ON DRAWINGS 002 AND 007 OF THE HAUL ROAD PLANS.

NOTE:
1. AREAS WEST OF CONSTRUCTION FENCING IN GRIDS 08, 09, 14, 15, 19, 20, AND 21 REQUIRE OVERSIGHT PRESENCE OF THE QUAPAW TRIBE OR BIA BEFORE ANY EXCAVATION ACTIVITY IS CONDUCTED.

DENOTES SURFACE WATER FLOW

BUILDING LOCATIONS:
#1 WATER TOWER
#2 LARGE DORMITORY FOUNDATION
#3 POSSIBLE PRESBYTERY - FOUNDATION WITH CELLAR
#4 UNKNOWN FUNCTION - SHED ROOF, TRUNCATED BY CHAT
#5 UNKNOWN FUNCTION - FOUNDATION
#6 STONE-LINED WELL
#7 UNKNOWN FUNCTION - RUINS WITH GABLE ROOF
#8 RUINS - POSSIBLE CLASSROOM/SISTERS QUARTERS
#9 ANIMAL PEN

RECONNAISSANCE NOTES

ALTERNATE ACCESS MAY BE FROM THE NORTH THROUGH AN ADJACENT PROPERTY NEAR THE WEST END OF THE CB, DEPENDING UPON WHETHER ACCESS CAN BE OBTAINED FROM THOSE PROPERTY OWNERS. WE DID NOT GET TO ASSESS THE NORTHERN ACCESS DUE TO LACK OF ACCESS TO THE PROPERTY. THE EXTENT OF THE CHAT BASE AS INDICATED ON THE DRAWING IS CLOSE TO WHAT IS OBSERVED IN THE FIELD, ALTHOUGH PART OF THE SOUTHEAST PORTION OF THE CHAT BASE IS MORE OF A CHAT PILE THAN A BASE. THE EASTERN EDGE OF THE CB APPEARS TO GO UP THE SIDE OF A HILL. THERE IS ALSO AN AREA WHERE CHAT APPEARS TO HAVE WASHED OFF OF THE CHAT BASE, NEAR THE SOUTHEAST CORNER OF THE BASE. TWO AREAS OF APPARENT FINE TAILINGS ARE LOCATED ON THE SOUTHERN PORTION OF THE CB AREA. DEVELOPMENT ROCK IS PRESENT ON THE NORTH SIDE OF AN AREA OF CONCRETE FOUNDATION BLOCKS ON THE EAST SIDE OF THE CB. THERE ARE AREAS OF ASPHALT COVERING THE CHAT, NEAR THE WEST END AND ON THE WEST-CENTRAL PORTION OF THE CB. A BARB-WIRE FENCE PASSES THROUGH THE CB FROM EAST TO WEST, SEPARATING THE NORTHERN 1/3 OF THE CB FROM THE SOUTHERN 2/3 OF THE CB.

..... FIELD RECONNAISSANCE AREAS OF INTEREST

NO	DATE	DSGN	DR	CHK	APVD	BY
1	10.17.13	KR CHANG	C CHILDRESS	M WILSON	M WILSON	ECCI PB

1 ADDED EROSION CONTROL ITEMS AND NOTES

EPA

TAR CREEK SOURCE MATERIAL OPERABLE UNIT 4
OTTAWA COUNTY, OKLAHOMA

CIVIL
DISTAL AREA 8
CHAT BASE CB011
RECONNAISSANCE PLAN

1" = 60'
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

DATE DECEMBER 2011
PROJ 388745
DWG CB011-C-2201DA8
SHEET

ISSUED FOR CLIENT REVIEW

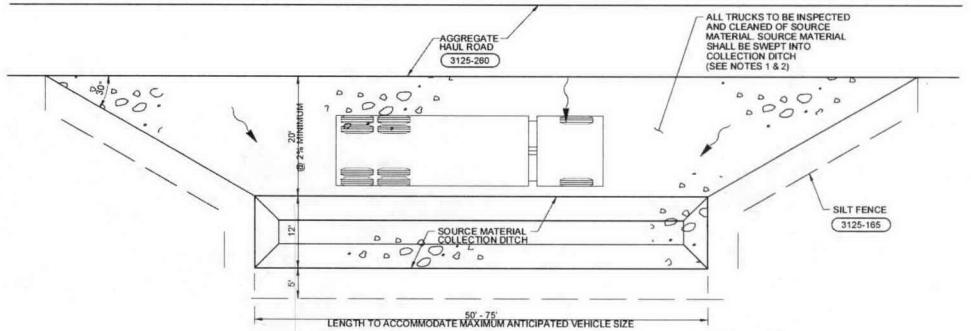
PW SERVER LOCATION: WBG FILENAME: $FILENAME PLOT DATE: $PLOTDATE PLOT TIME: $PLOTTIME

Appendix C

QUAPAW TRIBE ENVIRONMENTAL OFFICE

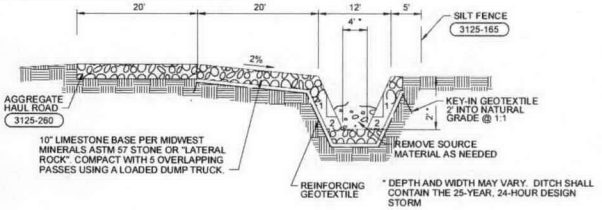
Erosion Control Diagrams/Specifications

[See Attached]



NOTES:

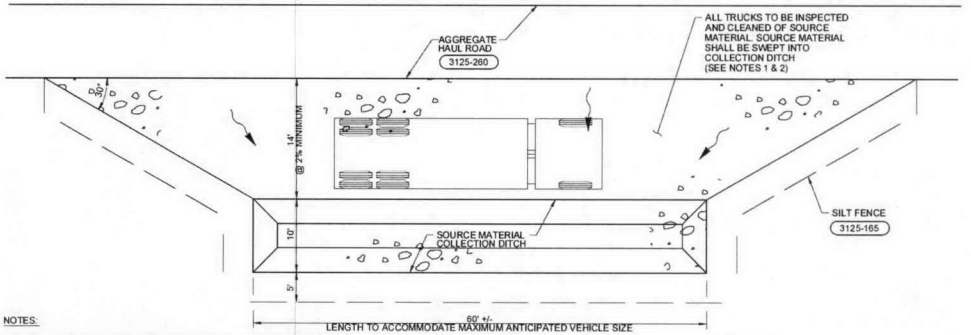
1. SOURCE MATERIAL AND DEBRIS FROM TRANSPORT VEHICLES SHALL BE REMOVED PRIOR TO LEAVING THE SITE. TIRES, TAILGATE, BUMPERS AND OTHER VEHICLE PARTS COLLECTING SOURCE MATERIAL SHALL BE INSPECTED AND DISCOVERED SOURCE MATERIAL SHALL BE REMOVED BY BRUSHING OR SOME OTHER PHYSICAL METHOD.
2. REMOVED SOURCE MATERIAL SHALL BE COLLECTED AND CONVEYED TO THE ADJACENT COLLECTION DITCH. THE COLLECTION DITCH SHALL BE DESIGNED TO COLLECT SOURCE MATERIAL AND STORMWATER RUNOFF FOR THE 25-YEAR, 24-HOUR DESIGN STORM.
3. DIMENSIONS OF WET DECONTAMINATION AREA AND SOURCE MATERIAL COLLECTION DITCH MAY VARY DEPENDING ON THE MAXIMUM SIZE OF TRANSPORT VEHICLES AND CONTRACTOR PREFERENCE.
4. DEBRIS AND SOURCE MATERIAL THAT ARE INADVERTENTLY TRACKED OFFSITE ONTO ROADS SHALL BE REMOVED AND CLEANED IMMEDIATELY UPON DISCOVERY. ALL SOURCE MATERIAL TRANSPORT VEHICLES SHALL HAVE A TARP OVER THE LOAD PRIOR TO LEAVING THE SITE TO PREVENT FUGITIVE DUST AND OFFSITE CONTAMINATION OF SOURCE MATERIAL.
5. EXCAVATION EQUIPMENT AND OTHER CONSTRUCTION EQUIPMENT AND TRAILERS SHALL BE SIMILARLY DECONTAMINATED PRIOR TO LEAVING THE SITE.



TRUCK DRY DECONTAMINATION AREA

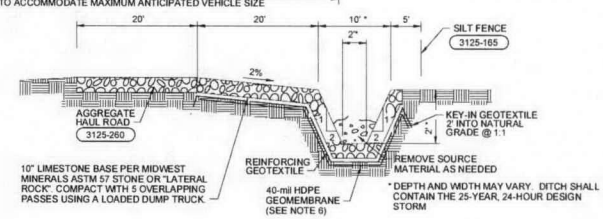
NTS

3125-136



NOTES:

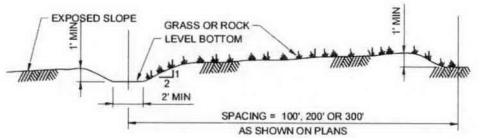
1. SOURCE MATERIAL AND DEBRIS FROM TRANSPORT VEHICLES SHALL BE REMOVED PRIOR TO LEAVING THE SITE. TIRES, TAILGATE, BUMPERS AND OTHER VEHICLE PARTS COLLECTING SOURCE MATERIAL SHALL BE INSPECTED AND DISCOVERED SOURCE MATERIAL SHALL BE REMOVED BY BRUSHING OR SOME OTHER PHYSICAL METHOD.
2. REMOVED SOURCE MATERIAL SHALL BE COLLECTED AND CONVEYED TO THE ADJACENT COLLECTION DITCH. THE COLLECTION DITCH SHALL BE DESIGNED TO COLLECT SOURCE MATERIAL AND STORMWATER RUNOFF FOR THE 25-YEAR, 24-HOUR DESIGN STORM.
3. DIMENSIONS OF WET DECONTAMINATION AREA AND SOURCE MATERIAL COLLECTION DITCH MAY VARY DEPENDING ON THE MAXIMUM SIZE OF TRANSPORT VEHICLES AND CONTRACTOR PREFERENCE.
4. DEBRIS AND SOURCE MATERIAL THAT ARE INADVERTENTLY TRACKED OFFSITE ONTO ROADS SHALL BE REMOVED AND CLEANED IMMEDIATELY UPON DISCOVERY. ALL SOURCE MATERIAL TRANSPORT VEHICLES SHALL HAVE A TARP OVER THE LOAD PRIOR TO LEAVING THE SITE TO PREVENT FUGITIVE DUST AND OFFSITE CONTAMINATION OF SOURCE MATERIAL.
5. EXCAVATION EQUIPMENT AND OTHER CONSTRUCTION EQUIPMENT AND TRAILERS SHALL BE SIMILARLY DECONTAMINATED PRIOR TO LEAVING THE SITE.
6. HDPE GEOMEMBRANE SHALL BE MANUFACTURED BY GSE LINING TECHNOLOGY, INC., HOUSTON, TX OR EQUIVALENT. INSTALL AND WELD ALL SEEMS IN ACCORDANCE WITH THE GEOMEMBRANE MANUFACTURER'S RECOMMENDATION.



TRUCK WET DECONTAMINATION AREA

NTS

3125-137



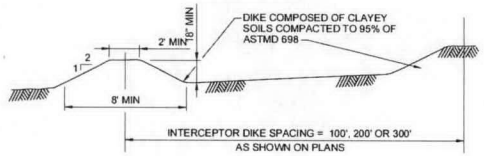
BOTTOM WIDTH: 2' MINIMUM, THE BOTTOM WIDTH SHALL BE LEVEL

DEPTH: 1' MINIMUM

SIDE SLOPE: 2H:1V OR FLATTER

GRADE: MAXIMUM 5 PERCENT WITH POSITIVE DRAINAGE TO A SUITABLE OUTLET (SUCH AS A SEDIMENTATION POND)

INTERCEPTOR SWALE



TEMPORARY INTERCEPTOR DIKES

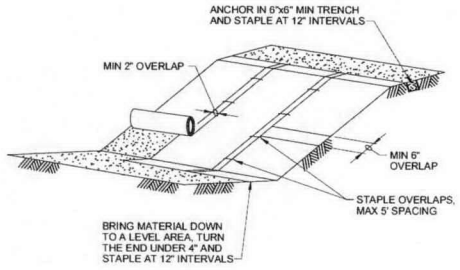
NOTES:

1. DIKE MATERIAL SHALL BE CLASSIFIED AS SP, SM OR CL IN ACCORDANCE WITH ASTMD-2487.

INTERCEPTOR SWALES AND DIKES

NTS

3125-145



NOTES:

1. IF THERE IS A BERM AT THE TOP OF SLOPE, ANCHOR UPSLOPE OF THE BERM.
2. SLOPE SURFACE SHALL BE SMOOTH BEFORE PLACEMENT FOR PROPER SOIL CONTACT.
3. DO NOT STRETCH BLANKETS/MATTINGS TIGHT, ALLOW THE ROLLS TO MOLD TO ANY IRREGULARITIES.
4. STAPLING PATTERN AS PER MANUFACTURER'S RECOMMENDATIONS.
5. FOR SLOPES LESS THAN 3:1, ROLLS MAY BE PLACED IN HORIZONTAL STRIPS.
6. LIME, FERTILIZE AND SEED BEFORE INSTALLATION. PLANTING OF SHRUBS, TREES, ETC SHOULD OCCUR AFTER INSTALLATION.

EROSION AND SEDIMENT CONTROL BLANKET ON SLOPE

NTS

3125-150

NO.	DATE	REVISION	BY	APVD
DSGN	T MALONE	DR C CHILDRESS	CHK KR CHANG	APVD M WILSON

EPA

TAR CREEK SOURCE MATERIAL OPERABLE UNIT 4
OTTAWA COUNTY, OKLAHOMA

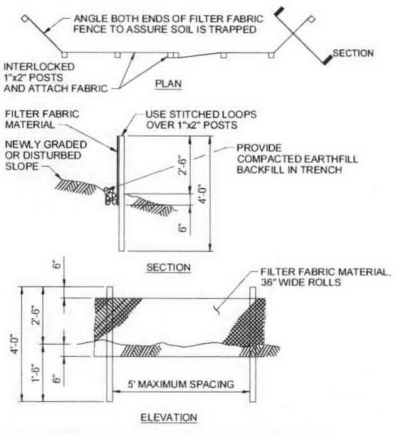
CIVIL
DISTAL AREA 7 DETAILS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	FEBRUARY 2012
PROJ	413831
DWG	DT003-C-5001DA7
SHEET	

ISSUED FOR CLIENT REVIEW

PW SERVER LOCATION: WBG FILENAME: $FILENAME PLOT DATE: $PLOTDATE PLOT TIME: $PLOTTIME



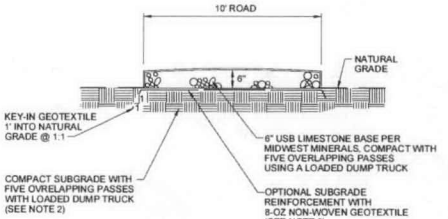
NOTES:

1. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
2. 1"x2" WOOD OR STEEL FENCE POSTS.
3. STITCHED LOOPS TO BE INSTALLED DOWNHILL SIDE OF SLOPE.
4. COMPACT ALL AREAS OF FILTER FABRIC TRENCH.

SILT FENCE

NTS

3125-16



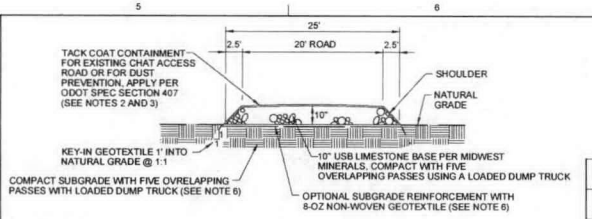
NOTES:

1. THE AGGREGATE ROAD SHALL BE CONSTRUCTED TO MAINTAIN THE EXISTING DRAINAGE PATTERNS AND SHALL NOT TRAP STORMWATER RUNOFF. DEPRESSIONS IN THE ROADWAY OR CULVERTS MAY BE REQUIRED IN SOME AREAS TO ALLOW STORMWATER TO FLOW FREELY. CONTRACTOR TO COORDINATE WITH ENGINEER WHEN EVALUATING DRAINAGE CONDITIONS.
2. CONTRACTOR TO COORDINATE WITH ENGINEER REGARDING THE PROPOSED ROAD SUBGRADE. FOR MOST PROPOSED ROAD SEGMENTS, COMPACTING THE SUBGRADE WITH 5 OVERLAPPING PASSES WITH A LOADED DUMP TRUCK IS SUFFICIENT. HOWEVER, IF A ROAD SEGMENT IS DEEMED TOO SOFT OR WET, THEN A SUGRADE REINFORCEMENT GEOTEXTILE MAY BE REQUIRED.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE ROAD FOR THE DURATION OF LOCALIZED SITE REMEDIATION.

AGGREGATE ACCESS ROAD

NTS

3125-25



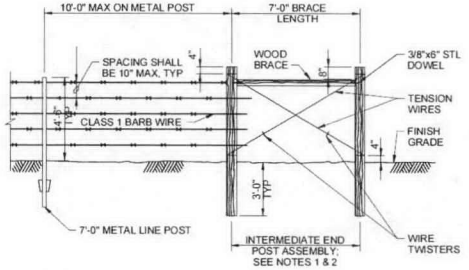
NOTES:

1. CONTRACTOR TO ASSESS THE ACCESS ROUTE TO EACH SOURCE AREA. IF THE EXISTING ROUTE IS INADEQUATE OR IF NO ROAD IS PRESENT, THE CONTRACTOR SHALL INSTALL AN AGGREGATE ACCESS ROAD PER THIS DETAIL.
2. IF THE CONTACTOR IS TO USE AN EXISTING ROAD AND THE ROAD IS COMPOSED OF CHAT MATERIAL, THE CONTRACTOR HAS TWO OPTIONS:
   a. OPTION 1 IS TO REPLACE THE CHAT ROAD WITH THIS DETAIL. THE EXCAVATED CHAT ROAD SHALL BE DISPOSED PER THE SPECIFICATIONS.
   b. OPTION 2 IS TO APPLY AN ASPHALTIC TACK COAT OVER THE CHAT ROAD TO PREVENT THE GENERATION OF HAZARDOUS CHAT DUST.
3. THE ASPHALTIC TACK COAT SHALL BE IN ACCORDANCE WITH ODOT SPEC SECTION 407 AND APPLIED AS NECESSARY TO PREVENT THE GENERATION OF DUST. THE TACK COAT CAN BE USED TO CONTAIN EXISTING CHAT ROADS OR TO PREVENT DUST FROM NEW AGGREGATE ROADS, IF DUST IS PROBLEMATIC.
4. THE AGGREGATE ROAD SHALL BE CONSTRUCTED TO MAINTAIN THE EXISTING DRAINAGE PATTERNS AND SHALL NOT TRAP STORMWATER RUNOFF. DEPRESSIONS IN THE ROADWAY OR CULVERTS MAY BE REQUIRED IN SOME AREAS TO ALLOW STORMWATER TO FLOW FREELY. CONTRACTOR TO COORDINATE WITH ENGINEER WHEN EVALUATING DRAINAGE CONDITIONS.
5. AFTER SOURCE EXCAVATION IS COMPLETE, THE AGGREGATE ACCESS ROAD AND/OR THE EXISTING CHAT ROAD SHALL BE REMOVED. ADDITIONALLY, ALL EVIDENCE OF TACK COAT SHALL BE REMOVED FROM SITE.
6. CONTRACTOR TO COORDINATE WITH ENGINEER REGARDING THE PROPOSED ROAD SUBGRADE. FOR MOST PROPOSED ROAD SEGMENTS, COMPACTING THE SUBGRADE WITH 5 OVERLAPPING PASSES WITH A LOADED DUMP TRUCK IS SUFFICIENT. HOWEVER, IF A ROAD SEGMENT IS DEEMED TOO SOFT OR WET, THEN A SUGRADE REINFORCEMENT GEOTEXTILE MAY BE REQUIRED.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE ROAD FOR THE DURATION OF LOCALIZED SITE REMEDIATION.

AGGREGATE ACCESS ROAD & TACK COAT CONTAINMENT

NTS

3125-26



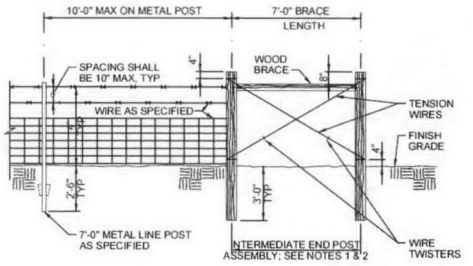
NOTES:

1. SPACING FOR INTERMEDIATE END POST ASSEMBLIES SHALL BE 400 FT MAXIMUM.
2. 6"x6"x8'-0" WOOD POSTS TO BE TREATED WITH PRESERVATIVE.

BARBED WIRE FENCE

NTS

3231-45



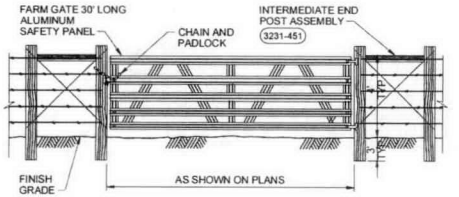
NOTES:

1. SPACING FOR INTERMEDIATE END POST ASSEMBLIES SHALL BE 400 FT MAXIMUM, UNLESS OTHERWISE NOTED.
2. 6"x6"x8'-0" WOOD POSTS TO BE TREATED WITH PRESERVATIVE AS SPECIFIED.

WIRE FIELD FENCE

NTS

3231-45



NOTE:

1. POST SPACING AND POST DEPTH PER FENCE INSTALLER RECOMMENDATIONS.

FIELD GATE

NTS

3231-45

EPA

TAR CREEK SOURCE MATERIAL OPERABLE UNIT 4
OTTAWA COUNTY, OKLAHOMA

CIVIL

DISTAL AREA 8 DETAILS

NO	DATE	DR	REVISION	CHK	BY	APVD
DESGN	T MALONE	C CHILDRESS		KR CHANG		M WILSON

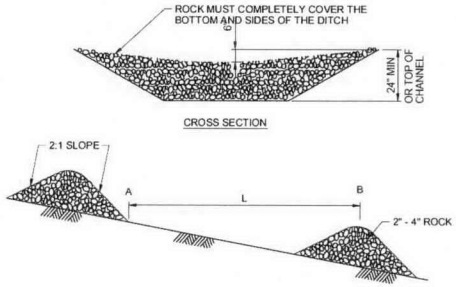
VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

DATE	APRIL 2012
PROJ	413831
DWG	DT006-C-5001DA8
SHEET	

ISSUED FOR CLIENT REVIEW

PW SERVER LOCATION: WRG FILENAME: SFILENAME PLOT DATE: SPLOTDATE PLOT TIME: SPLOTTIME



L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATIONS

DAM SPACING

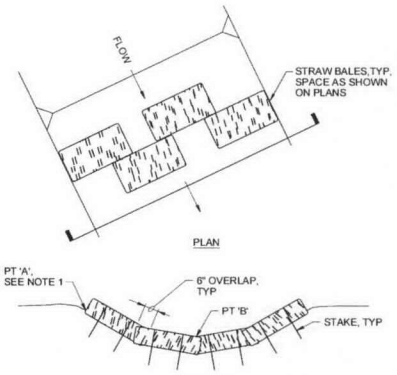
NOTES

1. ANY SEDIMENT DEPOSITION OF MORE THAN 0.5 FEET SHALL BE REMOVED SO THAT THE CHANNEL IS RESTORED TO ITS DESIGN CAPACITY.
2. THE CHANNEL SHALL BE EXAMINED FOR SIGNS OF SCOURING AND EROSION OF THE BED AND BANKS. IF SCOURING OR EROSION HAS OCCURRED, AFFECTED AREAS SHALL BE PROTECTED BY RIP-RAP OR AN EROSION CONTROL BLANKET.
3. BULL ROCK OR DEVELOPMENT ROCK IS SUITABLE FOR USE IN CHECK DAMS.

CHECK DAMS

NTS

3125–160



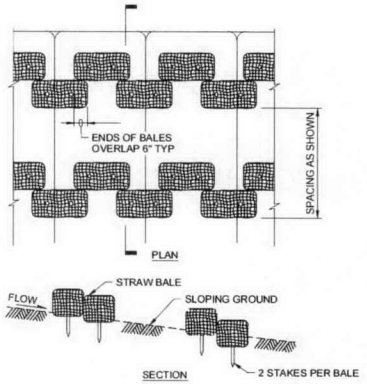
NOTES:

1. POINT 'A' MUST BE 6" MINIMUM HIGHER THAN PT 'B'.
2. STAKING OF BALES IS REQUIRED USING (2)2"x2"x3' LONG WOOD STAKES OR APPROVED EQUAL PER BALE.
3. DRIVE STAKES MINIMUM 12" INTO GROUND AND FLUSH WITH TOP OF BALES.
4. EMBED BALES MINIMUM OF 4" INTO GROUND SURFACE.
5. BIOFILTER BAGS TO BE USED, IF SPECIFIED.

STRAW BALES IN DITCHES

NTS

3125–170



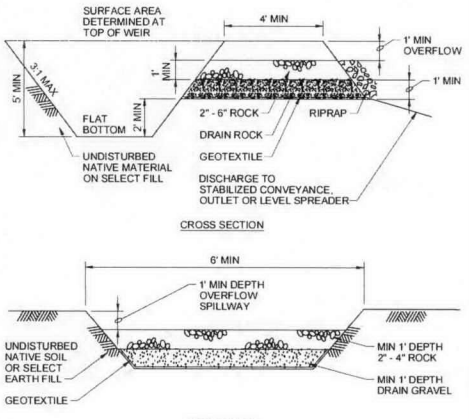
NOTES:

1. STAKING OF BALES IS REQUIRED USING (2) 2"x2"x3' LONG WOOD STAKES OR APPROVED EQUAL PER BALE.
2. DRIVE STAKES MINIMUM 12" INTO GROUND AND FLUSH WITH TOP OF BALES.
3. EMBED BALES MINIMUM OF 4" INTO GROUND SURFACE.
4. BIOFILTER BAGS TO BE USED, IF SPECIFIED.

STRAW BALES FOR OVERLAND FLOW

NTS

3125–171



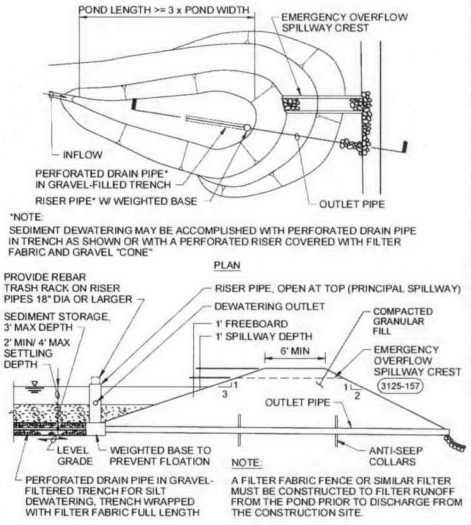
NOTES

1. SEDIMENT SHALL BE REMOVED FROM THE TRAP WHEN IT REACHES 1 FOOT IN DEPTH.
2. ANY DAMAGE TO THE TRAP EMBANKMENTS OR SLOPES SHALL BE REPAIRED.

SEDIMENT TRAP

NTS

3125–175

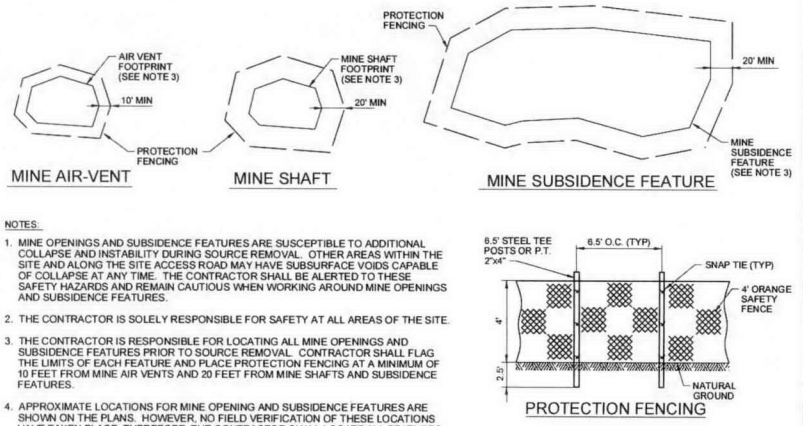


*NOTE:
SEDIMENT DEWATERING MAY BE ACCOMPLISHED WITH PERFORATED DRAIN PIPE IN TRENCH AS SHOWN OR WITH A PERFORATED RISER COVERED WITH FILTER FABRIC AND GRAVEL "CONE"

SEDIMENT POND

NTS

3125–180



NOTES:

1. MINE OPENINGS AND SUBSIDENCE FEATURES ARE SUSCEPTIBLE TO ADDITIONAL COLLAPSE AND INSTABILITY DURING SOURCE REMOVAL. OTHER AREAS WITHIN THE SITE AND ALONG THE SITE ACCESS ROAD MAY HAVE SUBSURFACE VOIDS CAPABLE OF COLLAPSE AT ANY TIME. THE CONTRACTOR SHALL BE ALERTED TO THESE SAFETY HAZARDS AND REMAIN CAUTIOUS WHEN WORKING AROUND MINE OPENINGS AND SUBSIDENCE FEATURES.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SAFETY AT ALL AREAS OF THE SITE.
3. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL MINE OPENINGS AND SUBSIDENCE FEATURES PRIOR TO SOURCE REMOVAL. CONTRACTOR SHALL FLAG THE LIMITS OF EACH FEATURE AND PLACE PROTECTION FENCING AT A MINIMUM OF 10 FEET FROM MINE AIR VENTS AND 20 FEET FROM MINE SHAFTS AND SUBSIDENCE FEATURES.
4. APPROXIMATE LOCATIONS FOR MINE OPENING AND SUBSIDENCE FEATURES ARE SHOWN ON THE PLANS. HOWEVER, NO FIELD VERIFICATION OF THESE LOCATIONS HAVE TAKEN PLACE. THEREFORE, THE CONTRACTOR SHALL LOCATE ALL FEATURES PRIOR TO WORK AND REPORT ANY DISCREPANCIES TO THE PROJECT MANAGER.
5. THE CONTRACTOR IS RESPONSIBLE FOR ASSESSING THE STABILITY OF EACH OPENING AND SUBSIDENCE FEATURE. CONTRACTOR MAY REQUIRE A GEOTECHNICAL INVESTIGATION OR GEOPHYSICAL INVESTIGATION TO FULLY ASSESS MINE FEATURES TO DETERMINE THEIR STABILITY AND THE CORRESPONDING LOCATION OF PROTECTION FENCING TO ENSURE WORKER SAFETY.

MINING OPENING AND SUBSIDENCE PROTECTION FENCING

NTS

3125–200

NO.	DATE	DR	REVISION	CHK	BY	APVD
DSGN	T.MALONE	C.CHILDRESS		KR.CHANG		M.WILSON

EPA

TAR CREEK SOURCE MATERIAL OPERABLE UNIT 4
OTTAWA COUNTY, OKLAHOMA

CIVIL

DISTAL AREA 8 DETAILS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

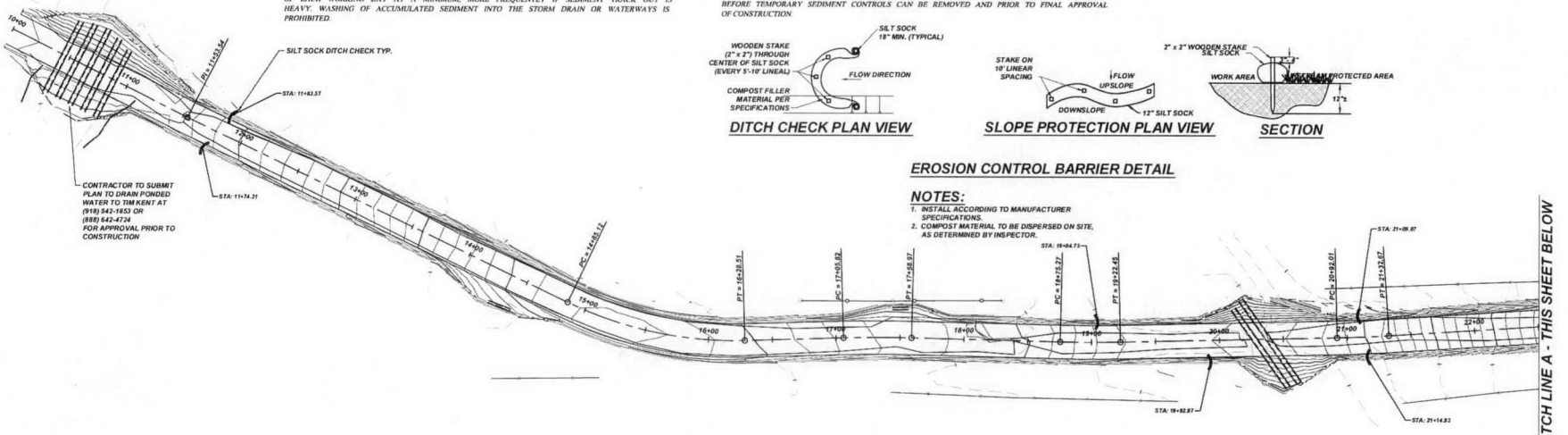
DATE	APRIL 2012
PROJ	413831
DWG	DT005-C-5001DA8
SHEET	

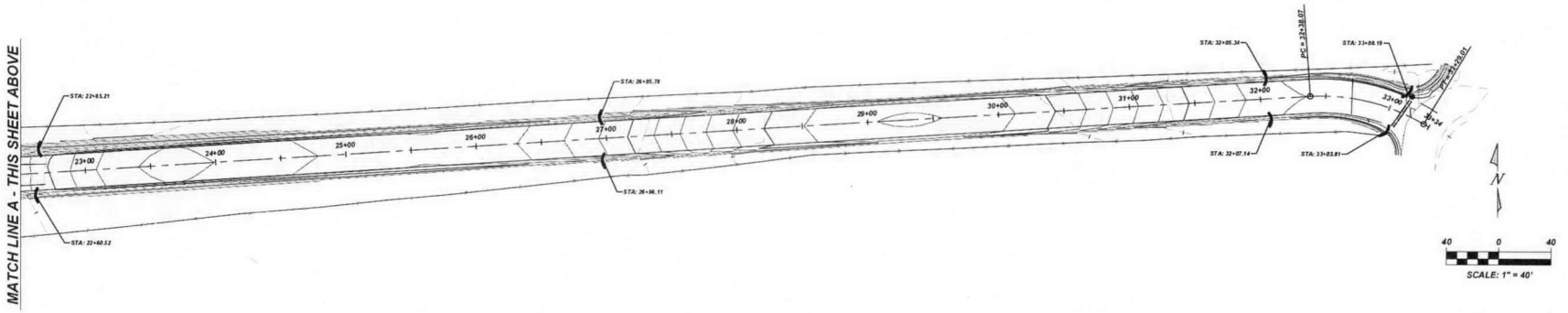
ISSUED FOR CLIENT REVIEW

PW SERVER LOCATION: WBG FILENAME: $FILENAME PLOT DATE: $PLOTDATE PLOT TIME: $PLOTTIME

SEDIMENT AND EROSION CONTROL GENERAL NOTES:

1. THIS PLAN SHOWS THE LOCATION AND DETAILS PRIMARY SEDIMENT CONTROLS TO BE CONSTRUCTED. THE PERMITTEE OR THEIR REPRESENTATIVE IS RESPONSIBLE FOR CONTROLLING EROSION AND DISCHARGE OF SEDIMENT FROM THE SITE AT ALL TIMES DURING CONSTRUCTION. THE PERMITTEE OR THEIR REPRESENTATIVE SHALL PROVIDE NECESSARY MEASURES DURING ALL PHASES OF CONSTRUCTION REGARDLESS OF WHETHER THEY ARE SPECIFICALLY NOTED ON THIS PLAN AND SHALL MAINTAIN AND REPLACE CONTROLS AS NECESSARY DURING CONSTRUCTION TO PREVENT THE MOVEMENT OF SEDIMENT DOWNSTREAM.
2. ALL EROSION AND SEDIMENT CONTROL BMPS SHALL BE INSTALLED AND MAINTAINED ACCORDING TO THE SPECIFICATIONS.
3. THE PERMITTEE OR THEIR REPRESENTATIVE IS RESPONSIBLE FOR INFORMING ALL PARTIES ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE SWPPP.
4. THE LIMITS OF CLEARING, GRADING, AND DISTURBANCE, AS SHOWN ON THE PLAN(S), SHALL BE KEPT TO A MINIMUM WITHIN THE APPROVED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE THE LIMITS OF DISTURBANCE SHALL REMAIN TOTALLY UNDISTURBED. PHASING SHALL BE USED TO MINIMIZE THE AMOUNT OF DISTURBED AREA AT ANY GIVEN TIME.
5. SEDIMENT BASINS, IF SHOWN ON THIS PLAN, MUST BE INSTALLED WITHIN 10 CALENDAR DAYS AFTER CONSTRUCTION BEGINS OR PRIOR TO 2 OR MORE ACRES BEING DISTURBED, WHICHEVER OCCURS FIRST.
6. A COPY OF THE SWPPP AND INSPECTION REPORTS MUST BE ACCESSIBLE AT THE CONSTRUCTION SITE.
7. PERMITTEE OR THEIR REPRESENTATIVE IS RESPONSIBLE FOR INSPECTING EROSION AND SEDIMENT CONTROL BMPS AND FACILITIES EVERY WEEK AND AFTER RAINFALL EVENTS EQUALING AT LEAST ½" IN 24 HOURS AND KEEPING WEEKLY INSPECTION REPORTS ATTACHED TO THE SWPPP.
8. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE CLEANED AND SWEPT AT THE END OF EACH WORKING DAY AT A MINIMUM, MORE FREQUENTLY IF SEDIMENT TRACK OUT IS HEAVY. WASHING OF ACCUMULATED SEDIMENT INTO THE STORM DRAIN OR WATERWAYS IS PROHIBITED.
9. DUST SHALL BE CONTROLLED DURING CONSTRUCTION AND CONSTRUCTION AREAS SHALL BE WATERED WHENEVER CONDITIONS WARRANT.
10. SEDIMENT REMOVED FROM EROSION AND SEDIMENT CONTROLS AND FACILITIES SHALL NOT BE PLACED ON STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND SHALL BE IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.
11. SEDIMENT ACCUMULATION IN BASINS SHALL BE REMOVED UPON ACCUMULATION OF 6 INCHES OF SEDIMENT.
12. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH AN APPROVED SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER NON DISTURBED AREAS.
13. THE PERMITTEE OR THEIR REPRESENTATIVE IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS OFF-SITE BORROW AND FILL AREAS.
14. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT DEPOSITION, THE PERMITTEE OR THEIR REPRESENTATIVE SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT DEPOSITION.
15. THE PERMITTEE OR THEIR REPRESENTATIVE SHALL STABILIZE ALL DISTURBED AREAS NOT SUBJECT TO CONSTRUCTION ACTIVITY WITHIN 14 CALENDAR DAYS AFTER ACTIVITY HAS CEASED.
16. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITHIN 7 CALENDAR DAYS OF ESTABLISHMENT WITH SOD OR SEED WITH APPROVED EROSION CONTROL MATTING OR BY OTHER APPROVED MEASURES.
17. ALL DISTURBED AREAS NOT RECEIVING OTHER PERMANENT STABILIZATION SUCH AS PAVEMENT, ROOFS, SOD, ETC., SHALL BE SEEDED AND MULCHED, AS SPECIFIED IN THE SWPPP BEFORE TEMPORARY SEDIMENT CONTROLS CAN BE REMOVED AND PRIOR TO FINAL APPROVAL OF CONSTRUCTION.
18. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
19. AFTER FINAL STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS SHALL BE STABILIZED IMMEDIATELY.
20. SILT AND DEBRIS MUST BE REMOVED FROM STORM DRAINS, CONVEYANCE CHANNELS, BASINS OR ANY PART OF THE STORMWATER SYSTEM PRIOR TO FINAL SITE STABILIZATION APPROVAL.
21. THE FOLLOWING WILL BE IMPLEMENTED ACCORDING TO LOCAL, STATE, AND FEDERAL REGULATIONS: LIQUID AND SOLID WASTE MANAGEMENT, CHEMICAL AND MATERIAL DELIVERY AND STORAGE, CONCRETE WASTE, PAINTING AND DRYWALL WORK, VEHICLE FUELING, MAINTENANCE AND CLEANING, ASPHALT, SAWCUTTING, CORING, AND GRINDING ACTIVITIES, BUILDING BLASTING AND CLEANING, CEMENT, GROUT AND MORTAR WORK, SANITARY AND SEPTIC WASTES, WATER LINE DISINFECTION, FLUSHING, DEWATERING, AND OTHER NON-STORMWATER DISCHARGES, HAZARDOUS WASTE MANAGEMENT, AND PROHIBITED DISCHARGES.
22. PERMITTEE OR THEIR REPRESENTATIVE SHALL CLOSE OUT THEIR LAND DISTURBANCE PERMIT AT THE END OF CONSTRUCTION ACTIVITIES AND AFTER FINAL STABILIZATION MEASURES AND REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROLS HAVE BEEN REVIEWED.
23. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS.
24. PERMITTEE OR THEIR REPRESENTATIVE SHALL MEET ALL OTHER STATE AND FEDERAL CLEAN WATER REQUIREMENTS.





DITCH CHECK PLAN VIEW

SLOPE PROTECTION PLAN VIEW

SECTION

EROSION CONTROL BARRIER DETAIL

NOTES:

1. INSTALL ACCORDING TO MANUFACTURER SPECIFICATIONS.
2. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY INSPECTOR.

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CJW
CJW Transportation Consultants, L.L.C.
CJW Transportation Consultants, L.L.C. 3535 S. Campbell Springfield, MO 65810
Tel: 417.889.3400 Fax: 417.889.3402 www.GoCJW.com

HAUL ROAD
QUAPAW TRIBE OF OKLAHOMA
OTTAWA COUNTY, OKLAHOMA

No.	Description:	Date:
—	—	-/-/-

SURVEY BY	CJW
DATE	10/15/13
DWG	0000-PLAN
DESIGN	CJW
DRAWN	CJW
CHECKED	CJW
SCALE HOR.	1"=20'
SCALE VERT.	N/A

TEMP EROSION CONTROL

SHEET NO. 007
CJW NO. 1379 OF 07

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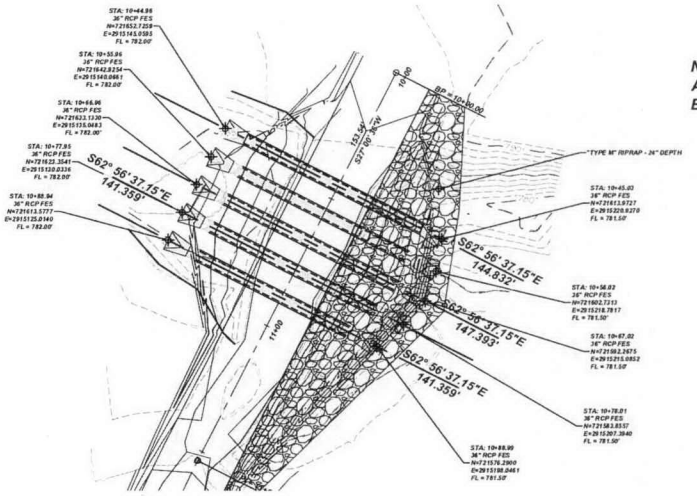
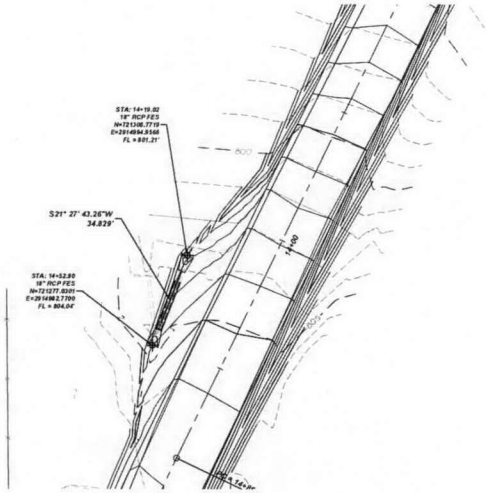
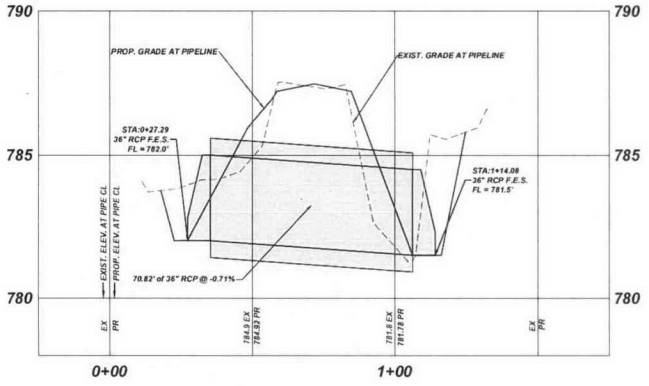
NOTE: PLAN STATIONS AND OFFSETS ARE BASED ON HAUL RD.



CULVERT PLAN A

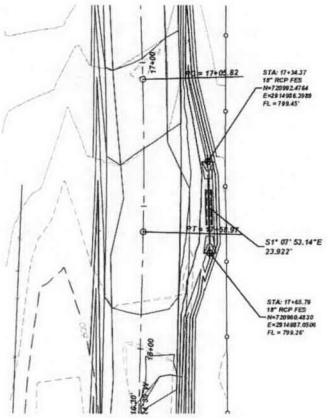


WEST DRIVEWAY CULVERT PLAN



CENTERLINE MIDDLE PIPE PROFILE

SCALE: 1"=20' HORZ.
1"=2' VERT.



EAST DRIVEWAY STORM PLAN

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HAUL ROAD
QUAPAW TRIBE OF OKLAHOMA
OTTAWA COUNTY, OKLAHOMA

No.:	Description:	Date:
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SURVEY BY	CJW
DATE	10/15/13
DWG	CUL P&P
DESIGN	CJW
DRAWN	CJW
CHECKED	CJW
SCALE HOR.	1" = 20'
SCALE VERT.	1" = 2'

CULVERT PLAN & PROFILE

SHEET NO. 005
CJW NO. 1379 OF 07

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Appendix D

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Chemical Inventory List

[See Attached]

Record of Chemical Usage

The Primary Contractor and the associated subcontractors will maintain the following inventory list of the type and amount of all hazardous and/or toxic chemicals that will be used at the construction site. This includes, but is not restricted to any insecticide, herbicide, other pesticide, lubricating fluids, and fuels. Construction personnel should be trained for the proper storage and use of such chemicals.

Chemical Name/Type	Amount Stored /Location	Date Brought To Site

Reporting of Incidents

An incident reporting and recordkeeping system to document incidents such as spills, leaks, accidents, and near misses has been developed for the construction project. The purpose of this system is to minimize recurrence, expedite mitigation or cleanup activities, and comply with regulatory requirements. The reporting system delineates the avenue for reporting and communications by including the following list of names and phone numbers of key personnel that are responsible for specific work areas.

Name/Title	Phone Number

Releases in Excess of Reportable Quantities

For activities that require the use of hazardous substances and/or oil the type and quantity of such substances that will be used and/or stored at the construction site should be identified. In the event of a spill or release of a hazardous substance or oil in an amount equal to, or in excess of, a reportable quantity established under 40 CFR Parts 110, 117, and 302 during a 24 hour period, the following actions must be taken:

Any person in charge of the facility is required to notify the National Response Center (NRC) at **1-800-424-8802** in accordance with the requirements of §110, §117, or §302 as soon as he/she has knowledge of the release.

- The responsible construction personnel are required to notify the designated management representative of the Primary Site Contractor and the Tribal Official immediately.
- The Primary Site contractor and/or the Tribal Representative will prepare and submit a written record of a description of the type of release, the date of the release, an estimation of the amount of the release, the circumstances leading to the release, and the preventative measures to avoid the recurrence of a release, within 14 calendar days.

Additionally, the SWPPP Plan will be reviewed, and modified where appropriate, to identify measures to prevent the reoccurrence of such releases and to respond to such releases.

Incident/Spill Report

Name of Person Preparing Report:	Date Completed:
Date of Incident:	
Time Incident Occurred:	
Description of Spill or Leak:	
Location:	
Type of Material Released:	
Quantity Released:	
Amount of Material Recovered:	
Duration of Release:	
Pollutants Involved:	
Cause of the Incident:	
Weather Conditions During Incident:	
Quantity of Stormwater Released:	
Parties Notified:	
Is Clean-Up Complete?	
Preventive Measures Taken to Prevent Recurrence:	

Additional Information:

Contact List
National Response Center – 1-800-424-8802

Appendix E

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Inspection Form / Recordkeeping Documents

[See Attached]

APPENDIX E
SWPPP INSPECTION CHECKLIST

Location of Inspection:_____ **Date:**_____

Inspector:_____ **Company:**_____

Inspection Procedure	Yes/No	Comments	Corrective Action Needed	Date Corrective Action Taken
Is there any evidence of sediment leaving the site? Is so, note areas				
Have any adverse impacts, such as, flooding, structural damage, erosion, spillage, or accumulation of sediment, debris or litter occurred on adjacent property, wetlands or surface waters?				
Have the stormwater BMPs been placed in accordance with approved design documents and are they working effectively?				
Are the stormwater BMPs functioning as intended?				
Is there evidence of discharges or spills of fuels or lubricants?				
Erosion blankets (if used) – Is the fabric damaged, loose, or in need of repairs				
Is the mulch distributed uniformly? Is there evidence that mulch has blown or washed away?				

SWPPP INSPECTION CHECKLIST

Inspection Procedure	Yes/No	Comments	Corrective Action Needed	Date Corrective Action Taken
Is any silt fence damaged or deteriorated, un-trenched, or ineffective? Has sediment been removed from behind the fence? Are the fences properly installed and positioned correctly?				
Are straw bales damaged or deteriorated or ineffective? Is maintenance or replacement needed?				
In areas where seeding has taken place: Is the seed protected with mulch? Has erosion occurred? Is there evidence of vehicle tracking on the seeded area?				
Vehicle Entry/Exit: Is the gravel surface clogged with mud or sediment? Is the gravel surface sinking into the ground? Has the sediment been tracked onto public roads? If so, has clean up occurred?				
Velocity Dissipation Devices (where used): Is there evidence of scouring at the outfall? Is there erosion around or below any riprap areas? Have stones been dislodged or removed? Is sediment accumulating on the rocks?				

SWPPP INSPECTION CHECKLIST

Inspection Procedure	Yes/No	Comments	Corrective Action Needed	Date Corrective Action Taken
In Stream BMP: Are the dams on each side of the culvert area installed as required? Are the dams functioning as designed? Is the filtration box effective and functioning as designed?				

Appendix F

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Official USFWS Endangered Species List

[See Attached]

Stormwater Pollution Prevention Plan

Stormwater Pollution Prevention Plan (Version 1.1)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
December 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
Version 1.1
APPROVAL SHEET

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Prepared by: Quapaw Tribe Environmental Office (QTEO) Date: December 2013

Approved by:

_____ _____
Representative Date
ECCI

_____ _____
Tim Kent, P.G. Date
QTEO, Project Manager

USEPA QTRAK #: ____

STORMWATER POLLUTION PREVENTION PLAN
Version 1.1
DISTRIBUTION LIST

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Copies of this SWPPP have been distributed to the following people:

Rafael Casanova, P.G. - U.S. EPA, Region 6, Remedial Project Manager

Tim Kent, P.G. - QTEO, Environmental Director / Project Manager

Engineering Compliance and Construction, Inc. (ECCI)

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Appendix D Chemical Inventory/Spill Report Form
Appendix E Inspection Forms/Recordkeeping Documents
Appendix F USFWS Official Endangered Species List

Acronyms

BMP	Best Management Practices
C	Runoff coefficient
CFR	Code of Federal Regulations
CGP	Construction General Permit
CMTP	Central Mill Tailings Pond
COC	Contaminant of Concern
CQAP	Construction Quality Assurance Plan
cy	cubic yards
EPA	United States Environmental Protection Agency
FSP	Field Sampling Plan
HUC11	Hydrologic Unit Code 11
MSDS	Material Safety Data Sheet
NPDES	National Pollutant Discharge Elimination System
NRHP	Nation Register of Historic Places
ODEQ	Oklahoma Department of Environmental Quality
ODWC	Oklahoma Department of Wildlife Conservation
OK	Oklahoma
OU4	Operable Unit No. 4
RA	Remedial Action
RD	Remedial Design
RG	Remediation Goal
SHPO	State Historic Preservation Office
SWPPP	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
T&E	Threatened and Endangered
TZ	transition zone
USFWS	United States Fish and Wildlife Service

References

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1.0 INTRODUCTION

This Storm Water Pollution Prevention Plan (SWPPP) was developed to address storm water discharges during remedial action (RA) construction activities associated with the Tar Creek Superfund Site Source Material Operable Unit No. 4 (OU4) in Ottawa County, Oklahoma.

This SWPPP will be implemented during the RA construction activities performed by QTEO and its' Contractors, and includes work to be performed on Distal Zone 8 (Catholic 40), and the construction associated with the southern access road in Ottawa County, Oklahoma.

The Catholic 40 Site is part of a former lead and zinc mining area known as the Tri-State Mining District, which includes portions of northeastern Oklahoma, southeastern Kansas, and southwestern Missouri. As a result of mining and milling operations, large quantities of mining wastes were deposited on the surface in piles. The large surface piles contain tailings, known locally as chat, produced from the gravity separation milling process. The chat pile or source material, located on Distal Zone 8, is labeled as Chat Base 11 (CB011). Distal Zone 8, commonly known as the Catholic 40, is approximately 40 acres in size and includes one (1) chat base and one (1) known mine shaft.

This SWPPP addresses remediation activities being performed within the Catholic 40 boundary.

1.1 Regulatory Authority

EPA regulation 40 CFR §122.26 requires the development of NPDES permits for stormwater discharges from construction activities that will disturb 1 or more acres of land, or will disturb less than 1 acre of land but is part of a common plan of development or sale that will ultimately disturb 1 or more acres of land. EPA issued the National Pollutant Discharge Elimination System (NPDES) General Permit for Construction Activities in compliance with the provisions of the Clean Water Act, 33 U.S.C § 1251 et. seq. as amended by the Water Quality Act of 1987, P.L. 100-4.

The U.S. Environmental Protection Agency (EPA) published effluent limitations guidelines (ELGs) and new source performance standards (NSPS) to control the discharge of pollutants from construction sites in 2009. The regulation, codified in 40 CFR 450 was effective February 1, 2010. The EPA was required to revise the existing CGP to incorporate the ELG requirements into the permit. The most recent version of the CGP was effective on February 16, 2012.

The State of Oklahoma has delegatory authority to administer the NPDES program within the State. However, this authority does not extend to construction activities that take place on Indian Trust Lands (Restricted properties). Because this project will take place on Restricted property, the EPA will serve as the control authority. The project is required to comply with the terms within the EPA Construction General Permit. The SWPPP contained herein has been developed in compliance with the EPA Construction General Permit (CGP). A copy of this permit is provided in Appendix A.

A general site location maps is shown in Figures 1.1 at the end of this document.

1.2 Compliance Issues

The proposed project will result in the surface disturbance of more than one acre and is located within an area where EPA is the permitting authority. As per the requirements of Part 1.1 (d) of the CGP, the stormwater discharges from the project area are not currently covered by another NPDES permit. The additional eligibility criteria are met as described in the following sections.

1.2.1 Endangered Species

Appendix D of the CGP contains specific criteria for ensuring that the discharge from the project will not impact federally listed threatened or endangered species or designated critical habitat(s).

The US Fish and Wildlife Service (USFWS) Oklahoma Ecological Services Information and Planning and Conservation System (IPAC) was accessed to determine the potential for endangered and /or threatened species or critical habitats to exist within the project boundaries. The species identified for the project area are shown below:

American Burying beetle (*Nicrophorus americanus*) - Endangered
Arkansas darter (*Etheostoma cragini*) – Candidate
Gray bat (*Myotis grisescens*) – Endangered
Least tern (*Sterna antillarum*) – Endangered
Neosho madtom (*Noturus placidus)* – Threatened
Neosho Mucket (*Lampsilis rafinesqueana*) – Proposed Endangered
Ozark Big-Eared bat (corynorhinus *(=plecotus) townsendii ingens*) - Endangered
Ozark cavefish (*Amblyopsis rosae*) - Threatened
Piping Plover (*Charardrius melodus*) - Threatened
Winged Mapleleaf *(Quadrula fragosa)* – Endangered

The project will implement measures designed to minimize potential impacts to federally endangered and/or threatened species as discussed further in Section 5.1 of this document.
1.2.2 Discharging to Water with High Water Quality (Outstanding Resource Waters)
The project receiving stream is not identified in Appendix F of the CGP as a Tier 2, 2.5 or Tier 3 water requiring special provisions. As a result the project is in compliance with eligibility criterion specified in Part 1.2.3 of the CGP.

1.2.3 Historic Preservation/Cultural Resources
Appendix E of the CGP contains screening procedures that all construction site operators must follow to ensure compliance with Section 106 of the National Historic Preservation Act (NHPA).

Historic and/or cultural resources have been identified on the project site. Measures to protect these resources are discussed further in Section 5.2 of the document.
1.3 Stormwater Team
The stormwater team is responsible for overseeing the development and implementation of the SWPPP and ensuring that it is maintained and modified as needed to address changes at the site. The Stormwater team is responsible for ensuring that the project is in compliance with the requirements of the permit.

The stormwater team for the Catholic 40 project is comprised of the individuals filling the following positions.

- Quapaw Tribe Site Representative
- Quapaw Signature Authority (Project Owner)
- Quapaw Tribe Construction Manager
- ECCI Representative

1.4 Site Operators
The Quapaw Tribe is the primary site operator, and as such, will typically have the day-to-day responsibility for ensuring the requirements of the SWPPP are met. In addition, contractors will be hired throughout the remediation project. Each contractor (and subcontractor) will be tasked with the implementation of pollution prevention measures as they relate to his specific activities. Because many of the contractors will be named after this plan has been developed, a list of each contractor (and subcontractor) and their specific duty will be maintained within the SWPPP recordkeeping documents.

2.0 NATURE OF CONSTRUCTION ACTIVITIES DISTAL AREAS

Chat base (CB011) and associated Transition Zone (TZ) soil will be removed during remediation activities and addressed in this SWPPP. The site drainage map showing the stormwater runoff patterns and the erosion control locations is contained within Appendix B.

2.1 Description of Construction Activities
The proposed project area includes 40 acres within the 40 square-mile Tar Creek Superfund Site. The Tar Creek superfund Site is a former lead and zinc mining area within Ottawa County, Oklahoma. RA construction activities will include excavation of chat, development rock, and TZ soil within the boundaries of Distal Zone 8 (Catholic 40). The project may also include some rehabilitation to existing onsite roadways to facilitate access to the remediation areas and will include construction of the southern access road. Cased borings and a mine shaft(s) will also be

addressed.

2.1.1 Chat Base 011 Removal (Distal 8, Catholic 40)
Chat Base 011, TZ soil, and development rock will be excavated, transported, and released to a chat processor, future processing location, mine feature, or the CMTP repository.

2.1.2 Potential Sources of Pollutants from Construction Activities
The following are potential sources of pollutants that could be discharged in storm water during construction activities in the distal areas:

- In-stream and land excavation and short-term deposition
- Construction vehicle traffic during transportation of material to the repository
- Vehicle and equipment decontamination
- Loading and unloading
- Vehicle and equipment staging and maintenance if allowed by property owners(s)
- Temporary waste and material storage areas

Onsite storage of vehicles, equipment or materials will be discussed with the property owner during the RA planning prior to mobilization.

2.2 Affected Area of the Site
Varying acreage within and near the Chat Base 011 will be disturbed at any given time. The disturbed areas will include areas for short-term remediation soil deposition, areas for equipment and truck staging, and site access roads. Upon the completion of excavation activities, a grading plan will be developed with the involvement of the property owner; this plan will be used to establish proper site drainage.

2.3 Sequence and Estimated Dates of Construction Activity
The construction activities are expected to follow the general sequence below: Pre-planning and adherence to the construction schedule will ensure that the amount of soil disturbed at any time is minimized to the extent practicable.

A. Stabilized Construction Entrance

Create stabilized construction site entrance. The site entrance will be constructed of compacted soil covered with a layer of filter fabric followed by crushed stone to prevent offsite tracking.

B. Erosion and Sedimentation Controls

Erosion and sedimentation controls will be constructed, stabilized and functional before general site disturbance. See drawings in Appendix C for erosion control and site stabilization specifications. The site construction will follow the general sequence outlined below.

1. Create stabilized construction site entrance. The site entrance will be constructed of compacted soil covered with a layer of filter fabric followed by crushed stone to prevent offsite tracking.
2. Perimeter controls (silt fencing and straw bales) will be installed prior to any soil disturbance on the site. This includes installing silt fencing, or other erosion and sediment control measures (e.g., straw or hay bales, earthen dikes, etc.), as needed, on the downgradient portions of the southern access road and the downgradient areas between CB 011 and Beaver Creek.
3. A 50-foot vegetated buffer will be maintained, to the extent practicable from the banks of Beaver Creek along the southern perimeter of the project area. However, if the 50 foot buffer cannot be maintained additional controls such as straw bales and silt fences will be installed along the bank to ensure the control of pollutants to the creek.
4. Silt fencing and straw bales (as needed) will be installed on the down gradient side of all materials stockpile locations.
5. Install outlet protection (rip-rap) at outfall locations where applicable.
6. Additional controls will be installed throughout the duration of the project as needed.

C. Mobilization of Equipment

Mobile heavy equipment and portable buildings/structures will be delivered to the site and staged appropriately. A gravel construction laydown are will be established.

D. Site Preparation

1. Clearing and grubbing as needed and removal of nuisance vegetation.
2. Prepare areas for the installation of the office trailer, scales, portable toilets and staging areas.
3. Install traffic controls
4. Construct wet and dry decontamination areas (See drawings).
5. Place frac tanks for contaminated water recovery

E. Temporary Access Road

1. The replacement of the existing culverts will take place during the seasonal period when the flow is low in the stream. However, it may be necessary to replace the culverts and install the new ones when there is still some measure of flow within the creek. In this instance, dams will be created on both sides of the culvert area. The upstream stream side will be created first with stacked rock of varying size to block the flow into the area of construction. A dam will be created on the downstream side to ensure that any groundwater resulting from the culvert excavation activities is captured and treated (filtered) before being returned to the creek. The water that accumulates on the upstream side and any groundwater encountered during the excavation will be pumped around the work area with a small pump through a filtration box as described in Section 4.1.2 (Dewatering) and discharged back to the creek downstream of the lower dam. The filtration box and rock dams will be created prior to the removal of the existing culvert. Additional rock check dams will be used as site specific conditions require.
2. Silt fencing and sock checks will be installed along the downgradient side of the proposed roadway route as shown on the drawing in Appendix B.
3. Construct temporary access road for the entering and removing material from the site.
4. Establish roadways within the project areas for equipment access.

F. Remediation Activities

1. Remove, transport, and disposed of marketable chat, source materials (unmarketable chat, development rock and fine tailings), waste materials and TZ soils.
2. Fill and cap mine shafts and cased borings

G. Stabilization/Restoration

1. Finally grade areas disturbed area, and spread on-site derived topsoil where necessary.
2. Add rip rap to areas where large slopes may exist, as needed, to prevent erosion and sedimentation.
3. Add grass seed (perennial and native to the area) and top dressing for vegetative areas.
4. The seeded areas will be mulched and fertilized as needed to sustain growth.

H. Remove Temporary Buildings and Structures

1. Decontaminate and remove scales.
2. Decontaminate and demobilize heavy equipment.
3. Decontaminate and demobilize site office.
4. Decontaminate and demobilize water recovery/storage equipment.
5. Decontaminate and demobilize roll-off boxes

J. Removal of Erosion Control Devices

Temporary erosion control structures, such as silt fences, check dams (if used) and any other sediment barriers will be removed when all soil-disturbing activities have ceased and the perennial vegetative cover on all areas not covered by buildings, pavement or gravel has reached a density of at least 70%.

It should be noted that site conditions and schedule issues could require slight modifications to this sequence of events. However, the general sequence should not change significantly. In addition, many of the tasks listed above may take place concurrently.

The dates when the various activities begin and end will be maintained on a log within the SWPPP Recordkeeping documents.

2.4 Runoff Coefficients

Consistent with the applicable permits, runoff coefficients (C) were developed during the RD for pre- and post-construction conditions for the chat piles and chat bases. Runoff coefficients do not apply to chat in streams. Pre- and post-construction C values for chat piles and chat bases are provided in Table 2-1 and Table 2-2, respectively. The runoff coefficient is the percentage of precipitation volume that will not be absorbed by the ground surface. This is influenced by the type of ground cover, the type of soil, and the slope of the terrain. For example, 90% of the precipitation that falls on a paved (impervious) surface runs off into nearby drainage. The amount of precipitation that infiltrates into the ground is inversely proportional to the C value. Runoff coefficients were calculated using typical C values from Caltrans Storm water Quality Handbooks, (Caltrans, 2007).

TABLE 2.1
Average Pre- and Post-Construction Runoff Coefficients for Chat Piles
Tar Creek Superfund Site, Ottawa County, Oklahoma

Type of Cover	Pre-Construction	Post-Construction
Relief	0.32	0.11
Soil Infiltration	0.14	0.07
Vegetal Cover	0.14	0.05
Surface Storage	0.11	0.11
C=	0.71	0.34

TABLE 2.2
Average Pre-Construction Weighted Runoff Coefficient for Chat Bases
Tar Creek Superfund Site, Ottawa County, Oklahoma

Type of Cover	Pre-Construction	Post-Construction
Relief	0.11	0.11
Soil Infiltration	0.14	0.07
Vegetal Cover	0.14	0.05
Surface Storage	0.11	0.11
C=	0.50	0.34

Chat consists of coarse gravel intermingled with other materials such as medium to fine sands, silt, and clay. The surface of undisturbed piles is predominately the largest-sized particles, and in some places, the chat has cemented to form a solid exterior. After removal, native soil will be exposed and vegetation (grasses) will be restored. Chat bases vary by location; in some cases they are covered with vegetation or bare, and have varying depths of chat remaining.

2.5 General Location Site Map

A general location site map showing town locations, haul roads, railroads and water bodies within the distal zones is provided in Figure 2.1. A Catholic 40 grid map is provided in Figure 2.2. A Site Drainage Map showing proposed stormwater/erosion control structures is provided in Appendix B. Typical design drawings depicting proposed stormwater control structures/devises are enclosed in Appendix C. The maps and drawings will be updated to reflect any warranted changes or additions based on site reconnaissance efforts prior to remediation.

2.6 Topography
Topography on the Catholic 40 is generally flat plains with some areas of very gentle relief. There are mounds of mine tailings located in various locations within the site boundaries. General topography of the site is denoted on the USGS topographic map shown in Figure 2.2.

2.7 Construction Site Pollutants
As required by the general stormwater permit, this SWPPP has been developed to identify potential sources of pollutants which may reasonably be expected to affect the quality of stormwater discharges associated with the proposed construction activities. EPA studies have shown that the primary stormwater pollutant associated with construction activities is total suspended solids (TSS). It is expected that TSS and turbidity will be the primary potential pollutants associated with the soil disturbing activities. However, because the materials being moved from the Site consist of tailings or chat generated from lead and zinc mining it is expected that levels of heavy metals such as lead and zinc will also be primary pollutants, including cadmium. In addition, hydraulic fluids, fuels, oils, fertilizers, and soil conditioners may also represent potential stormwater pollutants due to the type of construction activities taking place on the project. This plan has been developed to provide measures and controls to minimize the potential for significant levels of these pollutants to enter the stormwater runoff from the area. The potential pollutant concentrations in the stormwater runoff from the construction site will be controlled by the implementation of BMPs as addressed within this Plan.

2.8 Site Storm Water Receiving Waters
Distal zone 8 is located within the Spring River Watershed. The stormwater runoff from the project area flows to the south entering Beaver Creek along the southern property border, thence southeast ultimately discharging into the Spring River.

2.9 Water Quality Impaired Waters
The Oklahoma 2010 List of Impaired Waters (303d) was reviewed to ensure compliance with the CGP requiring that the discharge does not cause or contribute to an impairment of the receiving stream. Beaver Creek (the first receiving stream) is not listed on the 303d list as impaired; however, the Quapaw Tribe has designated Beaver Creek as "Culturally Significant Waterway" in its Tribal Water Quality Standards. Twenty-two miles of the Spring River (the second receiving stream) are identified as impaired. The impaired section of the river is categorized as 5a. The development of Total Maximum Daily Loads (TMDLs) for the pollutants of concern is required for Category 5 waters. Category 5a waters are currently in the process of TMDL development of a TMDL will be schedule. The TMDL for Spring River is scheduled for 2018. The pollutants of concern are lead, thallium, turbidity and Enterococcus. Potential sources of the impairment associated with the lead concentrations are identified as historical mining activity, highway runoff, municipal point sources and unknown other sources. The potential sources of the thallium concentrations are identified as unknown sources. The potential sources of the turbidity and enterococcus are primarily animal feeding operations in the watershed, grazing of livestock in riparian zones, wildlife (other than waterfowl) and pet wastes, and land application of biosolids in the watershed.

The Spring River is included within the TMDL developed for the Verdigris-Neosho River Area for the pollutants turbidity and Enterococcus. The TMDL specifically states that while stormwater associated with construction activities does occur in the study area it is not considered a significant contributor to the impairment of the stream.

The Quapaw Tribe Environmental Office (QTEO) has been monitoring Beaver Creek for more than 10 years and has found that the pollutants of concern in Beaver Creek include lead, zinc, and sulfates resulting from mine waste and mine discharges within the watershed, bacteria resulting from local animal feeding operations and area municipal wastewater discharges, and finally, nutrients from agricultural runoff.

The EPA developed effluent guidelines specific to stormwater management at construction sites. These guidelines are published in 40 Code of Federal Regulations (CFR) 450 and have been incorporated into the EPA CGP. Implementation of the required measures will serve to minimize the potential for the Distal 8 project to contribute turbidity to the receiving stream.

3.0 PROHIBITION OF NON-STORMWATER DISCHARGES

The discharge of non-stormwaters is prohibited under the terms and conditions of the CGP with the exception of the listed in Part 1.3 (d) of the EPA CGP permit as shown below:

- Discharges from firefighting activities;
- Fire hydrant flushings;
- Landscape irrigation;
- Vehicle/equipment wash water (where no soaps, solvents or detergents are used);
- Dust control water;
- Potable water sources including waterline flushings;
- Pavement wash waters that do not include the use of detergents; pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred, (unless spilled materials have been removed and where detergents are not used); The directing of pavement wash waters directly into any surface water, storm drain inlet, or stormwater conveyance is prohibited unless the conveyance is connected to a sediment basin, sediment trap or similarly effective control;
- Uncontaminated air conditioning or air compressor condensate;
- Uncontaminated non-turbid discharges of ground water or spring water;
- Foundation or footing drains where flows are not contaminated with process materials such as solvents;
- Construction dewatering water that has been treated by an appropriate control under Part 2.1.3.4; and
- Surface water (ponds and depressions) encountered within the chat base that has been tested according to the Site's "Field Sampling Plan" and shown not to have cadmium, lead, or zinc concentrations exceeding applicable surface water criteria.

These discharges are to be not to be routed to areas of exposed soils. Pollution prevention controls are to be implemented as applicable. It is expected that the only non-stormwater discharges that may occur at the remediation site is water used for dust control, and landscape irrigation. Washing of heavy equipment or vehicles may take place at a designated decontamination area to ensure that pollutants are not conveyed offsite on the vehicles. The water from these activities will be captured and disposed of properly. There will be no release onsite of water used for decontamination. It is not expected that any concrete washout will take place onsite

4.0 BEST MANAGEMENT PRACTICES FOR STORM WATER POLLUTION PREVENTION

Pollution prevention controls are designed to prevent, or at the least, control the pollution of stormwater before it has a chance to impact the receiving stream. The Effluent Limitation Guidelines (ELGs) established within 40 CFR 450 require that controls are designed to minimize the discharge of pollutants from the construction activities. The ELGs contain six specific types of controls that must be implemented at the construction site. The controls are as follows:

- Erosion and Sediment Controls;
- Dewatering Controls;
- Soil Stabilization Practices;
- Pollution Prevention Measures (equipment and vehicle washing, minimize exposure of building materials and miscellaneous wastes, spill control measures);
- Comply with list of prohibited discharges (install controls for washout of concrete and other construction materials, fueling areas and maintenance areas); and
- Properly design discharge outlets from basins and impoundments, when used.

The implementation of these controls at the site is addressed in the following sections of this document.

4.1 Erosion and Sediment Controls

4.1.1 General Erosion and Sediment Controls

The following general erosion and sediment control practices will be implemented, as applicable:

- Before grading, excavation or other land disturbing activities begin, project specific plans will consider how to minimize the time that bare soil is exposed and minimize the disturbance of existing vegetation.

- The BMPs planned for the project have been designed to consider expected precipitation rates, frequency, intensity and average duration; the nature of the stormwater runoff and run-on including an evaluation of slope, pervious and impervious surfaces, existing site drainage features and existing soil type.
- Erosion and sediment controls will be installed prior to the initiation of any soil disturbing activities onsite. The controls are designed to retain sediment onsite to the extent practicable.
- Control measures will be selected, installed and maintained in accordance with manufacturer's specifications and good engineering practices. A phased approach will be used where applicable as site conditions allow.
- Erosion controls will be inspected on a regular schedule as described in Section 4.4.1 of this document.
- If periodic inspections or other information indicate that a control measure has been used inappropriately or incorrectly, that control measure will be modified or replaced, as necessary. If periodic inspections or other information indicate that a control measure is inadequate, supplemental and/or different BMPs will be selected and installed to adequately control erosion and sedimentation.
- In the event that sediment escapes the construction site, remove offsite accumulations of sediment to minimize offsite impacts.
- Implement good housekeeping practices that prevent litter, construction debris, and chemicals exposed to storm water from becoming a pollutant source for storm water discharges.
- Control erosion and sediment runoff with structural and / or stabilization practices. Structural control practices may include the use of straw bales, silt fence, drainage swales, and sediment traps. Stabilization practices may include temporary or permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, and preservation of mature vegetation.
- Provide natural buffers or equivalent sediment controls at sites where a surface water body exists within 50 feet of the area of disturbance. Beaver Creek lies along the southern border of the project site. The project will comply with the requirements of the effluent guidelines as discussed below.
- A 50 foot buffer strip of vegetation is to be maintained between the area of surface disturbance and the water body where practicable.
- In areas where a 50 foot buffer cannot be maintained, additional controls such as erosion blankets and straw wattles will be used to ensure that solids loading to the creek is controlled.

4.1.2 Specific Controls to be implemented at the Project Site

- Construction Entrance: A stabilized construction entrance will be established using crushed stone over filter fabric to minimize the occurrence of off-site tracking.
- Perimeter Controls: Silt fencing will be established on the downgradient sides of the project area perimeter prior to the initiation of soil disturbing activities. Sock checks will be used as needed along the downgradient portions of the road construction area as shown on the drawing in Appendix B.
- Soil Stockpile Areas: In general, stockpiles are managed in the following manner:
  - Where practicable, stockpiles of soil are placed on plastic sheeting near the excavation and within the disturbed area.
  - Where practicable, stockpiles of soil will be provided with a liner, cover, and perimeter berm to prevent run-on, run-off, and infiltration of precipitation. Typically, liners and covers are 6 mil polyethylene and berms are typically hay bales placed beneath the liner.
  - Covers and perimeter berms will be secured in place when not in use and at the end of each workday, or as necessary to prevent wind dispersion or runoff from major precipitation events.
- Excavation and Deposition Areas: To prevent the mobilization of pollutants in storm water runoff from excavated areas and short-term deposition areas, BMPs described in the Erosion and Sediment Control section will be implemented.
- Temporary waste and Material Storage Areas: Materials on the sites will be stored in areas designated for that purpose. Suitable measures will be taken in these areas to reduce the likelihood of a discharge. For example, when practicable, materials will be sheltered from rainfall.
- Steep slopes: Soil disturbing activities in areas with steep slopes will be minimized to the extent practicable. In areas where disturbance is unavoidable, measures such as erosion blankets, straw waddles and rock check dams will be used to minimize the potential for erosion and "washout" the use of these controls will be documented within the SWPPP recordkeeping documents.
- Installation of Culverts for South Access Road: Removal and replacement of the existing culvert will take place to facilitate access to the site. It is expected that the activities would take place within the stream

during the months when the flow is the lowest to minimize the impacts to the stream and downstream populations. It is expected that dams will be created on both sides of the construction area using rock of varying sizes. The stream flow will be diverted around the work area through the use of a pump placed in the pool created by the upstream dam and a hose to the creek below the lower dam. The water and any groundwater encountered during the culvert excavation will be pumped through a filtration box as described before being returned to the stream channel below the lower dam. Velocity dissipation devices will be used as needed to prevent scouring in the creek when the water is returned. The rock used for the dams will not be rock excavated from the site.

- Dewatering: There is to be no discharge of turbid water into surface waters resulting from dewatering activities at the site. If trench or ground waters contain sediment, the water must pass through a sediment settling pond or other equally effective sediment control device, prior to being discharged from the site. Construction of a trench water filtration device will be used as necessary to facilitate the resumption of work following a rain event and if coffer dams are required during the replacement of the road culverts. This consists of a simple box constructed of one layer of fiber rolls that form a square that is surrounded by a perimeter of two layers of fiber rolls with silt fencing staked around them. Pumping the trench water through the filter box, serves to filter most of the solids, and slows the inertia of the discharge from the hose, thereby minimizing the potential to create an eroded cavity in the ground.

4.1.3 Erosion Controls Specific to Distal 8 (Catholic 40)

Silt fences will be installed down gradient of designated construction areas to control erosion and retain sediment onsite during excavation of chat in piles and bases. Straw (or hay) bales or fiber rolls may be installed if excavation activities occur near a stream or other water body. During construction, a water truck will be used to spray clean water over the excavation area and access roads to control dust without creating runoff. Haul roads and access roads will be maintained clean and swept as necessary.

As discussed above, vegetative buffer zones will be maintained on both sides of Beaver Creek to the extent practicable. Additional measures will be implemented during the activity associated with the replacement of the south road culverts. These additional measures may include a diversion ditch and or coffer dams. Dewatering activities associated with the culvert installation will utilize a small sedimentation basin or a filter box to ensure that the discharge to the creek is not turbid and does not cause scouring or erosion when re-entering the creek.

4.2 Interim and Final Stabilization Practices

Stabilization measures are to be implemented immediately whenever earth disturbing activities have permanently or temporarily ceased on any portion of the site. Earth disturbing activities are said to have ceased permanently when clearing and excavation within any area of the construction site that will not include permanent structures has been completed. Earth disturbing activities are said to have temporarily ceased when clearing and grading and excavation within any area of the site that will not include permanent structures will not resume for a period of 14 days or more but may resume in the future.

The following practices will be implemented (as soon as practicable but no later than the end of the next day following the day that earth disturbing activities ceased) to temporarily or finalize stabilize a site:

- The method for stabilizing disturbed soil areas after construction activities are either temporarily or permanently stopped varies for each set of sites:
  - Upon the completion of excavation of source materials and TZ soil at sites within the distal areas, QTEO and contractors will work with the property owner to develop a site-specific grading and restoration plan to establish proper site drainage. In general, soil will be graded to drain naturally and new soil areas will be rebuilt naturally to sustain vegetation using standard land preparation practices, as needed, such as ripping, contouring, amendments, disking, fertilizing, planting and seeding.
  - Upon the completion of excavation and backfill activities at various areas at the site, the ground surface will be restored to as close to the original grade as possible and drainage, to the extent possible, will be restored and be away from any disturbed areas. Soil at the bottom of excavated areas will be rebuilt naturally to sustain vegetation using standard land preparation practices such as ripping, contouring, amendments, disking, fertilizing, planting and seeding.

- Stabilization of the progressive cover at the Catholic 40 site will be accomplished with well-established plant growth on the erosion layer until final cover is established. Where practical, mulch will be applied to stabilize exposed or recently planted soil surfaces.
- Soil roughening techniques will be used when grading (final or interim grading). Soil roughening involves increasing the relief of a bare soil surface with horizontal grooves by either stair-stepping (running parallel to the contour of the land) or using construction equipment to track the surface.

Soil stabilization practices are to be completed no later than 14 days after initiation of said measures. This includes all activities necessary to provide initial seeding or planting for areas that will be vegetated and or installation or application of all non-vegetative measures (rock, gravel, rip-rap) for areas that will not support vegetation.

If the activities are occurring in a drought stricken or especially dry period non vegetative practices mare to be implemented to the extent necessary to prevent erosion. As soon as practicable (as site conditions allow) vegetative practices should be reestablished. Circumstances that prevent the implementation of the stabilization practices in a timely manner must be documented in the site stormwater recordkeeping documents.

Table 4.1 provides descriptions of several structural and stabilization measures that may be used to prevent erosion and offsite sedimentation.

TABLE 4.1
Structural and Stabilization Measures
Tar Creek Superfund Site, Ottawa County, Oklahoma

Control Measure	Location	Description of Control Measure
Silt Fence	Along the downgradient perimeter of the construction sites. Exact location is determined in the field.	To protect streams or wetland areas, prevent erosion, and keep sediment onsite. Silt fence consists of posts with filter fabric stretched across the posts. The lower end of the fence fabric is vertically trenched and covered with backfill. This prevents water from passing by the fence without first being filtered. The fabric allows the water to pass offsite while retaining the sediment onsite.
Straw, Hay Bales or Fiber Rolls	Around areas requiring protection, such as streams, and to form a temporary containment.	Straw, hay bales or fiber rolls work much like silt fences and may be used instead of silt fence when the installation of silt fencing is impractical. They can also be used in tandem with silt fencing to facilitate solids removal. They can be used to form a barrier or redirect water. They impede storm water flow. Unlike silt fence, straw or hay bales do not allow water to flow through freely, thus they are used where detention, not just filtration, is necessary.
Stabilized Construction Entrance/Exit	Designated construction site entrances/exits. Exact location is determined in the field.	The purpose is to reduce tracking of soil off the site. These entrances/exits will be constructed of fabric and large stone. The fabric is laid down on the soil and the rock is then placed on the fabric. The rough surface will shake and pull the soil from tires.
Temporary Seeding	Disturbed areas where the construction activity has temporarily ceased for more than 14 days. Seeding is to be implemented within 14 days of activity ceasing.	Growing of a short-term vegetative cover on disturbed areas that may be in danger of erosion.

TABLE 4.1
Structural and Stabilization Measures
Tar Creek Superfund Site, Ottawa County, Oklahoma

Control Measure	Location	Description of Control Measure
Mulching	On slopes steeper than 2:1 or on areas that have been seeded. Must be implemented within 14 days of activity ceasing.	Temporary soil stabilization or erosion control practices where materials, such as, grass, wood chips, or hay are placed on the soil surface.
Preservation of Natural Vegetation	Wherever practical.	Wherever possible, existing vegetation should be retained. It minimizes erosion potential and protects water quality. The preservation of natural vegetation between the silt fence and stream will provide additional water quality improvement prior to the storm water entering State or U.S. waters.
Permanent Seeding or Sod	On appropriate disturbed areas once construction is complete and within 14 days.	Provides permanent stabilization to the soil and reduces erosion

4.3 Pollution Prevention Controls
Controls to be implemented at the site to control the potential for pollutants are shown in the following sections.

4.3.1 Fueling and Maintenance of Facility Vehicles/Equipment

- Vehicle and Equipment Fueling Areas: All fueling stations will have temporary secondary containment around the fuel tanks. Spill control materials will be provided at the fueling areas. Vehicle fueling areas will not be placed near or adjacent to the creek banks.
- Vehicle and Equipment Decontamination Areas: Vehicles and equipment will be cleaned of material on the exterior prior to leaving the excavation sites. Should vehicles and equipment travel into the CMTP repository, they will be decontaminated prior to leaving the repository. A temporary decontamination area will be established, as necessary, and located within the construction site. If liquid decontamination is necessary, the liquids and solids generated will be contained, collected, sampled, and disposed at the repository.
- Vehicle and Equipment Maintenance Areas: If vehicle or equipment maintenance is necessary, it will be performed in an area designated for this purpose. Any spills will be cleaned up immediately. Precautions will be taken to prevent the release of pollutants to the environment from vehicle and equipment maintenance. Precautions will include the use of drip pans, mats, and other similar methods. No vehicle wash water will be allowed to run off the construction site or enter waters of the state.
- Construction vehicle traffic during transportation of material: Sediment and the generation of dust will be minimized to the extent practicable. Water trucks will be used as needed to control the generation of dust on the roadways.

4.3.2 Material Handling/Housekeeping
The following material handling procedures will be implemented during construction activities:

- Waste containers (solid and liquid) will be emptied frequently enough to prevent them from overflowing. Waste storage areas will be kept free of trash and spills.
- Trash receptacles will be equipped with covers.
- Containers (drums, bags, roll-off boxes, portable tanks) of waste, chemicals or other materials will be stored away from traffic to prevent accidental spills, and away from storm water inlets or other discharge points.
- Wastes will be transferred offsite to approved solid or hazardous waste disposal facilities on a routine schedule.
- Containers will be kept closed, except to add or remove material, as necessary.
- Containers will be stored in such a manner to prevent corrosion that could result from contact between the container and the ground, resulting in a release.

- Containers will be labeled to show name and type of substance, health hazards, and other appropriate information.
- Any soil or other materials spilled during loading or unloading will be cleaned up immediately. This includes soil on the outside of trucks (side rails), ground, and road surfaces.
- Material Safety Data Sheets (MSDS) for substances used or stored onsite will be available for review and use.

A list of the chemicals stored onsite is to be maintained on the form provided in Appendix D and records of the inventories will be maintained at the Worksite field office.

4.3.3 Spill Prevention, Control, and Response

The following procedures shall be followed for the prevention and mitigation of minor spills and releases during construction activities.

"Incidental" spills are defined as less than or equal to 5 gallons of non-hazardous material. In some cases, such as those involving "EPCRA Extremely Hazardous Substances" or "CERCLA Hazardous Substances" (a list for each of these types of substances is enclosed in Appendix 1), spills less than 500 milliliters may be considered large spills based upon the material spilled. Incidental spills may, at the discretion of the on-site personnel involved, be handled directly by Stormwater Team personnel in the immediate area who are familiar with the associated hazards. A petroleum based liquid (including gasoline and diesel fuel) spill of less than or equal to 5 gallons would be considered an Incidental spill.

"Small spills" are defined as greater than an "Incidental spill" (defined above), but less than a "Major spill" (defined below). A petroleum based liquid (including gasoline and diesel fuel) spill of between 5 gallons and 300 gallons would be considered a Small spill. Small spills should be reported to the On-Site Health and Safety Manager (HSM) who will contact the Tribe's Fire Department Haz-mat response personnel. If the HSM is not immediately available, contact the Tribe's Fire Department Haz-mat response personnel in Quapaw at: 918-673-1400 or 911.

"Major spills" are defined as greater than the "reportable quantity" of any "EPCRA Extremely Hazardous Substance" or "CERCLA Hazardous Substance". Major spills must be reported to the HSM so that emergency assistance from will be available if needed. Employees should leave the immediate area of a Major spill until assistance arrives. If the HSM is not immediately available, contact Oklahoma Regional HAZMAT Response Team at: 800-800-2481 or 911.

A "leak" is a release from a container via a puncture or other small opening of a weak spot in the container. Leaks will be treated as Incidental spills unless they result in a rapid discharge of material.
All spill response actions shall be in accordance with the project Spill Response Plan developed by the Quapaw Tribe Environmental Office (QTEO). The project Spill Response Plan is to be maintained at the field office at the work site.

General spill prevention procedures will be followed:

- Refueling operations and vehicle/equipment maintenance shall be performed at designated facilities, when practical.
- If any storage of fuel is required for vehicles or equipment, it will be located in secondary containment, within designated storage/lay down areas. Fuel containers will be managed to prevent releases, and storage areas will be sheltered from precipitation, when practical.
- Drip pans and or other containment devices will be used during maintenance and fueling to capture minor spills and leaks during fueling and maintenance.
- Each location having fueling operations, fuel containers/tanks, and/or waste container/tanks shall have a sufficient number of spill kits to contain minor spills and leaks.
- The following are general procedures for spill response. For detailed spill response procedures, refer to the Health and Safety Plan (QTEO, 2013).
    - Ensure personal safety, and then evaluate the area and nature of the spill.
    - Identify the source and stop the flow of pollutants, if it can be done safely.
    - Contain the spill with absorbent materials or by creating a berm around the area.

- Remove and contain the spilled material, contaminated media, and cleanup material, and transport to the designated location for collection of such material.
- Contact the appropriate personnel listed in the Spill Response Plan.
- Record pertinent facts.

4.4 Inspections, Maintenance and Corrective Actions

4.4.1 Inspections

To ensure that all construction personnel are maintaining compliance with the SWPPP, the permit requires that site inspections are conducted at least once every 7-calendar days or at least every 14 days *and* within 24 hours of a 0.25 inch or greater rain event. Inspections will be conducted on the Distal Zone 8 Remedial Action site every seven days to avoid confusion regarding when an applicable rain event occurs. The site inspections will take place every Monday, or as soon as possible after Monday if special circumstances prevent inspections on Monday. The inspections will be conducted by a qualified person in the QTEO or someone designated by the QTEO who has been trained, and is familiar with, the requirements of the SWPPP. Where sites have been temporarily or permanently stabilized, site evaluations will be conducted at a minimum of once per month. Inspections may be suspended temporarily due to frozen conditions but these conditions must be documented and the inspections resumed immediately upon thawing conditions. Written records of site evaluations containing the following information will be maintained on the recordkeeping form shown in Appendix E. In general, the form will contain the following information.

- Inspector Name and Title
- Date of Inspection
- BMPs used on-site during the seven day period
- Date most recent storm event occurred
- If the BMPs are in working order and if maintenance is required (when scheduled and completed)
- Condition of discharge point
- location and dates when major construction activities begin, occur or cease
- Signature of Contractor's Representative

The site drainage map will be used during the inspections and manually updated accordingly. Specifically, the site inspections will include and incorporate the following Stormwater Inspection and Maintenance Guidelines:

- The entire project area perimeter will be evaluated to ensure that no uncontrolled activities are occurring.
- Disturbed areas and material storage areas exposed to precipitation will be evaluated for evidence of pollutants entering runoff from the site.
- Erosion and sediment control measures identified in the plan must be observed to ensure that they are operating correctly.
- All areas where stormwater typically flows within the site, including drainageways are inspected to ensure proper operation.
- Discharge points must be inspected to determine whether erosion control measures are effective in preventing significant impacts to receiving waters.
- Areas where stabilization measures have been implemented are visual assessed for compliance with the permit.
- Locations where vehicles enter and leave the construction site will be evaluated for evidence of off-site sediment tracking.
- Evaluate the site for the presence of conditions that could lead to spills, leaks or other discharges of pollutant to the stormwater runoff.
- The banks of Beaver Creek will be inspected, to the extent practicable to determine if pollutants are leaving the site and entering the creek.
- If a discharge is occurring during the inspection additional requirements apply:
- All points where a discharge occurs will be identified.
- The visual quality of the discharge will be observed and the characteristics noted, including color, odor, floating, settled or suspended solids, foam, oil sheen, and other obvious indicators of pollution.
- Evaluate all controls and document effectiveness of said controls.

The site inspections are to be signed by the Cognizant Official or Authorized Signatory Authority within the QTEO and maintained onsite in the stormwater records. A site inspection checklist is contained within Appendix E-1.

4.4.2 Inspection Requirements Prior to Final Stabilization

Inspections will be reduced to once per month after construction activities are complete, but before vegetation cover has been fully established (70% of pre-construction coverage). A record of these inspections will be maintained at the work site field office.

4.4.3 Maintenance/Corrective Actions

All erosion and sediment control measures will be inspected weekly and maintained in effective operating condition. Maintenance will be performed on an as-needed basis. Consistent with the stormwater permit requirements, if site inspections identify BMPs that are not operating effectively, maintenance will be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of stormwater controls. If existing BMPs need to be modified or if additional BMPs are necessary for any reason, implementation must be completed before the next storm event whenever practicable. If maintenance prior to the next anticipated storm event is not possible, the situation must be documented in this plan, and maintenance must be scheduled and accomplished as soon as possible.

Proper maintenance of erosion and sediment controls is essential in their effectiveness in reducing pollutant loading. A maintenance program that has been developed in conjunction with evaluations and recordkeeping will be utilized to maintain the operating condition of structural controls and promptly repair and/or restore all erosion and sediment controls. The maintenance program at the site includes the following activities.

- The construction entrance will be maintained by adding and replacing the rock if the entrance becomes clogged with sediment (50% of voided space is filled) and is not effective in preventing off-site tracking.
- Silt fences will be re-anchored, repaired, or replaced as necessary. Sediment that has been trapped by the silt fence will be removed as required when there is bulging in the fabric. In no case shall the silt fences be allowed to fill to more than 50% capacity before removing the silt. Fences that have been knocked down or damaged will be repaired/replaced within seven days of discovery if repairs cannot be done immediately.
- Hay bales, straw bales and/or fiber rolls (if used) will be replaced routinely when they appear to be decomposing. Rock bags will be used if fiber rolls prove to be ineffective or require too much maintenance.
- If sediment plumes are discovered in Beaver Creek, the sediment will be immediately removed and measures implemented to mitigate the potential for sediment to enter the Creek.
- The EPA must be notified within 24 hours of the site operator becoming aware that the controls are not effective enough for the discharge to meet applicable water quality standards, a prohibited discharge was occurring, a control was never installed or was incorrectly installed.
- Unauthorized non-stormwater discharges identified during the inspections are to be eliminated immediately.
- All required temporary erosion and sediment controls will remain in place and be maintained until the area they protect has been stabilized. Stabilization for this project will consist of seeding and mulching disturbed areas as needed.
- Areas disturbed during the removal of erosion control measures will be repaired as needed. Depending on site conditions, it may be necessary to irrigate, fertilize, overseed or reestablish plantings to provide permanent vegetation for adequate erosion control.

All repairs needed as the result of issues identified during the inspections are to be completed within seven (7) business days of discovery. The corrective action implemented as a result of the inspections are documented in the appropriate space on the inspection form and retained in the facility records. If existing BMPs need to be modified or if additional BMPs are necessary for any reason, implementation must be completed before the next storm event whenever practicable. If maintenance prior to the next anticipated storm event is impracticable, the situation must be documented in this plan and maintenance must be scheduled and accomplished as soon as possible. Additionally, this SWPPP will be modified, as necessary, based on the results of the inspection and implementation of corrective actions. Revisions to the SWPPP and any drawings shall be completed within 7 calendar days following the inspection. The updated drawings and Inspection Checklists will be maintained at the work site field office. Table 4.2 provides storm water BMP inspection/maintenance guidelines.

TABLE 4.2
Storm Water Inspection/Maintenance Guidelines
Tar Creek Superfund Site, Ottawa County, Oklahoma

Erosion Control Blanket (if used)
Is fabric damaged, loose, or need repairs?
Mulching
Distributed uniformly? Any evidence of mulch being blown or washed away?
Silt Fence
Is the fence damaged, collapsed, untrenched, or ineffective? Has sediment been removed from behind fence? Is the silt fence properly installed and positioned?
Straw Bales
Are the straw bales damaged or deteriorated, untrenched, or ineffective? Has sediment been removed from behind the bales? Are the bales installed and positioned correctly?
Temporary Seeding
Is the seeding protected by mulch? Has any erosion occurred in the seeded area? Any evidence of vehicle tracking on seeded areas?
Vehicle Tracking
Is the gravel surface clogged with mud or sediment? Is the gravel surface sinking into the ground? Has sediment been tracked onto public roads, has it been cleaned up?
Rock Check Dams (where used)
Is the rock stacked appropriately? Has sediment accumulated such that 50% of the capacity is reduced? Are repairs required?
Sock Checks (where used)
Are the sock checks installed and positioned correctly? Is there evidence of damage or deterioration? Are repairs needed?

4.5 Onsite Training

Training will be provided to all contractors (and subcontractors) working onsite to ensure that their duties do not contribute pollutants to the stormwater runoff from the site. The training will consist of a pre-construction meeting with the on-site Construction Manager, the QTEO representatives, and the associated consulting engineers explaining the details and requirements within the SWPPP. Representatives of the Quapaw Tribe are responsible for ensuring that all activities taking place on the site are in compliance with the CGP.
These briefings may take place informally as various contractors/subcontractors report to the site. A copy of the plan will be available for on-site personnel to review prior to beginning work. Contractors/subcontractors are required to sign the contractor certification form stating they are aware of the requirements of the SWPPP before beginning work onsite.

Specifically the training will highlight the following items.

- Proper installation and maintenance of controls
- Prohibited discharges (specifically, discharges of paints, oils concrete washout (without controls) or fuels/oils)
- Spill response procedures
- Housekeeping
- Waste disposal procedures
- Restricted areas and buffer zones

5.0 DOCUMENTATION OF COMPLAINCE WITH OTHER FEDERAL REQUIREMENTS

5.1 Measures to Protect Threatened and Endangered Species

The US Fish and Wildlife Service (USFWS) Oklahoma Ecological Services Information and Planning and Conservation System (IPAC) was accessed to determine the potential for endangered and /or threatened species or critical habitats to exist within the project boundaries. An official species list was generated for the project area as shown in Appendix F. The species identified for the project area are shown below:

American Burying beetle (*Nicrophorus americanus*) - Endangered
Arkansas darter (*Etheostoma cragini*) – Candidate
Gray bat (*Myotis grisescens*) – Endangered
Least tern (*Sterna antillarum*) – Endangered
Neosho madtom (*Noturus placidus)* – Threatened
Neosho Mucket (*Lampsilis rafinesqueana*) – Proposed Endangered
Ozark Big-Eared bat (corynorhinus *(=plecotus) townsendii ingens*) - Endangered
Ozark cavefish (*Amblyopsis rosae*) - Threatened
Piping Plover (*Charardrius melodus*) - Threatened
Winged Mapleleaf *(Quadrula fragosa)* – Endangered

It is not expected that suitable habitat for the Gray bat, Ozark Big-Eared bat or the Least tern would exist on the site. There is no specific documentation to indicate that any of the species of mussels or fishes identified have specifically been identified within Beaver Creek. However, since all of these aquatic species are adversely impacted by changes in water quality the following measures will be implemented at the site to ensure that the existing water quality within Beaver Creek is not impacted by the project activities.

- Solid waste will be properly managed in designated receptacle for disposal offsite.
- Portable toilet facilities will be provided for human waste. The toilets will be staged in an area away from the creek and serviced on a routine schedule.
- Fuels and liquids chemicals will be properly stored in designated areas with appropriate secondary containment. Fueling activities will not take place adjacent to or within 100 feet of the creek banks.
- Sediment will be retained onsite, to the extent practicable. Accumulations of sediment that are discovered offsite or within the creek will be removed as soon as possible.
- A vegetated buffer of at least 50 feet will be retained or successfully established/planted between disturbed construction areas and all perennial and intermittent streams on or adjacent to the construction areas.
- A 50 foot vegetated buffer zone is also to be established for all ephemeral streams or drainage ways. Buffer zones are measured from the top of the first defined bank of the stream.
- All attempts will be made to preserve natural vegetation to the extent practicable.
- Velocity dissipation devices such as rip rap will be used as needed at all outfalls to minimize the potential for excess turbidity and scouring of the stream channel.
- Areas where construction has permanently or temporarily ceased will be stabilized as discussed in previous sections of the document.
- Implementation of the various control devices and changes to the schedule would be documented in the project recordkeeping files.

The project area is included within the known range of the American Burying beetle. Information within the USFWS website does not indicate that a survey has been conducted within the project boundaries. The general habitat of the American Burying beetle involves grasslands and open understory of oak-hickory forests. The beetles are carrion and require carcasses typically the size of small birds or mammals to survive and proliferate. It is not expected that suitable habitat would exist on the site due to the previous activities associated with the mining and deposition of the mining waste. However, If any endangered, threatened or candidate species is encountered or if a critical habitat is established within or adjacent to the project area work in the area will be stopped and the USFWS Ecological Service field Office will be contacted. Work will not resume in the area until clearance is issued by USFWS.

5.2 Measures to Protect Historic Places

Chat base CB011 is located on property that includes historic and culturally significant ruins, important to the Quapaw Tribe of Oklahoma. A number of these structures are located along the eastern portion of the site. The identified structures are associated with a Catholic church and school that provided educational opportunities to the Quapaw Tribe and the surrounding community. The church was established on the property in 1893 and the associated school house was constructed in 1894. Buildings were added to the property over a period of years as the number of students increased. The school had both resident and day students and dormitories were constructed to house the resident students. Additionally, male students were expected to learn agriculture and animal husbandry skills. Outbuildings for the associated farm animals and farming equipment occupied portions of the property. Funding was discontinued and the school closed in 1927. After closure, some wood-frame buildings were removed, while others were allowed to fall into ruins.

Care will be taken to preserve the Catholic 40 ruins during the remediation process. Additional ruin preservation details are described in the Construction Quality Assurance Plan (CQAP).
If historic ruins are found within the identified RA grids, work will be stopped and the situation evaluated. Conferral with the State Historic Preservation Officer or the Tribal Historic Resource Official will take place as needed.

5.3 Measures to Protect Impaired Waters

As discussed in Section 2.9, Beaver Creek (the first receiving stream) is not listed on the 303d list as impaired. However, twenty-two miles of the Spring River (the second receiving stream) are identified as impaired. The impaired section of the river is categorized as 5a. The development of Total Maximum Daily Loads (TMDLs) for the pollutants of concern is required for Category 5 waters. Category 5a waters are currently in the process of TMDL development The TMDL for Spring Creek is scheduled for 2018. The measures described throughout this document are designed to minimize the potential for pollutants to be discharged to Beaver Creek and subsequently the Spring River during the course of the project.

5.4 Safe Drinking Water Act

Construction projects that intend to utilize controls that would generally be considered Class V UIC wells, such as: infiltration trenches; commercially manufactured precast or pre-built proprietary subsurface detention vaults, chambers or other devices designed to capture and infiltrate stormwater; and drywells, seepage pits or improved sinkholes are required to contact the EPA Regional Office to ensure the devices are installed in compliance with Safe Drinking water Act and the regulations within 40 CFR Parts 144-147. Currently, none of these types of controls are anticipated to be used on the project site. Consequently, these requirements are not currently applicable to the project scope. Should it become necessary to use such devices within the scope of the project the proper agencies will be notified and the SWPPP updated accordingly.

6.0 CONDITIONS REQUIRING MODIFICATION OF THE SWPPP

The SWPPP when any of the following conditions exist.

- New operators are added to the project.
- The construction plans change.
- Stormwater controls are added, removed or modified.
- Pollution prevention measures change.
- Changes at the site that are made in response to corrective actions.
- The site drainage map is not accurate (the dates of changes is also to be documented on the changed map).
- An inspection or investigation by site staff, or local, state tribal or federal officials determine that the plan requires modifications.
- Where EPA determines that additional controls are required. In this instance the following additional documents must be maintained within the plan.
- A copy of the correspondence requiring the additional controls.
- A description of the measures implemented in response to the correspondence.
- Revisions have been made to applicable federal, state tribal or local requirements with the potential to affect the measures implemented at the site.

All revisions to the plan are to be completed within 7 calendar days following the occurrence of any of the conditions listed above. The dates of all modifications to the SWPPP are to be maintained on a log within the plan. All operators on the site will be notified of any and all modifications to the SWPPP as applicable.

7.0 RETENTION OF RECORDS

The plan is to be maintained current and onsite at all times. The plan should be placed within an easily accessible location that can be reviewed by an onsite inspection upon request.

In addition to the SWPPP the following records are to be maintained to demonstrate compliance with the requirements of the EPA MSGP.

- Site inspections and description with dates when corrective actions were implemented;
- A list of all modifications to the SWPPP and the Site Drainage Map;
- Contractor/subcontractor certifications;
- List of the locations and dates when major activities begin occur cease;
- Description of when temporary or permanent stabilization has taken place;
- Chemical inventory (identify areas where chemicals, such as fuel or paints, are stored, if applicable); and
- Record of spills occurring onsite and a description of corrective actions implemented.

These records are to be maintained during the entire duration of the construction project through final stabilization. The SWPPP, inspection records, and reports shall be retained by the owner/operator for a period of at least three years from the date the areas are finally stabilized.

8.0 CERTIFICATIONS

The SWPPP is to clearly identify the contractors responsible for certain phase of the project. However, due to the dynamics of an ongoing construction project, many contractors/subcontractors are not known until further into the project. The Primary site operator is the Quapaw Tribe. The Certification statement signed by the Tribal Representative is shown on the following page along with spaces for site contractor certifications. Because many of the contractors will be hired as the project progresses, a list of contracted and subcontracted firms/individuals and their respective signed certifications will be maintained onsite within the SWPPP, Volume II Recordkeeping Notebook.

8.1 Primary Site Operator Certification

As the owner and operator of the construction project, the EPA-designated Project Manager within the Quapaw Tribe, must sign a copy of the certification statement presented below before conducting any construction activities at the site that are identified in the SWPPP:

"I hereby certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

_____

Tim Kent, PG; Project Manager, Quapaw Tribe of Oklahoma

_____

Date

8.2 Contractor/Subcontractor Certification

Contractor/Subcontractor Certification

Contractors/subcontractors serving as operators of specific portions of the construction project are required to sign a copy of the certification statements presented below before conducting any construction activities at the site that are identified in the SWPPP. Additional contractor/subcontractor certification forms are maintained within the Recordkeeping Notebook.

"I certify under penalty of law that I understand the terms and conditions set forth by the Project Operator under the Stormwater Pollution Prevention Plan associated with the construction site identified as part of the certification."

Contractor/Subcontractor Company Name: _____

Contact Name and Title: _____

Address: _____

_____

Telephone Number: _____

Mobile (on site) Telephone Number: _____

Contractor/Subcontractor Project Task: _____

Signature: _____

Date: _____

Figures

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Figure 1.1 Tar Creek Superfund Site

Figure 2.1 General Location Tar Creek Superfund Site Map

Figure 2.2 Catholic 40 Site Grid Map

[See Attached]

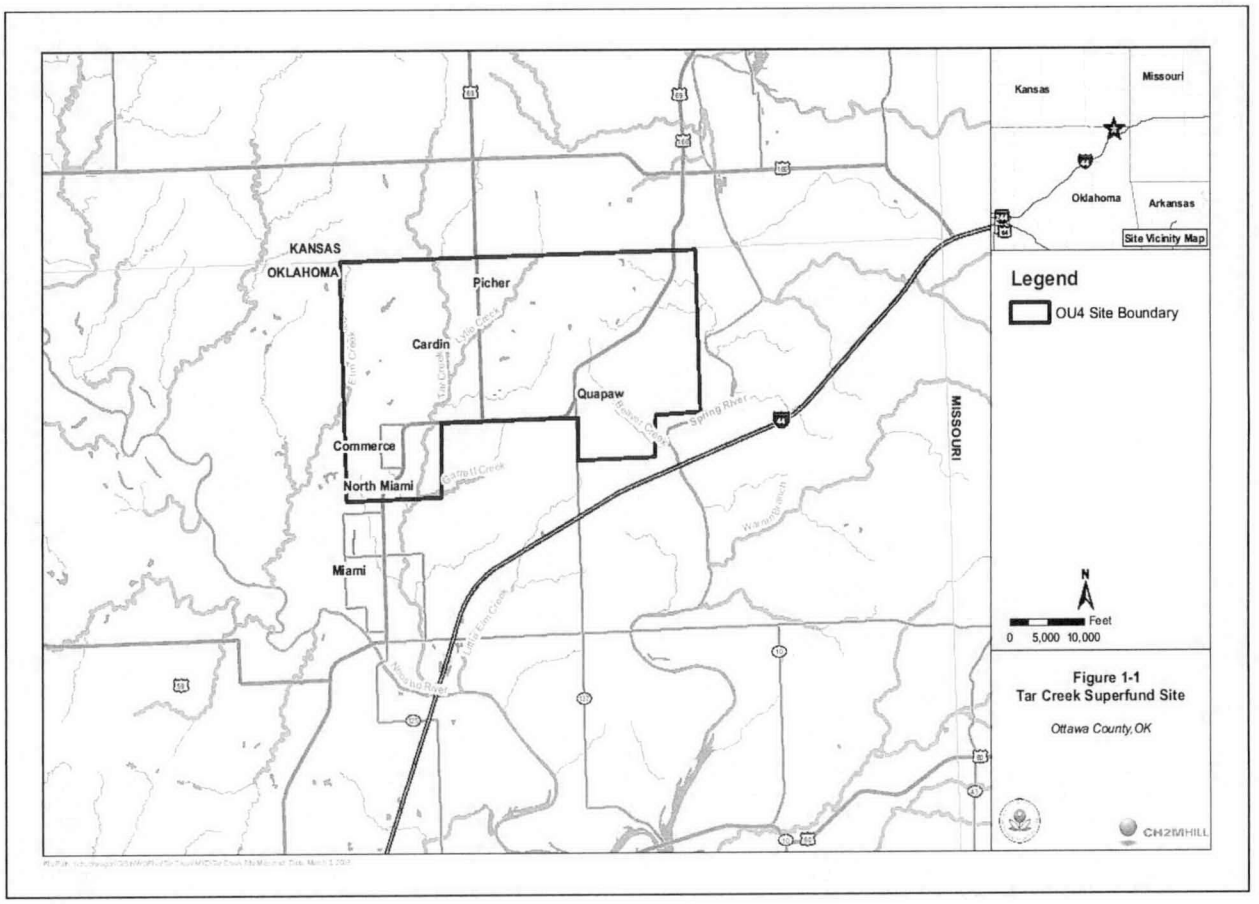
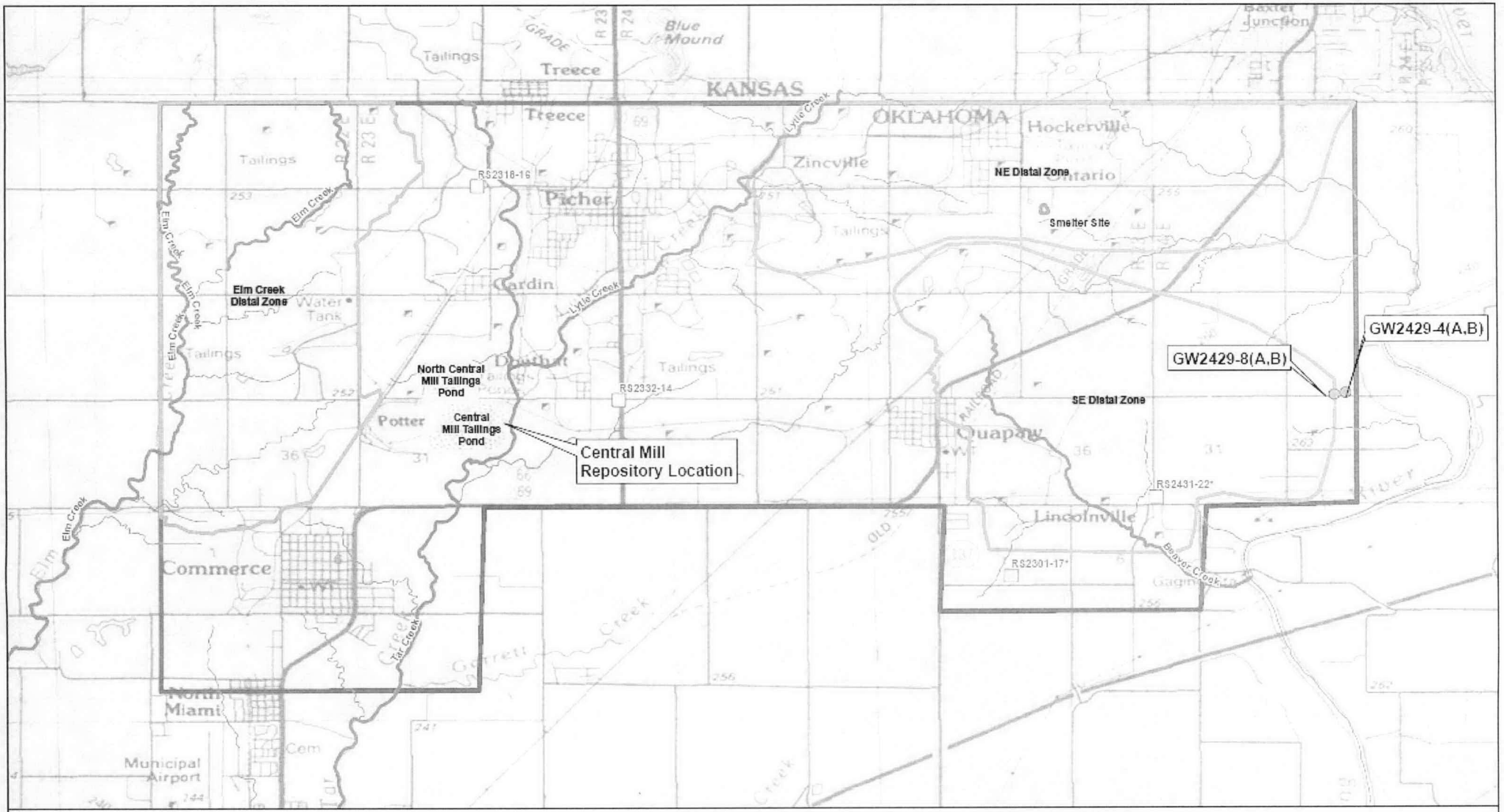


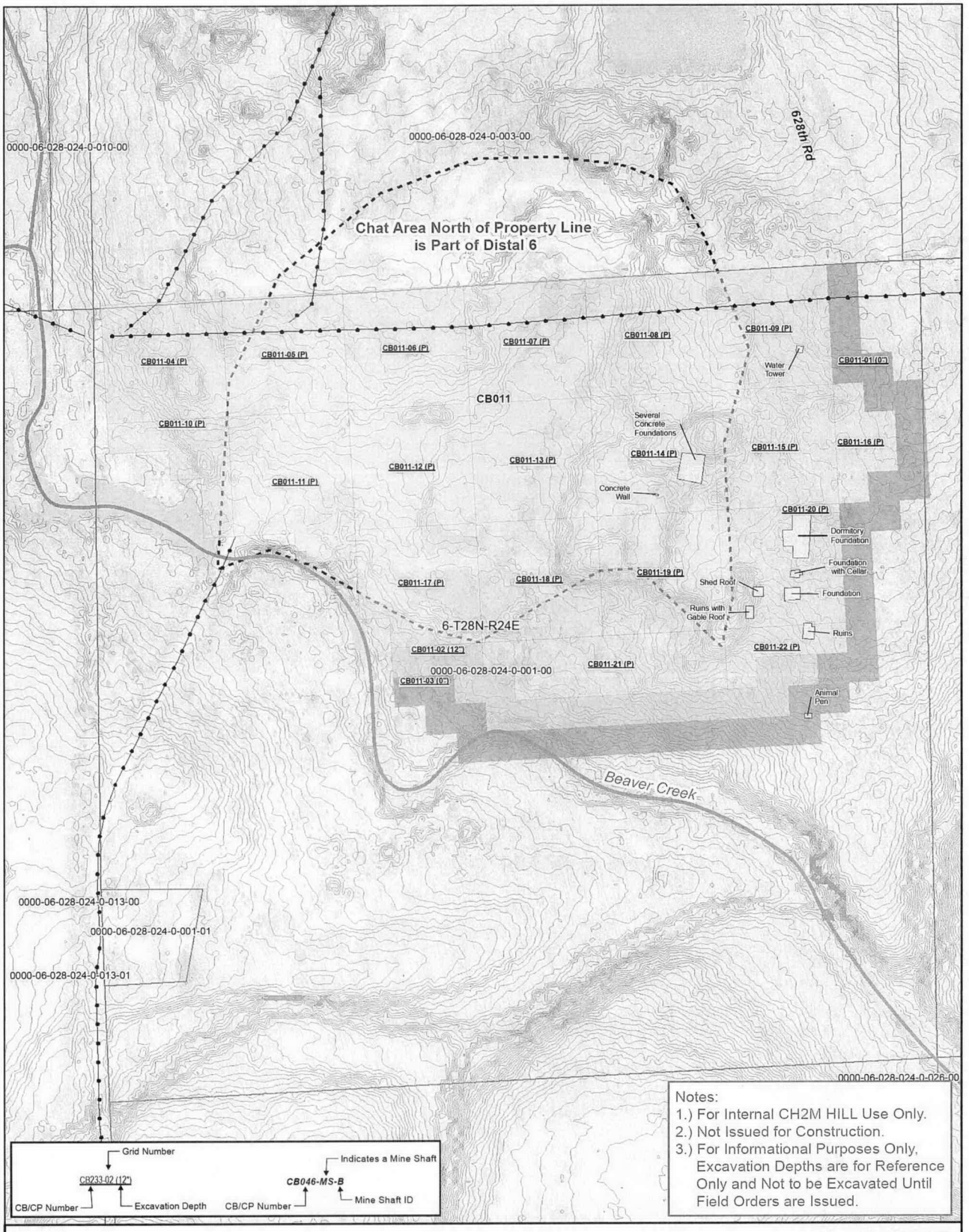
Figure 1.1 Tar Creek Superfund Site



Appendix B
Tar Creek Superfund Site
Operable Unit No. 4
Ottawa County, Oklahoma

CH2MHILL

Figure 2.2



Notes:
1.) For Internal CH2M HILL Use Only.
2.) Not Issued for Construction.
3.) For Informational Purposes Only, Excavation Depths are for Reference Only and Not to be Excavated Until Field Orders are Issued.

Legend
- Section
- Chat Bases
- Property Boundaries
- Building/Structure
- Creek
- Non-Permanent Clean Limestone Rd
- Improved Chat Rd
- Existing/Historic Chat Roads (Not used as HR)

Revision 2
Distal 8 Site Location
Tar Creek Superfund Site
Operable Unit No. 4
Ottawa County, Oklahoma

N

0 75 150 300 Feet

CH2MHILL

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Appendix A

QUAPAW TRIBE ENVIRONMENTAL OFFICE

EPA Construction General Permit

[See Attached]

National Pollutant Discharge Elimination System
General Permit for Discharges from
Construction Activities

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et. seq., (hereafter CWA or the Act), as amended by the Water Quality Act of 1987, P.L. 100-4, "operators" of construction activities (defined in Part 1.1.a and Appendix A) that meet the requirements of Part 1.1 of this National Pollutant Discharge Elimination System (NPDES) general permit, are authorized to discharge pollutants in accordance with the effluent limitations and conditions set forth herein. Permit coverage is required from the "commencement of earth-disturbing activities" (see Appendix A) until "final stabilization" (see Part 2.2).

This permit becomes effective on **February 16, 2012**. For the State of Idaho (except for Indian country), this permit becomes effective on **April 9, 2012**. For areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, this permit becomes effective on **April 13, 2012**. For projects located in the following areas, this permit becomes effective on **May 9, 2012**: Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

This permit and the authorization to discharge expire at midnight, **February 16, 2017**.

Signed and issued this 16th day of February, 2012

H. Curtis Spalding
Regional Administrator, Region 1

Signed and issued this 16th day of February, 2012

William K. Honker, P.E.
Acting Director, Water Quality Protection Division, Region 6

Signed and issued this 16th day of February, 2012

John Filippelli
Director, Division of Environmental Planning & Protection, Region 2

Signed and issued this 16th day of February, 2012

Karen Flournoy
Director, Wetlands and Pesticides Division, Region 7

Signed and issued this 16th day of February, 2012

José C. Font
Acting Division Director, Caribbean Environmental Protection Division, Region 2, Caribbean Office

Signed and issued this 16th day of February, 2012

Melanie L. Pallman
Acting Assistant Regional Administrator, Office of Partneships and Regulatory Assistance, Region 8

Signed and issued this 16th day of February, 2012

Catherine A. Libertz
Assistant Director, Water Protection Division, Region 3

Signed and issued this 16th day of February, 2012

Nancy Woo
Deputy Director, Water Division, Region 9

Signed and issued this 16th day of February, 2012

James D. Giattina
Director, Water Protection Division, Region 4

Signed and issued this 16th day of February and 9th day of April, 2012

Michael J. Lidgard
Acting Director, Office of Water and Watersheds, Region 10

Signed and issued this 16th day of February and 9th day of May, 2012

Tinka G. Hyde
Director, Water Division, Region 5

Signed and issued this 13th day of April, 2012

Christine Psyk
Associate Director, Office of Water and Watersheds, Region 10

The signatures are for the permit conditions in Parts 1 through 9 and Appendices A through K.

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1. HOW TO OBTAIN PERMIT COVERAGE UNDER THE CGP.

To be covered under this permit, you must meet the eligibility conditions and follow the requirements for applying for permit coverage in this Part.

1.1. ELIGIBILITY CONDITIONS REQUIRED OF ALL PROJECTS.

Only those projects that meet all of the following eligibility conditions may be covered under this permit:

a. You are an "operator" of the construction project for which discharges will be covered under this permit;

Note: For the purposes of this permit, an "operator" is any party associated with a construction project that meets either of the following two criteria:

1. *The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or*
2. *The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the permit).*

Subcontractors generally are not considered operators for the purposes of this permit.

Note: Where there are multiple operators associated with the same project, all operators are required to obtain permit coverage. The following applies in these situations:

1. *If one operator has control over plans and specifications and a different operator has control over activities at the project site, they may divide responsibility for compliance with the terms of this permit as long as they develop a group SWPPP (see Part 7.1.1), which documents which operator has responsibility for each requirement of the permit.*
2. *If an operator only has operational control over a portion of a larger project (e.g., one of four homebuilders in a subdivision), the operator is responsible for compliance with all applicable effluent limits, terms, and conditions of this permit as it relates to the activities on their portion of the construction site, including protection of endangered species, critical habitat, and historic properties, and implementation of control measures described in the SWPPP in the areas under their control.*
3. *You must ensure either directly or through coordination with other permittees, that your activities do not render another party's pollutant discharge controls ineffective.*
4. *If the operator of a "construction support activity" (see Part 1.3.c) is different than the operator of the main construction site, that operator is also required to obtain permit coverage.*

b. Your project:

i. Will disturb 1 or more acres of land, or will disturb less than 1 acre of land but is part of a common plan of development or sale that will ultimately disturb 1 or more acres of land; or

ii. Your project's discharges have been designated by EPA as needing a permit under § 122.26(a)(1)(v) or § 122.26(b)(15)(ii);

c. Your project is located in an area where EPA is the permitting authority (see Appendix B);

d. Discharges from your project are not:

   i. Already covered by a different NPDES permit for the same discharge; or

   ii. In the process of having coverage under a different NPDES permit for the same discharge denied, terminated, or revoked.[1, 2]

e. You are able to demonstrate that you meet one of the criteria listed in Appendix D with respect to the protection of species that are federally-listed as endangered or threatened under the Endangered Species Act (ESA) or federally-designated critical habitat;

f. You have completed the screening process in Appendix E relating to the protection of historic properties and places; and

g. You have complied with all requirements in Part 9 imposed by the applicable state, Indian tribe, or territory in which your construction activities will occur.

1.2. ELIGIBILITY CONDITIONS THAT APPLY DEPENDING ON TYPE OF PROJECT.

You must also satisfy, if applicable, the conditions in Parts 1.2.1 through 1.2.4 in order to obtain coverage under this permit.

1.2.1. Eligibility for Emergency-Related Construction Activities.

If you are conducting earth-disturbing activities in response to a public emergency *(e.g., natural disaster, widespread disruption in essential public services)*, and the related work requires immediate authorization to avoid imminent endangerment to human health, public safety, or the environment, or to reestablish essential public services, you are authorized to discharge on the condition that a complete and accurate NOI is submitted within 30 calendar days after commencing earth-disturbing activities (see Table 1) establishing that you are eligible under this permit. You are also required to provide documentation in your SWPPP to substantiate the occurrence of the public emergency.

1.2.2. Water Quality Standards – Eligibility for New Sources.

If you are a "new source" (as defined in Appendix A), you are not eligible for coverage under this permit for discharges that EPA, prior to authorization under this permit, *determines will cause, have the reasonable potential to cause, or contribute to an* excursion above any applicable water quality standard. Where such a determination is made prior to authorization, EPA may notify you that an individual permit application is necessary in accordance with Part 1.4.5. However, EPA may authorize your coverage under this permit after you have included appropriate controls and implementation *procedures designed to bring your discharge into compliance with water quality* standards. In the absence of information demonstrating otherwise, EPA expects that compliance with the stormwater control requirements of this permit, including the requirements applicable to such discharges in Part 3.2, will result in discharges that will not cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard.

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[1] Parts 1.1.d.i and 1.1.d.ii do not include sites currently covered under the 2003 or 2008 CGPs, which are in the process of obtaining coverage under this permit, and sites covered under this permit, which are transferring coverage to a different operator.

[2] Notwithstanding a project being made ineligible for coverage under this permit because it falls under the *description of Parts 1.1.d.i or 1.1.d.ii, above, EPA may waive the applicable requirement after specific* review if it determines that coverage under this permit is appropriate.

1.2.3. Discharging to Waters with High Water Quality – Eligibility for New Sources.

If you are a "new source" (as defined in Appendix A), you are eligible to discharge to a Tier 2, Tier 2.5, or Tier 3 water only if your discharge will not lower the water quality of the applicable water. In the absence of information demonstrating otherwise, EPA expects that compliance with the stormwater control requirements of this permit, including the requirements applicable to such discharges in Part 3.3.2, will result in discharges that will not lower the water quality of the applicable water. See list of Tier 2, Tier 2.5, and Tier 3 waters in Appendix F.

Note: Your project will be considered to discharge to a Tier 2, Tier 2.5, or Tier 3 water if the first surface water to which you discharge is identified by a state, tribe, or EPA as a Tier 2, Tier 2.5, or Tier 3 water. For discharges that enter a storm sewer system prior to discharge, the first surface water to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

1.2.4. Use of Cationic Treatment Chemicals.

If you plan to use cationic treatment chemicals (as defined in Appendix A), you are ineligible for coverage under this permit, unless you notify your applicable EPA Regional Office in advance and the EPA office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

1.3. Types of Discharges Authorized Under the CGP.

The following is a list of discharges that are allowed under the permit provided that *appropriate stormwater controls are designed, installed, and maintained:*

a. Stormwater discharges, including stormwater runoff, snowmelt runoff, and surface runoff and drainage, associated with construction activity under 40 CFR § 122.26(b)(14) or § 122.26(b)(15)(i);

b. Stormwater discharges designated by EPA as needing a permit under 40 CFR § 122.26(a)(1)(v) or § 122.26(b)(15)(ii);

c. Stormwater discharges from construction support activities *(e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas)* provided:

   i. The support activity is directly related to the construction site required to have permit coverage for stormwater discharges;

   ii. The support activity is not a commercial operation, nor does it serve multiple unrelated construction projects;

   iii. The support activity does not continue to operate beyond the completion of the construction activity at the project it supports; and

   iv. Stormwater controls are implemented in accordance with Part 2 and, if applicable, Part 3, for discharges from the support activity areas.

d. The following non-stormwater discharges from your construction activity, provided that, with the exception of water used to control dust and to irrigate areas to be vegetatively stabilized, these discharges are not routed to areas of exposed soil on your site and you comply with any applicable requirements for these discharges in Part 2:

   i. Discharges from emergency fire-fighting activities;

ii. Fire hydrant flushings;

iii. Landscape irrigation;

iv. Water used to wash vehicles and equipment, provided that there is no discharge of soaps, solvents, or detergents used for such purposes;

v. Water used to control dust;

vi. Potable water including uncontaminated water line flushings;

vii. Routine external building washdown that does not use detergents;

viii. Pavement wash waters provided spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used. You are prohibited from directing pavement wash waters directly into any surface water, storm drain inlet, or stormwater conveyance, unless the conveyance is connected to a sediment basin, sediment trap, or similarly effective control;

ix. Uncontaminated air conditioning or compressor condensate;

x. Uncontaminated, non-turbid discharges of ground water or spring water;

xi. Foundation or footing drains where flows are not contaminated with process materials such as solvents or contaminated ground water; and

xii. Construction dewatering water that has been treated by an appropriate control under Part 2.1.3.4; and

e. Discharges of stormwater listed above in Parts a, b, and c, or authorized non-stormwater discharges in Part d above, commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

1.4. SUBMITTING YOUR NOTICE OF INTENT (NOI).

To be covered under this permit, you must submit to EPA a complete and accurate NOI prior to commencing construction activities. The NOI certifies to EPA that you are eligible for coverage according to Part 1.1 and 1.2, and provides information on your construction operation and discharge.

Note: All "operators" (as defined in Appendix A) associated with your construction project, who meet the Part 1.1 eligibility requirements, and who elect to seek coverage under this permit, are required to submit an NOI.

Note: There are two exceptions to the requirement to submit the NOI prior to the commencement of construction activities: (1) for emergency-related projects, and (2) for new projects scheduled to commence construction activities on or after February 16, 2012, but no later than March 1, 2012.[3] *For these two types of projects, the NOI*

[3] For new projects in the State of Idaho (except Indian country), if you are scheduled to commence construction activities on or after April 9, 2012, but no later than May 9, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities. For new projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, if you are scheduled to commence construction activities on or after April 13, 2012, but no later than May 13, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities. For new projects in the following areas, if you are schedule to commence construction activities on or after May 9, 2012, but no later than June 8, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

must be submitted within 30 calendar days after the commencement of earth-disturbing activities (see Part 1.4.2).

Note: You must complete the development of a Stormwater Pollution Prevention Plan (SWPPP) consistent with Part 7 prior to submitting your NOI for coverage under this permit.

1.4.1. How to Submit Your NOI.

You are required to use EPA's electronic NOI system, or "eNOI system", to prepare and submit your NOI. Go to www.epa.gov/npdes/stormwater/cgpenoi to access the eNOI system and file an NOI. If you have a problem with the use of the eNOI system, contact the EPA Regional Office that corresponds to the location of your site. If you are given approval by the EPA Regional Office to use a paper NOI, and you elect to use it, you must complete the form in Appendix J.

1.4.2. Deadlines for Submitting Your NOI and Your Official Date of Permit Coverage.

Table 1 provides the deadlines for submitting your NOI and your official start date of permit coverage, which differ depending on when you commence construction activities. The following terms are used in Table 1 to establish NOI deadlines:

a. New project – a construction project that commences construction activities on or after February 16, 2012, or or April 9, 2012 for the State of Idaho (except for Indian country), or April 13, 2012 for areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

b. Existing project – a construction project that commenced construction activities prior to February 16, 2012, or April 9, 2012 for the State of Idaho (except for Indian country), or April 13, 2012 for areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

c. New operator of a new or existing project – an operator that through transfer of ownership and/or operation replaces the operator of an already permitted construction project.

Table 1 NOI Submittal Deadlines and Official Start Date for Permit Coverage.

Type of Construction Project	Deadlines for Operators to Submit NOI	Official Start Date for Permit Coverage
New project	You must submit your NOI at least 14 calendar days prior to commencing earth-disturbing activities. Exception: If your project qualifies as an "emergency-related project" under Part 1.2.1, you must submit your NOI by no later than 30 calendar days after commencing	You are considered covered under this permit 14 calendar days after EPA has acknowledged receipt of your NOI on the Agency's website (www.epa.gov/npdes/stormwater/cgpnoisearch), unless EPA notifies you that your authorization has been delayed or denied. Exception: If your project qualifies as

Type of Construction Project	Deadlines for Operators to Submit NOI	Official Start Date for Permit Coverage
	earth-disturbing activities. Exception: If you are scheduled to commence construction activities on or after February 16, 2012, but no later than March 1, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities.[4]	an "emergency-related project" under Part 1.2.1, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied. Exception: If you are scheduled to commence construction activities on or after February 16, 2012, but no later than March 1, 2012, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied.[5]

[4] For new projects in the State of Idaho (except Indian country), if you are scheduled to commence construction activities on or after April 9, 2012, but no later than May 9, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities. For new projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, if you are scheduled to commence construction activities on or after April 13, 2012, but no later than May 13, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities. For new projects located in the following areas, if you are scheduled to commence construction activities on or after May 9, 2012, but no later than June 8, 2012, you must submit your NOI by no later than 30 days after commencing earth-disturbing activities: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

[5] For new projects in the State of Idaho (except Indian country), if you are scheduled to commence construction activities on or after April 9, 2012, but no later than May 9, 2012, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied. For new projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, if you are scheduled to commence construction activities on or after April 13, 2012, but no later than May 13, 2012, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied. For new projects located in the following areas, if you are scheduled to commence construction activities on or after May 9, 2012, but no later than June 8, 2012, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

Type of Construction Project	Deadlines for Operators to Submit NOI	Official Start Date for Permit Coverage
Existing project	You must submit your NOI by no later than May 16, 2012.[6] However, if you have not previously obtained coverage under an NPDES permit, you must submit your NOI immediately.	You are considered covered under this permit 14 calendar days after EPA has acknowledged receipt of your NOI on the Agency's website (www.epa.gov/npdes/stormwater/cgpnoisearch), unless EPA notifies you that your authorization has been delayed or denied.[7]
New operator of a new or existing project	You must submit your NOI at least 14 calendar days before the date the transfer to the new operator will take place.	You are considered covered under this permit 14 calendar days after EPA has acknowledged receipt of your NOI on the Agency's website (www.epa.gov/npdes/stormwater/cgpnoisearch), unless EPA notifies you that your authorization has been delayed or denied.

Note: If you have missed the deadline to submit your NOI, any and all discharges from your construction activities will continue to be unauthorized under the Clean Water Act until they are covered by this or a different NPDES permit. EPA may take enforcement action for any unpermitted discharges that occur between the commencement of earth-disturbing activities and discharge authorization.

Note: Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage.

1.4.3. Your Official End Date of Permit Coverage

Once covered under this permit, your coverage will last until the date that:

- You terminate permit coverage consistent with Part 8; or
- Your discharges are permitted under a different NPDES permit or a reissued or replacement version of this permit after expiring on February 16, 2017; or
- For existing projects that continue after this permit has expired, the deadline has passed for the submission of an NOI for coverage under a reissued or replacement version of this permit and you have failed to submit an NOI by the required deadline.

1.4.4. Continuation of Coverage for Existing Permittees After the Permit Expires.

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act and

[6] For existing projects located in the State of Idaho (except Indian country), NOIs must be submitted by no later than July 8, 2012. For existing projects located in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, NOIs must be submitted by no later than July 12, 2012. For existing projects located in the following areas, NOIs must be submitted no later than August 7, 2012:

[7] Note that if you are currently covered under the 2003 or 2008 CGP, this coverage continues until your coverage under this permit begins, provided you have submitted an NOI by the deadline.

remain in force and effect for discharges that were covered prior to expiration. If you were granted permit coverage prior to the expiration date, you will automatically remain covered by this permit until the earliest of:

- Your authorization for coverage under a reissued or replacement version of this permit following your timely submittal of a complete and accurate NOI requesting coverage under the new permit; or

  Note: If you fail to submit a timely NOI for coverage under the reissued or replacement permit, your coverage will terminate on the date that the NOI was due.

- Your submittal of a Notice of Termination; or
- Issuance or denial of an individual permit for the project's discharges; or
- A final permit decision by EPA not to reissue a general permit, at which time EPA will identify a reasonable time period for covered dischargers to seek coverage under an alternative general permit or an individual permit. Coverage under this permit will terminate at the end of this time period.

EPA reserves the right to modify or revoke and reissue this permit under 40 CFR 122.62 and 63, in which case you will be notified of any relevant changes or procedures to which you may be subject.

1.4.5. *Procedures for Denial of Coverage.*

Following your submittal of a complete and accurate NOI, you may be notified in writing by EPA that you are not covered, and that you must either apply for and/or obtain coverage under an individual NPDES permit or an alternate general NPDES permit. This notification will include a brief statement of the reasons for this decision and will provide application information. Any interested person may request that EPA consider requiring an individual permit under this paragraph.

If you are already a permittee with coverage under this permit, the notice will set a deadline to file the permit application, and will include a statement that on the effective date of the individual NPDES permit or alternate general NPDES permit, as it applies to you, coverage under this general permit will terminate. EPA may grant additional time to submit the application if you request it. If you are covered under this permit and fail to submit an individual NPDES permit application or an NOI for an alternate general NPDES permit as required by EPA, then the applicability of this permit to you is terminated at the end of the day specified by EPA as the deadline for application submittal. EPA may take appropriate enforcement action for any unpermitted discharge. If you submit a timely permit application, then when an individual NPDES permit is issued to you or you are provided with coverage under an alternate general NPDES permit, your coverage under this permit is terminated on the effective date of the individual permit or date of coverage under the alternate general permit.

1.5. REQUIREMENT TO POST A NOTICE OF YOUR PERMIT COVERAGE.

You must post a sign or other notice conspicuously at a safe, publicly accessible location in close proximity to the project site. At a minimum, the notice must include the NPDES Permit tracking number and a contact name and phone number for obtaining additional project information. The notice must be located so that it is visible from the public road that is nearest to the active part of the construction site, and it must use a font large enough to be readily viewed from a public right-of-way.

2. EFFLUENT LIMITATIONS APPLICABLE TO ALL DISCHARGES FROM CONSTRUCTION SITES

You are required to comply with the following effluent limitations in this Part for discharges from your site and/or from construction support activities (see Part 1.3.c).

Note: If your project is an "existing project" (see Part 1.4.2.b) or if you are a "new operator of an existing project" (see Part 1.4.2.c), and it is infeasible for you to comply with a specific requirement in this Part because (1) the requirement was not part of the permit you were previously covered under (i.e., the 2003 or 2008 CGP), and (2) because you are prevented from compliance due to the nature or location of earth disturbances that commenced prior to February 16, 2012 (or prior to April 9, 2012 for projects in the State of Idaho (except for Indian country), or prior to April 13, 2012 for projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or prior to May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin), or because you are unable to comply with the requirement due to the manner in which stormwater controls have already been installed or were already designed prior to February 16, 2012 (or prior to April 9, 2012 for projects in the State of Idaho (except for Indian country), or prior to April 13, 2012 for projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or prior to May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin), you are required to document this fact in your SWPPP and are waived from complying with that requirement. This flexibility applies only to the requirements in Parts 2.1, and 2.3.3 through 2.3.5 (except for Parts 2.3.3.1, 2.3.3.2b, 2.3.3.3c.i, and 2.3.3.4). This only applies to those portions of your site that have already commenced earth-disturbing activities or where stormwater controls implemented in compliance with the previous permit have already been installed.

Part 2 includes the following types of requirements:

- Erosion and Sediment Control Requirements (Part 2.1)
- Stabilization Requirements (Part 2.2)
- Pollution Prevention Requirements (Part 2.3)

2.1. EROSION AND SEDIMENT CONTROL REQUIREMENTS.

You must design, install, and maintain erosion and sediment controls that minimize the discharge of pollutants from earth-disturbing activities. To meet this requirement, you must comply with the following provisions.

2.1.1. General Requirements Applicable to All Construction Sites.

2.1.1.1 ***Area of Disturbance.*** You are required to minimize the amount of soil exposed during construction activities. You are also subject to the deadlines for temporarily and/or permanently stabilizing exposed portions of your site pursuant to Part 2.2.

2.1.1.2 ***Design Requirements.***

a. You must account for the following factors in designing your stormwater controls:

i. The expected amount, frequency, intensity, and duration of precipitation;

ii. The nature of stormwater runoff and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features. If any stormwater flow will be channelized at your site, you must design stormwater controls to control both peak flowrates and total stormwater volume to minimize erosion at outlets and to minimize downstream channel and streambank erosion; and

iii. The range of soil particle sizes expected to be present on the site.

b. You must direct discharges from your stormwater controls to vegetated areas of your site to increase sediment removal and maximize stormwater infiltration, including any natural buffers established under Part 2.1.2.1, unless infeasible. Use velocity dissipation devices if necessary to prevent erosion when directing stormwater to vegetated areas.

2.1.1.3 ***Installation Requirements.***

a. **Complete installation of stormwater controls by the time each phase of earth-disturbance has begun, unless infeasible.** By the time earth-disturbing activities in any given portion of your site have begun, unless infeasible, you must install and make operational any downgradient sediment controls *(e.g., buffers or equivalent sediment controls, perimeter controls, exit point controls, storm drain inlet protection)* that control discharges from the initial site clearing, grading, excavating, and other land-disturbing activities.

Note: Where it is infeasible to install stormwater controls prior to the initial earth disturbance, it is EPA's expectation that it will be a rare circumstance that will prevent the operator from installing such controls immediately following the initial earth disturbance.

Following the installation of these initial controls, all other stormwater controls planned for this portion of your site and described in your SWPPP must be installed and made operational as soon as conditions on the site allow.

Note: The requirement to install stormwater controls prior to earth-disturbance for each phase of the project does not apply to the earth disturbance associated with the actual installation of these controls.

b. **Use good engineering practices and follow manufacturer's specifications.** You must install all stormwater controls in accordance with good engineering practices, including applicable design specifications.

Note: Design specifications may be found in manufacturer specifications and/or in applicable erosion and sediment control manuals or ordinances. Any departures from such specifications must reflect good engineering practice and must be explained in your SWPPP.

2.1.1.4 ***Maintenance Requirements.***

a. You must ensure that all erosion and sediment controls required in this Part remain in effective operating condition during permit coverage and are protected from activities that would reduce their effectiveness.

b. You must inspect all erosion and sediment controls in accordance with the applicable requirements in Part 4.1, and document your findings in accordance with Part 4.1.7. If you find a problem *(e.g., erosion and sediment controls need to be replaced, repaired, or maintained)*, you must make the necessary repairs or modifications in accordance with the following schedule:

i. Initiate work to fix the problem immediately after discovering the problem, and complete such work by the close of the next work day, if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance.

ii. When installation of a new erosion or sediment control or a significant repair is needed, you must install the new or modified control and make it operational, or complete the repair, by no later than 7 calendar days from the time of discovery where feasible. If it is infeasible to complete the installation or repair within 7 calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7-day timeframe and document your schedule for installing the stormwater control(s) and making it operational as soon as practicable after the 7-day timeframe. Where these actions result in changes to any of the stormwater controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within 7 calendar days of completing this work.

2.1.2. Erosion and Sediment Control Requirements Applicable to All Sites.

2.1.2.1 **Provide Natural Buffers or Equivalent Sediment Controls.** (These requirements only apply when a surface water is located within 50 feet of your project's earth disturbances).

Note: EPA does not consider stormwater control features (e.g., stormwater conveyance channels, storm drain inlets, sediment basins) to constitute "surface waters" for the purposes of triggering the requirement to comply with this Part.

Note: Areas that you do not own or that are otherwise outside your operational control may be considered areas of undisturbed natural buffer for purposes of compliance with this part.

You must ensure that any discharges to surface waters through the area between the disturbed portions of the property and any surface waters located within 50 feet of your site are treated by an area of undisturbed natural buffer and/or additional erosion and sediment controls in order to achieve a reduction in sediment load equivalent to that achieved by a 50-foot natural buffer. Refer to Appendix G (Buffer Guidance) for information to assist you in complying with this requirement, and to Part 2.1.2.1e for exceptions to this requirement.

a. **Compliance Alternatives.** You can comply with this requirement in one of the following ways:

i. Provide and maintain a 50-foot undisturbed natural buffer; or

Note: If your earth disturbances are located 50 feet or further from a surface water, then you have complied with this alternative.

ii. Provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer; or

iii. If it is infeasible to provide and maintain an undisturbed natural buffer of any size, you must implement erosion and sediment

controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

Note: For the compliance alternatives in Parts 2.1.2.1a.i and 2.1.2.1a.ii, you are not required to enhance the quality of the vegetation that already exists in the buffer, or provide vegetation if none exists (e.g., arid and semi-arid areas). You only need to retain and protect from disturbance the natural buffer that existed prior to the commencement of construction. Any preexisting structures or impervious surfaces are allowed in the natural buffer provided you retain and protect from disturbance the natural buffer area outside the preexisting disturbance. Similarly, for alternatives 2.1.2.1a.ii and 2.1.2.1a.iii, you are required to implement and maintain sediment controls that achieve the sediment load reduction equivalent to the undisturbed natural buffer that existed on the site prior to the commencement of construction. In determining equivalent sediment load reductions, you may consider naturally non-vegetated areas and prior disturbances. See Appendix G for a discussion of how to determine equivalent reductions.

You must document the compliance alternative you have selected in your SWPPP, and comply with the applicable additional requirements described in Parts 2.1.2.1b and 2.1.2.1c below.

The compliance alternative selected above must be maintained throughout the duration of permit coverage, except that you may select a different compliance alternative during your period of permit coverage, in which case you must modify your SWPPP to reflect this change.

b. **Additional Requirements for the Compliance Alternatives in Parts 2.1.2.1a.i and 2.1.2.1a.ii.** If you choose either of the compliance alternatives in Parts 2.1.2.1a.i or 2.1.2.1a.ii above, throughout your period of coverage under this permit, you must comply with the following additional requirements:

   i. Ensure that all discharges from the area of earth disturbance to the natural buffer are first treated by the site's erosion and sediment controls, and use velocity dissipation devices if necessary to prevent erosion caused by stormwater within the buffer;

   ii. Document in your SWPPP the natural buffer width retained on the property, and show the buffer boundary on your site plan; and

   iii. Delineate, and clearly mark off, with flags, tape, or other similar marking device all natural buffer areas.

c. **Additional Requirements for the Compliance Alternatives in Parts 2.1.2.1a.ii and 2.1.2.1a.iii.** If you choose either of the compliance alternatives in Parts 2.1.2.1a.ii and 2.1.2.1a.iii, you must document in your SWPPP the erosion and sediment control(s) you will use to achieve an equivalent sediment reduction, and any information you relied upon to demonstrate the equivalency.

d. **Additional Requirement for the Compliance Alternative in Part 2.1.2.1a.iii.** If you choose the compliance alternative in Part 2.1.2.1a.iii, you must also

include in your SWPPP a description of why it is infeasible for you to provide and maintain an undisturbed natural buffer of any size.

e. **Exceptions.**

i. If there is no discharge of stormwater to surface waters through the area between your site and any surface waters located within 50 feet of your site, you are not required to comply with the requirements in this Part. This includes situations where you have implemented control measures, such as a berm or other barrier, that will prevent such discharges.

ii. Where no natural buffer exists due to preexisting development disturbances *(e.g., structures, impervious surfaces)* that occurred prior to the initiation of planning for the current development of the site, you are not required to comply with the requirements in this Part, unless you will remove portions of the preexisting development.

Where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, you are required to comply with the requirements in this Part. For the purposes of calculating the sediment load reduction for either Part 2.1.2.1a.ii or 2.1.2.1a.iii above, you are not expected to compensate for the reduction in buffer function from the area covered by these preexisting disturbances. See Appendix G for further information on how to comply with the compliance alternatives in Part 2.1.2.1a.ii or 2.1.2.1a.iii above.

If during your project, you will disturb any portion of these preexisting disturbances, the area disturbed will be deducted from the area treated as natural buffer.

iii. For "linear construction projects" (see Appendix A), you are not required to comply with the requirements in this Part if site constraints *(e.g., limited right-of-way)* prevent you from meeting any of the compliance alternatives in Part 2.1.2.1a, provided that, to the extent practicable, you limit disturbances within 50 feet of the surface water and/or you provide supplemental erosion and sediment controls to treat stormwater discharges from earth disturbances within 50 feet of the surface water. You must also document in your SWPPP your rationale as to why it is infeasible for you to comply with the requirements in Part 2.1.2.1a, and describe any buffer width retained and/or supplemental erosion and sediment controls installed.

iv. For "small residential lot" construction *(i.e., a lot being developed for residential purposes that will disturb less than 1 acre of land, but is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre)*, you have the option of complying with the requirements in Appendix G (Part G.2.3).

v. The following disturbances within 50 feet of a surface water are exempt from the requirements in this Part:

- Construction approved under a CWA Section 404 permit; or
- Construction of a water-dependent structure or water access area *(e.g., pier, boat ramp, trail)*.

You must document in your SWPPP if any of the above disturbances will occur within the buffer area on your site.

2.1.2.2 ***Install Perimeter Controls.***

a. **Installation Requirements:** You must install sediment controls along those perimeter areas of your site that will receive stormwater from earth-disturbing activities.[8]

For linear projects with rights-of-way that restrict or prevent the use of such perimeter controls, you must maximize the use of these controls where practicable and document in your SWPPP why it is impracticable in other areas of the project.

b. **Maintenance Requirements:** You must remove sediment before it has accumulated to one-half of the above-ground height of any perimeter control.

2.1.2.3 ***Minimize Sediment Track-Out.*** You must minimize the track-out of sediment onto off-site streets, other paved areas, and sidewalks from vehicles exiting your construction site. To comply with this requirement, you must:

a. Restrict vehicle use to properly designated exit points;

b. Use appropriate stabilization techniques[9] at all points that exit onto paved roads so that sediment removal occurs prior to vehicle exit;

c. Where necessary, use additional controls[10] to remove sediment from vehicle tires prior to exit; and

d. Where sediment has been tracked-out from your site onto the surface of off-site streets, other paved areas, and sidewalks, you must remove the deposited sediment by the end of the same work day in which the track-out occurs or by the end of the next work day if track-out occurs on a non-work day. You must remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. You are prohibited from hosing or sweeping tracked-out sediment into any stormwater conveyance (unless it is connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water.

Note: EPA recognizes that some fine grains may remain visible on the surfaces of off-site streets, other paved areas, and sidewalks even after you have implemented sediment removal practices. Such "staining" is not a violation of Part 2.1.2.3.

2.1.2.4 **Control Discharges from Stockpiled Sediment or Soil.** For any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil, you must comply with the following requirements:

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[8] Examples of perimeter controls include, but are not limited to, filter berms, silt fences, and temporary diversion dikes.

[9] Examples of appropriate stabilization techniques include the use of aggregate stone with an underlying geotextile or non-woven filter fabric, or turf mats.

[10] Examples of additional controls to remove sediment from vehicle tires include, but are not limited to, wheel washing, rumble strips, and rattle plates.

Note: For the purposes of this permit, sediment or soil stockpiles are defined as the storage for multiple days of soil or other sediment material to be used in the construction project.

a. Locate the piles outside of any natural buffers established under Part 2.1.2.1a and physically separated from other stormwater controls implemented in accordance with Part 2.1;

b. Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier;[11]

c. Where practicable, provide cover or appropriate temporary stabilization to avoid direct contact with precipitation or to minimize sediment discharge;

d. Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water; and

e. Unless infeasible, contain and securely protect from wind.

2.1.2.5 ***Minimize Dust.*** In order to avoid pollutants from being discharged into surface waters, to the extent feasible, you must minimize the generation of dust through the appropriate application of water or other dust suppression techniques.

2.1.2.6 ***Minimize the Disturbance of Steep Slopes.*** You must minimize the disturbance of "steep slopes" (see definition in Appendix A).

Note: The permit does not prevent or prohibit disturbance on steep slopes. For some projects, disturbance on steep slopes may be necessary for construction (e.g., a road cut in mountainous terrain). If a disturbance to steep slopes is required for the project, EPA would recognize that it is not economically achievable to avoid the disturbance to steep slopes. However, in cases where steep slope disturbances are required, minimizing the disturbances to steep slopes consistent with this requirement can be accomplished through the implementation of a number of standard erosion and sediment control practices, such as by phasing disturbances to these areas and using stabilization practices designed to be used on steep grades.

2.1.2.7 ***Preserve Topsoil.*** You must preserve native topsoil on your site, unless infeasible.

Note: Some projects may be designed to be highly impervious after construction, and therefore little or no vegetation is intended to remain. In these cases, preserving topsoil at the site would not be feasible. Some sites may not have space to stockpile topsoil on site for later use, in which case, it may also not be feasible to preserve topsoil.

Note: Stockpiling of topsoil at off-site locations, or transfer of topsoil to other locations, is an example of a practice that is consistent with the requirements in this Part.

2.1.2.8 ***Minimize Soil Compaction.*** In areas of your site where final vegetative stabilization will occur or where infiltration practices will be installed, you must either:

[11] Examples include berms, dikes, fiber rolls, silt fences, sandbag, gravel bags, or straw bale.

a. **Restrict vehicle / equipment use.** Restrict vehicle and equipment use in these locations to avoid soil compaction; or

b. **Use soil conditioning techniques.** Prior to seeding or planting areas of exposed soil that have been compacted, use techniques that condition the soils to support vegetative growth, if necessary and feasible.

2.1.2.9 ***Protect Storm Drain Inlets.*** If you discharge to any storm drain inlet that carries stormwater flow from your site directly to a surface water (and it is not first directed to a sediment basin, sediment trap, or similarly effective control), and you have authority to access the storm drain inlet, you must:

a. **Installation Requirements.** Install inlet protection measures[12] that remove sediment from your discharge prior to entry into the storm drain inlet.

Note: Inlet protection measures can be removed in the event of flood conditions or to prevent erosion.

b. **Maintenance Requirements.** Clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, you must remove the deposited sediment by the end of the same work day in which it is found or by the end of the following work day if removal by the same work day is not feasible.

2.1.3. Requirements Applicable Only to Sites Using These Specific Stormwater Controls.

You are required to comply with the following requirements if you will install any of the following stormwater controls at your site:

2.1.3.1 ***Constructed Stormwater Conveyance Channels.*** Design stormwater conveyance channels to avoid unstabilized areas on the site and to reduce erosion, unless infeasible. Minimize erosion of channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters during discharge conditions through the use of erosion controls and velocity dissipation devices[13] within and along the length of any constructed stormwater conveyance channel, and at any outlet to provide a non-erosive flow velocity.

2.1.3.2 ***Sediment Basins.*** If you install a sediment basin , you must comply with the following:

a. **Design requirements.**

i. Provide storage for either (1) the calculated volume of runoff from a 2-year, 24-hour storm (see Appendix H), or (2) 3,600 cubic feet per acre drained;

ii. When discharging from the sediment basin, utilize outlet structures that withdraw water from the surface in order to minimize the discharge of pollutants, unless infeasible;

[12] Examples of inlet protection measures include fabric filters, sandbags, concrete blocks, and gravel barriers.

[13] Examples of velocity dissipation devices include check dams, sediment traps, riprap, or grouted riprap at outlets.

Note: EPA believes that the circumstances in which it is infeasible to design outlet structures in this manner are rare. Exceptions may include areas with extended cold weather, where surface outlets may not be feasible during certain time periods (although it is expected that they would be used during other periods). If you have determined that it is infeasible to meet this requirement, you must provide documentation in your SWPPP to support your determination.

iii. Prevent erosion of (1) the sediment basin using stabilization controls *(e.g., erosion control blankets)*, and (2) the inlet and outlet using erosion controls and velocity dissipation devices; and

iv. Sediment basins must be situated outside of surface waters and any natural buffers established under Part 2.1.2.1a, and must be designed to avoid collecting water from wetlands.

b. **Maintenance requirements.** Keep in effective operating condition and remove accumulated sediment to maintain at least ½ of the design capacity of the sediment basin at all times.

2.1.3.3 ***Use of Treatment Chemicals.*** If you are using polymers, flocculants, or other treatment chemicals at your site, you must comply with the following minimum requirements:

a. **Use conventional erosion and sediment controls prior to and after the application of treatment chemicals.** Use conventional erosion and sediment controls prior to chemical addition to ensure effective treatment. Chemicals may only be applied where treated stormwater is directed to a sediment control *(e.g., sediment basin, perimeter control)* prior to discharge.

b. **Select appropriate treatment chemicals.** Chemicals must be selected that are appropriately suited to the types of soils likely to be exposed during construction and discharged to locations where chemicals will be applied, and to the expected turbidity, pH, and flow rate of stormwater flowing into the chemical treatment system or area.

c. **Minimize discharge risk from stored chemicals.** Store all treatment chemicals in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures *(e.g., spill berms, decks, spill containment pallets)*, or provide equivalent measures, designed and maintained to minimize the potential discharge of treatment chemicals in stormwater or by any other means *(e.g., storing chemicals in covered area or having a spill kit available on site)*.

d. **Comply with state/local requirements.** Comply with relevant state and local requirements affecting the use of treatment chemicals.

e. **Use chemicals in accordance with good engineering practices and specifications of the chemical provider/supplier.** You must also use treatment chemicals and chemical treatment systems in accordance with good engineering practices, and with dosing specifications and sediment removal design specifications provided by the provider/supplier of the applicable chemicals, or document specific departures from these practices or specifications and how they reflect good engineering practice.

f. **Ensure proper training.** Ensure that all persons who handle and use treatment chemicals at the construction site are provided with appropriate, product-specific training. Among other things, the training must cover proper dosing requirements.

g. **Comply with additional requirements for the approved use of cationic chemicals.** If you have been authorized to use cationic chemicals at your site pursuant to Part 1.2.4, and the authorization is conditioned on your compliance with additional requirements necessary to ensure that the use of such chemicals will not cause an exceedance of water quality standards, you are required to comply with all such requirements.

h. **Provide proper SWPPP documentation.** You must include documentation in your SWPPP consistent with Parts 7.2.6.9 and 7.2.10.2 on the specific chemicals and chemical treatment systems you will use, and how you will comply with the requirements in this Part.

2.1.3.4 ***Dewatering Practices.*** You are prohibited from discharging ground water or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation, unless such waters are first effectively managed by appropriate controls.[14] Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control.

You must also meet the following requirements for dewatering activities:

a. **Discharge requirements.**

i. Do not discharge visible floating solids or foam;

ii. Use an oil-water separator or suitable filtration device (such as a cartridge filter) that is designed to remove oil, grease, or other products if dewatering water is found to contain these materials;

iii. To the extent feasible, utilize vegetated, upland areas of the site to infiltrate dewatering water before discharge. In no case will surface waters be considered part of the treatment area;

iv. At all points where dewatering water is discharged, comply with the velocity dissipation requirements of Part 2.1.3.1;

v. With backwash water, either haul it away for disposal or return it to the beginning of the treatment process; and

vi. Replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

b. **Treatment chemical restrictions.** If you are using polymers, flocculants, or other treatment chemicals to treat dewatering water, you must comply with the requirements in Parts 2.1.3.3.

2.2. STABILIZATION REQUIREMENTS.

You are required to stabilize exposed portions of your site in accordance with the requirements of this Part.

[14] Examples of appropriate controls include, but are not limited to, sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, or filtration systems (e.g., bag or sand filters) that are designed to remove sediment.

Note: For the purposes of this permit, "exposed portions of your site" means areas of exposed soil that are required to be stabilized. Note that EPA does not expect that temporary or permanent stabilization measures to be applied to areas that are intended to be left unvegetated or unstabilized following construction (e.g., dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, or materials).

2.2.1. Deadlines for Initiating and Completing Stabilization.

2.2.1.1 ***Deadline to Initiate Stabilization.*** You must initiate soil stabilization measures immediately whenever earth-disturbing activities have permanently or temporarily ceased on any portion of the site.

Note: Earth-disturbing activities have permanently ceased when clearing and excavation within any area of your construction site that will not include permanent structures has been completed.

Note: Earth-disturbing activities have temporarily ceased when clearing, grading, and excavation within any area of the site that will not include permanent structures will not resume (i.e., the land will be idle) for a period of 14 or more calendar days, but such activities will resume in the future.

The 14 calendar day timeframe above begins counting as soon as you know that construction work on a portion of your site will be temporarily ceased. In circumstances where you experience unplanned or unanticipated delays in construction due to circumstances beyond your control (e.g., sudden work stoppage due to unanticipated problems associated with construction labor, funding, or other issues related to the ability to work on the site; weather conditions rendering the site unsuitable for the continuation of construction work) and you do not know at first how long the work stoppage will continue, your requirement to immediately initiate stabilization is triggered as soon as you know with reasonable certainty that work will be stopped for 14 or more additional calendar days. At that point, you must comply with Parts 2.2.1.1 and 2.2.1.2.

Note: For the purposes of this permit, EPA will consider any of the following types of activities to constitute the initiation of stabilization:

1. *prepping the soil for vegetative or non-vegetative stabilization;*
2. *applying mulch or other non-vegetative product to the exposed area;*
3. *seeding or planting the exposed area;*
4. *starting any of the activities in # 1 – 3 on a portion of the area to be stabilized, but not on the entire area; and*
5. *finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing stabilization in Parts 2.2.1.2 and 2.2.1.3.*

This list of examples is not exhaustive.

Note: The term "immediately" is used to define the deadline for initiating stabilization measures. In the context of this provision, "immediately" means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased.

2.2.1.2 ***Deadline to Complete Stabilization Activities.*** As soon as practicable, but no later than 14 calendar days after the initiation of soil stabilization measures consistent with Part 2.2.1.1[15], you are required to have completed:

[15] EPA may determine, based on an inspection carried out under Part 4.2 and corrective actions required under Part 5.3, that the level of sediment discharge on the site makes it necessary to require a faster schedule for completing stabilization. For instance, if sediment discharges from an area of exposed soil

a. For vegetative stabilization, all activities[16] necessary to initially seed or plant the area to be stabilized; and/or

b. For non-vegetative stabilization, the installation or application of all such non-vegetative measures.

2.2.1.3 ***Exceptions to the Deadlines for Initiating and Completing Stabilization.***

a. *Deadlines for projects occurring in arid or semi-arid areas, or drought-stricken areas.* These requirements apply if (1) your site is located in an arid area, a semi-arid area, or a drought-stricken area, as these terms are defined in Appendix A, (2) construction will occur during the seasonally dry period or during a period in which drought is predicted to occur, and (3) you are using vegetative cover for temporary or permanent stabilization. You may also comply with the deadlines in Part 2.2.1.1 instead. The deadlines for these types of projects are as follows:

i. Immediately initiate, and within 14 calendar days of a temporary or permanent cessation of work in any portion of your site complete, the installation of temporary non-vegetative stabilization measures to the extent necessary to prevent erosion;

ii. As soon as practicable, given conditions or circumstances on your site, complete all activities necessary to initially seed or plant the area to be stabilized; and

iii. If construction is occurring during the seasonally dry period, indicate in your SWPPP the beginning and ending dates of the seasonally dry period and your site conditions. You must also include the schedule you will follow for initiating and completing vegetative stabilization.

b. *Deadlines for projects that are affected by circumstances beyond the control of the permittee that delay the initiation and/or completion of vegetative stabilization as required in Parts 2.2.1.1 and/or 2.2.1.2.* If you are unable to meet the deadlines in Parts 2.2.1.1and/or 2.2.1.2 due to circumstances beyond your control[17], and you are using vegetative cover for temporary or permanent stabilization, you may comply with the following stabilization deadlines instead:

i. Immediately initiate, and within 14 calendar days complete, the installation of temporary non-vegetative stabilization measures to prevent erosion;

ii. Complete all soil conditioning, seeding, watering or irrigation installation, mulching, and other required activities related to the planting and initial establishment of vegetation as soon as conditions or circumstances allow it on your site; and

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that is required to be stabilized are compromising the performance of existing stormwater controls, EPA may require stabilization to correct this problem.

[16] For example, such activities might include, but are not limited to, soil conditioning, application of seed or sod, planting of seedlings or other vegetation, application of fertilizer, and, as deemed appropriate, watering.

[17] Examples include problems with the supply of seed stock or with the availability of specialized equipment, unsuitability of soil conditions due to excessive precipitation and/or flooding.

Note: You are required to have stabilized the exposed portions of your site consistent with Part 2.2.2 prior to terminating permit coverage under Part 8.2.

iii. Document the circumstances that prevent you from meeting the deadlines required in Parts 2.2.1.1and/or 2.2.1.2 and the schedule you will follow for initiating and completing stabilization.

c. *Deadlines for sites discharging to sensitive waters.* For any portion of the site that discharges to a sediment or nutrient-impaired water (see Part 3.2) or to a water that is identified by your state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes (see Part 3.3), you are required to complete the stabilization activities specified in Parts 2.2.1.2a and/or 2.2.1.2b within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities.

Note: If you qualify for the deadlines for initiating and completing stabilization in Part 2.2.1.3a or b, you may comply with the stabilization deadlines in Part 2.2.1.3a or b for any portion of your site that discharges to a sensitive water.

2.2.2. Criteria for Stabilization.

To be considered adequately stabilized, you must meet the criteria below depending on the type of cover you are using, either vegetative or non-vegetative.

2.2.2.1 ***Vegetative Stabilization.***

a. ***For all sites, except those located in arid or semi-arid areas or on agricultural lands.***

i. If you are vegetatively stabilizing any exposed portion of your site through the use of seed or planted vegetation, you must provide established uniform vegetation *(e.g., evenly distributed without large bare areas)*, which provides 70 percent or more of the density of coverage that was provided by vegetation prior to commencing earth-disturbing activities. You should avoid the use of invasive species;

ii. For final stabilization, vegetative cover must be perennial; and

iii. Immediately after seeding or planting the area to be vegetatively stabilized, to the extent necessary to prevent erosion on the seeded or planted area, you must select, design, and install non-vegetative erosion controls that provide cover *(e.g., mulch, rolled erosion control products)* to the area while vegetation is becoming established.

b. ***For sites located in arid or semi-arid areas, or drought-stricken areas.*** If you are located in an arid or semi-arid area, or a drought-stricken area, as these terms are defined in Appendix A, you are considered to have completed final stabilization if both of the following criteria are met:

i. The area you have seeded or planted must within 3 years provide established vegetation that covers 70 percent or more of the density of vegetation prior to commencing earth-disturbing activities; and

ii. In addition to seeding or planting the area to be vegetatively stabilized, to the extent necessary to prevent erosion on the seeded

or planted area, you must select, design, and install non-vegetative erosion controls that provide cover for at least 3 years without active maintenance by you.

c. ***For sites located on land used for agriculture.*** Disturbed areas on land used for agricultural purposes *(e.g., pipelines across crop or range land, staging areas for highway construction)* that are restored to their pre-construction agricultural use are not subject to these final stabilization criteria. Areas disturbed that were not previously used for agricultural activities, and areas that are not being returned to preconstruction agricultural use, must meet the conditions for stabilization in this Part.

2.2.2.2 ***Non-Vegetative Stabilization.*** If you are using non-vegetative controls to stabilize exposed portions of your site, or if you are using such controls to temporarily protect areas that are being vegetatively stabilized, you must provide effective non-vegetative cover[18] to stabilize any such exposed portions of your site.

2.3. POLLUTION PREVENTION REQUIREMENTS.

You are required to design, install, and maintain effective pollution prevention measures in order to prevent the discharge of pollutants. Consistent with this requirement, you must:

- Eliminate certain pollutant discharges from your site (see Part 2.3.1);
- Properly maintain all pollution prevention controls (see Part 2.3.2); and
- Comply with pollution prevention standards for pollutant-generating activities that occur at your site (see Part 2.3.3).

These requirements apply to all areas of your construction site and any and all support activities covered by this permit consistent with Part 1.3.c.

2.3.1. Prohibited Discharges.

You are prohibited from discharging the following from your construction site:

2.3.1.1 Wastewater from washout of concrete, unless managed by an appropriate control as described in Part 2.3.3.4;

2.3.1.2 Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials, unless managed by an appropriate control as described in Part 2.3.3.4;

2.3.1.3 Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;

2.3.1.4 Soaps, solvents, or detergents used in vehicle and equipment washing; and

2.3.1.5 Toxic or hazardous substances from a spill or other release.

2.3.2. General Maintenance Requirements.

You must ensure that all pollution prevention controls installed in accordance with this Part remain in effective operating condition and are protected from activities that would reduce their effectiveness. You must inspect all pollutant-generating activities and

[18] For temporary stabilization, examples of temporary non-vegetative stabilization methods include, but are not limited to, hydromulch and erosion control blankets. For final stabilization, examples of permanent non-vegetative stabilization methods include, but are not limited to, riprap, gabions, and geotextiles.

pollution prevention controls in accordance with your inspection frequency requirements in Parts 4.1.2 or 3.2.2.1 to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater discharges to receiving waters, and must document your findings in accordance with Part 4.1.7. If you find that controls need to be replaced, repaired, or maintained, you must make the necessary repairs or modifications in accordance with the following:

2.3.2.1 Initiate work to fix the problem immediately after discovering the problem, and complete such work by the close of the next work day, if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance.

2.3.2.2 When installation of a new pollution prevention control or a significant repair is needed, you must install the new or modified control and make it operational, or complete the repair, by no later than 7 calendar days from the time of discovery. If it is infeasible to complete the installation or repair within 7 calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7 calendar day timeframe and document your schedule for installing the stormwater control(s) and making it operational as soon as practicable after the 7 calendar day timeframe. Where these actions result in changes to any of the pollution prevention controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within 7 calendar days of completing this work.

2.3.3. Pollution Prevention Standards.

You are required to comply with the pollution prevention standards in this Part if you conduct any of the following activities at your site or at any construction support activity areas covered by this permit (see Part 1.3.c):

- Fueling and maintenance of equipment or vehicles;
- Washing of equipment and vehicles;
- Storage, handling, and disposal of construction materials, products, and wastes; and
- Washing of applicators and containers used for paint, concrete, or other materials.

The pollution prevention standards are as follows:

2.3.3.1 ***Fueling and Maintenance of Equipment or Vehicles.*** If you conduct fueling and/or maintenance of equipment or vehicles at your site, you must provide an effective means of eliminating the discharge of spilled or leaked chemicals, including fuel, from the area where these activities will take place.[19]

To comply with the prohibition in Part 2.3.1.3, you must:

a. If applicable, comply with the Spill Prevention Control and Countermeasures (SPCC) requirements in 40 CFR 112 and Section 311 of the CWA;

b. Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of used liquids;

[19] Examples of effective controls include, but are not limited to, locating activities away from surface waters and stormwater inlets or conveyances, providing secondary containment *(e.g., spill berms, decks, spill containment pallets)* and cover where appropriate, and/or having spill kits readily available.

c. Use drip pans and absorbents under or around leaky vehicles;

d. Dispose of or recycle oil and oily wastes in accordance with other federal, state, tribal, or local requirements;

e. Clean up spills or contaminated surfaces immediately, using dry clean up measures where possible, and eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge; and

f. Do not clean surfaces by hosing the area down.

2.3.3.2 ***Washing of Equipment and Vehicles.***

a. You must provide an effective means of minimizing the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other types of washing;[20] and

b. To comply with the prohibition in Part 2.3.1.4, for storage of soaps, detergents, or solvents, you must provide either (1) cover (*e.g., plastic sheeting or temporary roofs*) to prevent these detergents from coming into contact with rainwater, or (2) a similarly effective means designed to prevent the discharge of pollutants from these areas.

2.3.3.3 ***Storage, Handling, and Disposal of Construction Products, Materials, and Wastes.*** You must minimize the exposure to stormwater of any of the products, materials, or wastes specified below that are present at your site by complying with the requirements in this Part.

Note: These requirements do not apply to those products, materials, or wastes that are not a source of stormwater contamination or that are designed to be exposed to stormwater.

To ensure you meet this requirement, you must:

a. *For building products*[21]*:* In storage areas, provide either (1) cover (*e.g., plastic sheeting or temporary roofs*) to prevent these products from coming into contact with rainwater, or (2) a similarly effective means designed to prevent the discharge of pollutants from these areas.

b. *For pesticides, herbicides, insecticides, fertilizers, and landscape materials:*

i. In storage areas, provide either (1) cover (e.g., *plastic sheeting or temporary roofs*) to prevent these chemicals from coming into contact with rainwater, or (2) a similarly effective means designed to prevent the discharge of pollutants from these areas; and

ii. Comply with all application and disposal requirements included on the registered pesticide, herbicide, insecticide, and fertilizer label.

c. *For diesel fuel, oil, hydraulic fluids, other petroleum products, and other chemicals:*

[20] Examples of effective controls include, but are not limited to, locating activities away from surface waters and stormwater inlets or conveyances and directing wash waters to a sediment basin or sediment trap, using filtration devices, such as filter bags or sand filters, or using other similarly effective controls.

[21] Some examples of building products that are typically stored at construction sites include, but are not limited to, asphalt sealants, copper flashing, roofing materials, adhesives, concrete admixtures.

i. To comply with the prohibition in Part 2.3.1.3, store chemicals in water-tight containers, and provide either (1) cover *(e.g., plastic sheeting or temporary roofs)* to prevent these containers from coming into contact with rainwater, or (2) a similarly effective means designed to prevent the discharge of pollutants from these areas *(e.g., spill kits)*, or provide secondary containment *(e.g., spill berms, decks, spill containment pallets)*; and

ii. Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly. Do not clean surfaces or spills by hosing the area down. Eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.

d. *For hazardous or toxic waste*[22]*:*

i. Separate hazardous or toxic waste from construction and domestic waste;

ii. Store waste in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable federal, state, tribal, or local requirements;

iii. Store all containers that will be stored outside within appropriately-sized secondary containment *(e.g., spill berms, decks, spill containment pallets)* to prevent spills from being discharged, or provide a similarly effective means designed to prevent the discharge of pollutants from these areas *(e.g., storing chemicals in covered area or having a spill kit available on site)*;

iv. Dispose of hazardous or toxic waste in accordance with the manufacturer's recommended method of disposal and in compliance with federal, state, tribal, and local requirements; and

v. Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly. Do not clean surfaces or spills by hosing the area down. Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.

e. *For construction and domestic waste*[23]: Provide waste containers *(e.g., dumpster or trash receptacle)* of sufficient size and number to contain construction and domestic wastes. In addition, you must:

(1) On work days, clean up and dispose of waste in designated waste containers; and

(2) Clean up immediately if containers overflow.

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[22] Examples of hazardous or toxic waste that may be present at construction sites include, but are not limited to, paints, solvents, petroleum-based products, wood preservatives, additives, curing compounds, acids.

[23] Examples of construction and domestic waste include, but are not limited to, packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, and other trash or building materials.

f. *For sanitary waste:* Position portable toilets so that they are secure and will not be tipped or knocked over.

2.3.3.4 **Washing of Applicators and Containers used for Paint, Concrete, or Other Materials.** To comply with the prohibition in Parts 2.3.1.1 and 2.3.1.2, you must provide an effective means of eliminating the discharge of water from the washout and cleanout of stucco, paint, concrete, form release oils, curing compounds, and other construction materials. To comply with this requirement, you must:

a. Direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation;

b. Handle washout or cleanout wastes as follows:

i. Do not dump liquid wastes in storm sewers;

ii. Dispose of liquid wastes in accordance with applicable requirements in Part 2.3.3.3; and

iii. Remove and dispose of hardened concrete waste consistent with your handling of other construction wastes in Part 2.3.3.3; and

c. Locate any washout or cleanout activities as far away as possible from surface waters and stormwater inlets or conveyances, and, to the extent practicable, designate areas to be used for these activities and conduct such activities only in these areas.

2.3.4. Emergency Spill Notification.

You are prohibited from discharging toxic or hazardous substances from a spill or other release, consistent with Part 2.3.1.5. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 or, in the Washington, DC metropolitan area, call (202) 267-2675 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as you have knowledge of the discharge. You must also, within 7 calendar days of knowledge of the release, provide a description of the release, the circumstances leading to the release, and the date of the release. State, tribal, or local requirements may necessitate additional reporting of spills or discharges to local emergency response, public health, or drinking water supply agencies.

2.3.5. Fertilizer Discharge Restrictions.

You are required to minimize discharges of fertilizers containing nitrogen or phosphorus. To meet this requirement, you must comply with the following requirements:

2.3.5.1 Apply at a rate and in amounts consistent with manufacturer's specifications, or document departures from the manufacturer specifications where appropriate in Part 7.2.7.2 of the SWPPP;

2.3.5.2 Apply at the appropriate time of year for your location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth;

2.3.5.3 Avoid applying before heavy rains that could cause excess nutrients to be discharged;

2.3.5.4 Never apply to frozen ground;

2.3.5.5 Never apply to stormwater conveyance channels with flowing water; and

2.3.5.6 Follow all other federal, state, tribal, and local requirements regarding fertilizer application.

3. WATER QUALITY-BASED EFFLUENT LIMITATIONS.

3.1. GENERAL EFFLUENT LIMITATION TO MEET APPLICABLE WATER QUALITY STANDARDS

Your discharge must be controlled as necessary to meet applicable water quality standards. You must also comply with any additional requirements that your state or tribe requires you to meet in Part 9.

In the absence of information demonstrating otherwise, EPA expects that compliance with the conditions in this permit will result in stormwater discharges being controlled as necessary to meet applicable water quality standards. If at any time you become aware, or EPA determines, that your discharge is not being controlled as necessary to meet applicable water quality standards, you must take corrective action as required in Part 5.2.1, and document the corrective actions as required in Part 5.2.2 and Part 5.4.

EPA will also impose additional water quality-based limitations on a site-specific basis, or require you to obtain coverage under an individual permit, if information in your NOI, or from other sources indicates that your discharges are not controlled as necessary to meet applicable water quality standards. This includes situations where additional controls are necessary to comply with a wasteload allocation in an EPA established or approved TMDL.

3.2. DISCHARGE LIMITATIONS FOR IMPAIRED WATERS

If you discharge to a surface water that is impaired for (1) sediment or a sediment-related parameter, such as total suspended solids (TSS) or turbidity, and/or (2) nutrients, including impairments for nitrogen and/or phosphorus, you are required to comply with the requirements in Part 3.2.2.

Note: For the purposes of this Part, "impaired waters" are waters identified as impaired on the appropriate CWA Section 303(d) list, or waters with an EPA-approved or established TMDL. Your construction site will be considered to discharge to an impaired water if the first surface water to which you discharge is identified by a state, tribe, or EPA pursuant to Section 303(d) of the CWA as not meeting an applicable water quality standard, or is included in an EPA-approved or established total maximum daily load (TMDL). For discharges that enter a storm sewer system prior to discharge, the first surface water to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

If you discharge to an impaired water that is impaired for a parameter other than a sediment-related parameter or nutrients, EPA will inform you if any additional limits or controls are necessary for your discharge to be controlled as necessary to meet water quality standards, including for it to be consistent with the assumptions of any available wasteload allocation in any applicable TMDL, or if coverage under an individual permit is necessary in accordance with Part 1.4.5.

If during your coverage under a previous permit, you were required to install and maintain stormwater controls specifically to meet the assumptions and requirements of an EPA-approved or established TMDL (for any parameter) or to otherwise control your discharge to meet water quality standards, you must continue to implement such controls as part of this permit.

3.2.1. Identify If You Discharge To An Impaired Water.

If you discharge to an impaired water, you must provide the following information in your NOI:

- A list of all impaired waters to which you discharge;
- The pollutant(s) for which the surface water is impaired; and

- Whether a TMDL has been approved or established for the waters to which you discharge.

3.2.2. Requirements for Discharges to Sediment or Nutrient-Impaired Waters.

If you discharge to a surface water that is impaired for (1) sediment or a sediment-related parameter *(e.g., total suspended solids (TSS) or turbidity)* and/or (2) nutrients *(e.g., nitrogen and/or phosphorus)*, including impaired waters for which a TMDL has been approved or established for the impairment, you are required to comply with the following stormwater control requirements, which supplement the requirements applicable to your site in other corresponding parts of the permit

3.2.2.1 ***Frequency of Site Inspection.*** You must conduct inspections at the frequency specified in Part 4.1.3.

3.2.2.2 ***Deadline to Complete Stabilization.*** You must comply with the deadlines for completing site stabilization as specified in Part 2.2.1.3c.

3.2.2.3 ***State and Tribal Requirements.*** You must comply with any additional state or tribal impairment-related requirements included in Part 9.

EPA will also impose additional water quality-based limitations on a site-specific basis, or require you to obtain coverage under an individual permit, if it is determined that the controls in the Part will not be sufficient to control discharges consistent with the assumptions and requirements of an applicable wasteload allocation of an approved or established TMDL or to prevent the site from contributing to the impairment.

3.3. DISCHARGES TO WATERS IDENTIFIED AS TIER 2, TIER 2.5, OR TIER 3.

3.3.1. Identify if You Discharge to a Tier 2, Tier 2.5, or Tier 3 Water.

If you discharge to a water identified by a state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 water, you must provide on your NOI a list of waters identified as Tier 2, Tier 2.5, or Tier 3 to which you discharge. See Appendix F for a list of Tier 2 and 3 waters.

Note: For the purposes of this permit, you are considered to discharge to a Tier 2, Tier 2.5, or Tier 3 water if the first surface water to which you discharge is identified by a state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3. Tiers 2,.2.5 and 3 refer to waters either identified by the state as high quality waters or Outstanding National Resource Waters under 40 CFR §131.12(a)(2) and (3). For discharges that enter a storm sewer system prior to discharge, the surface water to which you discharge is the first surface water that receives the stormwater discharge from the storm sewer system.

3.3.2. Requirements for New Projects Discharging to Tier 2, Tier 2.5, or Tier 3 Waters.

For new projects, if you will discharge to a Tier 2, Tier 2.5, or Tier 3 water, you are required to comply with the requirements in Parts 4.1.3 (inspection frequencies) and 2.2.1.3c (stabilization deadlines), and, if applicable, Part 9 (relevant state or tribal requirements). In addition, on a case-by-case basis, EPA may notify operators of such new projects or operators of existing projects with increased discharges that additional analyses, stormwater controls, or other permit conditions are necessary to comply with the applicable antidegradation requirements, or notify you that an individual permit application is necessary in accordance with Part 1.4.5.

4. INSPECTIONS.

4.1. SITE INSPECTIONS.

4.1.1. Person(s) Responsible for Inspecting Site.

The person(s) inspecting your site may be a person on your staff or a third party you hire to conduct such inspections. You are responsible for ensuring that the person who conducts inspections is a "qualified person."

Note: A "qualified person" is a person knowledgeable in the principles and practice of erosion and sediment controls and pollution prevention, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit.

4.1.2. Frequency of Inspections.

At a minimum, you must conduct a site inspection in accordance with one of the two schedules listed below, unless you are subject to Part 4.1.3 or Part 4.1.4:

4.1.2.1 At least once every 7 calendar days; or

4.1.2.2 Once every 14 calendar days and within 24 hours of the occurrence of a storm event of 0.25 inches or greater. To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that day in accordance with Part 4.1.7.1d.

Note: Inspections are only required during the project's normal working hours.

Note: You are required to specify in your SWPPP which schedule you will be following.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if you have elected to inspect bi-weekly in accordance with Part 4.1.2.2 and there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

4.1.3. Increase in Inspection Frequency for Sites Discharging to Sensitive Waters.

For any portion of the site that discharges to a sediment or nutrient-impaired water (see Part 3.2) or to a water that is identified by your state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes (see Part 3.3), instead of the inspection frequency specified in Part 4.1.2, you must conduct inspections in accordance with the following inspection frequencies:

4.1.3.1 Once every 7 calendar days; and

4.1.3.2 Within 24 hours of the occurrence of a storm event of 0.25 inches or greater. To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that

measures 0.25 inches or greater, you must record the total rainfall measured for that day in accordance with Part 4.1.7.1d.

Note: Inspections are only required during the project's normal working hours.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

Note: If you qualify for any of the reduced inspection frequencies in Part 4.1.4, you may conduct inspections in accordance with Part 4.1.4 for any portion of your site that discharges to a sensitive water.

4.1.4. Reductions in Inspection Frequency.

Your inspection frequency may be reduced as follows:

4.1.4.1 ***For Stabilized Areas.*** You may reduce the frequency of inspections to once per month in any area of your site where the stabilization steps in Parts 2.2.1.2a and 2.2.1.2b have been completed. If construction activity resumes in this portion of the site at a later date, the inspection frequency immediately increases to that required in Parts 4.1.2 or 4.1.3, if applicable. You must document the beginning and ending dates of this period in your records.

4.1.4.2 ***For Arid, Semi-Arid, or Drought-Stricken Areas.*** You may reduce the frequency of inspections to once per month and within 24 hours of the occurrence of a storm event of 0.25 inches or greater if your site is located in an arid, semi-arid, or drought-stricken area, as these terms are defined in Appendix A, and construction is occurring during the seasonally dry period or during a period in which drought is predicted to occur. You must document that you are using this reduced schedule and the beginning and ending dates of the seasonally dry period in your SWPPP. To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that day in accordance with Part 4.1.7.1d.

Note: Inspections are only required during the project's normal working hours.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

4.1.4.3 ***For Frozen Conditions.***

a. If you are suspending earth-disturbing activities due to frozen conditions, you may temporarily suspend inspections on your site until thawing conditions (see Appendix A) begin to occur if:

i. Runoff is unlikely due to continuous frozen conditions that are likely to continue at your site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, you must immediately resume your regular inspection frequency as described in Parts 4.1.2 or 4.1.3, if applicable;

ii. Land disturbances have been suspended; and

iii. All disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.

b. If you are still conducting earth-disturbing activities during frozen conditions, you may reduce your inspection frequency to once per month if:

i. Runoff is unlikely due to continuous frozen conditions that are likely to continue at your site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, you must immediately resume your regular inspection frequency as described in Parts 4.1.2 or 4.1.3 if applicable; and

ii. Except for areas in which you are actively conducting earth-disturbing activities, disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.

You must document the beginning and ending dates of this period in your SWPPP.

4.1.5. Areas that Need to Be Inspected. During your site inspection, you must at a minimum inspect the following areas of your site:

4.1.5.1 All areas that have been cleared, graded, or excavated and that have not yet completed stabilization consistent with Part 2.2;

4.1.5.2 All stormwater controls (including pollution prevention measures) installed at the site to comply with this permit;

4.1.5.3 Material, waste, borrow, or equipment storage and maintenance areas that are covered by this permit;

4.1.5.4 All areas where stormwater typically flows within the site, including drainageways designed to divert, convey, and/or treat stormwater;

4.1.5.5 All points of discharge from the site; and

4.1.5.6 All locations where stabilization measures have been implemented.

You are not required to inspect areas that, at the time of the inspection, are considered unsafe to your inspection personnel.

4.1.6. Requirements for Inspections. During your site inspection, you must at a minimum:

4.1.6.1 Check whether all erosion and sediment controls and pollution prevention controls are installed, appear to be operational, and are working as intended to minimize pollutant discharges. Determine if any controls need to be replaced, repaired, or maintained in accordance with Parts 2.1.1.4 and 2.3.2;

4.1.6.2 Check for the presence of conditions that could lead to spills, leaks, or other accumulations of pollutants on the site;

4.1.6.3 Identify any locations where new or modified stormwater controls are necessary to meet the requirements of Parts 2 and/or 3;

4.1.6.4 At points of discharge and, if applicable, the banks of any surface waters flowing within your property boundaries or immediately adjacent to your property, check for signs of visible erosion and sedimentation *(i.e., sediment deposits)* that have occurred and are attributable to your discharge; and

4.1.6.5 Identify any and all incidents of noncompliance observed.

4.1.6.6 If a discharge is occurring during your inspection, you are required to:

a. Identify all points of the property from which there is a discharge;

b. Observe and document the visual quality of the discharge, and take note of the characteristics of the stormwater discharge, including color, odor, floating, settled, or suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollutants; and

c. Document whether your stormwater controls are operating effectively, and describe any such controls that are clearly not operating as intended or are in need of maintenance.

4.1.6.7 Based on the results of your inspection, initiate corrective action under Part 5.

4.1.7. Inspection Report.

4.1.7.1 ***Requirement to Complete Inspection Report.*** You must complete an inspection report within 24 hours of completing any site inspection. Each inspection report must include the following:

a. The inspection date;

b. Names and titles of personnel making the inspection;

c. A summary of your inspection findings, covering at a minimum the observations you made in accordance with Part 4.1.6;

d. If you are inspecting your site at the frequency specified in Part 4.1.2.2, Part 4.1.3, or Part 4.1.4.2, and you conducted an inspection because of rainfall measuring 0.25 inches or greater, you must include the applicable rain gauge or weather station readings that triggered the inspection; and

e. If you have determined that it is unsafe to inspect a portion of your site, you must describe the reason you found it to be unsafe and specify the *locations that this condition applied to.*

4.1.7.2 ***Signature Requirements.*** Each inspection report must be signed in accordance with Appendix I, Part I.11 of this permit.

4.1.7.3 ***Recordkeeping Requirements.*** You are required to keep a current, copy of all inspection reports at the site or at an easily accessible location, so that it can be made available at the time of an onsite inspection or upon request by EPA. For purposes of this permit, your inspection reports may be kept electronically if the records are:

a. In a format that can be read in a similar manner as a paper record;

b. Legally dependable with no less evidentiary value than their paper equivalent; and

c. Accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form.

Note: See Section IX.1.7 of the Fact Sheet for a discussion on ways to ensure that electronic records satisfy this requirement. See Appendix I, Part I.11.5 for requirements relating to electronic signature of these documents.

All inspection reports completed for this Part must be retained for at least 3 years from the date that your permit coverage expires or is terminated.

4.2. INSPECTIONS BY EPA.

You must allow EPA, or an authorized representative of the EPA, to conduct the following activities at reasonable times:

4.2.1. Enter onto areas of your site, including any construction support activity areas covered by this permit (see Part 1.3.c), and onto locations where records are kept under the conditions of this permit;

4.2.2. Access and copy any records that must be kept under the conditions of this permit;

4.2.3. Inspect your construction site, including any construction support activity areas covered by this permit (see Part 1.3.c) and any stormwater controls installed and maintained at the site; and

4.2.4. Sample or monitor for the purpose of ensuring compliance.

5. CORRECTIVE ACTIONS.

5.1. "CORRECTIVE ACTIONS" DEFINED.

Corrective actions are actions you take in compliance with this Part to:

- Repair, modify, or replace any stormwater control used at the site;
- Clean up and properly dispose of spills, releases, or other deposits; or
- Remedy a permit violation.

5.2. REQUIREMENTS FOR TAKING CORRECTIVE ACTION.

You must complete the following corrective actions in accordance with the deadlines specified in this Part. In all circumstances, you must immediately take all reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events.

Note: In this context, the term "immediately" requires construction operators to, on the same day a condition requiring corrective action is found, take all reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational. However, if the problem is identified at a time in the work day when it is too late to initiative corrective action, the initiation of corrective action must begin on the following work day.

5.2.1. For any of the following conditions on your site, you must install a new or modified control and make it operational, or complete the repair, by no later than 7 calendar days from the time of discovery. If it is infeasible to complete the installation or repair within 7 calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7 calendar day timeframe and document your schedule for installing the stormwater control(s) and making it operational as soon as practicable after the 7-day timeframe.

5.2.1.1 A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Parts 2 and/or 3; or

5.2.1.2 You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements in Part 3.1. In this case, you must notify your EPA Regional Office by the end of the next work day. You are required to submit your notification through EPA's electronic NOI system, or "eNOI", at www.epa.gov/npdes/cgpenoi; or

5.2.1.3 One of the prohibited discharges in Part 2.3.1 is occurring or has occurred.

5.2.2. Where your corrective actions result in changes to any of the stormwater controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within 7 calendar days of completing corrective action work.

5.3. CORRECTIVE ACTION REQUIRED BY EPA.

You must comply with any corrective actions required by EPA as a result of permit violations found during an inspection carried out under Part 4.2.

5.4. CORRECTIVE ACTION REPORT.

For each corrective action taken in accordance with this Part, you must complete a corrective action report, which includes the applicable information in Parts 5.4.1 and 5.4.2. Note that these reports must be maintained in your records but do not need to be provided to EPA except upon request.

5.4.1. Within 24 hours of discovering the occurrence of one of the triggering conditions in Part 5.2.1 at your site, you must complete a report of the following:

5.4.1.1 Which condition was identified at your site;

5.4.1.2 The nature of the condition identified; and

5.4.1.3 The date and time of the condition identified and how it was identified.

5.4.2. Within 7 calendar days of discovering the occurrence of one of the triggering conditions in Part 5.2.1 at your site, you must complete a report of the following:

5.4.2.1 Any follow-up actions taken to review the design, installation, and maintenance of stormwater controls, including the dates such actions occurred;

5.4.2.2 A summary of stormwater control modifications taken or to be taken, including a schedule of activities necessary to implement changes, and the date the modifications are completed or expected to be completed; and

5.4.2.3 Notice of whether SWPPP modifications are required as a result of the condition identified or corrective action.

5.4.3. **Signature Requirements.** Each corrective action report must be signed and certified in accordance with Appendix I, Part I.11 of this permit.

5.4.4. **Recordkeeping Requirements.** You are required to keep a current copy of all corrective action reports at the site or at an easily accessible location, so that it can be made available at the time of an onsite inspection or upon request by EPA. For purposes of this permit, your corrective action reports may be kept electronically if the records are:

5.4.4.1 In a format that can be read in a similar manner as a paper record;

5.4.4.2 Legally dependable with no less evidentiary value than their paper equivalent; and

5.4.4.3 Accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form.

Note: See Section IX.1.7 of the Fact Sheet for a discussion on ways to ensure that electronic records satisfy this requirement. See Appendix I, Part I.11.5 for requirements relating to electronic signature of these documents.

All corrective action reports completed for this Part must be retained for at least 3 years from the date that your permit coverage expires or is terminated.

6. STAFF TRAINING REQUIREMENTS.

Prior to the commencement of earth-disturbing activities or pollutant-generating activities, whichever occurs first, you must ensure that the following personnel understand the requirements of this permit and their specific responsibilities with respect to those requirements:

- Personnel who are responsible for the design, installation, maintenance, and/or repair of stormwater controls (including pollution prevention measures);
- Personnel responsible for the application and storage of treatment chemicals (if applicable);
- Personnel who are responsible for conducting inspections as required in Part 4.1.1; and
- Personnel who are responsible for taking corrective actions as required in Part 5.

Notes: *(1) If the person requiring training is a new employee, who starts after you commence earth-disturbing or pollutant-generating activities, you must ensure that this person has the proper understanding as required above prior to assuming particular responsibilities related to compliance with this permit.*

(2) For emergency-related construction activities, the requirement to train personnel prior to commencement of earth-disturbing activities does not apply, however, such personnel must have the required training prior to NOI submission.

You are responsible for ensuring that all activities on the site comply with the requirements of this permit. You are not required to provide or document formal training for subcontractors or other outside service providers, but you must ensure that such personnel understand any requirements of the permit that may be affected by the work they are subcontracted to perform.

At a minimum, personnel must be trained to understand the following if related to the scope of their job duties (e.g., only personnel responsible for conducting inspections need to understand how to conduct inspections):

- The location of all stormwater controls on the site required by this permit, and how they are to be maintained;
- The proper procedures to follow with respect to the permit's pollution prevention requirements; and
- When and how to conduct inspections, record applicable findings, and take corrective actions.

7. STORMWATER POLLUTION PREVENTION PLAN (SWPPP).

7.1. GENERAL REQUIREMENTS.

7.1.1. Requirement to Develop a SWPPP Prior to Submitting Your NOI.

All operators associated with a construction project to be covered under this permit must develop a SWPPP.

Note: You have the option of developing a group SWPPP where you are one of several operators who will be engaged in construction activities at your site. For instance, if both the owner and the general contractor of the construction site are permitted, the owner may be the party responsible for SWPPP development, and the general contractor can choose to use this same SWPPP, as long as the SWPPP addresses the general contractor's scope of construction work and obligations under this permit.

You are required to develop your site's SWPPP prior to submitting your NOI. At a minimum, your SWPPP must include the information required in Part 7.2 and as specified in other parts of the permit. [24] You must also update the SWPPP as required in Part 7.4.

Note: If your project is an "existing project" (see Part 1.4.2.b) or if you are a new operator of an existing project" (see Part 1.4.2.c), and it is infeasible for you to comply with a specific requirement in this Part or in Parts 2.1, and 2.3.3 through 2.3.5 (except for Parts 2.3.3.1, 2.3.3.2b, 2.3.3.3c.i, and 2.3.3.4) because (1) the provision was not part of the permit you were previously covered under (i.e., the 2003 or 2008 CGP), and (2) because you are prevented from compliance due to the nature or location of earth disturbances that commenced prior to February 16, 2012 (or prior to April 9, 2012 for projects in the State of Idaho (except for Indian country), or prior to April 13, 2012 for projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or prior to May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin), or because you are unable to comply with the requirement due to the manner in which stormwater controls have already been installed or were already designed prior to February 16, 2012 (or prior to April 9, 2012 for projects in the State of Idaho (except for Indian country), or prior to April 13, 2012 for projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or prior to May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin), you are required to include documentation of the reasons why it is infeasible for you to meet the specific requirement, and then you may be waived from complying with this requirement. You must include a separate justification why it is infeasible for you to meet each of the applicable requirements.

If you prepared a SWPPP for coverage under a previous version of this NPDES permit, you must review and update your SWPPP to ensure that this permit's requirements are addressed prior to submitting your NOI.

7.2. SWPPP CONTENTS.

Your SWPPP must include the following information, at a minimum.

[24] The SWPPP does not establish the effluent limits that apply to your site's discharges; these limits are established in this permit in Parts 2 and 3.

7.2.1. Stormwater Team.

Each operator, or group of multiple operators, must assemble a "stormwater team," which is responsible for overseeing the development of the SWPPP, any later modifications to it, and for compliance with the requirements in this permit.

The SWPPP must identify the personnel (by name or position) that are part of the stormwater team, as well as their individual responsibilities. Each member of the stormwater team must have ready access to an electronic or paper copy of applicable portions of this permit, the most updated copy of your SWPPP, and other relevant documents or information that must be kept with the SWPPP.

7.2.2. Nature of Construction Activities.

The SWPPP must describe the nature of your construction activities, including the size of the property (in acres) and the total area expected to be disturbed by the construction activities (in acres), construction support activity areas covered by this permit (see Part 1.3.c), and the maximum area expected to be disturbed at any one time.

7.2.3. Emergency-Related Projects.

If you are conducting earth-disturbing activities in response to a public emergency (see Part 1.2), you must document the cause of the public emergency (e.g., natural disaster, extreme flooding conditions, etc.), information substantiating its occurrence (e.g., state disaster declaration or similar state or local declaration), and a description of the construction necessary to reestablish effected public services.

7.2.4. Identification of Other Site Operators.

The SWPPP must include a list of all other operators who will be engaged in construction activities at your site, and the areas of the site over which each operator has control.

7.2.5. Sequence and Estimated Dates of Construction Activities.

The SWPPP must include a description of the intended sequence of construction activities, including a schedule of the estimated start dates and the duration of the activity, for the following activities:

7.2.5.1 Installation of stormwater control measures, and when they will be made operational, including an explanation of how the sequence and schedule for installation of stormwater control measures complies with Part 2.1.1.3a and of any departures from manufacturer specifications pursuant to Part 2.1.1.3b;

7.2.5.2 Commencement and duration of earth-disturbing activities, including clearing and grubbing, mass grading, site preparation (i.e., excavating, cutting and filling), final grading, and creation of soil and vegetation stockpiles requiring stabilization;

7.2.5.3 Cessation, temporarily or permanently, of construction activities on the site, or in designated portions of the site;

7.2.5.4 Final or temporary stabilization of areas of exposed soil. The dates for stabilization must reflect the applicable deadlines to which you are subject in Part 2.2.1; and

7.2.5.5 Removal of temporary stormwater conveyances/channels and other stormwater control measures, removal of construction equipment and vehicles, and cessation of any pollutant-generating activities.

Note: If plans change due to unforeseen circumstances or for other reasons, the requirement to describe the sequence and estimated dates of construction activities is not meant

to "lock in" the operator to meeting these projections. When departures from initial projections are necessary, this should be documented in the SWPPP itself or in associated records, as appropriate.

7.2.6. Site Map.

The SWPPP must include a legible site map, or series of maps, showing the following features of your project:

Note: Included in the project site are any construction support activities covered by this permit (see Part 1.3.c).

7.2.6.1 Boundaries of the property and of the locations where construction activities will occur, including:

a. Locations where earth-disturbing activities will occur, noting any phasing of construction activities;

b. Approximate slopes before and after major grading activities. Note areas of steep slopes, as defined in Appendix A;

c. Locations where sediment, soil, or other construction materials will be stockpiled;

d. Locations of any crossings of surface waters;

e. Designated points on the site where vehicles will exit onto paved roads;

f. Locations of structures and other impervious surfaces upon completion of construction; and

g. Locations of construction support activity areas covered by this permit (see Part 1.3.c).

7.2.6.2 Locations of all surface waters, including wetlands, that exist within or in the immediate vicinity of the site. Indicate which waterbodies are listed as impaired, and which are identified by your state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 waters;

7.2.6.3 The boundary lines of any natural buffers provided consistent with Part 2.1.2.1a;

7.2.6.4 Areas of federally-listed critical habitat for endangered or threatened species;

7.2.6.5 Topography of the site, existing vegetative cover (e.g., *forest, pasture, pavement, structures*), and drainage pattern(s) of stormwater and authorized non-stormwater flow onto, over, and from the site property before and after major grading activities;

7.2.6.6 Stormwater and allowable non-stormwater discharge locations, including:

a. Locations of any storm drain inlets on the site and in the immediate vicinity of the site; and

Note: The requirement to show storm drain inlets in the immediate vicinity of the site on your site map only applies to those inlets that are easily identifiable from your site or from a publicly accessible area immediately adjacent to your site.

b. Locations where stormwater or allowable non-stormwater will be discharged to surface waters (including wetlands) on or near the site.

7.2.6.7 Locations of all potential pollutant-generating activities identified in Part 7.2.7;

7.2.6.8 Locations of stormwater control measures; and

7.2.6.9 Locations where polymers, flocculants, or other treatment chemicals will be used and stored.

7.2.7. Construction Site Pollutants.

The SWPPP must include the following:

7.2.7.1 A list and description of all the pollutant-generating activities[25] on your site.

7.2.7.2 For each pollutant-generating activity, an inventory of pollutants or pollutant constituents *(e.g., sediment, fertilizers and/or pesticides, paints, solvents, fuels)* associated with that activity, which could be exposed to rainfall, or snowmelt, and could be discharged from your construction site. You must take into account where potential spills and leaks could occur that contribute pollutants to stormwater discharges. You must also document any departures from the manufacturer's specifications for applying fertilizers containing nitrogen and phosphorus, as required in Part 2.3.5.1.

7.2.8. Non-Stormwater Discharges.

The SWPPP must also identify all sources of allowable non-stormwater discharges listed in Part 1.3.d.

7.2.9. Buffer Documentation.

If you are required to comply with Part 2.1.2.1 because a surface water is located within 50 feet of your project's earth disturbances, you must describe which compliance alternative you have selected for your site, and comply with any additional requirements to provide documentation in Part 2.1.2.1.

7.2.10. Description of Stormwater Control Measures.

7.2.10.1 ***Stormwater Control Measures to be Used During Construction Activity.*** The SWPPP must describe all stormwater control measures that are or will be installed and maintained at your site to meet the requirements of Part 2. For each stormwater control measure, you must document:

a. Information on the type of stormwater control measure to be installed and maintained, including design information;

b. What specific sediment controls will be installed and made operational prior to conducting earth-disturbing activities in any given portion of your site to meet the requirement of Part 2.1.2.2a;

c. For exit points on your site, document stabilization techniques you will use and any additional controls that are planned to remove sediment prior to vehicle exit consistent with Part 2.1.2.3; and

d. For linear projects, where you have determined that the use of perimeter controls in portions of the site is impracticable, document why you believe this to be the case (see Part 2.1.2.2a).

7.2.10.2 ***Use of Treatment Chemicals.*** If you will use polymers, flocculants, or other treatment chemicals at your site, the SWPPP must include:

a. A listing of all soil types[26] that are expected to be exposed during construction and that will be discharged to locations where chemicals

[25] Examples of pollutant-generating activities include, but are not limited to: paving operations; concrete, paint, and stucco washout and waste disposal; solid waste storage and disposal; and dewatering operations.

will be applied. Also include a listing of soil types expected to be found in fill material to be used in these same areas, to the extent you have this information prior to construction.

b. A listing of all treatment chemicals to be used at the site, and why the selection of these chemicals is suited to the soil characteristics of your site;

c. If you have been authorized by your applicable EPA Regional Office to use cationic treatment chemicals, include the specific controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards;

d. The dosage of all treatment chemicals you will use at the site or the methodology you will use to determine dosage;

e. Information from any applicable Material Safety Data Sheets (MSDS);

f. Schematic drawings of any chemically-enhanced stormwater controls or chemical treatment systems to be used for application of the treatment chemicals;

g. A description of how chemicals will be stored consistent with Part 2.1.3.3b;

h. References to applicable state or local requirements affecting the use of treatment chemicals, and copies of applicable manufacturer's specifications regarding the use of your specific treatment chemicals and/or chemical treatment systems; and

i. A description of the training that personnel who handle and apply chemicals have received prior to permit coverage, or will receive prior to use of the treatment chemicals at your site.

7.2.10.3 ***Stabilization Practices.*** The SWPPP must describe the specific vegetative and/or non-vegetative practices that will be used to comply with the requirements in Part 2.2, including:

a. If you will be complying with the stabilization deadlines specified in Part 2.2.1.3a, you must indicate in your SWPPP the beginning and ending dates of the seasonally dry period and your site conditions; and

b. If you will be complying with the stabilization deadlines specified in Part 2.2.1.3b, you must document the circumstances that prevent you from meeting the deadlines specified in Parts 2.2.1.1 and/or 2.2.1.2.

7.2.11. Pollution Prevention Procedures.

7.2.11.1 ***Spill Prevention and Response Procedures.*** The SWPPP must describe procedures that you will follow to prevent and respond to spills and leaks consistent with Part 2.3, including:

a. Procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases. Identify the name or position of the employee(s) responsible for detection and response of spills or leaks; and

[26] Information on soils may be obtained at http://websoilsurvey.nrcs.usda.gov/app/.

b. Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity consistent with Part 2.3.4 and established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period. Contact information must be in locations that are readily accessible and available.

You may also reference the existence of Spill Prevention Control and Countermeasure (SPCC) plans developed for the construction activity under Part 311 of the CWA, or spill control programs otherwise required by an NPDES permit for the construction activity, provided that you keep a copy of that other plan onsite.

Note: Even if you already have an SPCC or other spill prevention plan in existence, your plans will only be considered adequate if they meet all of the requirements of this Part, either as part of your existing plan or supplemented as part of the SWPPP.

7.2.11.2 ***Waste Management Procedures.*** The SWPPP must describe procedures for how you will handle and dispose of all wastes generated at your site, including, but not limited to, clearing and demolition debris, sediment removed from the site, construction and domestic waste, hazardous or toxic waste, and sanitary waste.

7.2.12. Procedures for Inspection, Maintenance, and Corrective Action.

The SWPPP must describe the procedures you will follow for maintaining your stormwater control measures, conducting site inspections, and, where necessary, taking corrective actions, in accordance with Part 2.1.1.4, Part 2.3.2, Part 4, and Part 5 of the permit. The following information must also be included in your SWPPP:

7.2.12.1 Personnel responsible for conducting inspections;

7.2.12.2 The inspection schedule you will be following, which is based on whether your site is subject to Part 4.1.2 or Part 4.1.3, and whether your site qualifies for any of the allowances for reduced inspection frequencies in Part 4.1.4. If you will be conducting inspections in accordance with the inspection schedule in Part 4.1.2.2 or Part 4.1.3, the location of the rain gauge on your site or the address of the weather station you will be using to obtain rainfall data;

7.2.12.3 If you will be reducing your inspection frequency in accordance with Part 4.1.4.2, the beginning and ending dates of the seasonally-defined arid period for your area or the valid period of drought. If you will be reducing your inspection frequency in accordance with Part 4.1.4.3, the beginning and ending dates of frozen conditions on your site; and

7.2.12.4 Any inspection or maintenance checklists or other forms that will be used.

7.2.13. Staff Training.

The SWPPP must include documentation that the required personnel were trained in accordance with Part 6.

7.2.14. Documentation of Compliance with Other Federal Requirements.

7.2.14.1 *Endangered Species Act.* The SWPPP must include documentation supporting your determination with respect to Part 1.1.e and Appendix D.

7.2.14.2 *Historic Properties.* The SWPPP must include documentation required by Appendix E in relation to potential impacts to historic properties.

7.2.14.3 *Safe Drinking Water Act Underground Injection Control (UIC) Requirements for Certain Subsurface Stormwater Controls.* If you are using any of the following stormwater controls at your site, as they are described below, you must document any contact you have had with the applicable state agency or EPA Regional Office responsible for implementing the requirements for underground injection wells in the Safe Drinking Water Act and EPA's implementing regulations at 40 CFR Parts 144-147. Such controls would generally be considered Class V UIC wells:

a. Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system);

b. Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow; and

c. Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system).

Note: For state UIC program contacts, refer to the following EPA website: http://water.epa.gov/type/groundwater/uic/whereyoulive.cfm.

7.2.15. SWPPP Certification.

You must sign and date your SWPPP in accordance with Appendix I, Part I.11.

7.2.16. Post-Authorization Additions to the SWPPP.

Once you are notified of your coverage under this permit, you must include the following documents as part of your SWPPP:

7.2.16.1 A copy of your NOI submitted to EPA along with any correspondence exchanged between you and EPA related to coverage under this permit;

7.2.16.2 A copy of the acknowledgment letter you receive from the NOI Processing Center or eNOI system assigning your permit tracking number;

7.2.16.3 A copy of this permit (an electronic copy easily available to the stormwater team is also acceptable).

7.3. ON-SITE AVAILABILITY OF YOUR SWPPP.

You are required to keep a current copy of your SWPPP at the site or at an easily accessible location so that it can be made available at the time of an on-site inspection or upon request by EPA; a state, tribal, or local agency approving stormwater management plans; the operator of a storm sewer system receiving discharges from the site; or representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).

EPA may provide access to portions of your SWPPP to a member of the public upon request. Confidential Business Information (CBI) will be withheld from the public, but may not be withheld from EPA, USFWS, or NMFS.

Note: Information covered by a claim of confidentiality will be disclosed by EPA only to the extent of, and by means of, the procedures set forth in 40 CFR Part 2, Subpart B. In general, submitted information protected by a business confidentiality claim may

be disclosed to other employees, officers, or authorized representatives of the United States concerned with implementing the CWA. The authorized representatives, including employees of other executive branch agencies, may review CBI during the course of reviewing draft regulations.

If an onsite location is unavailable to keep the SWPPP when no personnel are present, notice of the plan's location must be posted near the main entrance of your construction site.

7.4. REQUIRED SWPPP MODIFICATIONS.

7.4.1. List of Conditions Requiring SWPPP Modification.

You must modify your SWPPP, including the site map(s), in response to any of the following conditions:

7.4.1.1 Whenever new operators become active in construction activities on your site, or you make changes to your construction plans, stormwater control measures, pollution prevention measures, or other activities at your site that are no longer accurately reflected in your SWPPP. This includes changes made in response to corrective actions triggered under Part 5. You do not need to modify your SWPPP if the estimated dates in Part 7.2.5 change during the course of construction;

7.4.1.2 To reflect areas on your site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;

7.4.1.3 If inspections or investigations by site staff, or by local, state, tribal, or federal officials determine that SWPPP modifications are necessary for compliance with this permit;

7.4.1.4 Where EPA determines it is necessary to impose additional requirements on your discharge, the following must be included in your SWPPP:

a. A copy of any correspondence describing such requirements; and

b. A description of the stormwater control measures that will be used to meet such requirements.

7.4.1.5 To reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater control measures implemented at the site; and

7.4.1.6 If applicable, if a change in chemical treatment systems or chemically-enhanced stormwater control is made, including use of a different treatment chemical, different dosage rate, or different area of application.

7.4.2. Deadlines for SWPPP Modifications.

You must complete required revisions to the SWPPP within 7 calendar days following the occurrence of any of the conditions listed in Part 7.4.1.

7.4.3. SWPPP Modification Records.

You are required to maintain records showing the dates of all SWPPP modifications. The records must include the name of the person authorizing each change (see Part 7.2.15 above) and a brief summary of all changes.

7.4.4. Certification Requirements.

All modifications made to the SWPPP consistent with Part 7.4 must be authorized by a person identified in Appendix I, Part I.11.b.

7.4.5. Required Notice to Other Operators.

Upon determining that a modification to your SWPPP is required, if there are multiple operators covered under this permit, you must immediately notify any operators who may be impacted by the change to the SWPPP.

8. HOW TO TERMINATE COVERAGE.

Until you terminate coverage under this permit, you are required to comply with all conditions and effluent limitations in the permit. To terminate permit coverage, you must submit to EPA a complete and accurate Notice of Termination (NOT), which certifies that you have met the requirements for terminating in Part 8.

8.1. MINIMUM INFORMATION REQUIRED IN NOT.

You will be required to provide the following in your NOT:

8.1.1. NPDES permit tracking number provided by EPA when you received coverage under this permit;

8.1.2. Basis for submission of the NOT (see Part 8.2);

8.1.3. Operator contact information;

8.1.4. Name of project and address (or a description of location if no street address is available); and

8.1.5. NOT certification.

8.2. CONDITIONS FOR TERMINATING PERMIT COVERAGE.

You may terminate permit coverage only if one of the following conditions occurs at your site:

8.2.1. You have completed all earth-disturbing activities at your site and, if applicable, construction support activities covered by this permit (see Part 1.3.c), and you have met the following requirements:

8.2.1.1 For any areas that (1) were disturbed during construction, (2) are not covered over by permanent structures, and (3) over which you had control during the construction activities, you have met the requirements for final vegetative or non-vegetative stabilization in Part 2.2.2;

8.2.1.2 You have removed and properly disposed of all construction materials, waste and waste handling devices, and have removed all equipment and vehicles that were used during construction, unless intended for long-term use following your termination of permit coverage;

8.2.1.3 You have removed all stormwater controls that were installed and maintained during construction, except those that are intended for long-term use following your termination of permit coverage or those that are biodegradable; and

8.2.1.4 You have removed all potential pollutants and pollutant-generating activities associated with construction, unless needed for long-term use following your termination of permit coverage; or

8.2.2. You have transferred control of all areas of the site for which you are responsible under this permit to another operator, and that operator has submitted an NOI and obtained coverage under this permit; or

8.2.3. Coverage under an individual or alternative general NPDES permit has been obtained.

8.3. HOW TO SUBMIT YOUR NOT.

You are required to use EPA's electronic NOI system, or "eNOI system", to prepare and submit your NOT. The electronic NOT form you are required to complete is found at www.epa.gov/npdes/stormwater/cgpenoi. You will use your NOI tracking number *(i.e., the EPA number you were assigned upon authorization under the permit)* to upload the

fillable NOT form, which will ensure that EPA properly records your termination of coverage. If you have a problem with the use of the eNOI system, contact the EPA Regional Office that corresponds to the location of your site. If you are given approval by the EPA Regional Office to use a paper NOT, you must complete the form in Appendix K.

8.4. DEADLINE FOR SUBMITTING NOTS.

You must submit your NOT within 30 calendar days after any one of the triggering conditions in Part 8.2 occur.

8.5. EFFECTIVE DATE OF TERMINATION OF COVERAGE.

Your authorization to discharge under this permit terminates at midnight of the calendar day that a complete NOT is processed and posted on EPA's website (www.epa.gov/npdes/stormwater/cgpnoisearch).

9. PERMIT CONDITIONS APPLICABLE TO SPECIFIC STATES, INDIAN COUNTRY LANDS, OR TERRITORIES

The provisions in this Part provide modifications or additions to the applicable conditions of this permit to reflect specific additional conditions required as part of the state or tribal CWA Section 401 certification process, or the Coastal Zone Management Act (CZMA) certification process, or as otherwise established by the permitting authority. The specific additional revisions and requirements only apply to activities in those specific states, Indian country, and areas in certain states subject to construction projects by Federal Operators. States, Indian country, and areas subject to construction by Federal Operators not included in this Part do not have any modifications or additions to the applicable conditions of this permit

9.1. Region 1

9.1.1. MAR120000: Commonwealth of Massachusetts (except Indian country).

9.1.1.1 You must comply with the Massachusetts Clean Waters Act (Ch. 21, ss. 26-53).

9.1.1.2 You must comply with the conditions in 314 CMR 4.00- Massachusetts Surface Water Quality Standards.

9.1.1.3 You must comply with the conditions in 314 CMR 3.00- Massachusetts Surface Water Discharge Permit Program.

9.1.1.4 You must comply with the Wetlands Protection Act (Ch. 131 s. 40) and its regulations, 310 CMR 10.00 and any Order of Conditions issued by a Conservation Commission or a Superseding Order of Conditions issued by the Massachusetts Department of Environmental Protection.

9.1.1.5 You must comply with the Massachusetts Storm Water Performance Standards, as prescribed by state regulations promulgated under the authority of the Massachusetts Clean Waters Act, MGL Ch. 21, ss 26-53 and the Wetlands Protection Act, Ch. 131, s. 40.

9.1.1.6 You must comply with the conditions in 314 CMR 9.00 – Water Quality Certification for Discharges of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States within the Commonwealth.

9.1.1.7 You must comply with the Massachusetts Endangered Species Act (MESA), MGL Ch. 313A and regulations at 321 CMR 10.00 and any actions undertaken to comply with this stormwater general permit shall not result in non-compliance with the MESA.

9.1.1.8 Activities covered under this general permit shall not interfere with the implementation of mosquito control work conducted in accordance with Chapter 252 including s. 5A thereunder and MassDEP Guideline Number BRP G01-02, West Nile Virus Application of Pesticides to Wetland Resource Areas and Buffer Zones, and Public Water Supplies.

9.1.1.9 The Department may request a copy of the Stormwater Pollution Prevention Plan (SWPPP) and the permittee is required to submit the SWPPP to the Department within 14 days of such request. The Department may conduct an inspection of any facility covered by this permit to ensure compliance with state law requirements, including state water quality standards. The Department may enforce its certification conditions.

9.1.1.10 The Department may require the permit holder to perform water quality monitoring during the permit term if monitoring is necessary for the protection of public health or the environment as designated under the authority at 314 CMR 3.00.

9.1.1.11 The Department may require the permit holder to provide measurable verification of the effectiveness of Best Management Practices (BMPs) and other control measures used in the stormwater management program, including water quality monitoring.

9.1.1.12 The Department has determined that compliance with this permit does not protect the permit holder from enforcement actions deemed necessary by the Department under its associated regulations to address an imminent threat to public health or a significant adverse environmental impact which results in a violation of the Massachusetts Clean Waters Act, Ch. 21, ss. 26-53.

9.1.1.13 The Department reserves the right to modify this 401 Water Quality Certification if any changes, modifications, or deletions are made to this general permit. In addition, the Department reserves the right to add and/or alter the terms and conditions of this 401 Water Quality Certification to carry out its responsibilities during the term of this general permit with respect to water quality, including any revisions to 314 CMR 4.00, Massachusetts Surface Water Quality Standards.

9.1.1.14 Should any violation of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00, or the conditions of this 401 Water Quality Certification occur, the Department will direct the permit holder to correct the violation(s). The Department has the right to take any action as authorized by the General Laws of the Commonwealth to address the violation(s) of this permit or the Massachusetts Clean Waters Act and the regulations promulgated thereunder. Substantial civil and criminal penalties are authorized under MGL Ch. 21, s. 42 for discharging into Masachusetts' waters in violation of an order or permit issued by this Department. This 401 Water Quality Certification does not relieve the permit holder of the duty to comply with other applicable Massachusetts statutes and regulations.

9.1.2. NHR120000: State of New Hampshire.

9.1.2.1 If you disturb 100,000 square feet or more of contiguous area, you must also apply for an Alteration of Terrain (AoT) permit from DES pursuant to RSA 485-A:17 and Env-Ws 1500. This requirement also applies to a lower disturbance threshold of 50,000 square feet or more when construction occurs within the protected shoreline under the Shoreland Water Quality Protection Act (see RSA 483-B and Env-Ws 1400). A permit application must also be filed if your project disturbs an area of greater than 2,500 square feet, is within 50 feet of any surface water, and has a flow path of 50 feet or longer disturbing a grade of 25 percent or greater. Project sites with disturbances smaller than those discussed above, that have the potential to adversely affect state surface waters, are subject to the conditions of an AoT General Permit by Rule.

9.1.2.2 You must determine that any excavation dewatering discharges are not contaminated before they will be authorized as an allowable non-stormwater discharge under this permit (see Part 1.3.d). The water is considered uncontaminated if there is no groundwater contamination within 1,000 feet of the source of the groundwater to be treated and discharged.

Information on groundwater contamination can be generated over the Internet via the NHDES web site http://des.nh.gov/ at the OneStop Web Geographic Information System at http://www2.des.state.nh.us/gis/onestop. If it is determined that the groundwater to be dewatered is near a remediation or other waste site you must apply for the Remediation General Permit (see http://www.epa.gov/region1/npdes/rgp.html.)

9.1.2.3 You must treat any uncontaminated excavation dewatering discharges as necessary to remove suspended solids and turbidity. The discharges must be sampled at a location prior to mixing with stormwater at least once per week during weeks when discharges occur. Samples must be analyzed for total suspended solids (TSS) and must meet monthly average and daily maximum TSS limits of 50 milligrams per liter (mg/L) and 100 mg/L, respectively. TSS (a.k.a. Residue, Nonfilterable) sampling and analysis must be performed in accordance with Tables IB and II in 40 CFR 136.3 (see: http://www.access.gpo.gov/nara/cfr/waisidx_02/40cfr136_02.html). Records of any sampling and analysis must be maintained and kept with the SWPPP for at least three years after final site stabilization.

9.1.2.4 Construction site owners and operators must consider opportunities for post-construction groundwater recharge using infiltration best management practices (BMPs) during site design and preparation of the stormwater pollution prevention plan (SWPPP). If your construction site is in a town that is required to obtain coverage under the NPDES General Permit for discharges from Municipal Separate Storm Sewer Systems (MS4) you may be required to use such practices. The SWPPP must include a description of any on-site infiltration that will be installed as a post-construction stormwater management measure or reasons for not employing such measures such as 1) The facility is located in a wellhead protection area as defined in RSA 485-C:2; or 2) The facility is located in an area where groundwater has been reclassified to GAA, GAI or GA2 pursuant to RSA 485-C and Env-Ws 420; or 3) Any areas that would be exempt from the groundwater recharge requirements contained in Env-Ws 1507.04(e), including all land uses or activities considered to be a "High-load Area" (see Env-Wq 1502.26). For design considerations for infiltration measures see Volume II of the NH Stormwater Manual.

9.1.2.5 Appendix F contains a list of Tier 2, or high quality waters. Although there is no official list of tier 2 waters, it can be assumed that all NH surface waters are tier 2 for turbidity unless 1) the surface water that you are proposing to discharge into is listed as impaired for turbidity in the states listing of impaired waters (see Surface Water Quality Watershed Report Cards at http://des.nh.gov/organization/divisions/water/wmb/swqa/report_cards.htm or 2) sampling upstream of the proposed discharge location shows turbidity values greater than 10 NTU. A single grab sample collected during dry weather (no precipitation within 48 hours) is acceptable.

9.1.2.6 To ensure compliance with RSA 485-C, RSA 485-A, RSA 485-A:13, I(a), Env-Wq 1700 and Env-Wq 302, the following information may be requested by NHDES. This information must be kept on site unless you receive a written request from NHDES that it be sent to the address shown in Part 9.1.2.7.

a. A site map required in Part 7.2.6, showing the type and location of all post-construction infiltration BMPs utilized at the facility or the reason(s) why none were installed;

b. A list of all non-stormwater discharges that occur at the facility, including their source locations and the control measures being used (see Part 1.3.d).

c. Records of sampling and analysis of TSS required for construction dewatering discharges (see Part 9.1.2.3).

9.1.2.7 All required or requested documents must be sent to:

NH Department of Environmental Services, Wastewater Engineering Bureau, Permits & Compliance Section
P.O. Box 95
Concord, NH 03302-0095

9.1.2.8 When NHDES determines that additional water quality certification requirements are necessary to protect water quality, it may require individual discharges to meet additional conditions to obtain or continue coverage under the CGP. Any such conditions must be supplied to the permittee in writing. Any required pollutant loading analyses and any designs for structural best management practices necessary to protect water quality must be prepared by a civil or sanitary engineer registered in New Hampshire.

9.2. Region 4

9.2.1. FLR12000I: Indian country within the State of Florida.

9.2.1.1 **Seminole Tribe of Florida.** The following conditions apply only for discharges on federal trust lands of the Seminole Tribe of Florida (Big Cypress, Brighton, Hollywood, Immokalee, and Tampa Reservations):

a. Any discharges into waters of the Seminole Tribe of Florida shall not cause an exceedance in Turbidity of 29 NTU above natural background conditions.

b. Unless otherwise specified by previous permits or criteria, a storm event of three (3) day duration and twenty five (25) year return frequency shall be used in computing off-site discharge on Seminole Lands as agreed upon in the Water Rights Compact agreement attached to Public Law 100-228 (December 31, 1987), Seminole Indian Land Claims Settlement Act of 1987.

c. The Seminole Tribe of Florida accepts a 20' X 20' stabilization at entry/exit points.

9.3. Region 5

MNR12000I: Indian country within the State of Minnesota.

9.3.1.1 **Fond du Lac Band of Lake Superior Chippewa.** The following conditions apply only to discharges on the Fond du Lac Band of Lake Superior Chippewa Reservation.

a. A copy of the Storm Water Pollution Prevention Plan must be submitted to the following office at least thirty (30) days in advance of sending the Notice of Intent (NOI) to EPA:

Fond du Lac Reservation
Office of Water Protection
1720 Big Lake Road
Cloquet, MN 55720

CGP applicants are encouraged to work with the FDL Office of Water Protection in the identification of all proposed receiving waters.

b. Copies of the Notice of Intent (NOI) and the Notice of Termination (NOT) must be sent to the Fond du Lac Office of Water Protection at the same time they are submitted to EPA.

c. The turbidity limit shall NOT exceed 10% of natural background as determined by the Office of Water protection staff.

d. Turbidity sampling must take place within 24 hours of a ½ -inch or greater rainfall event. The results of the sampling must be reported to the Officce of Water Protection staff within 7 days of sample collection. All sample reporting must include the date and time, location (GPS:UTM/Zone 15), and NTU.

e. Discharges to receiving waters with open water must be sampled for turbidity prior to any authorized discharge as determined by Office of Water Protection staff.

f. This certification does not pertain to any new discharge to Outstanding Reservation Resource Waters (ORRW) as described in §105 b.3 of the Fond du Lac Water Quality Standards (Ordinance #12/98). Although additional waters may be designated in the future, currently Perch Lake, Rice Portage Lake, Miller Lake, Deadfish Lake and Jaskari Lake are designated as ORRWs. New dischargers wishing to discharge to an ORRW must obtain an individual permit for stormwater discharges from large and small construction activities.

g. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in the Water Quality Standards of the Fond du Lac Reservation, Ordinance 12/98 as amended. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of water of the Fond du Lac Reservation for any of the uses designated in the Water Quality Standards of the Fond du Lac Reservation. These uses include wildlife, aquatic life, warm and cold water fisheries, subsistence fishing (netting), primary contact recreation, cultural, wild rice areas, aesthetic waters, agriculture, navigation and commercial.

h. Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the Fond du Lac Reservation. All spills must be reported to the appropriate emergency management agency, and measures shall be taken immediately to prevent the pollution of waters of the Fond du Lac reservation, including groundwater.

i. This certification does not authorize impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for such listing.

9.3.1.2 **Grand Portage Band of Lake Superior Chippewa.** The following conditions apply only to discharges on the Grand Portage Band of Lake Superior Chippewa Reservation.

a. The CGP authorization is for construction activities that may occur within the exterior boundaries of the Grand Portage Reservation in

accordance to the Grand Portage Land Use Ordinance. The CGP regulates stormwater discharges associated with construction sites of one acre or more in size. Only those activities specifically authorized by the CGP are authorized by this certification (the "Certification"). This Certification does not authorize impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for listing as such.

b. All construction stormwater discharges authorized by the CGP must comply with the Water Quality Standards and Water Resources Ordinance, as well as Applicable Federal Standards (as defined in the Water Resources Ordinance). As such, appropriate steps must be taken to ensure that petroleum products or other chemical pollutants are prevented from entering the Waters of the Reservation (as defined in the Water Resources Ordinance). All spills must be reported to the appropriate emergency-management agency, and measures must be taken to prevent the pollution of the Waters of the Reservation, including groundwater.

c. A copy of the Storm Water Pollution Prevention Plan (the "Plan") required by the CGP must be submitted to the Board at least 30 days in advance of sending the requisite Notice of Intent to EPA. The Board may require monitoring of storm-water discharges as determined on a case-by-case basis. If the Board determines that a monitoring plan is necessary, the monitoring plan must be prepared and incorporated into the Plan before the Notice of Intent is submitted to the EPA. The Plan should be sent to:

   Grand Portage Environmental Resources Board
   P.O. Box 428
   Grand Portage, MN 55605

   Copies of the Notice of Intent and Notice of Termination required under the General Permit must be submitted to the Board at the address above at the same time they are submitted to the EPA.

d. If requested by the Grand Portage Environmental Department, the permittee must provide additional information necessary for a case-by-case eligibility determination to assure compliance with the Water Quality Standards and any Applicable Federal Standards.

e. Discharges that the Board has determined to be or that may reasonably be expected to be contributing to a violation of Water Quality Standards or Applicable Federal Standards are not authorized by this Certification.

f. The Board retains full authority provided by the Water Resources Ordinance to ensure compliance with and to enforce the provisions of the Water Resource Ordinance and Water Quality Standards, Applicable Federal Standards, and these Certification conditions.

g. Appeals related to Board actions taken in accordance with any of the preceding conditions may be heard by the Grand Portage Tribal Court.

9.3.2. WIR12000I: *Indian country within the State of Wisconsin.*

9.3.2.1 **Bad River Band of the Lake Superior Tribe of Chippewa Indians.** The following conditions apply only to discharges on the Bad River Band of the Lake Superior Tribe of Chippewa Indians Reservation.

a. Only those activities specifically authorized by the CGP are authorized by this Certification. This Certification does not authorize impacts to cultural properties, or historical sites, or properties that may be eligible for listing as such.[27, 28]

b. Operators are not eligible to obtain authorization under the CGP for all new discharges to an Outstanding Tribal Resource Water (or Tier 3 water).[29] Outstanding Tribal Resource Waters, or Tier 3 waters, include the following: Kakagon Slough and the lower wetland reaches of its tributaries that support wild rice, Kakagon River, Bad River Slough, Honest John Lake, Bog Lake, a portion of Bad River, from where it enters the Reservation through the confluence with the White River, and Potato River.[30]

c. Projects utilizing cationic treatment chemicals[31] within the Bad River Reservation boundaries are not eligible for coverage under the CGP.[32]

d. All projects which are eligible for coverage under the CGP and are located within the exterior boundaries of the Bad River Reservation shall be implemented in such a manner that is consistent with the Tribe's Water Quality Standards (WQS).[33]

e. An operator proposing to discharge to an Outstanding Resource Water (or Tier 2.5 water) under the CGP must comply with the antidegradation provisions of the Tribe's WQS. Outstanding Resource Waters, or Tier 2.5 waters, include the following: a portion of Bad River, from downstream the confluence with the White River to Lake Superior, White River, Marengo River, Graveyard Creek, Bear Trap Creek, Wood Creek, Brunsweiler River, Tyler Forks, Bell Creek, and Vaughn Creek.[34] The antidegradation demonstration materials described in provision E.4.iii. must be submitted to the following address:

   Bad River Tribe's Natural Resources Department
   Attn: Water Resources Specialist
   P.O. Box 39
   Odanah, WI 54861

f. An operator proposing to discharge to an Exceptional Resource Water (or Tier 2 water) under the CGP must comply with the antidegradation provisions of the Tribe's WQS. Exceptional Resource Waters, or Tier 2 waters, include the following: any surface water within the exterior boundaries of the Reservation that is not specifically classified as an Outstanding Resource Water (Tier 2.5 water) or an Outstanding Tribal

[27] Bad River Band of Lake Superior Tribe of Chippewa Indians Water Quality Standards adopted by Resolution No. 7-6-11-441 (hereafter, Tribe's WQS).

[28] 36 C.F.R §800.16(l)(2).

[29] Tribe's WQS: See provisions E.3.ii and E.4.iv.

[30] Tribe's WQS: See provision E.2.iii.

[31] See definition of cationic treatment chemicals in Appendix A of the CGP

[32] Tribe's WQS: See provisions E.6.ii.a and E.6.ii.c.

[33] See Footnote 27.

[34] Tribe's WQS: See provision E.2.ii.

Resource Water (Tier 3 water).[35] The antidegradation demonstration materials described in provision E.4.ii. must be submitted to the following address:

Bad River Tribe's Natural Resources Department
Attn: Water Resources Specialist
P.O. Box 39
Odanah, WI 54861

g. A discharge to a surface water within the Bad River Reservation boundaries shall not cause or contribute to an exceedance of the turbidity criterion included in the Tribe's WQS, which states: Turbidity shall not exceed 5 NTU over natural background turbidity when the background turbidity is 50 NTU or less, or turbidity shall not increase more than 10% when the background turbidity is more than 50 NTU.[36]

h. All projects which are eligible for coverage under the CGP within the exterior boundaries of the Bad River Reservation must comply with the Bad River Reservation Wetland and Watercourse Protection Ordinance, or Chapter 323 of the Bad River Tribal Ordinances, including the erosion and sedimentation control, natural buffer, and stabilization requirements. Questions regarding Chapter 323 and requests for permit applications can be directed to the Wetlands Specialist in the Tribe's Natural Resources Department at (715) 682-7123 or wetlands@badriver-nsn.gov.

i. An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must notify the Tribe prior to the commencing earth-disturbing activities.[37] The operator must submit a copy of the Notice of Intent (NOI) to the following addresses at the same time it is submitted to the U.S. EPA:

Bad River Tribe's Natural Resources Department
Attn: Water Resources Specialist
P.O. Box 39
Odanah, WI 54861

Bad River Tribe's Natural Resources Department
Attn: Tribal Historic Preservation Officer (THPO)
P.O. Box 39
Odanah, WI 54861

The operator must also submit a copy of the Notice of Termination (NOT) to the above addresses at the same time it is submitted to the U.S. EPA.

j. The THPO must be provided 30 days to comment on the project.[38]

k. The operator must obtain THPO concurrence in writing. This written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties. For more information regarding the specifics

[35] Tribe's WQS: See provision E.2.i.

[36] Tribe's WQS: See provision E.7.iii.

[37] See footnotes 27 and 28.

[38] 36 C.F.R. § 800.3(c)(4).

of the cultural resources process, see 36 CFR Part 800. A best practice for an operator is to consult with the THPO during the planning stages of an undertaking.[39]

l. An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must submit a copy of the Stormwater Pollution Prevention Plan (SWPPP) to the following address at the same time as submitting the NOI:[40]

Bad River Tribe's Natural Resources Department
Attn: Water Resources Specialist
P.O. Box 39
Odanah, WI 54861

m. Any corrective action reports that are required under the CGP must be submitted to the following address within one (1) working day of the report completion:[41]

Bad River Tribe's Natural Resources Department
P.O. Box 39
Odanah, WI 54861

n. An operator shall be responsible for meeting any additional permit requirements imposed by the U.S. EPA necessary to comply with the Tribe's antidegradation policies if the discharge point is located upstream of waters designated by the Tribe.[42]

9.3.2.2 **Lac du Flambeau Band of Lake Superior Chippewa Indians.** The following conditions apply only to discharges on the Lac du Flambeau Band of Lake Superior Chippewa Indians Reservation.

a. A copy of the Storm Water Pollution Prevention Plan must be submitted to the following office at least thirty (30) days in advance of sending the Notice of Intent (NOI) to EPA:

Lac du Flambeau
Tribal Land Management
P. O. Box 279
Lac du Flambeau, WI 54538

CGP applicants are encouraged to work with the LdF Office of Water Protection in the identification of all proposed receiving waters.

b. Copies of the NOI and the Notice of Termination (NOT) must be sent to the LdF Water Resource Program at the same time they are submitted to EPA.

c. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in the Water Quality Standards of the Lac du Flambeau Reservation. This includes, but is not limited to, the

[39] 36 C.F.R. § 800.3(b).

[40] See footnote 27.

[41] See footnote 27.

[42] See footnote 27.

prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of water of the Lac du Flambeau Reservation for any of the uses designated in the Water Quality Standards of the Lac du Flambeau Reservation.

d. Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the Lac du Flambeau Reservation. All spills must be reported to the appropriate emergency management agency, and measures shall be taken immediately to prevent the pollution of waters of the Lac du Flambeau Reservation, including groundwater.

e. This certification does not authorize impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for such listing.

Note: Facilities within the Sokaogon Chippewa Community are not eligible for stormwater discharge coverage under this permit. Contact the Region 5 office for an individual permit application.

9.4. Region 6

9.4.1. NMR120000: State of New Mexico, except Indian country.

9.4.1.1 In addition to all other provisions of this permit, operators who intend to obtain authorization under this permit for all new and existing stormwater discharges must satisfy the following condition:

The SWPPP must include site-specific interim and permanent stabilization, managerial, and structural solids, erosion, and sediment control best management practices (BMPs) and/or other controls that are designed to prevent to the maximum extent practicable an increase in the sediment yield and flow velocity from pre-construction, pre-development conditions to assure that applicable standards in 20.6.4 NMAC, including the antidegradation policy, or waste load allocations (WLAs) are met. This requirement applies to discharges both during construction and after construction operations have been completed. The SWPPP must identify, and document the rationale for selecting these BMPs and/or other controls. The SWPPP must also describe design specifications, construction specifications, maintenance schedules (including a long term maintenance plan), criteria for inspections, and expected performance and longevity of these BMPs. BMP selection must be made based on the use of appropriate soil loss prediction models (e.g., SEDCAD 4.0, RUSLE, SEDIMOT II, MULTISED, etc.), or equivalent, generally accepted (by professional erosion control specialists), soil loss prediction tools. The operator(s) must demonstrate, and include documentation in the SWPPP, that implementation of the site-specific practices will assure that the applicable standards or WLAs are met, and will result in sediment yields and flow velocities that, to the maximum extent practicable, will not be greater than the sediment yield levels and flow velocities from pre-construction, pre-development conditions. The SWPPP must be prepared in accordance with good engineering practices by qualified (e.g., CPESC certified, engineers with appropriate training, etc.) erosion control specialists familiar with the use of soil loss prediction models and design of erosion and sediment control systems based on these models (or equivalent soil loss prediction tools). Qualifications of the preparer (e.g., professional certifications, description of appropriate training) must be

documented in the SWPPP. The operator(s) must design, implement, and maintain BMPs in the manner specified in the SWPPP.

9.4.1.2 Operators are not eligible to obtain authorization under this permit for all new and existing stormwater discharges to outstanding national resource waters (ONRWs) (also referred to as "Tier 3" waters).

9.4.1.3 For temporary stabilization, instead of the deadline for initiating and completing stabilization in Part 2.2.1.3a, operators must comply with the deadlines in Parts 2.2.1.1 and 2.2.1.2.

9.4.1.4 Instead of the criteria for vegetative stabilization in Part 2.2.2.1.a, operators must provide a uniform vegetation (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background vegetative cover for all unpaved areas and areas not covered by permanent structures. The adjustment to allow for less than 100 % native vegetative cover (e.g., 50 % native vegetative cover x 70 % = 35 %) is acceptable.

9.4.1.5 The following replaces the criteria for final vegetative stabilization in Part 2.2.2.1.b:

- The area you have seeded and planted must within 3 years provide established vegetation that achieves 70% of the native background vegetative cover for all unpaved areas and areas not covered by *permanent structures; and*
- In addition to to seeding or planting the area to be vegetatively stabilized, you must select, design, and install non-vegetative erosion controls that provide cover for at least 3 years without active maintenance by you.

In addition, permittees are only authorized to used this option as a method for final vegetative stabilization for purposes of filing a Notice of Termination (NOT) under the following conditions:

If this option is selected, you must notify NMED at the address listed in Part 9.4.1.6 at the time the NOT is submitted to EPA. The information to be submitted includes:

- A copy of the NOT;
- Contact information, including individual name or title, address, and phone number for the party responsible for implementing the final stabilization measures; and
- The date that the permanent vegetative stabilization practice was implemented and the projected timeframe that the 70 % native vegetative cover requirements are expected to be met. (Note that if more than three years is required to establish 70 % of the natural vegetative cover, this technique cannot be used or cited for fulfillment of the final stabilization requirement – you remain responsible for establishment of final stabilization).

NMED also requires that operators periodically (minimum once/year) inspect and properly maintain the area until the criteria for final stabilization, as specified in Part 2.2 of the CGP, have been met. Operators must prepare an inspection report documenting the findings of these inspections and signed in accordance with Appendix I, Part I.11. This inspection record must be

retained along with the SWPPP for three years after the NOT is submitted for the site and additionally submitted to NMED at the address listed in Part 9.4.1.6. The inspections at a minimum must include the following:

- Observations of all areas of the site disturbed by construction activity;
- Best Management Practices (BMPs)/post-construction stormwater controls must be observed to ensure they are effective;
- An assessment of the status of vegetative re-establishment; and
- Corrective actions required to ensure vegetative success within three years, and control of pollutants in stormwater runoff from the site, including implementation dates.

9.4.1.6 Copies of all documents submitted to EPA in non-electronic format must be sent to the following address:

Program Manager
Point Source Regulation Section
Surface Water Quality Bureau
New Mexico Environment Department
P.O. Box 5469
Santa Fe, New Mexico 87502

9.4.2. NMR12000I: Indian country within the State of New Mexico.

9.4.2.1 **Pueblo of Sandia.** The following conditions apply only to discharges on the Pueblo of Sandia Reservation:

a. Copies of all Notices of Intent submitted to the EPA must also be sent concurrently to the Pueblo of Sandia at the following address. Discharges are not authorized by this permit unless an accurate and complete NOI has been submitted to the Pueblo of Sandia.

Regular U.S. Delivery Mail:
Pueblo of Sandia Environment Department
Attention: Water Quality Manager
481 Sandia Loop
Bernalillo, New Mexico 87004

b. The Pueblo of Sandia will not allow the Rainfall Erosivity Waivers (see Appendix C) to be granted for any small construction activities.

c. The Stormwater Pollution Prevention Plan (SWPPP) must be available to the Pueblo of Sandia Environment either electronically or hard copy upon request for review. The SWPPP must be made available at least fourteen (14) days before construction begins. The fourteen (14) day period will give Tribal staff time to become familiar with the project site, prepare for construction inspections, and determine compliance with the Pueblo of Sandia Water Quality Standards. Failure to provide a SWPPP to the Pueblo of Sandia may result in denial of the discharge or construction delay.

d. An "Authorization to Proceed Letter" with site specific mitigation, site and project requirements will be sent out to the permittee when a review of the NOI and SWPPP is completed by the Pueblo of Sandia

Environment Department. This approval will allow the construction to proceed if all applicable requirements are met.

e. Before submitting a Notice of Termination (NOT), permittees must clearly demonstrate to the Pueblo of Sandia Environment Department though a site visit or documentation that requirements for site stabilization have been met and any temporary erosion control structures have been removed. A short letter stating the stabilization requirements have been met will be sent to the permittee to add to the permittees NOT submission to EPA.

f. Copies of all NOT submitted to the EPA must also be sent concurrently to the Pueblo of Sandia at the following address:

Regular U.S. Delivery Mail:
Pueblo of Sandia Environment Department
Attention: Water Quality Manager
481 Sandia Loop
Bernalillo, New Mexico 87004

9.4.3. OKR12000F: Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).

In accordance with Section 303 of the Clean Water Act and Oklahoma's Water Quality Standards (OAC 785: 45):

9.4.3.1 For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, this permit may only be used to authorize discharges from temporary construction activities. Certification is denied for any on-going activities such as sand and gravel mining or any mineral mining.

9.4.3.2 For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, certification is denied for any discharges originating from support activities, including concrete and asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, or borrow areas.

9.5. Region 8

9.5.1. MTR12000I: Indian country within the State of Montana

9.5.1.1 **The Confederated Salish and Kootenai Tribes of the Flathead Nation.** The following conditions apply only to discharges on the Confederated Salish and Kootenai Tribes of the Flathead Nation Reservation:

a. Permittees must send the Stormwater Pollution Prevention Plan (SWPPP) to the Tribes at least 30 days before construction starts.

b. Before submitting the Notice of Termination (NOT), permittees must clearly demonstrate to an appointed tribal staff person during an on-site inspection that requirements for site stabilization have been met.

c. The permittee must send a copy of the Notice of Intent (NOI) and the Notice of Termination (NOT) to the tribes.

d. Permittees may submit their SWPPPs and NOTs electronically to clintf@cskt.org.

Written NOI's, SWPPPs and NOT's may be mailed to:
Clint Folden, Water Quality Regulatory Specialist
Confederated Salish and Kootenai Tribes
Natural Resources Department
P.O. Box 278
Pablo, MT 59855

9.5.1.2 *Fort Peck Tribes. The following conditions apply only to discharges on the Fort Peck Reservation:*

Permittees must notify the Fort Peck Office of Environmental Protection (OEP) two weeks prior to commencing construction.

9.6. Region 9

9.6.1. AZR12000I: Indian country within the State of Arizona.

9.6.1.1 **Hualapai Tribal Lands**. The following condition applies only for discharges on the Hualapai Reservation:

All notices of intent for proposed stormwater discharges under the CGP and all pollution prevention plans for stormwater discharges on Hualapai Tribal lands shall be submitted to Water Resources Program through the Tribal Chairman for review and approval, P.O. Box 179, Peach Springs, AZ 86434.

9.6.2. CAR12000I: Indian country within the State of California.

9.6.2.1 **Big Pine Paiute Tribe of the Owens Valley**. Big Pine Tribal Water Quality Standards Section VII(e): If a proposed action has the possibility to adversely affect the water quality of Big Pine Creek, an application must be filed with the Tribal Environmental Office. The application must describe the action proposed and its effects on the creek, how this information was derived, and a justification for the action. Upon satisfying these requirements, the Tribal Environmental Office will recommend or not recommend this proposal to be considered by the Tribal Council. Tribal Council will make a determination whether to consider the proposal further. If the Tribal Council wishes to consider the application further, the public participation process will take place (see paragraph VII(d)). The Tribal Council has the sole authority in permitting degradation to Big Pine Creek. If the Tribal Council makes the decision to allow degradation, they will submit their decision to the USEPA for review and approval.

9.6.3. GUR120000: The Island of Guam. Permittees must adhere with imposed conditions for the project, in accordance with section 307(c)(1), of the Coastal Zone Management Act, 15 CFR part 930.

9.6.4. MPR120000: Commonwealth of the Northern Mariana Islands (CNMI).

9.6.4.1 An Earthmoving and Erosion Control Permit must be obtained from DEQ prior to any construction activity covered under the NPDES General Permit.

9.6.4.2 All conditions and requirements set forth in the United States Environmental Protection Agency (USEPA), National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Construction Activities must be complied with.

9.6.4.3 A stormwater pollution prevention plan (SWPPP) for stormwater discharges from construction activities must be approved by the Director of DEQ prior to submission of the Notice of Intent (NOI).

9.6.4.4 A NOI to be covered by the General Permit for Discharges from Construction Activities must be submitted to DEQ and USEPA, Region IX, in the form prescribed by USEPA, accompanied by a SWPPP approval letter from DEQ.

9.6.4.5 The NOI must be postmarked fourteen (14) calendar days prior to any stormwater discharges and a copy is submitted to the Director of DEQ no later than seven (7) calendar days prior to any stormwater discharges.

9.6.4.6 Copies of all monitoring reports required by the NPDES General Permit are submitted to DEQ.

9.6.4.7 In accordance with Section 10.3(h) and (i) of the CNMI Water Quality Standards, DEQ reserves the right to deny coverage under this permit and require submittal of an application for an individual NPDES permit based on review of the NOI or other information made available to the Director.

9.6.5. NVR12000I: Indian country within the State of Nevada.

9.6.5.1 **Pyramid Lake Paiute Tribe.** The following conditions apply only for discharges on the Pyramid Lake Paiute Reservation:

a. A SWPPP for stormwater discharges from project construction activities must be submitted to, and approved by, the PLPT Environmental Department director, prior to the submission of a Notice of Intent (NOI or eNOI) to EPA.

b. The applicant is to submit a hard copy of the Notice of Intent (NOI or eNOI) and a draft or final copy of the Stormwater Pollution Prevention Plan (SWPPP) by U.S. Mail to the Pyramid Lake Environmental Department at the address below:

Pyramid Lake Tribe Environmental Department
P.O. Box 256
Nixon, NV 89424

c. The applicant is to concurrently submit to the PLPT Environmental Department, hard copies of any other forms submitted to the EPA, including waivers, reporting, and Notice of Termination (NOT).

9.7. Region 10

9.7.1. IDR120000: The State of Idaho, except those located on Indian country.

For the complete text of Idaho's certification including the full anti-degradation analysis, please visit the IDEQ website at http://www.deq.idaho.gov/media/821491-usepa-npdes-general-permit-storm-water-discharges-401-certification-final-0412.pdf

9.7.1.1 The Idaho Department of Environmental Quality's (DEQ) certification of this permit does not constitute authorization of your permitted activities by any other state or federal agency or private person or entity. DEQ's certification does not excuse you from the obligation to obtain any other necessary

approvals, authorizations or permits, including without limitation, the approval from the owner of a private water conveyance system, if one is required, to use the system in connection with the permitted activities.

9.7.1.2 Idaho's Antidegradation Policy. Idaho Water Quality Standards (WQS) (IDAPA 58.01.02) contain an antidegradation policy providing three levels of protection to water bodies in Idaho (IDAPA 58.01.02.051).

a. Tier 1 Protection. The first level of protection applies to all water bodies subject to Clean Water Act jurisdiction and ensures that existing uses of a water body and the level of water quality necessary to protect those existing uses will be maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, a Tier 1 review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.05).
b. Tier 2 Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.06).
c. Tier 3 Protection. The third level of protection applies to water bodies that have been designated outstanding resource waters and requires that activities not cause a lowering of water quality (IDAPA 58.01.02.051.03; 58.01.02.052.07).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (Idaho Code § 39-3603(2)(b)(i)). Any water body not fully supporting its beneficial uses will be provided Tier 1 protection for that use, unless specific circumstances warranting Tier 2 protection are met (Idaho Code § 39-3603(2)(b)(iii)). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (Idaho Code § 39-3603(2)(b)). The primary pollutants of concern associated with stormwater discharges from construction activities are sediment and turbidity (as Total Suspended Solids). Other potential pollutants include the following: phosphorus, nitrogen and other nutrients from fertilizers; pesticides; petroleum products; construction chemicals; and solid wastes.

9.7.1.3 Protection and Maintenance of Existing Uses (Tier 1 Protection). In order to protect and maintain designated and existing beneficial uses, a permitted discharge must comply with narrative and numeric criteria of the Idaho WQS, as well as other provisions of the WQS such as Section 055, which addresses water quality limited waters. The permittee must notify the appropriate DEQ Regional Office (see table in Part 9.7.1.8 below for contact information) of any potential discharges to impaired waters - water bodies identified as "impaired" for sediment or a sediment-related parameter, such as total suspended solids (TSS) or turbidity, and/or nutrients, including impairments for nitrogen and/or phosphorus.

To determine the support status of the affected water body, the permittee must use the most current EPA-approved Integrated Report, available on Idaho DEQ's website: http://www.deq.idaho.gov/water-quality/surface-water/monitoring-assessment/integrated-report.aspx. Impaired waters are identified in Categories 4 and 5 of the Integrated Report. Category 4(a) reflects impaired waters for which a TMDL has been approved by EPA. Category 5

contains waters which have been identified as "impaired" but do not yet have an EPA-approved TMDL.

DEQ's webpage also has a link to the state's map-based Integrated Report which presents information from the Integrated Report in a searchable, map-based format: http://mapcase.deq.idaho.gov/wq2010/.

In addition to complying with the Part 3.2.2 requirements for any sediment or nutrient-impaired waters, permittee(s) must also comply with Idaho's numeric turbidity criteria, developed to protect aquatic life uses. The criterion states, "Turbidity shall not exceed background turbidity by more than 50 NTU instantaneously or more than 25 NTU for more than 10 consecutive days" (IDAPA 58.01.02250.02.e). For Waters of the State which have been identified as impaired due to sedimentation/siltation, the permittee must conduct turbidity monitoring as described below in Part 9.7.1.6

9.7.1.4 Protection of High-Quality Waters (Tier 2 Protection). To determine the support status of the affected water body, the permittee must use the most current EPA-approved Integrated Report, available on Idaho DEQ's website: http://www.deq.idaho.gov/water-quality/surface-water/monitoring-assessment/integrated-report.aspx. DEQ's webpage also has a link to the state's map-based Integrated Report which presents information from the Integrated Report in a searchable, map-based format: http://mapcase.deq.idaho.gov/wq2010/.

DEQ retains the authority to determine that a 303(d) listed water body is actually a high quality water body if there is biological, chemical or physical data to support such a determination. In cases where information submitted with the NOI, or available from other sources, indicates that further Tier 2 analysis is necessary and/or additional conditions are needed, either for a new project or an existing project with a significantly increased discharge, EPA and DEQ will conduct a review and require any appropriate additional controls. If during this review, EPA and DEQ decide that an additional Tier 2 protection is warranted, then EPA may either change the terms of coverage or terminate coverage under the CGP and require an individual permit.

9.7.1.5 Protection of Outstanding Resource Waters (Tier 3 Protection). Idaho's antidegradation policy requires that the quality of outstanding resource waters (ORWs) be maintained and protected from the impacts of point source discharges. No water bodies in Idaho have been designated as outstanding resource waters to date; however, it is possible that waters may become designated during the term of the CGP. Any applicant proposing to discharge to an ORW must obtain an individual NPDES permit from EPA.

9.7.1.6 Turbidity Monitoring. For Waters of the State which are identified in the Integrated Report as impaired for sedimentation/siltation, the permittee must conduct turbidity monitoring each day during construction activities when the project is not stabilized per Part 2.2 or shut down per Part 4.1.4.3 of the CGP. A properly and regularly calibrated turbidimeter is required.

A sample must be taken twice daily at an undisturbed area immediately upstream of the project area to establish background turbidity levels for each monitoring event. Background turbidity, location, date and time must be recorded prior to monitoring downstream of the project area.

A sample must also be taken twice daily immediately downstream from any point of discharge, and within any visible plume. The turbidity, location, date

and time must be recorded. The downstream sample(s) must be taken immediately following the upstream sample(s) in order to obtain meaningful and representative results.

Results from the compliance point sampling or observation must be compared to the background levels to determine whether project activities are causing an exceedance of state WQS. If the downstream turbidity is 50 NTUs or more than the upstream turbidity, or a plume is observed, then the project is causing an exceedance of the WQS. The permittee must inspect the condition of project BMPs. If the BMPs are functioning to their fullest capability, then the permittee must modify project activities and/or BMPs to correct the violation.

Copies of daily logs for turbidity monitoring must be available to DEQ upon request. The report must describe all exceedances and subsequent actions taken, including the effectiveness of the action.

9.7.1.7 Equivalent Analysis Waiver. Use of the "Equivalent Analysis Waiver" in Appendix C (Part C.3) of the CGP is not authorized.

9.7.1.8 Reporting of Discharges Containing Hazardous Materials or Petroleum Products. Any spill of hazardous materials must be immediately reported to the appropriate DEQ regional office (see table of contacts, below) (IDAPA 58.01.02.850.03). Spills of petroleum products that exceed 25 gallons or that cause a visible sheen on nearby surface waters should be reported to DEQ within 24-hours. Petroleum product spills of less than 25 gallons or spills that do not cause a sheen on nearby surface waters shall only be reported to DEQ if clean-up cannot be accomplished within 24-hours (IDAPA 58.01.02.851.04).

DEQ Regional Office	Contact Name	Phone Number
Boise	Lance Holloway	208-373-0550
Coeur d'Alene	June Bergquist	208-769-1422
Idaho Falls	Troy Saffle	208-528-2650
Lewiston	John Cardwell	208-799-4370
Pocatello	Greg Mladenka	208-236-6160
Twin Falls	Balthasar Buhidar	208-736-2190

Outside of regular business hours, qualified spills shall be reported to the State Communications Center (1-800-632-8000 or 208-846-7610).

9.7.2. ORR12000I: Indian country within the State of Oregon.

9.7.2.1 **Confederated Tribes of the Umatilla Indian Reservation.** The following conditions apply only to discharges on the Umatilla Indian Reservation:

a. The operator shall be responsible for achieving compliance with the Confederated Tribes of the Umatilla Indian Reservations (CTUIR) Water Quality Standards.

b. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the CTUIR Water Resources Program at the address below, at the same time it is submitted to EPA.

c. The operator shall be responsible for submitting all Stormwater Pollution Prevention Plans (SWPPP) required under this permit to the CTUIR Water Resources Program for review and determination that the SWPPP is sufficient to meet Tribal Water Quality Standards, prior to the beginning of any discharge activities taking place.

d. The operator shall be responsible for reporting an exceedance to Tribal Water Quality Standards to the CTUIR Water Resources Program at the same time it is reported to EPA.

Confederated Tribes of the Umatilla Indian Reservation
Water Resources Program
46411 Timine Way
Pendleton, OR 97801

e. The CTUIR Tribal Historic Preservation Office (THPO) requests copies of each NOI which will define whether or not the undertaking has the potential to affect historic properties, and if so, define the undertaking's area of potential effect (APE).

f. The THPO must be provided 30 days to comment on the APE as defined in the permit application.

g. If the project is an undertaking, a cultural resource investigation must occur. All fieldwork must be conducted by qualified personnel (as outlined by the Secretary of Interior's Standards and Guidelines; http://www.nps.gov/history/local-law/arch_stnds_0.htm) and documented using Oregon Reporting Standards (http://egov.oregon.gov/OPRD/HCD/ARCH/arch_pubsandlinks.shtml). The resulting report must be submitted to the THPO and the THOP must concur with the findings and recommendations before any ground disturbing work can occur. The THPO requires 30 days to review all reports.

h. The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties.

i. For more information regarding the specifics of the cultural resources process, see 36 CFR Part 800.

Confederated Tribes of the Umatilla Indian Reservation
Cultural Resources Protection Program
Tribal Historic Preservation Office
46411 Timine Way
Pendleton, OR 97801

9.7.2.2 Confederated Tribes of the Warm Springs Reservation of Oregon. The following conditions apply only for discharges on the Warm Springs Reservation:

a. All activities covered by this NPDES general permit occurring within a designated riparian buffer zone as established in Ordinance 74 (Integrated Resource Management Plan or IRMP) must be reviewed, approved and permitted through the Tribe's Hydraulic Permit Application process, including payment of any applicable fees.

b. All activities covered by this NPDES permit must follow all applicable land management and resource conservation requirements specified in the IRMP.

c. Operators of activities covered by this NPDES general permit must submit a Storm Water Pollution Prevention Plan to the Tribe's Water Control Board at the following address for approval at least 30 days prior to beginning construction activity:

Chair, Warm Springs Water Control Board
P.O. Box C
Warm Springs, Oregon 97761

d. The operator shall be responsible for achieving compliance with the Water Quality Standards of the Confederated Tribes of the Warm Springs Reservation of Oregon. The operator shall be responsible for reporting an exceedance to Tribal Water Quality Standards to the Water Control Board at the address above.

e. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the CTWS, Branch of Natural Resources, Tribal Environmental Office at the address above, at the same time it is submitted to EPA.

f. The CTWS Tribal Historic Preservation Officer (THPO) requests copies of each NOI which will define whether or not the undertaking has the potential to affect historic properties, and if so, define the undertaking's area of potential effect (APE).

g. The THPO must be provided 30 days to comment on the APE as defined in the permit application.

h. If the project is an undertaking, a cultural resource investigation must occur. All fieldwork must be conducted by qualified personnel (as outlined by the Secretary of Interior's Standards and Guidelines; http://www.nps.gov/history/local-law/arch_stnds_0.htm) and documented using Oregon Reporting Standards (http://egov.oregon.gov/OPRD/HCD/ARCH/arch_pubsandlinks.shtml). The resulting report must be submitted to the THPO and the THOP must concur with the findings and recommendations before any ground disturbing work can occur. The THPO requires 30 days to review all reports.

i. The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties.

j. For more information regarding the specifics of the cultural resources process, see 36 CFR Part 800.

9.7.3. WAR12000F: Areas in the State of Washington, except those located on Indian country, subject to construction by Federal Operators.

9.7.3.1 Discharges shall not cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 CFR Part 131.36). Discharges that are not in compliance with these standards are not authorized.

9.7.3.2 Prior to the discharge of stormwater and non-stormwater to waters of the state, the permittee shall apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), with all appropriate best management practices (BMPs) installed and maintained in accordance with the SWPPP and the terms and conditions of this permit.

9.7.3.3 Sampling & Numeric Effluent Limitations – For Sites Discharging to Certain Waterbodies on the 303(d) List

a. Permittees that discharge to water bodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH or phosphorus, shall conduct water quality sampling according to the requirements of this subsection.

Parameter identified in 303(d) listing	Parameter/Units	Analytical Method	Sampling Frequency	Water Quality Standard
Turbidity Fine Sediment Phosphorus	Turbidity/NTU	SM2130 or EPA180.1	Weekly, if discharging	If background is 50 NTU or less: 5 NTU over background; or If background is more than 50 NTU: 10% over background
High pH	pH/Standard Units	pH meter	Weekly, if discharging	In the range of 6.5 – 8.5

b. The operator must retain all monitoring results required by this section as part of the SWPPP. All data and related monitoring records must be provided to EPA or the Washington State Department of Ecology (Ecology) upon request.

c. The operator must notify EPA when the discharge turbidity or discharge pH exceeds the water quality standards as defined in 5.b and 6.b below. All such reports must be submitted within 30 day s of measurement to EPA at the following address:

USEPA – Region 10
NPDES Compliance Unit - Attn: Federal Facilities Compliance Officer
1200 6th Avenue, Suite 900
OCE-133
Seattle, WA 98101
(206) 553-1846

d. All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current EPA approved listing of impaired waters that exists on January 29, 2009, or the date when the operator's complete NOI is received by EPA, whichever is later. The most

recent EPA approved 303(d) list is available on Ecology's website at www.ecy.wa.gov/programs/wq/303d/2008/index.html.

e. Discharges to waterbodies on the 303(d) list for turbidity, fine sediment, or phosphorus

i. Permittees which discharge to waterbodies on the 303(d) list for turbidity, fine sediment, or phosphorus shall conduct turbidity sampling at the following locations to evaluate compliance with the water quality standard for turbidity:

(1) Background turbidity shall be measured in the 303(d) listed receiving water immediately upstream (upgradient) or outside the area of influence of the discharge.

(2) Discharge turbidity shall be measured at the point of discharge into the 303(d) listed receiving waterbody, inside the area of influence of the discharge; or

(3) Alternatively, discharge turbidity may be measured at the point where the discharge leaves the construction site, rather than in the receiving waterbody.

Based on sampling, if the discharge turbidity ever exceeds the water quality standard for turbidity (more than 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or more than a 10% increase in turbidity when the background turbidity is more than 50 NTU), all future discharges shall comply with a numeric effluent limit which is equal to the water quality standard for turbidity. If the receiving water background turbidity is 50 NTU or less, the water quality standard is 5 NTU over background. If the receiving water background turbidity is more than 50 NTU, the water quality standard is 10% over background.

If a future discharge exceeds the water quality standard for turbidity, the permittee shall:

(1) Review the SWPPP for compliance with the permit and make appropriate revisions within seven days of the discharge that exceeded the standard.

(2) Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but no later than ten days of the discharge that exceeded the standard.

(3) Document BMP implementation and maintenance in the site log book.

(4) Continue to sample daily until discharge turbidity meets the water quality standard for turbidity.

f. Discharges to waterbodies on the 303(d) list for High pH

i. Permittees which discharge to waterbodies on the 303(d) list for high pH shall conduct sampling one of the following locations to evaluate compliance with the water quality standard for pH (in the range of 6.5 – 8.5):

(1) pH shall be measured at the point of discharge into the 303(d) listed waterbody, inside the area of influence of the discharge; or,

(2) Alternatively, pH may be measured at the point where the discharge leaves the construction site, rather than in the receiving water.

ii. Based on the sampling set forth above, if the pH ever exceeds the water quality standard for pH (in the range of 6.5 – 8.5), all future discharges shall comply with a numeric effluent limit which is equal to the water quality standard for pH. If a future discharge exceeds the water quality standard for pH, the permittee shall:

(1) Review the SWPPP for compliance with the permit and make appropriate revisions within 7 days of the discharge.

(2) Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but no later than 10 days of the discharge that exceeded the standards.

(3) Document BMP implementation and maintenance in the site log book.

(4) Continue to sample daily until discharge meets the water quality standard for pH (in the range of 6.5 – 8.5).

9.7.3.4 Sampling & Limitations – For Sites Discharging to TMDLs

a. Discharges to a waterbodies subject to an applicable Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus, shall be consistent with the assumptions and requirements of the TMDL.

i. Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges shall be consistent with any specific waste load allocations or requirements established by the applicable TMDL.

(1) Discharges shall be sampled weekly, or as otherwise specified by the TMDL, to evaluate compliance with the specific waste load allocations or requirements.

(2) Analytical methods used to meet the monitoring requirements shall conform to the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136.

ii. Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but no specific requirements have been identified, compliance with this permit will be assumed to be consistent with the approved TMDL.

iii. Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with this permit will be assumed to be consistent with the approved TMDL.

iv. Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

b. Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which has been completed and approved by EPA prior to February 16, 2012, or prior to the date the operator's complete NOI is received by EPA, whichever is later.

Completed TMDLs are available on Ecology's website at www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyWria/TMDLbyWria.html, or by phone at (360) 407-6460.

9.7.4. WAR12000I: Indian country within the State of Washington

9.7.4.1 **Kalispel Tribe**. The following conditions apply only for discharges on the Kalispel Reservation:

a. The operator shall be responsible for achieving compliance with the Kalispel Tribe's Water Quality Standards, and;

b. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the Kalispel Tribe Natural Resources Department (KNRD) at the same time as it is submitted to the EPA, and;

c. The operator shall submit all Storm Water Pollution Prevention Plans (SWPPP) to KNRD thirty (30) days prior to beginning any discharge activities for review, and;

d. The operator shall be responsible for reporting any exceedance of Tribal Water Quality Standards to KNRD at the same time it is reported to EPA, and;

e. Prior to any land disturbing activities on the Kalispel Indian Reservation and its dependent communities, the operator shall attain a cultural resource clearance letter from KNRD.

f. All tribal correspondence pertaining to the General Permit for Discharges from Construction Activities shall be sent to:

Kalispel Tribe Natural Resources Department
Water Resources Program
PO Box 39
Usk, WA 99180

9.7.4.2 **Lummi Nation**. The following conditions apply only for discharges on the Lummi Reservation:

a. Pursuant to Lummi Code of Laws (LCL) 17.05.020(a), the operator must also obtain a land use permit from the Lummi Planning Department as provided in Title 15 of the Lummi Code of Laws and regulations adopted thereunder.

b. Pursuant to LCL 17.05.020(a), each operator shall develop and submit a Stormwater Pollution Prevention Plan to the Lummi Water Resources Division for review and approval by the Water Resources Manager prior to beginning any discharge activities.

c. Pursuant to LCL Title 17, each operator shall be responsible for achieving compliance with the Water Quality Standards for Surface Waters of the Lummi Indian Reservation (Lummi Administrative Regulations [LAR] 17 LAR 07.010 together with supplements and amendments thereto).

d. Each operator shall submit a signed hard copy of the Notice of Intent (NOI) to the Lummi Water Resources Division at the same time it is submitted electronically to the Environmental Protection Agency (EPA) and shall provide the Lummi Water Resources Division the acknowledgement of receipt of the NOI from the EPA and the associated NPDES tracking number provided by the EPA within 7 calendar days of receipt by EPA.

e. Each operator shall submit a signed hard copy of the Notice of Termination (NOT) to the Lummi Water Resources Division at the same time it is submitted electronically to the EPA and shall provide the Lummi Water Resources Division the EPA acknowledgement of receipt of the NOT.

f. Stormwater Pollution Prevention Plans, Notice of intent, Notice of Termination and associated correspondence with the EPA shall be submitted to:

Lummi Natural Resources Department
ATTN: Water Resources Manager
2616 Kwina Road
Bellingham, WA 98226-9298

g. Please see the Lummi Nation website (www.lummi-nsn.gov) and/or the Lummi Natural Resources Department website (http://lnnr.lummi-nsn.gov/LummiWebsite/Website.php?PageID=53) to review a copy of Title 17 of the Lummi Code of Laws, associated regulations, and the references upon which the conditions identified above are based.

9.7.4.3 **Makah Tribe**. The following conditions apply only for discharges on the Makah Reservation:

a. The operator shall be responsible for achieving compliance with the Makah Tribe's Water Quality Standards.

b. The operator shall submit a Storm Water Pollution Prevention Plan to the Makah Tribe Water Quality Program and Makah Fisheries Habitat Division for review and approval at least thirty (30) days prior to beginning any discharge activities.

c. The operator shall submit a copy of the Notice of Intent to the Makah Tribe Water Quality Program and Makah Fisheries Habitat Division at the same time it is submitted to EPA.

d. Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Ray Colby
Makah Tribal Water Quality
Water Quality Specialist
(360) 645-3162
colby.ray@centurytel.net
PO Box 115
Neah Bay, WA 98357

9.7.4.4 **Puyallup Tribe of Indians.** The following conditions apply only for discharges on the Puyallup Reservation:

a. Each permittee shall be responsible for achieving compliance with the Puyallup Tribe's Water Quality Standards, including antidegradation provisions. The Puyallup Natural Resources Department will conduct an antidegradation review for permitted activities that have the potential to lower water quality. The antidegradation review will be consistent with the Tribe's Antidegradation Implementation Procedures.

b. The permittee shall be responsible for meeting any additional permit requirements imposed by EPA necessary to comply with the Puyallup Tribe's antidegradation policies if the discharge point is located within 1 linear mile upstream of waters designated by the Tribe.

c. Each permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the Puyallup tribal Natural Resources Department at the address listed below at the same time it is submitted to EPA.

Puyallup Tribe of Indians
3009 E. Portland Avenue
Tacoma, WA 98404
ATTN: Natural Resources Department – Bill Sullivan and Char Naylor

d. All supporting documentation and certifications in the NOI related to coverage under the general permit for Endangered Species Act purposes shall be submitted to Bill Sullivan and Char Naylor in the Puyallup Tribal Natural Resources Department for review.

e. If EPA requires coverage under an individual or alternative permit, the permittee shall submit a copy of the permit to Bill Sullivan and Char Naylor in the Puyallup Tribal Natural Resources Department at the address listed above.

f. The permittee shall submit all stormwater pollution prevention plans to Bill Sullivan and Char Naylor in the Puyallup Tribal Natural Resources Department for review and approval prior to beginning any activities resulting in a discharge to tribal waters.

g. The permittee shall conduct benchmark monitoring for turbidity and nutrients, complying with Section 3 monitoring requirements.

h. The permittee shall notify Bill Sullivan and Char Naylor prior to conducting inspections at construction sites generating stormwater discharged to tribal waters.

Appendix A - Definitions and Acronyms

Definitions

"Action Area" – all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. See 50 CFR 402. For the purposes of this permit and for application of the Endangered Species Act requirements, the following areas are included in the definition of action area:

- The areas on the construction site where stormwater discharges originate and flow toward the point of discharge into the receiving waters (including areas where excavation, site development, or other ground disturbance activities occur) and the immediate vicinity. (Example: Where bald eagles nest in a tree that is on or bordering a construction site and could be disturbed by the construction activity or where grading causes stormwater to flow into a small wetland or other habitat that is on the site that contains listed species.)
- The areas where stormwater discharges flow from the construction site to the point of discharge into receiving waters. (Example: Where stormwater flows into a ditch, swale, or gully that leads to receiving waters and where listed species (such as listed amphibians) are found in the ditch, swale, or gully.)
- The areas where stormwater from construction activities discharge into receiving waters and the areas in the immediate vicinity of the point of discharge. (Example: Where stormwater from construction activities discharges into a stream segment that is known to harbor listed aquatic species.)
- The areas where stormwater controls will be constructed and operated, including any areas where stormwater flows to and from the stormwater controls. (Example: Where a stormwater retention pond would be built.)
- The areas upstream and/or downstream from the stormwater discharge into a stream segment that may be affected by these discharges. (Example: Where sediment discharged to a receiving stream settles downstream and impacts a breeding area of a listed aquatic species.)

"Agricultural Land" - cropland, grassland, rangeland, pasture, and other agricultural land, on which agricultural and forest-related products or livestock are produced and resource concerns may be addressed. Agricultural lands include cropped woodland, marshes, incidental areas included in the agricultural operation, and other types of agricultural land used for the production of livestock.

"Antidegradation Policy" or "Antidegradation Requirements" - the water quality standards regulation that requires States and Tribes to establish a three-tiered antidegradation program:

1. Tier 1 maintains and protects existing uses and water quality conditions necessary to support such uses. An existing use can be established by demonstrating that fishing, swimming, or other uses have actually occurred since November 28, 1975, or that the water quality is suitable to allow such uses to occur. Where an existing use is established, it must be protected even if it is not listed in the water quality standards as a designated use. Tier 1 requirements are applicable to all surface waters.
2. Tier 2 maintains and protects "high quality" waters -- water bodies where existing conditions are better than necessary to support CWA § 101(a)(2) "fishable/swimmable"

uses. Water quality can be lowered in such waters. However, State and Tribal Tier 2 programs identify procedures that must be followed and questions that must be answered before a reduction in water quality can be allowed. In no case may water quality be lowered to a level which would interfere with existing or designated uses.

3. Tier 3 maintains and protects water quality in outstanding national resource waters (ONRWs). Except for certain temporary changes, water quality cannot be lowered in such waters. ONRWs generally include the highest quality waters of the United States. However, the ONRW classification also offers special protection for waters of exceptional ecological significance, i.e., those which are important, unique, or sensitive ecologically. Decisions regarding which water bodies qualify to be ONRWs are made by States and authorized Indian Tribes.

"Arid Areas" – areas with an average annual rainfall of 0 to 10 inches.

"Bank" (e.g., stream bank or river bank) – the rising ground bordering the channel of a water of the U.S.

"Bluff" – a steep headland, promontory, riverbank, or cliff.

"Borrow Areas" – the areas where materials are dug for use as fill, either onsite or off-site.

"Bypass" – the intentional diversion of waste streams from any portion of a treatment facility. See 40 CFR 122.41(m)(1)(i).

"Cationic Treatment Chemical" – polymers, flocculants, or other chemicals that contain an overall positive charge. Among other things, they are used to reduce turbidity in stormwater discharges by chemically bonding to the overall negative charge of suspended silts and other soil materials and causing them to bind together and settle out. Common examples of cationic treatment chemicals are chitosan and cationic PAM.

"Commencement of Earth-Disturbing Activities" - the initial disturbance of soils (or 'breaking ground') associated with clearing, grading, or excavating activities or other construction-related activities (e.g., stockpiling of fill material).

"Commencement of Pollutant-Generating Activities" – at construction sites (for the purposes of this permit) occurs in any of the following circumstances:

- Clearing, grubbing, grading, and excavation has begun;
- Raw materials related to your construction activity, such as building materials or products, landscape materials, fertilizers, pesticides, herbicides, detergents, fuels, oils, or other chemicals have been placed at your site;
- Use of authorized non-stormwater for washout activities, or dewatering activities, have begun; or
- Any other activity has begun that causes the generation of or the potential generation of pollutants.

"Construction Activities" – earth-disturbing activities, such as the clearing, grading, and excavation of land.

"Construction and Development Effluent Limitations and New Source Performance Standards" (C&D Rule) – as published in 40 CFR § 450 is the regulation requiring effluent limitations guidelines

(ELG's) and new source performance standards (NSPS) for controlling the discharge of pollutants from construction sites.

"Construction Site" – the land or water area where construction activities will occur and where stormwater controls will be installed and maintained. The construction site includes construction support activities, which may be located at a different part of the property from where the primary construction activity will take place, or on a different piece of property altogether. The construction site is often a smaller subset of the lot or parcel within which the project is taking place.

"Construction Support Activities" – a construction-related activity that specifically supports the construction activity and involves earth disturbance or pollutant-generating activities of its own, and can include activities associated with concrete or asphalt batch plants, equipment staging yards, materials storage areas, excavated material disposal areas, and borrow areas.

"Construction Waste" – discarded material (such as packaging materials, scrap construction materials, masonry products, timber, steel, pipe, and electrical cuttings, plastics, and styrofoam).

"Conveyance Channel" – a temporary or permanent waterway designed and installed to safely convey stormwater flow within and out of a construction site.

"Corrective Action" – for the purposes of the permit, any action taken to (1) repair, modify, or replace any stormwater control used at the site; (2) clean up and dispose of spills, releases, or other deposits found on the site; and (3) remedy a permit violation.

"Critical Habitat" – as defined in the Endangered Species Act at 16 U.S.C. 1531 for a threatened or endangered species, (i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act, upon a determination by the Secretary that such areas are essential for the conservation of the species.

"CWA" – the Clean Water Act or the Federal Water Pollution Control Act, 33 U.S.C. section 1251 et seq.

"Dewatering" – the act of draining rainwater and/or groundwater from building foundations, vaults, and trenches.

"Discharge" – when used without qualification, means the "discharge of a pollutant."

"Discharge of a Pollutant" – any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. See 40 CFR 122.2.

"Discharge Point" – for the purposes of this permit, the location where collected and concentrated stormwater flows are discharged from the construction site.

"Discharge-Related Activity" – activities that cause, contribute to, or result in stormwater and allowable non-stormwater point source discharges, and measures such as the siting, construction, and operation of stormwater controls to control, reduce, or prevent pollutants from being discharged.

"Discharge to an Impaired Water" – for the purposes of this permit, a discharge to an impaired water occurs if the first water of the U.S. to which you discharge is identified by a State, Tribe, or EPA pursuant to Section 303(d) of the Clean Water Act as not meeting an applicable water quality standard, or is included in an EPA-approved or established total maximum daily load (TMDL). For discharges that enter a storm sewer system prior to discharge, the water of the U.S. to which you discharge is the first water of the U.S. that receives the stormwater discharge from the storm sewer system.

"Domestic Waste" – for the purposes of this permit, typical household trash, garbage or rubbish items generated by construction activities.

"Drainageway" – an open linear depression, whether constructed or natural, that functions for the collection and drainage of surface water.

"Drought-Stricken Area" – for the purposes of this permit, an area in which the National Oceanic and Atomospheric Administration's U.S. Seasonal Drought Outlook indicates for the period during which the construction will occur that any of the following conditions are likely: (1) "Drought to persist or intensify", (2) "Drought ongoing, some improvement", (3) "Drought likely to improve, impacts ease", or (4) "Drought development likely". See http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.gif.

"Earth-Disturbing Activity" or "Land-Disturbing Activity" – actions taken to alter the existing vegetation and/or underlying soil of a site, such as clearing, grading, site preparation (e.g., excavating, cutting, and filling), soil compaction, and movement and stockpiling of top soils.

"Effective Operating Condition" – for the purposes of this permit, a stormwater control is kept in effective operating condition if it has been implemented and maintained in such a manner that it is working as designed to minimize pollutant discharges.

"Effluent Limitations" – for the purposes of this permit, any of the Part 2 or Part 3 requirements.

"Effluent Limitations Guideline" (ELG) – defined in 40 CFR § 122.2 as a regulation published by the Administrator under section 304(b) of CWA to adopt or revise effluent limitations.

"Electronic Notice of Intent" (eNOI) – EPA's online system for submitting electronic Construction General Permit forms.

"Eligible" – for the purposes of this permit, refers to stormwater and allowable non-stormwater discharges that are authorized for coverage under this general permit.

"Emergency-Related Project" – a project initiated in response to a public emergency (e.g., natural disaster, disruption in essential public services), for which the related work requires immediate authorization to avoid imminent endangerment to human health or the environment, or to reestablish essential public services.

"Endangered Species" – defined in the Endangered Species Act at 16 U.S.C. 1531 as any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary to constitute a pest whose

protection under the provisions of this Act would present an overwhelming and overriding risk to man.

"Excursion" – a measured value that exceeds a specified limit.

"Existing Project" – a construction project that commenced construction activities prior to February 16, 2012 (April 9, 2012 for the State of Idaho, except for Indian Country; April 13, 2012 for areas in the state of Washington, except for Indian Country, subject to construction activity by a Federal Operator; May 9, 2012 for projects in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin).

"Exit Points" – any points of egress from the construction site to be used by vehicles and equipment during construction activities.

"Exposed Soils" – for the purposes of this permit, soils that as a result of earth-disturbing activities are left open to the elements.

"Federal Operator" – an entity that meets the definition of "Operator" in this permit and is either any department, agency or instrumentality of the executive, legislative, and judicial branches of the Federal government of the United States, or another entity, such as a private contractor, performing construction activity for any such department, agency, or instrumentality.

"Final Stabilization" – on areas not covered by permanent structures, either (1) vegetation has been established, or for arid or semi-arid areas, will be established that provides a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the natural background vegetative cover, or (2) non-vegetative stabilization methods have been implemented to provide effective cover for exposed portions of the site.

"Hazardous Materials" or "Hazardous Substances" or "Hazardous or Toxic Waste" – for the purposes of this permit, any liquid, solid, or contained gas that contain properties that are dangerous or potentially harmful to human health or the environment. See also 40 CFR §261.2.

"Historic Property" – as defined in the National Historic Preservation Act regulations means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

"Impaired Water" or "Water Quality Impaired Water" or "Water Quality Limited Segment" – for the purposes of this permit, waters identified as impaired on the CWA Section 303(d) list, or waters with an EPA-approved or established TMDL. Your construction site will be considered to discharge to an impaired water if the first water of the U.S. to which you discharge is identified by a state, tribe, or EPA pursuant to Section 303(d) of the CWA as not meeting an applicable water quality standard, or is included in an EPA-approved or established total maximum daily load (TMDL). For discharges that enter a storm sewer system prior to discharge, the first water of the U.S. to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

"Impervious Surface" – for the purpose of this permit, any land surface with a low or no capacity for soil infiltration including, but not limited to, pavement, sidewalks, parking areas and driveways, packed gravel or soil, or rooftops.

"Indian Country" or "Indian Country Lands" – defined at 40 CFR §122.2 as:

1. All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;
2. All dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and
3. All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-ways running through the same.

"Infeasible" – for the purpose of this permit, infeasible means not technologically possible or not economically practicable and achievable in light of best industry practices. EPA notes that it does not intend for any permit requirement to conflict with state water rights law.

"Install" or "Installation" – when used in connection with stormwater controls, to connect or set in position stormwater controls to make them operational.

"Intermittent (or Seasonal) Stream" – one which flows at certain times of the year when groundwater provides water for stream flow, as well as during and immediately after some precipitation events or snowmelt.

"Jar test" – a test designed to simulate full-scale coagulation/flocculation/sedimentation water treatment processes by taking into account the possible conditions.

"Landward" – positioned or located away from a waterbody, and towards the land.

"Level Spreader" – a temporary stormwater control used to spread stormwater flow uniformly over the ground surface as sheet flow to prevent concentrated, erosive flows from occurring.

"Linear Project" – includes the construction of roads, bridges, conduits, substructures, pipelines, sewer lines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities in a long, narrow area.

"Minimize" – to reduce and/or eliminate to the extent achievable using stormwater controls that are technologically available and economically practicable and achievable in light of best industry practices.

"Municipal Separate Storm Sewer System" or "MS4" – defined at 40 CFR §122.26(b)(8) as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

1. Owned and operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
2. Designed or used for collecting or conveying stormwater;
3. Which is not a combined sewer; and

4. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR §122.2.

"National Pollutant Discharge Elimination System" (NPDES) – defined at 40 CFR §122.2 as the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA. The term includes an 'approved program.'

"Native Topsoil" – the uppermost layer of naturally occurring soil for a particular area, and is often rich in organic matter, biological activity, and nutrients.

"Native Vegetation" – the species of plants that have developed for a particular region or ecosystem and are considered endemic to that region or ecosystem.

"Natural Buffer" – for the purposes of this permit, an area of undisturbed natural cover surrounding surface waters within which construction activities are restricted. Natural cover includes the vegetation, exposed rock, or barren ground that exists prior to commencement of earth-disturbing activities.

"Natural Vegetation" – vegetation that occurs spontaneously without regular management, maintenance or species introductions, removals, and that generally has a strong component of native species.

"New Operator of a New or Existing Project" – an operator that through transfer of ownership and/or operation replaces the operator of an already permitted construction project.

"New Project" – a construction project that commences construction activities on or after February 16 (or on or after April 9, 2012 for the State of Idaho, except for Indian Country; April 13, 2012 for areas in the state of Washington, except for Indian Country, subject to construction activity by a Federal Operator; May 9, 2012 for projects in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin).

"New Source" – for the purpose of this permit, a construction project that commenced construction activities after February 1, 2010.

"New Source Performance Standards (NSPS)" – for the purposes of this permit, NSPS are technology-based standards that apply to construction sites that are new sources under 40 CFR 450.24.

"Non-Stormwater Discharges" – discharges that do not originate from storm events. They can include, but are not limited to, discharges of process water, air conditioner condensate, non-contact cooling water, vehicle wash water, sanitary wastes, concrete washout water, paint wash water, irrigation water, or pipe testing water.

"Non-Turbid" – a discharge that does not cause or contribute to an exceedence of turbidity-related water quality standards.

"Notice of Intent" (NOI) – the form (electronic or paper) required for authorization of coverage under the Construction General Permit.

"Notice of Termination" (NOT) – the form (electronic or paper) required for terminating coverage under the Construction General Permit.

"Operational" – for the purpose of this permit, stormwater controls are made "operational" when they have been installed and implemented, are functioning as designed, and are properly maintained.

"Operator" – for the purpose of this permit and in the context of stormwater discharges associated with construction activity, any party associated with a construction project that meets either of the following two criteria:

1. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
2. The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the permit).

This definition is provided to inform permittees of EPA's interpretation of how the regulatory definitions of "owner or operator" and "facility or activity" are applied to discharges of stormwater associated with construction activity.

"Ordinary High Water Mark" – the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, and/or the presence of litter and debris.

"Outfall" – see "Discharge Point."

"Permitting Authority" – for the purposes of this permit, EPA, a Regional Administrator of EPA, or an authorized representative.

"Point(s) of Discharge" – see "Discharge Point."

"Point Source" – any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

"Pollutant" – defined at 40 CFR §122.2. A partial listing from this definition includes: dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial or municipal waste.

"Pollutant-Generating Activities" – at construction sites (for the purposes of this permit), those activities that lead to or could lead to the generation of pollutants, either as a result of earth-disturbance or a related support activity. Some of the types of pollutants that are typically found at construction sites are:

- sediment;
- nutrients;
- heavy metals;
- pesticides and herbicides;
- oil and grease;
- bacteria and viruses;

- trash, debris, and solids;
- treatment polymers; and
- any other toxic chemicals.

"Pollution Prevention Measures" – stormwater controls designed to reduce or eliminate the addition of pollutants to construction site discharges through analysis of pollutant sources, implementation of proper handling/disposal practices, employee education, and other actions.

"Polymers" – for the purposes of this permit, coagulants and flocculants used to control erosion on soil or to enhance the sediment removal capabilities of sediment traps or basins. Common construction site polymers include polyacrylamide (PAM), chitosan, alum, polyaluminum chloride, and gypsum.

"Prohibited Discharges" – discharges that are not allowed under this permit, including:

1. Wastewater from washout of concrete;
2. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
4. Soaps or solvents used in vehicle and equipment washing;
5. Toxic or hazardous substances from a spill or other release; and
6. Waste, garbage, floatable debris, construction debris, and sanitary waste from pollutant-generating activities.

"Provisionally Covered Under this Permit" – for the purposes of this permit, EPA provides temporary coverage under this permit for emergency-related projects prior to receipt of a complete and accurate NOI. Discharges from earth-disturbing activities associated with the emergency-related projects are subject to the terms and conditions of the permit during the period of temporary coverage.

"Receiving Water" – a "Water of the United States" as defined in 40 CFR §122.2 into which the regulated stormwater discharges.

"Run-On" – sources of stormwater that drain from land located upslope or upstream from the regulated site in question.

"Semi-Arid Areas" – areas with an average annual rainfall of 10 to 20 inches.

"Site" – for construction activities, the land or water area where earth-disturbing activities take place, including construction support activities.

"Small Construction Activity" – defined at 40 CFR §122.26(b)(15) and incorporated here by reference. A small construction activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than one (1) acre and less than five (5) acres of land or will disturb less than one (1) acre of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one (1) acre and less than five (5) acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site.

"Small Residential Lot" – for the purpose of this permit, a lot being developed for residential purposes that will disturb less than 1 acre of land, but is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre.

"Snowmelt" – the conversion of snow into overland stormwater and groundwater flow as a result of warmer temperatures.

"Spill" – for the purpose of this permit, the release of a hazardous or toxic substance from its container or containment.

"Stabilization" – the use of vegetative and/or non-vegetative cover to prevent erosion and sediment loss in areas exposed through the construction process.

"Steep Slopes" – where a state, Tribe, local government, or industry technical manual (e.g., stormwater BMP manual) has defined what is to be considered a "steep slope", this permit's definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 15 percent or greater in grade.

"Storm Sewer System" – a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) designed or used for collecting or conveying stormwater.

"Stormwater" – stormwater runoff, snow melt runoff, and surface runoff and drainage.

"Stormwater Control Measure" - refers to any stormwater control, BMP, or other method (including narrative effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the United States.

"Stormwater Controls" – see "Stormwater Control measure."

"Stormwater Discharge Associated with Construction Activity" – as used in this permit, a discharge of pollutants in stormwater to waters of the United States from areas where land-disturbing activities (e.g., clearing, grading, or excavation) occur, or where construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck chute washdown, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants), are located.

"Stormwater Inlet" – a structure placed below grade to conduct water used to collect stormwater runoff for conveyance purposes.

"Stormwater Team" – the group of individuals responsible for oversight of the development and modifications of the SWPPP, and oversight of compliance with the permit requirements. The individuals on the "Stormwater Team" must be identified in the SWPPP.

"Storm Event" – a precipitation event that results in a measurable amount of precipitation.

"Storm Sewer" – a system of pipes (separate from sanitary sewers) that carries stormwater runoff from buildings and land surfaces.

"Subcontractor" – for the purposes of this permit, an individual or company that takes a portion of a contract from the general contractor or from another subcontractor.

"Surface Water" – a "Water of the United States" as defined in 40 CFR §122.2.

"SWPPP" (Stormwater Pollution Prevention Plan) – a site-specific, written document that, among other things: (1) identifies potential sources of stormwater pollution at the construction site; (2) describes stormwater control measures to reduce or eliminate pollutants in stormwater discharges from the construction site; and (3) identifies procedures the operator will implement to comply with the terms and conditions of this general permit.

"Temporary Stabilization" – a condition where exposed soils or disturbed areas are provided a temporary vegetative and/or non-vegetative protective cover to prevent erosion and sediment loss. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either final stabilization can be achieved or until further construction activities take place to re-disturb this area.

"Thawing Conditions" – for the purposes of this permit, thawing conditions are expected based on the historical likelihood of two or more days with daytime temperatures greater than 32°F. This date can be determined by looking at historical weather data. Note: the estimation of thawing conditions is for planning purposes only. During construction the permittee will be required to conduct site inspections based upon actual conditions (i.e., if thawing conditions occur sooner than expected, the permittee will be required to conduct inspections at the regular frequency).

"Threatened Species" – defined in the Endangered Species Act at 16 U.S.C. 1531 as any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

"Tier 2 Waters" – for antidegradation purposes, pursuant to 40 CFR 131.12(a)(2), those waters thatare characterized as having water quality that exceeds the levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water.

"Tier 2.5 Waters" – for antidegradation purposes, those waters designated by States or Tribes as requiring a level of protection equal to and above that given to Tier 2 waters, but less than that given Tier 3 waters. Some States have special requirements for these waters.

"Tier 3 Waters" – for antidegradation purposes, pursuant to 40 CFR 131.12(a)(3), Tier 3 waters are identified by states as having high quality waters constituting an Outstanding Natural Resource Water (ONRW), such as waters of National Parks and State Parks, wildlife refuges, and waters of exceptional recreational or ecological significance.

"Total Maximum Daily Load" or "TMDL" – the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.

"Toxic Waste" – see "Hazardous Materials."

"Turbidity" – a condition of water quality characterized by the presence of suspended solids and/or organic material.

"Uncontaminated Discharge" – a discharge that does not cause or contribute to an exceedence of applicable water quality standards.

"Upland" - the dry land area above and 'landward' of the ordinary high water mark.

"Upset" – Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. See 40 CFR 122.41(n)(1).

"Water-Dependent Structures" – structures or facilities that are required to be located directly adjacent to a waterbody or wetland, such as a marina, pier, boat ramp, etc.

"Water Quality Standards" – defined in 40 CFR § 131.3, and are provisions of State or Federal law which consist of a designated use or uses for the waters of the United States, water quality criteria for such waters based upon such uses, and an antidegradation policy to protect high-quality waters. Water quality standards protect the public health or welfare, enhance the quality of water and serve the purposes of the Act.

"Waters of the United States" – defined at 40 CFR §122.2 as:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
   a. Which are or could be used by interstate or foreign travelers for recreational or other purposes;
   b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
   c. Which are used or could be used or could be used for industrial purposes by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under this definition;
5. Tributaries of waters identified in paragraphs (1) through (4) of this definition;
6. The territorial sea; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

In applying this definition, EPA will consider applicable Court cases and current guidance.

"Wetland" – those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. On-site evaluations are typically required to confirm the presence and boundaries of wetlands.

"Work day" – for the purposes of this permit, a work day is a calendar day on which construction activities will take place.

Acronyms

C&D – Construction & Development

CGP – Construction General Permit

CFR – Code of Federal Regulations

CWA – Clean Water Act

eNOI – Electronic Notice of Intent

EPA – United States Environmental Protection Agency

ESA – Endangered Species Act

FWS – United States Fish and Wildlife Service

MS4 – Municipal Separate Storm Sewer System

MSGP – Multi-Sector General Permit

NMFS – United States National Marine Fisheries Service

NOI – Notice of Intent

NOT – Notice of Termination

NPDES – National Pollutant Discharge Elimination System

NRC – National Response Center

NRCS – National Resources Conservation Service

POTW – Publicly Owned Treatment Works

SPCC – Spill Prevention Control and Countermeasure

SWPPP – Stormwater Pollution Prevention Plan

TMDL – Total Maximum Daily Load

USGS – United States Geological Survey

WQS – Water Quality Standard

Appendix B - Permit Areas Eligible for Coverage

Permit coverage for stormwater discharges from construction activity occurring within the following areas is provided by legally separate and distinctly numbered permits:

B.1 EPA Region 1: CT, MA, ME, NH, RI, VT

US EPA, Region 01
Office of Ecosystem Protection
NPDES Stormwater Program
5 Post Office Square
Boston, MA 02109-3912

The States of Connecticut, Maine, Rhode Island, and Vermont are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
CTR12000I	Indian country within the State of Connecticut
MAR120000	Commonwealth of Massachusetts (except Indian country)
MAR12000I	Indian country within the State of Massachusetts
NHR120000	State of New Hampshire
RIR12000I	Indian country within the State of Rhode Island
VTR12000F	Areas in the State of Vermont subject to construction by a Federal Operator

B.2 EPA Region 2: NJ, NY, PR, VI

For NJ, NY, and VI:
US EPA, Region 02
NPDES Stormwater Program
290 Broadway, 24th Floor
New York, NY 10007-1866

For PR:
US EPA, Region 02
Caribbean Environmental Protection Division
NPDES Stormwater Program
1492 Ponce de Leon Ave
Central Europa Building, Suite 417
San Juan, PR 00907-4127

The State of New York is the NPDES Permitting Authority for the majority of discharges within its state. The State of New Jersey and the Virgin Islands are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
NYR12000I	Indian country within the State of New York
PRR120000	Commonwealth of Puerto Rico

B.3 EPA Region 3: DE, DC, MD, PA, VA, WV

US EPA, Region 03
NPDES Stormwater Program
1650 Arch St
Philadelphia, PA 19103

The State of Delaware is the NPDES Permitting Authority for the majority of discharges within its state. Maryland, Pennsylvania, Virginia, and West Virginia are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
DCR120000	District of Columbia
DER12000F	Areas in the State of Delaware subject to construction by a Federal Operator

B.4 EPA Region 4: AL, FL, GA, KY, MS, NC, SC, TN

US EPA, Region 04
Water Protection Division
NPDES Stormwater Program
61 Forsyth St SW
Atlanta, GA 30303-3104

The States of Alabama, Florida, Mississippi, and North Carolina are the NPDES Permitting Authority for the majority of discharges within their respective States. EPA Region 4 is the NPDES Permitting Authority for all Indian country lands within any other Region 4 State except Catawba lands in South Carolina.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
ALR12000I	Indian country within the State of Alabama
FLR12000I	Indian country within the State of Florida
MSR12000I	Indian country within the State of Mississippi
NCR12000I	Indian country within the State of North Carolina
RE412000I	Indian country within any other Region 4 State (except Catawba lands in South Carolina)

B.5 EPA Region 5: IL, IN, MI, MN, OH, WI

US EPA, Region 05
NPDES & Technical Support
NPDES Stormwater Program
77 W Jackson Blvd
(WN-16J)
Chicago, IL 60604-3507

The States of Michigan, Minnesota, and Wisconsin are the NPDES Permitting Authority for the majority of discharges within their respective states. The States of Illinois, Indiana, and Ohio are the NPDES Permitting Authorities for all discharges within their respective states.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
OKLAHOMA ECOLOGICAL SERVICES FIELD OFFICE
9014 EAST 21ST STREET
TULSA, OK 74129
PHONE: (918)581-7458 FAX: (918)581-7467
URL: www.fws.gov/southwest/es/Oklahoma/

Consultation Tracking Number: 02EKOK00-2013-SLI-1611 September 03, 2013
Project Name: Quapaw Tribe of Oklahoma

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species 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

Non-federal entities conducting activities that may result in take of listed species should consider seeking coverage under section 10 of the ESA, either through development of a Habitat Conservation Plan (HCP) or, by becoming a signatory to the General Conservation Plan (GCP) currently under development for the American burying beetle. Each of these mechanisms provides the means for obtaining a permit and coverage for incidental take of listed species during otherwise lawful activities.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

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 Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit through our Project Review step-wise process http://www.fws.gov/southwest/es/oklahoma/OKESFO%20Permit%20Home.htm.

If your species list does not contain the American burying beetle and your projects falls within Marshall, Love, Carter, Murray, Garvin, McClain, Cleveland, Pottawatomie or Adair counties,

the Service reccomends that you consider the American burying beetle in your project planning process. There is evidence to suggest (Crawford and Hoagland 2010), that the American burying beetle may occur in these counties.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Quapaw Tribe of Oklahoma

Official Species List

Provided by:

OKLAHOMA ECOLOGICAL SERVICES FIELD OFFICE
9014 EAST 21ST STREET
TULSA, OK 74129
(918) 581-7458
http://www.fws.gov/southwest/es/Oklahoma/

Consultation Tracking Number: 02EKOK00-2013-SLI-1611
Project Type: Land - Restoration / Enhancement
Project Description: The project includes the remediation and removal of chat (mine waste).

Project Location Map:

Project Location Measurements: Area : 40.0 ac., Length : 1.0 mi.

Project Coordinates: MULTIPOLYGON (((-94.7615155 36.9400396, -94.7591552 36.9400568, -94.7566146 36.9400165, -94.7564729 36.9367124, -94.7614297 36.9367304, -94.7615155 36.9400396)))

Project Counties: Ottawa, OK

Endangered Species Act Species List

Species lists are not entirely based upon the current range of a species but may also take into consideration actions that affect a species that exists in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Please contact the designated FWS office if you have questions.

American Burying beetle *(Nicrophorus americanus)*

Population: Entire

Listing Status: Endangered

Arkansas darter *(Etheostoma cragini)*

Listing Status: Candidate

Gray bat *(Myotis grisescens)*

Population: Entire

Listing Status: Endangered

Least tern *(Sterna antillarum)*

Population: interior pop.

Listing Status: Endangered

Condition(s):

- Wind Turbines and Wind Farms
- Towers (i.e. radio, television, cellular, microwave, meterological)

Neosho madtom *(Noturus placidus)*

Population: Entire

Listing Status: Threatened

Neosho Mucket *(Lampsilis rafinesqueana)*

Listing Status: Proposed Endangered

Ozark Big-Eared bat *(Corynorhinus (=plecotus) townsendii ingens)*

Population: Entire

Listing Status: Endangered

Ozark cavefish *(Amblyopsis rosae)*

Population: Entire

Listing Status: Threatened

Piping Plover *(Charadrius melodus)*

Population: except Great Lakes watershed

Listing Status: Threatened

Winged Mapleleaf *(Quadrula fragosa)*

Population: Entire; except where listed as experimental populations

Listing Status: Endangered

Storm Water Pollution Prevention Plan (Version 1.2)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
February 2014

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
Version 1.2
APPROVAL SHEET

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Prepared by: Quapaw Tribe Environmental Office (QTEO) Date: December 2013

Approved by:

_____ _____
Representative Date
ECCI

_____ _____
Tim Kent, P.G. Date
QTEO, Project Manager

USEPA QTRAK #: ____

STORM WATER POLLUTION PREVENTION PLAN
Version 1.2
DISTRIBUTION LIST

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Copies of this SWPPP have been distributed to the following people:

Rafael Casanova, P.G. - U.S. EPA, Region 6, Remedial Project Manager

Tim Kent, P.G. - QTEO, Environmental Director / Project Manager

Engineering Compliance and Construction, Inc. (ECCI)

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Acronyms

BMP	Best Management Practices
C	Runoff coefficient
CFR	Code of Federal Regulations
CGP	Construction General Permit
CMTP	Central Mill Tailings Pond
COC	Contaminant of Concern
CQAP	Construction Quality Assurance Plan
cy	cubic yards
EPA	United States Environmental Protection Agency
FSP	Field Sampling Plan
HUC11	Hydrologic Unit Code 11
MSDS	Material Safety Data Sheet
NPDES	National Pollutant Discharge Elimination System
NRHP	Nation Register of Historic Places
ODEQ	Oklahoma Department of Environmental Quality
ODWC	Oklahoma Department of Wildlife Conservation
OK	Oklahoma
OU4	Operable Unit No. 4
RA	Remedial Action
RD	Remedial Design
RG	Remediation Goal
SHPO	State Historic Preservation Office
SWPPP	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
T&E	Threatened and Endangered
TZ	transition zone
USFWS	United States Fish and Wildlife Service

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1.0 INTRODUCTION

This Storm Water Pollution Prevention Plan (SWPPP) was developed to address storm water discharges during remedial action (RA) construction activities associated with the Tar Creek Superfund Site Source Material Operable Unit No. 4 (OU4) in Ottawa County, Oklahoma.

This SWPPP will be implemented during the RA construction activities performed by QTEO and its' Contractors, and includes work to be performed on Distal Zone 8 (Catholic 40), and the construction associated with the southern access road in Ottawa County, Oklahoma.

The Catholic 40 Site is part of a former lead and zinc mining area known as the Tri-State Mining District, which includes portions of northeastern Oklahoma, southeastern Kansas, and southwestern Missouri. As a result of mining and milling operations, large quantities of mining wastes were deposited on the surface in piles. The large surface piles contain tailings, known locally as chat, produced from the gravity separation milling process. The chat pile or source material, located on Distal Zone 8, is labeled as Chat Base 11 (CB011). Distal Zone 8, commonly known as the Catholic 40, is approximately 40 acres in size and includes one (1) chat base and five (5) known mine shafts.

This SWPPP addresses remediation activities being performed within the Catholic 40 boundary.

1.1 Regulatory Authority

EPA regulation 40 CFR §122.26 requires the development of NPDES permits for Storm Water discharges from construction activities that will disturb 1 or more acres of land, or will disturb less than 1 acre of land but is part of a common plan of development or sale that will ultimately disturb 1 or more acres of land. EPA issued the National Pollutant Discharge Elimination System (NPDES) General Permit for Construction Activities in compliance with the provisions of the Clean Water Act, 33 U.S.C § 1251 et. seq. as amended by the Water Quality Act of 1987, P.L. 100-4.

The U.S. Environmental Protection Agency (EPA) published effluent limitations guidelines (ELGs) and new source performance standards (NSPS) to control the discharge of pollutants from construction sites in 2009. The regulation, codified in 40 CFR 450 was effective February 1, 2010. The EPA was required to revise the existing CGP to incorporate the ELG requirements into the permit. The most recent version of the CGP was effective on February 16, 2012.

The State of Oklahoma has delegatory authority to administer the NPDES program within the State. However, this authority does not extend to construction activities that take place on Indian Trust Lands (Restricted properties). Because this project will take place on Restricted property, the EPA will serve as the control authority. The project is required to comply with the terms within the EPA Construction General Permit. The SWPPP contained herein has been developed in compliance with the EPA Construction General Permit (CGP). A copy of this permit is provided in Appendix A.

A general site location maps is shown in Figures 1.1 at the end of this document.

1.2 Compliance Issues

The proposed project will result in the surface disturbance of more than one acre and is located within an area where EPA is the permitting authority. As per the requirements of Part 1.1 (d) of the CGP, the Storm Water discharges from the project area are not currently covered by another NPDES permit. The additional eligibility criteria are met as described in the following sections.

1.2.1 Endangered Species

Appendix D of the CGP contains specific criteria for ensuring that the discharge from the project will not impact federally listed threatened or endangered species or designated critical habitat(s).

The US Fish and Wildlife Service (USFWS) Oklahoma Ecological Services Information and Planning and Conservation System (IPAC) was accessed to determine the potential for endangered and /or threatened species or critical habitats to exist within the project boundaries. The species identified for the project area are shown below:

American Burying beetle (*Nicrophorus americanus*) - Endangered
Arkansas darter (*Etheostoma cragini*) – Candidate
Gray bat (*Myotis grisescens*) – Endangered
Least tern (*Sterna antillarum*) – Endangered
Neosho madtom (*Noturus placidus)* – Threatened
Neosho Mucket (*Lampsilis rafinesqueana*) – Proposed Endangered
Ozark Big-Eared bat (corynorhinus *(=plecotus) townsendii ingens*) - Endangered
Ozark cavefish (*Amblyopsis rosae*) - Threatened
Piping Plover (*Charardrius melodus*) - Threatened
Winged Mapleleaf *(Quadrula fragosa)* – Endangered

The project will implement measures designed to minimize potential impacts to federally endangered and/or threatened species as discussed further in Section 5.1 of this document.

1.2.2 Discharging to Water with High Water Quality (Outstanding Resource Waters)
The project receiving stream is not identified in Appendix F of the CGP as a Tier 2, 2.5 or Tier 3 water requiring special provisions. As a result the project is in compliance with eligibility criterion specified in Part 1.2.3 of the CGP.

1.2.3 Historic Preservation/Cultural Resources
Appendix E of the CGP contains screening procedures that all construction site operators must follow to ensure compliance with Section 106 of the National Historic Preservation Act (NHPA).

Historic and/or cultural resources have been identified on the project site. Measures to protect these resources are discussed further in Section 5.2 of the document.
1.3 Storm Water Team
The Storm Water team is responsible for overseeing the development and implementation of the SWPPP and ensuring that it is maintained and modified as needed to address changes at the site. The Storm Water team is responsible for ensuring that the project is in compliance with the requirements of the permit.

The Storm Water team for the Catholic 40 project is comprised of the individuals filling the following positions.

- Quapaw Tribe Site Representative
- Quapaw Signature Authority (Project Owner)
- Quapaw Tribe Construction Manager
- ECCI Representative

1.4 Site Operators
The Quapaw Tribe is the primary site operator, and as such, will typically have the day-to-day responsibility for ensuring the requirements of the SWPPP are met. In addition, contractors will be hired throughout the remediation project. Each contractor (and subcontractor) will be tasked with the implementation of pollution prevention measures as they relate to his specific activities. Because many of the contractors will be named after this plan has been developed, a list of each contractor (and subcontractor) and their specific duty will be maintained within the SWPPP recordkeeping documents.

2.0 NATURE OF CONSTRUCTION ACTIVITIES DISTAL AREAS

Chat base (CB011) and associated Transition Zone (TZ) soil will be removed during remediation activities and addressed in this SWPPP. The site drainage map showing the Storm Water runoff patterns and the erosion control locations is contained within Appendix B.

2.1 Description of Construction Activities
The proposed project area includes 40 acres within the 40 square-mile Tar Creek Superfund Site. The Tar Creek superfund Site is a former lead and zinc mining area within Ottawa County, Oklahoma. RA construction activities will include excavation of chat, development rock, and TZ soil within the boundaries of Distal Zone 8 (Catholic 40).

The project may also include some rehabilitation to existing onsite roadways to facilitate access to the remediation areas and will include construction of the southern access road. Cased borings and a mine shaft(s) will also be addressed.

2.1.1 Chat Base 011 Removal (Distal 8, Catholic 40)
Chat Base 011, TZ soil, and development rock will be excavated, transported, and released to a chat processor, future processing location, mine feature, or the CMTP repository.

2.1.2 Potential Sources of Pollutants from Construction Activities
The following are potential sources of pollutants that could be discharged in storm water during construction activities in the distal areas:

- In-stream and land excavation and short-term deposition
- Construction vehicle traffic during transportation of material to the repository
- Vehicle and equipment decontamination
- Loading and unloading
- Vehicle and equipment staging and maintenance if allowed by property owners(s)
- Temporary waste and material storage areas

Onsite storage of vehicles, equipment or materials will be discussed with the property owner during the RA planning prior to mobilization.

2.2 Affected Area of the Site
Varying acreage within and near the Chat Base 011 will be disturbed at any given time. The disturbed areas will include areas for short-term remediation soil deposition, areas for equipment and truck staging, and site access roads. Upon the completion of excavation activities, a grading plan will be developed with the involvement of the property owner; this plan will be used to establish proper site drainage.

2.3 Sequence and Estimated Dates of Construction Activity
The construction activities are expected to follow the general sequence below: Pre-planning and adherence to the construction schedule will ensure that the amount of soil disturbed at any time is minimized to the extent practicable.

A. Stabilized Construction Entrance

Create stabilized construction site entrance. The site entrance will be constructed of compacted soil covered with a layer of filter fabric followed by crushed stone to prevent offsite tracking.

B. Erosion and Sedimentation Controls

Erosion and sedimentation controls will be constructed, stabilized and functional before general site disturbance. See drawings in Appendix C for erosion control and site stabilization specifications. The site construction will follow the general sequence outlined below.

1. Create stabilized construction site entrance. The site entrance will be constructed of compacted soil covered with a layer of filter fabric followed by crushed stone to prevent offsite tracking.
2. Perimeter controls (silt fencing and straw bales) will be installed prior to any soil disturbance on the site. This includes installing silt fencing, or other erosion and sediment control measures (e.g., straw or hay bales, earthen dikes, etc.), as needed, on the downgradient portions of the southern access road and the downgradient areas between CB 011 and Beaver Creek.
3. A 50-foot vegetated buffer will be maintained, to the extent practicable from the banks of Beaver Creek along the southern perimeter of the project area. However, if the 50 foot buffer cannot be maintained additional controls such as straw bales and silt fences will be installed along the bank to ensure the control of pollutants to the creek.
4. Silt fencing and straw bales (as needed) will be installed on the down gradient side of all materials stockpile locations.
5. Install outlet protection (rip-rap) at outfall locations where applicable.

6. Additional controls will be installed throughout the duration of the project as needed.

C. Mobilization of Equipment

Mobile heavy equipment and portable buildings/structures will be delivered to the site and staged appropriately. A gravel construction laydown are will be established.

D. Site Preparation

1. Clearing and grubbing as needed and removal of nuisance vegetation.
2. Prepare areas for the installation of the office trailer, scales, portable toilets and staging areas.
3. Install traffic controls
4. Construct wet and dry decontamination areas (See drawings).
5. Place frac tanks for contaminated water recovery

E. Temporary Access Road

1. The replacement of the existing culverts will take place during the seasonal period when the flow is low in the stream. However, it may be necessary to replace the culverts and install the new ones when there is still some measure of flow within the creek. In this instance, dams will be created on both sides of the culvert area. The upstream stream side will be created first with stacked rock of varying size to block the flow into the area of construction. A dam will be created on the downstream side to ensure that any groundwater resulting from the culvert excavation activities is captured and treated (filtered) before being returned to the creek. The water that accumulates on the upstream side and any groundwater encountered during the excavation will be pumped around the work area with a small pump through a filtration box as described in Section 4.1.2 (Dewatering) and discharged back to the creek downstream of the lower dam. The filtration box and rock dams will be created prior to the removal of the existing culvert. Additional rock check dams will be used as site specific conditions require.
2. Silt fencing and sock checks will be installed along the downgradient side of the proposed roadway route as shown on the drawing in Appendix B.
3. Construct temporary access road for the entering and removing material from the site.
4. Establish roadways within the project areas for equipment access.

F. Remediation Activities

1. Remove, transport, and disposed of marketable chat, source materials (unmarketable chat, development rock and fine tailings), waste materials and TZ soils.
2. Fill and cap mine shafts and cased borings

G. Stabilization/Restoration

1. Finally grade areas disturbed area, and spread on-site derived topsoil where necessary.
2. Add rip rap to areas where large slopes may exist, as needed, to prevent erosion and sedimentation.
3. Add grass seed (perennial and native to the area) and top dressing for vegetative areas.
4. The seeded areas will be mulched and fertilized as needed to sustain growth.

H. Remove Temporary Buildings and Structures

1. Decontaminate and remove scales.
2. Decontaminate and demobilize heavy equipment.
3. Decontaminate and demobilize site office.
4. Decontaminate and demobilize water recovery/storage equipment.
5. Decontaminate and demobilize roll-off boxes

J. Removal of Erosion Control Devices

Temporary erosion control structures, such as silt fences, check dams (if used) and any other sediment barriers will be removed when all soil-disturbing activities have ceased and the perennial vegetative cover on all areas not covered by buildings, pavement or gravel has reached a density of at least 70%.

It should be noted that site conditions and schedule issues could require slight modifications to this sequence of events. However, the general sequence should not change significantly. In addition, many of the tasks listed above may take place concurrently.

The dates when the various activities begin and end will be maintained on a log within the SWPPP Recordkeeping documents.

2.4 Runoff Coefficients

Consistent with the applicable permits, runoff coefficients (C) were developed during the RD for pre- and post-construction conditions for the chat piles and chat bases. Runoff coefficients do not apply to chat in streams. Pre- and post-construction C values for chat piles and chat bases are provided in Table 2-1 and Table 2-2, respectively.
The runoff coefficient is the percentage of precipitation volume that will not be absorbed by the ground surface. This is influenced by the type of ground cover, the type of soil, and the slope of the terrain. For example, 90% of the precipitation that falls on a paved (impervious) surface runs off into nearby drainage. The amount of precipitation that infiltrates into the ground is inversely proportional to the C value. Runoff coefficients were calculated using typical C values from Caltrans Storm water Quality Handbooks, (Caltrans, 2007*).*

TABLE 2.1
Average Pre- and Post-Construction Runoff Coefficients for Chat Piles
Tar Creek Superfund Site, Ottawa County, Oklahoma

Type of Cover	Pre-Construction	Post-Construction
Relief	0.32	0.11
Soil Infiltration	0.14	0.07
Vegetal Cover	0.14	0.05
Surface Storage	0.11	0.11
C=	0.71	0.34

TABLE 2.2
Average Pre-Construction Weighted Runoff Coefficient for Chat Bases
Tar Creek Superfund Site, Ottawa County, Oklahoma

Type of Cover	Pre-Construction	Post-Construction
Relief	0.11	0.11
Soil Infiltration	0.14	0.07
Vegetal Cover	0.14	0.05
Surface Storage	0.11	0.11
C=	0.50	0.34

Chat consists of coarse gravel intermingled with other materials such as medium to fine sands, silt, and clay. The surface of undisturbed piles is predominately the largest-sized particles, and in some places, the chat has cemented to form a solid exterior. After removal, native soil will be exposed and vegetation (grasses) will be restored. Chat bases vary by location; in some cases they are covered with vegetation or bare, and have varying depths of chat remaining.

2.5 General Location Site Map

A general location site map showing town locations, haul roads, railroads and water bodies within the distal zones is provided in Figure 2.1. A Catholic 40 grid map is provided in Figure 2.2. A Site Drainage Map showing proposed Storm Water/erosion control structures is provided in Appendix B. Typical design drawings depicting proposed Storm Water control structures/devises are enclosed in Appendix C. The maps and drawings will be updated to reflect any warranted changes or additions based on site reconnaissance efforts prior to remediation.

2.6 Topography
Topography on the Catholic 40 is generally flat plains with some areas of very gentle relief. There are mounds of mine tailings located in various locations within the site boundaries. General topography of the site is denoted on the USGS topographic map shown in Figure 2.2.

2.7 Construction Site Pollutants
As required by the general Storm Water permit, this SWPPP has been developed to identify potential sources of pollutants which may reasonably be expected to affect the quality of Storm Water discharges associated with the proposed construction activities. EPA studies have shown that the primary Storm Water pollutant associated with construction activities is total suspended solids (TSS). It is expected that TSS and turbidity will be the primary potential pollutants associated with the soil disturbing activities. However, because the materials being moved from the Site consist of tailings or chat generated from lead and zinc mining it is expected that levels of heavy metals such as lead and zinc will also be primary pollutants, including cadmium. In addition, hydraulic fluids, fuels, oils, fertilizers, and soil conditioners may also represent potential Storm Water pollutants due to the type of construction activities taking place on the project. This plan has been developed to provide measures and controls to minimize the potential for significant levels of these pollutants to enter the Storm Water runoff from the area. The potential pollutant concentrations in the Storm Water runoff from the construction site will be controlled by the implementation of BMPs as addressed within this Plan.

2.8 Site Storm Water Receiving Waters
Distal zone 8 is located within the Spring River Watershed. The Storm Water runoff from the project area flows to the south entering Beaver Creek along the southern property border, thence southeast ultimately discharging into the Spring River.

2.9 Water Quality Impaired Waters
The Oklahoma 2010 List of Impaired Waters (303d) was reviewed to ensure compliance with the CGP requiring that the discharge does not cause or contribute to an impairment of the receiving stream. Beaver Creek (the first receiving stream) is not listed on the 303d list as impaired; however, the Quapaw Tribe has designated Beaver Creek as “Culturally Significant Waterway” in its Tribal Water Quality Standards. Twenty-two miles of the Spring River (the second receiving stream) are identified as impaired. The impaired section of the river is categorized as 5a. The development of Total Maximum Daily Loads (TMDLs) for the pollutants of concern is required for Category 5 waters. Category 5a waters are currently in the process of TMDL development of a TMDL will be schedule. The TMDL for Spring River is scheduled for 2018. The pollutants of concern are lead, thallium, turbidity and Enterococcus. Potential sources of the impairment associated with the lead concentrations are identified as historical mining activity, highway runoff, municipal point sources and unknown other sources. The potential sources of the thallium concentrations are identified as unknown sources. The potential sources of the turbidity and enterococcus are primarily animal feeding operations in the watershed, grazing of livestock in riparian zones, wildlife (other than waterfowl) and pet wastes, and land application of biosolids in the watershed.

The Spring River is included within the TMDL developed for the Verdigris-Neosho River Area for the pollutants turbidity and Enterococcus. The TMDL specifically states that while Storm Water associated with construction activities does occur in the study area it is not considered a significant contributor to the impairment of the stream.

The Quapaw Tribe Environmental Office (QTEO) has been monitoring Beaver Creek for more than 10 years and has found that the pollutants of concern in Beaver Creek include lead, zinc, and sulfates resulting from mine waste and mine discharges within the watershed, bacteria resulting from local animal feeding operations and area municipal wastewater discharges, and finally, nutrients from agricultural runoff.

The EPA developed effluent guidelines specific to Storm Water management at construction sites. These guidelines are published in 40 Code of Federal Regulations (CFR) 450 and have been incorporated into the EPA CGP. Implementation of the required measures will serve to minimize the potential for the Distal 8 project to contribute turbidity to the receiving stream.

3.0 PROHIBITION OF NON-STORM WATER DISCHARGES

The discharge of non-Storm Waters is prohibited under the terms and conditions of the CGP with the exception of the listed in Part 1.3 (d) of the EPA CGP permit as shown below:

- Discharges from firefighting activities;
- Fire hydrant flushings;
- Landscape irrigation;
- Vehicle/equipment wash water (where no soaps, solvents or detergents are used);
- Dust control water;
- Potable water sources including waterline flushings;
- Pavement wash waters that do not include the use of detergents; pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred, (unless spilled materials have been removed and where detergents are not used); The directing of pavement wash waters directly into any surface water, storm drain inlet, or Storm Water conveyance is prohibited unless the conveyance is connected to a sediment basin, sediment trap or similarly effective control;
- Uncontaminated air conditioning or air compressor condensate;
- Uncontaminated non-turbid discharges of ground water or spring water;
- Foundation or footing drains where flows are not contaminated with process materials such as solvents;
- Construction dewatering water that has been treated by an appropriate control under Part 2.1.3.4; and
- Surface water (ponds and depressions) encountered within the chat base that has been tested according to the Site's "Field Sampling Plan" and shown not to have cadmium, lead, or zinc concentrations exceeding applicable surface water criteria.

These discharges are to be not to be routed to areas of exposed soils. Pollution prevention controls are to be implemented as applicable. It is expected that the only non-Storm Water discharges that may occur at the remediation site is water used for dust control, and landscape irrigation. Washing of heavy equipment or vehicles may take place at a designated decontamination area to ensure that pollutants are not conveyed offsite on the vehicles. The water from these activities will be captured and disposed of properly. There will be no release onsite of water used for decontamination. It is not expected that any concrete washout will take place onsite

4.0 BEST MANAGEMENT PRACTICES FOR STORM WATER POLLUTION PREVENTION

Pollution prevention controls are designed to prevent, or at the least, control the pollution of Storm Water before it has a chance to impact the receiving stream. The Effluent Limitation Guidelines (ELGs) established within 40 CFR 450 require that controls are designed to minimize the discharge of pollutants from the construction activities. The ELGs contain six specific types of controls that must be implemented at the construction site. The controls are as follows:

- Erosion and Sediment Controls;
- Dewatering Controls;
- Soil Stabilization Practices;
- Pollution Prevention Measures (equipment and vehicle washing, minimize exposure of building materials and miscellaneous wastes, spill control measures);
- Comply with list of prohibited discharges (install controls for washout of concrete and other construction materials, fueling areas and maintenance areas); and
- Properly design discharge outlets from basins and impoundments, when used.

The implementation of these controls at the site is addressed in the following sections of this document.

4.1 Erosion and Sediment Controls

4.1.1 General Erosion and Sediment Controls

The following general erosion and sediment control practices will be implemented, as applicable:

- Before grading, excavation or other land disturbing activities begin, project specific plans will consider how to minimize the time that bare soil is exposed and minimize the disturbance of existing vegetation.

- The BMPs planned for the project have been designed to consider expected precipitation rates, frequency, intensity and average duration; the nature of the Storm Water runoff and run-on including an evaluation of slope, pervious and impervious surfaces, existing site drainage features and existing soil type.
- Erosion and sediment controls will be installed prior to the initiation of any soil disturbing activities onsite. The controls are designed to retain sediment onsite to the extent practicable.
- Control measures will be selected, installed and maintained in accordance with manufacturer's specifications and good engineering practices. A phased approach will be used where applicable as site conditions allow.
- Erosion controls will be inspected on a regular schedule as described in Section 4.4.1 of this document.
- If periodic inspections or other information indicate that a control measure has been used inappropriately or incorrectly, that control measure will be modified or replaced, as necessary. If periodic inspections or other information indicate that a control measure is inadequate, supplemental and/or different BMPs will be selected and installed to adequately control erosion and sedimentation.
- In the event that sediment escapes the construction site, remove offsite accumulations of sediment to minimize offsite impacts.
- Implement good housekeeping practices that prevent litter, construction debris, and chemicals exposed to storm water from becoming a pollutant source for storm water discharges.
- Control erosion and sediment runoff with structural and / or stabilization practices. Structural control practices may include the use of straw bales, silt fence, drainage swales, and sediment traps. Stabilization practices may include temporary or permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, and preservation of mature vegetation.
- Provide natural buffers or equivalent sediment controls at sites where a surface water body exists within 50 feet of the area of disturbance. Beaver Creek lies along the southern border of the project site. The project will comply with the requirements of the effluent guidelines as discussed below.
- A 50 foot buffer strip of vegetation is to be maintained between the area of surface disturbance and the water body where practicable.
- In areas where a 50 foot buffer cannot be maintained, additional controls such as erosion blankets and straw wattles will be used to ensure that solids loading to the creek is controlled.

4.1.2 Specific Controls to be implemented at the Project Site

- Construction Entrance: A stabilized construction entrance will be established using crushed stone over filter fabric to minimize the occurrence of off-site tracking.
- Perimeter Controls: Silt fencing will be established on the downgradient sides of the project area perimeter prior to the initiation of soil disturbing activities. Sock checks will be used as needed along the downgradient portions of the road construction area as shown on the drawing in Appendix B.
- Soil Stockpile Areas: In general, stockpiles are managed in the following manner:
  - Where practicable, stockpiles of soil are placed on plastic sheeting near the excavation and within the disturbed area.
  - Where practicable, stockpiles of soil will be provided with a liner, cover, and perimeter berm to prevent run-on, run-off, and infiltration of precipitation. Typically, liners and covers are 6 mil polyethylene and berms are typically hay bales placed beneath the liner.
  - Covers and perimeter berms will be secured in place when not in use and at the end of each workday, or as necessary to prevent wind dispersion or runoff from major precipitation events.
- Excavation and Deposition Areas: To prevent the mobilization of pollutants in storm water runoff from excavated areas and short-term deposition areas, BMPs described in the Erosion and Sediment Control section will be implemented.
- Temporary waste and Material Storage Areas: Materials on the sites will be stored in areas designated for that purpose. Suitable measures will be taken in these areas to reduce the likelihood of a discharge. For example, when practicable, materials will be sheltered from rainfall.
- Steep slopes: Soil disturbing activities in areas with steep slopes will be minimized to the extent practicable. In areas where disturbance is unavoidable, measures such as erosion blankets, straw waddles and rock check dams will be used to minimize the potential for erosion and "washout" the use of these controls will be documented within the SWPPP recordkeeping documents.
- Installation of Culverts for South Access Road: Removal and replacement of the existing culvert will take place to facilitate access to the site. It is expected that the activities would take place within the stream

during the months when the flow is the lowest to minimize the impacts to the stream and downstream populations. It is expected that dams will be created on both sides of the construction area using rock of varying sizes. The stream flow will be diverted around the work area through the use of a pump placed in the pool created by the upstream dam and a hose to the creek below the lower dam. The water and any groundwater encountered during the culvert excavation will be pumped through a filtration box as described before being returned to the stream channel below the lower dam. Velocity dissipation devices will be used as needed to prevent scouring in the creek when the water is returned. The rock used for the dams will not be rock excavated from the site.

- Dewatering: There is to be no discharge of turbid water into surface waters resulting from dewatering activities at the site. If trench or ground waters contain sediment, the water must pass through a sediment settling pond or other equally effective sediment control device, prior to being discharged from the site. Construction of a trench water filtration device will be used as necessary to facilitate the resumption of work following a rain event and if coffer dams are required during the replacement of the road culverts. This consists of a simple box constructed of one layer of fiber rolls that form a square that is surrounded by a perimeter of two layers of fiber rolls with silt fencing staked around them. Pumping the trench water through the filter box, serves to filter most of the solids, and slows the inertia of the discharge from the hose, thereby minimizing the potential to create an eroded cavity in the ground.

4.1.3 Erosion Controls Specific to Distal 8 (Catholic 40)

Silt fences will be installed down gradient of designated construction areas to control erosion and retain sediment onsite during excavation of chat in piles and bases. Straw (or hay) bales or fiber rolls may be installed if excavation activities occur near a stream or other water body. During construction, a water truck will be used to spray clean water over the excavation area and access roads to control dust without creating runoff. Haul roads and access roads will be maintained clean and swept as necessary.

As discussed above, vegetative buffer zones will be maintained on both sides of Beaver Creek to the extent practicable. Additional measures will be implemented during the activity associated with the replacement of the south road culverts. These additional measures may include a diversion ditch and or coffer dams. Dewatering activities associated with the culvert installation will utilize a small sedimentation basin or a filter box to ensure that the discharge to the creek is not turbid and does not cause scouring or erosion when re-entering the creek.

4.2 Interim and Final Stabilization Practices

Stabilization measures are to be implemented immediately whenever earth disturbing activities have permanently or temporarily ceased on any portion of the site. Earth disturbing activities are said to have ceased permanently when clearing and excavation within any area of the construction site that will not include permanent structures has been completed. Earth disturbing activities are said to have temporarily ceased when clearing and grading and excavation within any area of the site that will not include permanent structures will not resume for a period of 14 days or more but may resume in the future.

The following practices will be implemented (as soon as practicable but no later than the end of the next day following the day that earth disturbing activities ceased) to temporarily or finalize stabilize a site:

- The method for stabilizing disturbed soil areas after construction activities are either temporarily or permanently stopped varies for each set of sites:
  - Upon the completion of excavation of source materials and TZ soil at sites within the distal areas, QTEO and contractors will work with the property owner to develop a site-specific grading and restoration plan to establish proper site drainage. In general, soil will be graded to drain naturally and new soil areas will be rebuilt naturally to sustain vegetation using standard land preparation practices, as needed, such as ripping, contouring, amendments, disking, fertilizing, planting and seeding.
  - Upon the completion of excavation and backfill activities at various areas at the site, the ground surface will be restored to as close to the original grade as possible and drainage, to the extent possible, will be restored and be away from any disturbed areas. Soil at the bottom of excavated areas will be rebuilt naturally to sustain vegetation using standard land preparation practices such as ripping, contouring, amendments, disking, fertilizing, planting and seeding.

- Stabilization of the progressive cover at the Catholic 40 site will be accomplished with well-established plant growth on the erosion layer until final cover is established. Where practical, mulch will be applied to stabilize exposed or recently planted soil surfaces.
- Soil roughening techniques will be used when grading (final or interim grading). Soil roughening involves increasing the relief of a bare soil surface with horizontal grooves by either stair-stepping (running parallel to the contour of the land) or using construction equipment to track the surface.

Soil stabilization practices are to be completed no later than 14 days after initiation of said measures. This includes all activities necessary to provide initial seeding or planting for areas that will be vegetated and or installation or application of all non-vegetative measures (rock, gravel, rip-rap) for areas that will not support vegetation.

If the activities are occurring in a drought stricken or especially dry period non vegetative practices mare to be implemented to the extent necessary to prevent erosion. As soon as practicable (as site conditions allow) vegetative practices should be reestablished. Circumstances that prevent the implementation of the stabilization practices in a timely manner must be documented in the site Storm Water recordkeeping documents.

Table 4.1 provides descriptions of several structural and stabilization measures that may be used to prevent erosion and offsite sedimentation.

TABLE 4.1
Structural and Stabilization Measures
Tar Creek Superfund Site, Ottawa County, Oklahoma

Control Measure	Location	Description of Control Measure
Silt Fence	Along the downgradient perimeter of the construction sites. Exact location is determined in the field.	To protect streams or wetland areas, prevent erosion, and keep sediment onsite. Silt fence consists of posts with filter fabric stretched across the posts. The lower end of the fence fabric is vertically trenched and covered with backfill. This prevents water from passing by the fence without first being filtered. The fabric allows the water to pass offsite while retaining the sediment onsite.
Straw, Hay Bales or Fiber Rolls	Around areas requiring protection, such as streams, and to form a temporary containment.	Straw, hay bales or fiber rolls work much like silt fences and may be used instead of silt fence when the installation of silt fencing is impractical. They can also be used in tandem with silt fencing to facilitate solids removal. They can be used to form a barrier or redirect water. They impede storm water flow. Unlike silt fence, straw or hay bales do not allow water to flow through freely, thus they are used where detention, not just filtration, is necessary.
Stabilized Construction Entrance/Exit	Designated construction site entrances/exits. Exact location is determined in the field.	The purpose is to reduce tracking of soil off the site. These entrances/exits will be constructed of fabric and large stone. The fabric is laid down on the soil and the rock is then placed on the fabric. The rough surface will shake and pull the soil from tires.
Temporary Seeding	Disturbed areas where the construction activity has temporarily ceased for more than 14 days. Seeding is to be implemented within 14 days of activity ceasing.	Growing of a short-term vegetative cover on disturbed areas that may be in danger of erosion.

TABLE 4.1
Structural and Stabilization Measures
Tar Creek Superfund Site, Ottawa County, Oklahoma

Control Measure	Location	Description of Control Measure
Mulching	On slopes steeper than 2:1 or on areas that have been seeded. Must be implemented within 14 days of activity ceasing.	Temporary soil stabilization or erosion control practices where materials, such as, grass, wood chips, or hay are placed on the soil surface.
Preservation of Natural Vegetation	Wherever practical.	Wherever possible, existing vegetation should be retained. It minimizes erosion potential and protects water quality. The preservation of natural vegetation between the silt fence and stream will provide additional water quality improvement prior to the storm water entering State or U.S. waters.
Permanent Seeding or Sod	On appropriate disturbed areas once construction is complete and within 14 days.	Provides permanent stabilization to the soil and reduces erosion

4.3 Pollution Prevention Controls
Controls to be implemented at the site to control the potential for pollutants are shown in the following sections.

4.3.1 Fueling and Maintenance of Facility Vehicles/Equipment

- Vehicle and Equipment Fueling Areas: All fueling stations will have temporary secondary containment around the fuel tanks. Spill control materials will be provided at the fueling areas. Vehicle fueling areas will not be placed near or adjacent to the creek banks.
- Vehicle and Equipment Decontamination Areas: Vehicles and equipment will be cleaned of material on the exterior prior to leaving the excavation sites. Should vehicles and equipment travel into the CMTP repository, they will be decontaminated prior to leaving the repository. A temporary decontamination area will be established, as necessary, and located within the construction site. If liquid decontamination is necessary, the liquids and solids generated will be contained, collected, sampled, and disposed at the repository.
- Vehicle and Equipment Maintenance Areas: If vehicle or equipment maintenance is necessary, it will be performed in an area designated for this purpose. Any spills will be cleaned up immediately. Precautions will be taken to prevent the release of pollutants to the environment from vehicle and equipment maintenance. Precautions will include the use of drip pans, mats, and other similar methods. No vehicle wash water will be allowed to run off the construction site or enter waters of the state.
- Construction vehicle traffic during transportation of material: Sediment and the generation of dust will be minimized to the extent practicable. Water trucks will be used as needed to control the generation of dust on the roadways.

4.3.2 Material Handling/Housekeeping
The following material handling procedures will be implemented during construction activities:

- Waste containers (solid and liquid) will be emptied frequently enough to prevent them from overflowing. Waste storage areas will be kept free of trash and spills.
- Trash receptacles will be equipped with covers.
- Containers (drums, bags, roll-off boxes, portable tanks) of waste, chemicals or other materials will be stored away from traffic to prevent accidental spills, and away from storm water inlets or other discharge points.
- Wastes will be transferred offsite to approved solid or hazardous waste disposal facilities on a routine schedule.
- Containers will be kept closed, except to add or remove material, as necessary.
- Containers will be stored in such a manner to prevent corrosion that could result from contact between the container and the ground, resulting in a release.

- Containers will be labeled to show name and type of substance, health hazards, and other appropriate information.
- Any soil or other materials spilled during loading or unloading will be cleaned up immediately. This includes soil on the outside of trucks (side rails), ground, and road surfaces.
- Material Safety Data Sheets (MSDS) for substances used or stored onsite will be available for review and use.

A list of the chemicals stored onsite is to be maintained on the form provided in Appendix D and records of the inventories will be maintained at the Worksite field office.

4.3.3 Spill Prevention, Control, and Response

The following procedures shall be followed for the prevention and mitigation of minor spills and releases during construction activities.

"Incidental" spills are defined as less than or equal to 5 gallons of non-hazardous material. In some cases, such as those involving "EPCRA Extremely Hazardous Substances" or "CERCLA Hazardous Substances" (a list for each of these types of substances is enclosed in Appendix 1), spills less than 500 milliliters may be considered large spills based upon the material spilled. Incidental spills may, at the discretion of the on-site personnel involved, be handled directly by Storm Water Team personnel in the immediate area who are familiar with the associated hazards. A petroleum based liquid (including gasoline and diesel fuel) spill of less than or equal to 5 gallons would be considered an Incidental spill.

"Small spills" are defined as greater than an "Incidental spill" (defined above), but less than a "Major spill" (defined below). A petroleum based liquid (including gasoline and diesel fuel) spill of between 5 gallons and 300 gallons would be considered a Small spill. Small spills should be reported to the On-Site Health and Safety Manager (HSM) who will contact the Tribe's Fire Department Haz-mat response personnel. If the HSM is not immediately available, contact the Tribe's Fire Department Haz-mat response personnel in Quapaw at: 918-673-1400 or 911.

"Major spills" are defined as greater than the "reportable quantity" of any "EPCRA Extremely Hazardous Substance" or "CERCLA Hazardous Substance". Major spills must be reported to the HSM so that emergency assistance from will be available if needed. Employees should leave the immediate area of a Major spill until assistance arrives. If the HSM is not immediately available, contact Oklahoma Regional HAZMAT Response Team at: 800-800-2481 or 911.

A "leak" is a release from a container via a puncture or other small opening of a weak spot in the container. Leaks will be treated as Incidental spills unless they result in a rapid discharge of material.
All spill response actions shall be in accordance with the project Spill Response Plan developed by the Quapaw Tribe Environmental Office (QTEO). The project Spill Response Plan is to be maintained at the field office at the work site.

General spill prevention procedures will be followed:

- Refueling operations and vehicle/equipment maintenance shall be performed at designated facilities, when practical.
- If any storage of fuel is required for vehicles or equipment, it will be located in secondary containment, within designated storage/lay down areas. Fuel containers will be managed to prevent releases, and storage areas will be sheltered from precipitation, when practical.
- Drip pans and or other containment devices will be used during maintenance and fueling to capture minor spills and leaks during fueling and maintenance.
- Each location having fueling operations, fuel containers/tanks, and/or waste container/tanks shall have a sufficient number of spill kits to contain minor spills and leaks.
- The following are general procedures for spill response. For detailed spill response procedures, refer to the Health and Safety Plan (QTEO, 2013).
    - Ensure personal safety, and then evaluate the area and nature of the spill.
    - Identify the source and stop the flow of pollutants, if it can be done safely.
    - Contain the spill with absorbent materials or by creating a berm around the area.

- Remove and contain the spilled material, contaminated media, and cleanup material, and transport to the designated location for collection of such material.
- Contact the appropriate personnel listed in the Spill Response Plan.
- Record pertinent facts.

4.4 Inspections, Maintenance and Corrective Actions

4.4.1 Inspections

To ensure that all construction personnel are maintaining compliance with the SWPPP, the permit requires that site inspections are conducted at least once every 7-calendar days or at least every 14 days *and* within 24 hours of a 0.25 inch or greater rain event. Inspections will be conducted on the Distal Zone 8 Remedial Action site every seven days to avoid confusion regarding when an applicable rain event occurs. The site inspections will take place every Monday, or as soon as possible after Monday if special circumstances prevent inspections on Monday. The inspections will be conducted by a qualified person in the QTEO or someone designated by the QTEO who has been trained, and is familiar with, the requirements of the SWPPP. Where sites have been temporarily or permanently stabilized, site evaluations will be conducted at a minimum of once per month. Inspections may be suspended temporarily due to frozen conditions but these conditions must be documented and the inspections resumed immediately upon thawing conditions. Written records of site evaluations containing the following information will be maintained on the recordkeeping form shown in Appendix E. In general, the form will contain the following information.

- Inspector Name and Title
- Date of Inspection
- BMPs used on-site during the seven day period
- Date most recent storm event occurred
- If the BMPs are in working order and if maintenance is required (when scheduled and completed)
- Condition of discharge point
- location and dates when major construction activities begin, occur or cease
- Signature of Contractor's Representative

The site drainage map will be used during the inspections and manually updated accordingly. Specifically, the site inspections will include and incorporate the following Storm Water Inspection and Maintenance Guidelines:

- The entire project area perimeter will be evaluated to ensure that no uncontrolled activities are occurring.
- Disturbed areas and material storage areas exposed to precipitation will be evaluated for evidence of pollutants entering runoff from the site.
- Erosion and sediment control measures identified in the plan must be observed to ensure that they are operating correctly.
- All areas where Storm Water typically flows within the site, including drainageways are inspected to ensure proper operation.
- Discharge points must be inspected to determine whether erosion control measures are effective in preventing significant impacts to receiving waters.
- Areas where stabilization measures have been implemented are visual assessed for compliance with the permit.
- Locations where vehicles enter and leave the construction site will be evaluated for evidence of off-site sediment tracking.
- Evaluate the site for the presence of conditions that could lead to spills, leaks or other discharges of pollutant to the Storm Water runoff.
- The banks of Beaver Creek will be inspected, to the extent practicable to determine if pollutants are leaving the site and entering the creek.
- If a discharge is occurring during the inspection additional requirements apply:
- All points where a discharge occurs will be identified.
- The visual quality of the discharge will be observed and the characteristics noted, including color, odor, floating, settled or suspended solids, foam, oil sheen, and other obvious indicators of pollution.
- Evaluate all controls and document effectiveness of said controls.

The site inspections are to be signed by the Cognizant Official or Authorized Signatory Authority within the QTEO and maintained onsite in the Storm Water records. A site inspection checklist is contained within Appendix E-1.

4.4.2 Inspection Requirements Prior to Final Stabilization

Inspections will be reduced to once per month after construction activities are complete, but before vegetation cover has been fully established (70% of pre-construction coverage). A record of these inspections will be maintained at the work site field office.

4.4.3 Maintenance/Corrective Actions

All erosion and sediment control measures will be inspected weekly and maintained in effective operating condition. Maintenance will be performed on an as-needed basis. Consistent with the Storm Water permit requirements, if site inspections identify BMPs that are not operating effectively, maintenance will be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of Storm Water controls. If existing BMPs need to be modified or if additional BMPs are necessary for any reason, implementation must be completed before the next storm event whenever practicable. If maintenance prior to the next anticipated storm event is not possible, the situation must be documented in this plan, and maintenance must be scheduled and accomplished as soon as possible.

Proper maintenance of erosion and sediment controls is essential in their effectiveness in reducing pollutant loading. A maintenance program that has been developed in conjunction with evaluations and recordkeeping will be utilized to maintain the operating condition of structural controls and promptly repair and/or restore all erosion and sediment controls. The maintenance program at the site includes the following activities.

- The construction entrance will be maintained by adding and replacing the rock if the entrance becomes clogged with sediment (50% of voided space is filled) and is not effective in preventing off-site tracking.
- Silt fences will be re-anchored, repaired, or replaced as necessary. Sediment that has been trapped by the silt fence will be removed as required when there is bulging in the fabric. In no case shall the silt fences be allowed to fill to more than 50% capacity before removing the silt. Fences that have been knocked down or damaged will be repaired/replaced within seven days of discovery if repairs cannot be done immediately.
- Hay bales, straw bales and/or fiber rolls (if used) will be replaced routinely when they appear to be decomposing. Rock bags will be used if fiber rolls prove to be ineffective or require too much maintenance.
- If sediment plumes are discovered in Beaver Creek, the sediment will be immediately removed and measures implemented to mitigate the potential for sediment to enter the Creek.
- The EPA must be notified within 24 hours of the site operator becoming aware that the controls are not effective enough for the discharge to meet applicable water quality standards, a prohibited discharge was occurring, a control was never installed or was incorrectly installed.
- Unauthorized non-Storm Water discharges identified during the inspections are to be eliminated immediately.
- All required temporary erosion and sediment controls will remain in place and be maintained until the area they protect has been stabilized. Stabilization for this project will consist of seeding and mulching disturbed areas as needed.
- Areas disturbed during the removal of erosion control measures will be repaired as needed. Depending on site conditions, it may be necessary to irrigate, fertilize, overseed or reestablish plantings to provide permanent vegetation for adequate erosion control.

All repairs needed as the result of issues identified during the inspections are to be completed within seven (7) business days of discovery. The corrective action implemented as a result of the inspections are documented in the appropriate space on the inspection form and retained in the facility records. If existing BMPs need to be modified or if additional BMPs are necessary for any reason, implementation must be completed before the next storm event whenever practicable. If maintenance prior to the next anticipated storm event is impracticable, the situation must be documented in this plan and maintenance must be scheduled and accomplished as soon as possible. Additionally, this SWPPP will be modified, as necessary, based on the results of the inspection and implementation of corrective actions. Revisions to the SWPPP and any drawings shall be completed within 7 calendar days following the inspection. The updated drawings and Inspection Checklists will be maintained at the work site field office. Table 4.2 provides storm water BMP inspection/maintenance guidelines.

TABLE 4.2
Storm Water Inspection/Maintenance Guidelines
Tar Creek Superfund Site, Ottawa County, Oklahoma

Erosion Control Blanket (if used)
Is fabric damaged, loose, or need repairs?
Mulching
Distributed uniformly? Any evidence of mulch being blown or washed away?
Silt Fence
Is the fence damaged, collapsed, untrenched, or ineffective? Has sediment been removed from behind fence? Is the silt fence properly installed and positioned?
Straw Bales
Are the straw bales damaged or deteriorated, untrenched, or ineffective? Has sediment been removed from behind the bales? Are the bales installed and positioned correctly?
Temporary Seeding
Is the seeding protected by mulch? Has any erosion occurred in the seeded area? Any evidence of vehicle tracking on seeded areas?
Vehicle Tracking
Is the gravel surface clogged with mud or sediment? Is the gravel surface sinking into the ground? Has sediment been tracked onto public roads, has it been cleaned up?
Rock Check Dams (where used)
Is the rock stacked appropriately? Has sediment accumulated such that 50% of the capacity is reduced? Are repairs required?
Sock Checks (where used)
Are the sock checks installed and positioned correctly? Is there evidence of damage or deterioration? Are repairs needed?

4.5 Onsite Training

Training will be provided to all contractors (and subcontractors) working onsite to ensure that their duties do not contribute pollutants to the Storm Water runoff from the site. The training will consist of a pre-construction meeting with the on-site Construction Manager, the QTEO representatives, and the associated consulting engineers explaining the details and requirements within the SWPPP. Representatives of the Quapaw Tribe are responsible for ensuring that all activities taking place on the site are in compliance with the CGP.
These briefings may take place informally as various contractors/subcontractors report to the site. A copy of the plan will be available for on-site personnel to review prior to beginning work. Contractors/subcontractors are required to sign the contractor certification form stating they are aware of the requirements of the SWPPP before beginning work onsite.

Specifically the training will highlight the following items.

- Proper installation and maintenance of controls
- Prohibited discharges (specifically, discharges of paints, oils concrete washout (without controls) or fuels/oils)
- Spill response procedures
- Housekeeping
- Waste disposal procedures
- Restricted areas and buffer zones

5.0 DOCUMENTATION OF COMPLAINCE WITH OTHER FEDERAL REQUIREMENTS

5.1 Measures to Protect Threatened and Endangered Species

The US Fish and Wildlife Service (USFWS) Oklahoma Ecological Services Information and Planning and Conservation System (IPAC) was accessed to determine the potential for endangered and /or threatened species or critical habitats to exist within the project boundaries. An official species list was generated for the project area as shown in Appendix F. The species identified for the project area are shown below:

American Burying beetle (*Nicrophorus americanus*) - Endangered
Arkansas darter (*Etheostoma cragini*) – Candidate
Gray bat (*Myotis grisescens*) – Endangered
Least tern (*Sterna antillarum*) – Endangered
Neosho madtom (*Noturus placidus)* – Threatened
Neosho Mucket (*Lampsilis rafinesqueana*) – Proposed Endangered
Ozark Big-Eared bat (corynorhinus *(=plecotus) townsendii ingens*) - Endangered
Ozark cavefish (*Amblyopsis rosae*) - Threatened
Piping Plover (*Charardrius melodus*) - Threatened
Winged Mapleleaf *(Quadrula fragosa)* – Endangered

It is not expected that suitable habitat for the Gray bat, Ozark Big-Eared bat or the Least tern would exist on the site. There is no specific documentation to indicate that any of the species of mussels or fishes identified have specifically been identified within Beaver Creek. However, since all of these aquatic species are adversely impacted by changes in water quality the following measures will be implemented at the site to ensure that the existing water quality within Beaver Creek is not impacted by the project activities.

- Solid waste will be properly managed in designated receptacle for disposal offsite.
- Portable toilet facilities will be provided for human waste. The toilets will be staged in an area away from the creek and serviced on a routine schedule.
- Fuels and liquids chemicals will be properly stored in designated areas with appropriate secondary containment. Fueling activities will not take place adjacent to or within 100 feet of the creek banks.
- Sediment will be retained onsite, to the extent practicable. Accumulations of sediment that are discovered offsite or within the creek will be removed as soon as possible.
- A vegetated buffer of at least 50 feet will be retained or successfully established/planted between disturbed construction areas and all perennial and intermittent streams on or adjacent to the construction areas.
- A 50 foot vegetated buffer zone is also to be established for all ephemeral streams or drainage ways. Buffer zones are measured from the top of the first defined bank of the stream.
- All attempts will be made to preserve natural vegetation to the extent practicable.
- Velocity dissipation devices such as rip rap will be used as needed at all outfalls to minimize the potential for excess turbidity and scouring of the stream channel.
- Areas where construction has permanently or temporarily ceased will be stabilized as discussed in previous sections of the document.
- Implementation of the various control devices and changes to the schedule would be documented in the project recordkeeping files.

The project area is included within the known range of the American Burying beetle. Information within the USFWS website does not indicate that a survey has been conducted within the project boundaries. The general habitat of the American Burying beetle involves grasslands and open understory of oak-hickory forests. The beetles are carrion and require carcasses typically the size of small birds or mammals to survive and proliferate. It is not expected that suitable habitat would exist on the site due to the previous activities associated with the mining and deposition of the mining waste. However, If any endangered, threatened or candidate species is encountered or if a critical habitat is established within or adjacent to the project area work in the area will be stopped and the USFWS Ecological Service field Office will be contacted. Work will not resume in the area until clearance is issued by USFWS.

5.2 Measures to Protect Historic Places

Chat base CB011 is located on property that includes historic and culturally significant ruins, important to the Quapaw Tribe of Oklahoma. A number of these structures are located along the eastern portion of the site. The identified structures are associated with a Catholic church and school that provided educational opportunities to the Quapaw Tribe and the surrounding community. The church was established on the property in 1893 and the associated school house was constructed in 1894. Buildings were added to the property over a period of years as the number of students increased. The school had both resident and day students and dormitories were constructed to house the resident students. Additionally, male students were expected to learn agriculture and animal husbandry skills. Outbuildings for the associated farm animals and farming equipment occupied portions of the property. Funding was discontinued and the school closed in 1927. After closure, some wood-frame buildings were removed, while others were allowed to fall into ruins.

Care will be taken to preserve the Catholic 40 ruins during the remediation process. Additional ruin preservation details are described in the Construction Quality Assurance Plan (CQAP).
If historic ruins are found within the identified RA grids, work will be stopped and the situation evaluated. Conferral with the State Historic Preservation Officer or the Tribal Historic Resource Official will take place as needed.

5.3 Measures to Protect Impaired Waters

As discussed in Section 2.9, Beaver Creek (the first receiving stream) is not listed on the 303d list as impaired. However, twenty-two miles of the Spring River (the second receiving stream) are identified as impaired. The impaired section of the river is categorized as 5a. The development of Total Maximum Daily Loads (TMDLs) for the pollutants of concern is required for Category 5 waters. Category 5a waters are currently in the process of TMDL development The TMDL for Spring Creek is scheduled for 2018. The measures described throughout this document are designed to minimize the potential for pollutants to be discharged to Beaver Creek and subsequently the Spring River during the course of the project.

5.4 Safe Drinking Water Act

Construction projects that intend to utilize controls that would generally be considered Class V UIC wells, such as: infiltration trenches; commercially manufactured precast or pre-built proprietary subsurface detention vaults, chambers or other devices designed to capture and infiltrate Storm Water; and drywells, seepage pits or improved sinkholes are required to contact the EPA Regional Office to ensure the devices are installed in compliance with Safe Drinking water Act and the regulations within 40 CFR Parts 144-147. Currently, none of these types of controls are anticipated to be used on the project site. Consequently, these requirements are not currently applicable to the project scope. Should it become necessary to use such devices within the scope of the project the proper agencies will be notified and the SWPPP updated accordingly.

6.0 CONDITIONS REQUIRING MODIFICATION OF THE SWPPP

The SWPPP when any of the following conditions exist.

- New operators are added to the project.
- The construction plans change.
- Storm Water controls are added, removed or modified.
- Pollution prevention measures change.
- Changes at the site that are made in response to corrective actions.
- The site drainage map is not accurate (the dates of changes is also to be documented on the changed map).
- An inspection or investigation by site staff, or local, state tribal or federal officials determine that the plan requires modifications.
- Where EPA determines that additional controls are required. In this instance the following additional documents must be maintained within the plan.
- A copy of the correspondence requiring the additional controls.
- A description of the measures implemented in response to the correspondence.
- Revisions have been made to applicable federal, state tribal or local requirements with the potential to affect the measures implemented at the site.

All revisions to the plan are to be completed within 7 calendar days following the occurrence of any of the conditions listed above. The dates of all modifications to the SWPPP are to be maintained on a log within the plan. All operators on the site will be notified of any and all modifications to the SWPPP as applicable.

7.0 RETENTION OF RECORDS

The plan is to be maintained current and onsite at all times. The plan should be placed within an easily accessible location that can be reviewed by an onsite inspection upon request.

In addition to the SWPPP the following records are to be maintained to demonstrate compliance with the requirements of the EPA MSGP.

- Site inspections and description with dates when corrective actions were implemented;
- A list of all modifications to the SWPPP and the Site Drainage Map;
- Contractor/subcontractor certifications;
- List of the locations and dates when major activities begin occur cease;
- Description of when temporary or permanent stabilization has taken place;
- Chemical inventory (identify areas where chemicals, such as fuel or paints, are stored, if applicable); and
- Record of spills occurring onsite and a description of corrective actions implemented.

These records are to be maintained during the entire duration of the construction project through final stabilization. The SWPPP, inspection records, and reports shall be retained by the owner/operator for a period of at least three years from the date the areas are finally stabilized.

8.0 CERTIFICATIONS

The SWPPP is to clearly identify the contractors responsible for certain phase of the project. However, due to the dynamics of an ongoing construction project, many contractors/subcontractors are not known until further into the project. The Primary site operator is the Quapaw Tribe. The Certification statement signed by the Tribal Representative is shown on the following page along with spaces for site contractor certifications. Because many of the contractors will be hired as the project progresses, a list of contracted and subcontracted firms/individuals and their respective signed certifications will be maintained onsite within the SWPPP, Volume II Recordkeeping Notebook.

8.1 Primary Site Operator Certification

As the owner and operator of the construction project, the EPA-designated Project Manager within the Quapaw Tribe, must sign a copy of the certification statement presented below before conducting any construction activities at the site that are identified in the SWPPP:

“I hereby certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

_____

Tim Kent, PG; Project Manager, Quapaw Tribe of Oklahoma

_____

Date

8.2 Contractor/Subcontractor Certification

Contractor/Subcontractor Certification
Contractors/subcontractors serving as operators of specific portions of the construction project are required to sign a copy of the certification statements presented below before conducting any construction activities at the site that are identified in the SWPPP. Additional contractor/subcontractor certification forms are maintained within the Recordkeeping Notebook.
"I certify under penalty of law that I understand the terms and conditions set forth by the Project Operator under the Storm Water Pollution Prevention Plan associated with the construction site identified as part of the certification."

Contractor/Subcontractor Company Name: _____

Contact Name and Title: _____

Address: _____

_____

Telephone Number: _____

Mobile (on site) Telephone Number: _____

Contractor/Subcontractor Project Task: _____

Signature: _____

Date: _____

Figures

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Figure 1.1 Tar Creek Superfund Site

Figure 2.1 General Location Tar Creek Superfund Site Map

Figure 2.2 Catholic 40 Site Grid Map

[See Attached]

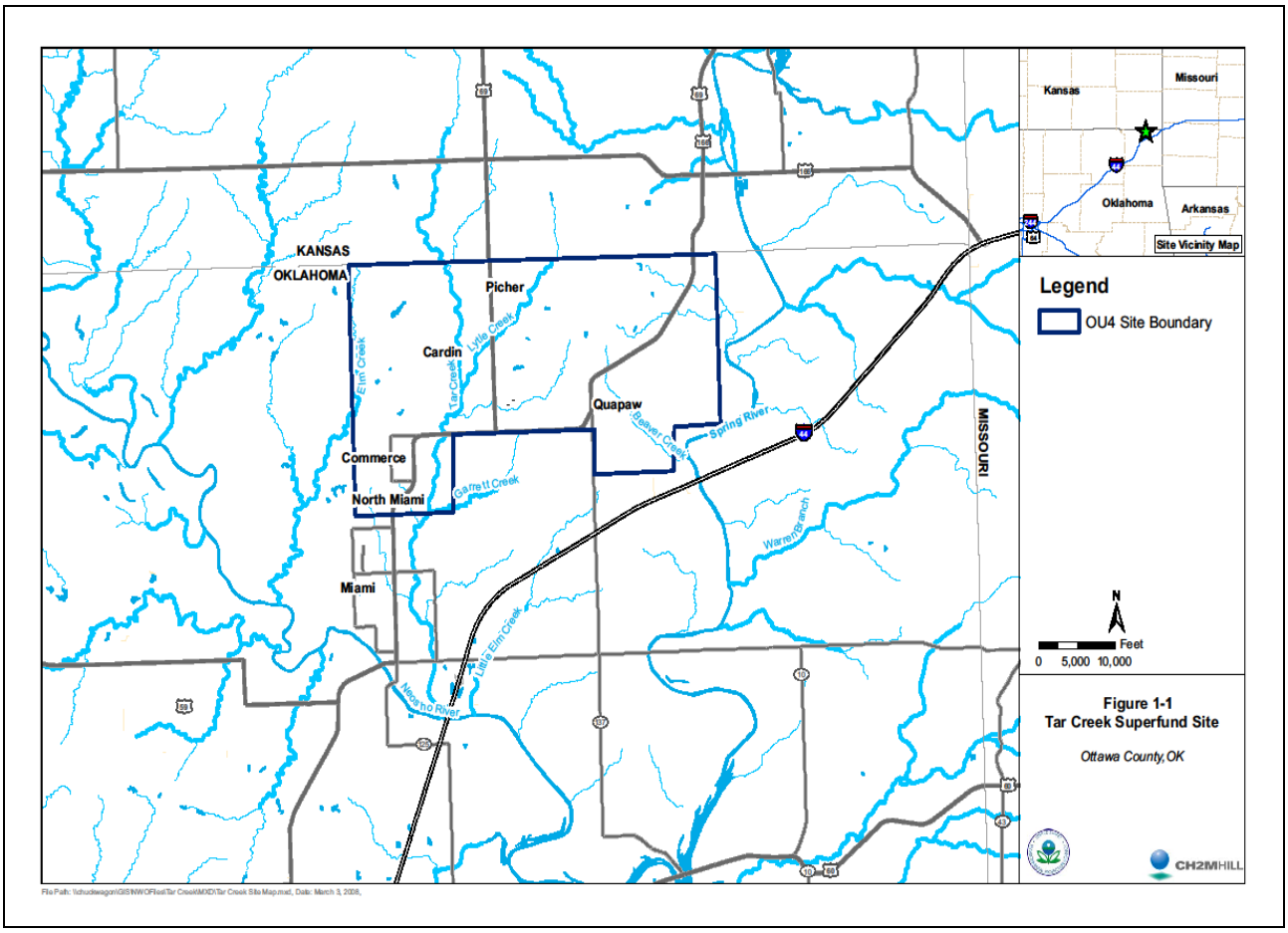
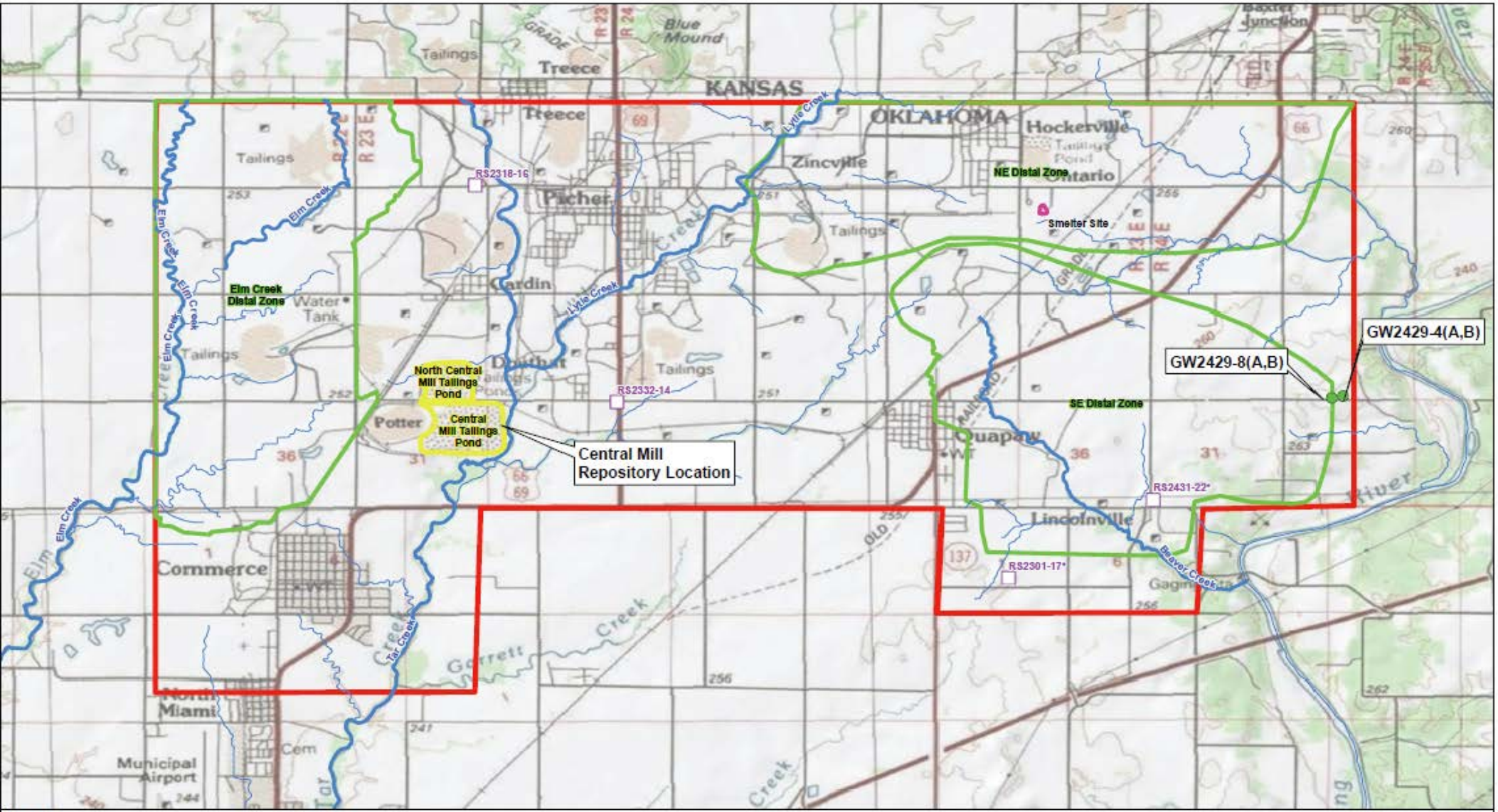


Figure 1.1 Tar Creek Superfund Site **Quapaw Tribe of Oklahoma**



Appendix B
Tar Creek Superfund Site
Operable Unit No. 4
Ottawa County, Oklahoma

CH2MHILL

FIGURE 2.1

FIGURE 2.2

NOTE:
1. STRAW BALE OR FIBER ROLLS MAY BE USED AS NEEDED ALONG WITH THE SILT FENCING TO PROVIDE ADDITIONAL POLLUTANT REMOVAL
2. A 50-FOOT BUFFER ZONE WILL BE MAINTAINED FROM THE CREEK BED
3. ROCK CHECK DAMS, STRAW WADDLES, OR EROSION CONTROL BLANKERS WILL BE USED ON STEEP SLOPES AS APPLICABLE
4. A SPECIFIC AREA WILL BE ESTABLISHED FOR EQUIPEMENT MAINTENANCE AND FUELING. THIS AREA WILL BE ADDED TO THE PLAN WHEN ESTABLISHED.
5. EROSION CONTROL MEASURE SPECIFIC TO THE ROAD CONSTRUCTION ARE SHOWN ON DRAWINGS 002 AND 007 OF HAUL ROAD PLANS

NOTE:
1. AREAS WEST OF CONSTRUCTION FENCING IN GRIDS 08, 09, 14, 15, 19, 20, AND 21 REQUIRE OVERSIGHT PRESENCE OF THE QUAPAW TRIBE OR BIA BEFORE ANY EXCAVATION ACTIVITY IS CONDUCTED.

DENOTES SURFACE WATER FLOW

BUILDING LOCATIONS:
- #1 WATER TOWER
- #2 LARGE DORMITORY FOUNDATION
- #3 POSSIBLE PRESBYTERY - FOUNDATION WITH CELLAR
- #4 UNKNOWN FUNCTION - SHED ROOF, TRUNCATED BY CHAT
- #5 UNKNOWN FUNCTION - FOUNDATION
- #6 STONE-LINED WELL
- #7 UNKNOWN FUNCTION - RUINS WITH GABLE ROOF
- #8 RUINS - POSSIBLE CLASSROOM/SISTERS QUARTERS
- #9 ANIMAL PEN

FIELD RECONNAISSANCE AREAS OF INTEREST

RECONNAISSANCE NOTES

ALTERNATE ACCESS MAY BE FROM THE NORTH THROUGH AN ADJACENT PROPERTY NEAR THE WEST END OF THE CB, DEPENDING UPON WHETHER ACCESS CAN BE OBTAINED FROM THOSE PROPERTY OWNERS. WE DID NOT GET TO ASSESS THE NORTHERN ACCESS DUE TO LACK OF ACCESS TO THE PROPERTY. THE EXTENT OF THE CHAT BASE AS INDICATED ON THE DRAWING IS CLOSE TO WHAT IS OBSERVED IN THE FIELD, ALTHOUGH PART OF THE SOUTHEAST PORTION OF THE CHAT BASE IS MORE OF A CHAT PILE THAN A BASE. THE EASTERN EDGE OF THE CB APPEARS TO GO UP THE SIDE OF A HILL. THERE IS ALSO AN AREA WHERE CHAT APPEARS TO HAVE WASHED OFF OF THE CHAT BASE, NEAR THE SOUTHEAST CORNER OF THE BASE. TWO AREAS OF APPARENT FINE TAILINGS ARE LOCATED ON THE SOUTHERN PORTION OF THE CB AREA. DEVELOPMENT ROCK IS PRESENT ON THE NORTH SIDE OF AN AREA OF CONCRETE FOUNDATION BLOCKS ON THE EAST SIDE OF THE CB. THERE ARE AREAS OF ASPHALT COVERING THE CHAT, NEAR THE WEST END AND ON THE WEST-CENTRAL PORTION OF THE CB. A BARB-WIRE FENCE PASSES THROUGH THE CB FROM EAST TO WEST, SEPARATING THE NORTHERN 1/3 OF THE CB FROM THE SOUTHERN 2/3 OF THE CB.

NO.	DSGN	DATE	DR	CHK	BY	REVISION
			C CHILDRESS	M WILSON	APVD	

KR CHANG — M WILSON

EPA
TAR CREEK SOURCE MATERIAL
OPERABLE UNIT 4
OTTAWA COUNTY, OKLAHOMA

CIVIL

DISTAL AREA 8
CHAT BASE CB011
RECONNAISSANCE PLAN

1" = 60'
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

DATE	DECEMBER 2011
PROJ	388745
DWG	CB011-C-2201DA8
SHEET	

ISSUED FOR CLIENT REVIEW

PW SERVER LOCATION: WBG FILENAME: $FILENAME PLOT DATE: $PLOTDATE PLOT TIME: $PLOTTIME

Appendix A

QUAPAW TRIBE ENVIRONMENTAL OFFICE

EPA Construction General Permit

[See Attached]

National Pollutant Discharge Elimination System
General Permit for Discharges from
Construction Activities

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et. seq., (hereafter CWA or the Act), as amended by the Water Quality Act of 1987, P.L. 100-4, "operators" of construction activities (defined in Part 1.1.a and Appendix A) that meet the requirements of Part 1.1 of this National Pollutant Discharge Elimination System (NPDES) general permit, are authorized to discharge pollutants in accordance with the effluent limitations and conditions set forth herein. Permit coverage is required from the "commencement of earth-disturbing activities" (see Appendix A) until "final stabilization" (see Part 2.2).

This permit becomes effective on **February 16, 2012**. For the State of Idaho (except for Indian country), this permit becomes effective on **April 9, 2012**. For areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, this permit becomes effective on **April 13, 2012**. For projects located in the following areas, this permit becomes effective on **May 9, 2012**: Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

This permit and the authorization to discharge expire at midnight, **February 16, 2017**.

Signed and issued this 16th day of February, 2012

H. Curtis Spalding
Regional Administrator, Region 1

Signed and issued this 16th day of February, 2012

William K. Honker, P.E.
Acting Director, Water Quality Protection Division, Region 6

Signed and issued this 16th day of February, 2012

John Filippelli
Director, Division of Environmental Planning & Protection, Region 2

Signed and issued this 16th day of February, 2012

Karen Flournoy
Director, Wetlands and Pesticides Division, Region 7

Signed and issued this 16th day of February, 2012

José C. Font
Acting Division Director, Carribbean Environmental Protection Division, Region 2, Caribbean Office

Signed and issued this 16th day of February, 2012

Melanie L. Pallman
Acting Assistant Regional Administrator, Office of Partneships and Regulatory Assistance, Region 8

Signed and issued this 16th day of February, 2012

Catherine A. Libertz
Assistant Director, Water Protection Division, Region 3

Signed and issued this 16th day of February, 2012

Nancy Woo
Deputy Director, Water Division, Region 9

Signed and issued this 16th day of February, 2012

James D. Giattina
Director, Water Protection Division, Region 4

Signed and issued this 16th day of February and 9th day of April, 2012

Michael J. Lidgard
Acting Director, Office of Water and Watersheds, Region 10

Signed and issued this 16th day of February and 9th day of May, 2012

Tinka G. Hyde
Director, Water Division, Region 5

Signed and issued this 13th day of April, 2012

Christine Psyk
Associate Director, Office of Water and Watersheds, Region 10

The signatures are for the permit conditions in Parts 1 through 9 and Appendices A through K.

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1. HOW TO OBTAIN PERMIT COVERAGE UNDER THE CGP.

To be covered under this permit, you must meet the eligibility conditions and follow the requirements for applying for permit coverage in this Part.

1.1. ELIGIBILITY CONDITIONS REQUIRED OF ALL PROJECTS.

Only those projects that meet all of the following eligibility conditions may be covered under this permit:

a. You are an "operator" of the construction project for which discharges will be covered under this permit;

Note: For the purposes of this permit, an "operator" is any party associated with a construction project that meets either of the following two criteria:

1. *The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or*
2. *The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the permit).*

Subcontractors generally are not considered operators for the purposes of this permit.

Note: Where there are multiple operators associated with the same project, all operators are required to obtain permit coverage. The following applies in these situations:

1. *If one operator has control over plans and specifications and a different operator has control over activities at the project site, they may divide responsibility for compliance with the terms of this permit as long as they develop a group SWPPP (see Part 7.1.1), which documents which operator has responsibility for each requirement of the permit.*
2. *If an operator only has operational control over a portion of a larger project (e.g., one of four homebuilders in a subdivision), the operator is responsible for compliance with all applicable effluent limits, terms, and conditions of this permit as it relates to the activities on their portion of the construction site, including protection of endangered species, critical habitat, and historic properties, and implementation of control measures described in the SWPPP in the areas under their control.*
3. *You must ensure either directly or through coordination with other permittees, that your activities do not render another party's pollutant discharge controls ineffective.*
4. *If the operator of a "construction support activity" (see Part 1.3.c) is different than the operator of the main construction site, that operator is also required to obtain permit coverage.*

b. Your project:

i. Will disturb 1 or more acres of land, or will disturb less than 1 acre of land but is part of a common plan of development or sale that will ultimately disturb 1 or more acres of land; or

ii. Your project's discharges have been designated by EPA as needing a permit under § 122.26(a)(1)(v) or § 122.26(b)(15)(ii);

c. Your project is located in an area where EPA is the permitting authority (see Appendix B);

d. Discharges from your project are not:

   i. Already covered by a different NPDES permit for the same discharge; or

   ii. In the process of having coverage under a different NPDES permit for the same discharge denied, terminated, or revoked.[1, 2]

e. You are able to demonstrate that you meet one of the criteria listed in Appendix D with respect to the protection of species that are federally-listed as endangered or threatened under the Endangered Species Act (ESA) or federally-designated critical habitat;

f. You have completed the screening process in Appendix E relating to the protection of historic properties and places; and

g. You have complied with all requirements in Part 9 imposed by the applicable state, Indian tribe, or territory in which your construction activities will occur.

1.2. ELIGIBILITY CONDITIONS THAT APPLY DEPENDING ON TYPE OF PROJECT.

You must also satisfy, if applicable, the conditions in Parts 1.2.1 through 1.2.4 in order to obtain coverage under this permit.

1.2.1. Eligibility for Emergency-Related Construction Activities.

If you are conducting earth-disturbing activities in response to a public emergency *(e.g., natural disaster, widespread disruption in essential public services)*, and the related work requires immediate authorization to avoid imminent endangerment to human health, public safety, or the environment, or to reestablish essential public services, you are authorized to discharge on the condition that a complete and accurate NOI is submitted within 30 calendar days after commencing earth-disturbing activities (see Table 1) establishing that you are eligible under this permit. You are also required to provide documentation in your SWPPP to substantiate the occurrence of the public emergency.

1.2.2. Water Quality Standards – Eligibility for New Sources.

If you are a "new source" (as defined in Appendix A), you are not eligible for coverage under this permit for discharges that EPA, prior to authorization under this permit, determines will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. Where such a determination is made prior to authorization, EPA may notify you that an individual permit application is necessary in accordance with Part 1.4.5. However, EPA may authorize your coverage under this permit after you have included appropriate controls and implementation procedures designed to bring your discharge into compliance with water quality standards. In the absence of information demonstrating otherwise, EPA expects that compliance with the stormwater control requirements of this permit, including the requirements applicable to such discharges in Part 3.2, will result in discharges that will not cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard.

---

[1] Parts 1.1.d.i and 1.1.d.ii do not include sites currently covered under the 2003 or 2008 CGPs, which are in the process of obtaining coverage under this permit, and sites covered under this permit, which are transferring coverage to a different operator.

[2] Notwithstanding a project being made ineligible for coverage under this permit because it falls under the description of Parts 1.1.d.i or 1.1.d.ii, above, EPA may waive the applicable requirement after specific review if it determines that coverage under this permit is appropriate.

1.2.3. Discharging to Waters with High Water Quality – Eligibility for New Sources.

If you are a "new source" (as defined in Appendix A), you are eligible to discharge to a Tier 2, Tier 2.5, or Tier 3 water only if your discharge will not lower the water quality of the applicable water. In the absence of information demonstrating otherwise, EPA expects that compliance with the stormwater control requirements of this permit, including the requirements applicable to such discharges in Part 3.3.2, will result in discharges that will not lower the water quality of the applicable water. See list of Tier 2, Tier 2.5, and Tier 3 waters in Appendix F.

Note: Your project will be considered to discharge to a Tier 2, Tier 2.5, or Tier 3 water if the first surface water to which you discharge is identified by a state, tribe, or EPA as a Tier 2, Tier 2.5, or Tier 3 water. For discharges that enter a storm sewer system prior to discharge, the first surface water to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

1.2.4. Use of Cationic Treatment Chemicals.

If you plan to use cationic treatment chemicals (as defined in Appendix A), you are ineligible for coverage under this permit, unless you notify your applicable EPA Regional Office in advance and the EPA office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

1.3. Types of Discharges Authorized Under the CGP.

The following is a list of discharges that are allowed under the permit provided that appropriate stormwater controls are designed, installed, and maintained:

a. Stormwater discharges, including stormwater runoff, snowmelt runoff, and surface runoff and drainage, associated with construction activity under 40 CFR § 122.26(b)(14) or § 122.26(b)(15)(i);

b. Stormwater discharges designated by EPA as needing a permit under 40 CFR § 122.26(a)(1)(v) or § 122.26(b)(15)(ii);

c. Stormwater discharges from construction support activities *(e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas)* provided:

   i. The support activity is directly related to the construction site required to have permit coverage for stormwater discharges;

   ii. The support activity is not a commercial operation, nor does it serve multiple unrelated construction projects;

   iii. The support activity does not continue to operate beyond the completion of the construction activity at the project it supports; and

   iv. Stormwater controls are implemented in accordance with Part 2 and, if applicable, Part 3, for discharges from the support activity areas.

d. The following non-stormwater discharges from your construction activity, provided that, with the exception of water used to control dust and to irrigate areas to be vegetatively stabilized, these discharges are not routed to areas of exposed soil on your site and you comply with any applicable requirements for these discharges in Part 2:

   i. Discharges from emergency fire-fighting activities;

ii. Fire hydrant flushings;

iii. Landscape irrigation;

iv. Water used to wash vehicles and equipment, provided that there is no discharge of soaps, solvents, or detergents used for such purposes;

v. Water used to control dust;

vi. Potable water including uncontaminated water line flushings;

vii. Routine external building washdown that does not use detergents;

viii. Pavement wash waters provided spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used. You are prohibited from directing pavement wash waters directly into any surface water, storm drain inlet, or stormwater conveyance, unless the conveyance is connected to a sediment basin, sediment trap, or similarly effective control;

ix. Uncontaminated air conditioning or compressor condensate;

x. Uncontaminated, non-turbid discharges of ground water or spring water;

xi. Foundation or footing drains where flows are not contaminated with process materials such as solvents or contaminated ground water; and

xii. Construction dewatering water that has been treated by an appropriate control under Part 2.1.3.4; and

e. Discharges of stormwater listed above in Parts a, b, and c, or authorized non-stormwater discharges in Part d above, commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

1.4. SUBMITTING YOUR NOTICE OF INTENT (NOI).

To be covered under this permit, you must submit to EPA a complete and accurate NOI prior to commencing construction activities. The NOI certifies to EPA that you are eligible for coverage according to Part 1.1 and 1.2, and provides information on your construction operation and discharge.

Note: All "operators" (as defined in Appendix A) associated with your construction project, who meet the Part 1.1 eligibility requirements, and who elect to seek coverage under this permit, are required to submit an NOI.

Note: There are two exceptions to the requirement to submit the NOI prior to the commencement of construction activities: (1) for emergency-related projects, and (2) for new projects scheduled to commence construction activities on or after February 16, 2012, but no later than March 1, 2012. [3] *For these two types of projects, the NOI*

[3] For new projects in the State of Idaho (except Indian country), if you are scheduled to commence construction activities on or after April 9, 2012, but no later than May 9, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities. For new projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, if you are scheduled to commence construction activities on or after April 13, 2012, but no later than May 13, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities. For new projects in the following areas, if you are schedule to commence construction activities on or after May 9, 2012, but no later than June 8, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

must be submitted within 30 calendar days after the commencement of earth-disturbing activities (see Part 1.4.2).

Note: You must complete the development of a Stormwater Pollution Prevention Plan (SWPPP) consistent with Part 7 prior to submitting your NOI for coverage under this permit.

1.4.1. How to Submit Your NOI.

You are required to use EPA's electronic NOI system, or "eNOI system", to prepare and submit your NOI. Go to www.epa.gov/npdes/stormwater/cgpenoi to access the eNOI system and file an NOI. If you have a problem with the use of the eNOI system, contact the EPA Regional Office that corresponds to the location of your site. If you are given approval by the EPA Regional Office to use a paper NOI, and you elect to use it, you must complete the form in Appendix J.

1.4.2. Deadlines for Submitting Your NOI and Your Official Date of Permit Coverage.

Table 1 provides the deadlines for submitting your NOI and your official start date of permit coverage, which differ depending on when you commence construction activities. The following terms are used in Table 1 to establish NOI deadlines:

a. New project – a construction project that commences construction activities on or after February 16, 2012, or or April 9, 2012 for the State of Idaho (except for Indian country), or April 13, 2012 for areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

b. Existing project – a construction project that commenced construction activities prior to February 16, 2012, or April 9, 2012 for the State of Idaho (except for Indian country), or April 13, 2012 for areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

c. New operator of a new or existing project – an operator that through transfer of ownership and/or operation replaces the operator of an already permitted construction project.

Table 1 NOI Submittal Deadlines and Official Start Date for Permit Coverage.

Type of Construction Project	Deadlines for Operators to Submit NOI	Official Start Date for Permit Coverage
New project	You must submit your NOI at least 14 calendar days prior to commencing earth-disturbing activities. *Exception:* If your project qualifies as an "emergency-related project" under Part 1.2.1, you must submit your NOI by no later than 30 calendar days after commencing	You are considered covered under this permit 14 calendar days after EPA has acknowledged receipt of your NOI on the Agency's website (www.epa.gov/npdes/stormwater/cgpnoisearch), unless EPA notifies you that your authorization has been delayed or denied. *Exception:* If your project qualifies as

Type of Construction Project	Deadlines for Operators to Submit NOI	Official Start Date for Permit Coverage
	earth-disturbing activities. *Exception:* If you are scheduled to commence construction activities on or after February 16, 2012, but no later than March 1, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities.[4]	an "emergency-related project" under Part 1.2.1, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied. *Exception:* If you are scheduled to commence construction activities on or after February 16, 2012, but no later than March 1, 2012, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied.[5]

[4] For new projects in the State of Idaho (except Indian country), if you are scheduled to commence construction activities on or after April 9, 2012, but no later than May 9, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities. For new projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, if you are scheduled to commence construction activities on or after April 13, 2012, but no later than May 13, 2012, you must submit your NOI by no later than 30 calendar days after commencing earth-disturbing activities. For new projects located in the following areas, if you are scheduled to commence construction activities on or after May 9, 2012, but no later than June 8, 2012, you must submit your NOI by no later than 30 days after commencing earth-disturbing activities: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

[5] For new projects in the State of Idaho (except Indian country), if you are scheduled to commence construction activities on or after April 9, 2012, but no later than May 9, 2012, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied. For new projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, if you are scheduled to commence construction activities on or after April 13, 2012, but no later than May 13, 2012, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied. For new projects located in the following areas, if you are scheduled to commence construction activities on or after May 9, 2012, but no later than June 8, 2012, you are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA has acknowledged receipt of your NOI, unless EPA notifies you that your authorization has been delayed or denied: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin.

Type of Construction Project	Deadlines for Operators to Submit NOI	Official Start Date for Permit Coverage
Existing project	You must submit your NOI by no later than May 16, 2012.[6] However, if you have not previously obtained coverage under an NPDES permit, you must submit your NOI immediately.	You are considered covered under this permit 14 calendar days after EPA has acknowledged receipt of your NOI on the Agency's website (www.epa.gov/npdes/stormwater/cgpnoisearch), unless EPA notifies you that your authorization has been delayed or denied.[7]
New operator of a new or existing project	You must submit your NOI at least 14 calendar days before the date the transfer to the new operator will take place.	You are considered covered under this permit 14 calendar days after EPA has acknowledged receipt of your NOI on the Agency's website (www.epa.gov/npdes/stormwater/cgpnoisearch), unless EPA notifies you that your authorization has been delayed or denied.

Note: If you have missed the deadline to submit your NOI, any and all discharges from your construction activities will continue to be unauthorized under the Clean Water Act until they are covered by this or a different NPDES permit. EPA may take enforcement action for any unpermitted discharges that occur between the commencement of earth-disturbing activities and discharge authorization.

Note: Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage.

1.4.3. Your Official End Date of Permit Coverage

Once covered under this permit, your coverage will last until the date that:

- You terminate permit coverage consistent with Part 8; or
- Your discharges are permitted under a different NPDES permit or a reissued or replacement version of this permit after expiring on February 16, 2017; or
- For existing projects that continue after this permit has expired, the deadline has passed for the submission of an NOI for coverage under a reissued or replacement version of this permit and you have failed to submit an NOI by the required deadline.

1.4.4. Continuation of Coverage for Existing Permittees After the Permit Expires.

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act and

[6] For existing projects located in the State of Idaho (except Indian country), NOIs must be submitted by no later than July 8, 2012. For existing projects located in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, NOIs must be submitted by no later than July 12, 2012. For existing projects located in the following areas, NOIs must be submitted no later than August 7, 2012:

[7] Note that if you are currently covered under the 2003 or 2008 CGP, this coverage continues until your coverage under this permit begins, provided you have submitted an NOI by the deadline.

remain in force and effect for discharges that were covered prior to expiration. If you were granted permit coverage prior to the expiration date, you will automatically remain covered by this permit until the earliest of:

- Your authorization for coverage under a reissued or replacement version of this permit following your timely submittal of a complete and accurate NOI requesting coverage under the new permit; or

  Note: If you fail to submit a timely NOI for coverage under the reissued or replacement permit, your coverage will terminate on the date that the NOI was due.

- Your submittal of a Notice of Termination; or
- Issuance or denial of an individual permit for the project's discharges; or
- A final permit decision by EPA not to reissue a general permit, at which time EPA will identify a reasonable time period for covered dischargers to seek coverage under an alternative general permit or an individual permit. Coverage under this permit will terminate at the end of this time period.

EPA reserves the right to modify or revoke and reissue this permit under 40 CFR 122.62 and 63, in which case you will be notified of any relevant changes or procedures to which you may be subject.

1.4.5. Procedures for Denial of Coverage.

Following your submittal of a complete and accurate NOI, you may be notified in writing by EPA that you are not covered, and that you must either apply for and/or obtain coverage under an individual NPDES permit or an alternate general NPDES permit. This notification will include a brief statement of the reasons for this decision and will provide application information. Any interested person may request that EPA consider requiring an individual permit under this paragraph.

If you are already a permittee with coverage under this permit, the notice will set a deadline to file the permit application, and will include a statement that on the effective date of the individual NPDES permit or alternate general NPDES permit, as it applies to you, coverage under this general permit will terminate. EPA may grant additional time to submit the application if you request it. If you are covered under this permit and fail to submit an individual NPDES permit application or an NOI for an alternate general NPDES permit as required by EPA, then the applicability of this permit to you is terminated at the end of the day specified by EPA as the deadline for application submittal. EPA may take appropriate enforcement action for any unpermitted discharge. If you submit a timely permit application, then when an individual NPDES permit is issued to you or you are provided with coverage under an alternate general NPDES permit, your coverage under this permit is terminated on the effective date of the individual permit or date of coverage under the alternate general permit.

1.5. REQUIREMENT TO POST A NOTICE OF YOUR PERMIT COVERAGE.

You must post a sign or other notice conspicuously at a safe, publicly accessible location in close proximity to the project site. At a minimum, the notice must include the NPDES Permit tracking number and a contact name and phone number for obtaining additional project information. The notice must be located so that it is visible from the public road that is nearest to the active part of the construction site, and it must use a font large enough to be readily viewed from a public right-of-way.

2. EFFLUENT LIMITATIONS APPLICABLE TO ALL DISCHARGES FROM CONSTRUCTION SITES

You are required to comply with the following effluent limitations in this Part for discharges from your site and/or from construction support activities (see Part 1.3.c).

Note: If your project is an "existing project" (see Part 1.4.2.b) or if you are a "new operator of an existing project" (see Part 1.4.2.c), and it is infeasible for you to comply with a specific requirement in this Part because (1) the requirement was not part of the permit you were previously covered under (i.e., the 2003 or 2008 CGP), and (2) because you are prevented from compliance due to the nature or location of earth disturbances that commenced prior to February 16, 2012 (or prior to April 9, 2012 for projects in the State of Idaho (except for Indian country), or prior to April 13, 2012 for projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or prior to May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin), or because you are unable to comply with the requirement due to the manner in which stormwater controls have already been installed or were already designed prior to February 16, 2012 (or prior to April 9, 2012 for projects in the State of Idaho (except for Indian country), or prior to April 13, 2012 for projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or prior to May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin), you are required to document this fact in your SWPPP and are waived from complying with that requirement. This flexibility applies only to the requirements in Parts 2.1, and 2.3.3 through 2.3.5 (except for Parts 2.3.3.1, 2.3.3.2b, 2.3.3.3c.i, and 2.3.3.4). This only applies to those portions of your site that have already commenced earth-disturbing activities or where stormwater controls implemented in compliance with the previous permit have already been installed.

Part 2 includes the following types of requirements:

- Erosion and Sediment Control Requirements (Part 2.1)
- Stabilization Requirements (Part 2.2)
- Pollution Prevention Requirements (Part 2.3)

2.1. EROSION AND SEDIMENT CONTROL REQUIREMENTS.

You must design, install, and maintain erosion and sediment controls that minimize the discharge of pollutants from earth-disturbing activities. To meet this requirement, you must comply with the following provisions.

2.1.1. General Requirements Applicable to All Construction Sites.

2.1.1.1 ***Area of Disturbance.*** You are required to minimize the amount of soil exposed during construction activities. You are also subject to the deadlines for temporarily and/or permanently stabilizing exposed portions of your site pursuant to Part 2.2.

2.1.1.2 ***Design Requirements.***

a. You must account for the following factors in designing your stormwater controls:

i. The expected amount, frequency, intensity, and duration of precipitation;

ii. The nature of stormwater runoff and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features. If any stormwater flow will be channelized at your site, you must design stormwater controls to control both peak flowrates and total stormwater volume to minimize erosion at outlets and to minimize downstream channel and streambank erosion; and

iii. The range of soil particle sizes expected to be present on the site.

b. You must direct discharges from your stormwater controls to vegetated areas of your site to increase sediment removal and maximize stormwater infiltration, including any natural buffers established under Part 2.1.2.1, unless infeasible. Use velocity dissipation devices if necessary to prevent erosion when directing stormwater to vegetated areas.

2.1.1.3 ***Installation Requirements.***

a. **Complete installation of stormwater controls by the time each phase of earth-disturbance has begun, unless infeasible.** By the time earth-disturbing activities in any given portion of your site have begun, unless infeasible, you must install and make operational any downgradient sediment controls (*e.g., buffers or equivalent sediment controls, perimeter controls, exit point controls, storm drain inlet protection)* that control discharges from the initial site clearing, grading, excavating, and other land-disturbing activities.

Note: Where it is infeasible to install stormwater controls prior to the initial earth disturbance, it is EPA's expectation that it will be a rare circumstance that will prevent the operator from installing such controls immediately following the initial earth disturbance.

Following the installation of these initial controls, all other stormwater controls planned for this portion of your site and described in your SWPPP must be installed and made operational as soon as conditions on the site allow.

Note: The requirement to install stormwater controls prior to earth-disturbance for each phase of the project does not apply to the earth disturbance associated with the actual installation of these controls.

b. **Use good engineering practices and follow manufacturer's specifications.** You must install all stormwater controls in accordance with good engineering practices, including applicable design specifications.

Note: Design specifications may be found in manufacturer specifications and/or in applicable erosion and sediment control manuals or ordinances. Any departures from such specifications must reflect good engineering practice and must be explained in your SWPPP.

2.1.1.4 ***Maintenance Requirements.***

a. You must ensure that all erosion and sediment controls required in this Part remain in effective operating condition during permit coverage and are protected from activities that would reduce their effectiveness.

b. You must inspect all erosion and sediment controls in accordance with the applicable requirements in Part 4.1, and document your findings in accordance with Part 4.1.7. If you find a problem (*e.g., erosion and sediment controls need to be replaced, repaired, or maintained*), you must make the necessary repairs or modifications in accordance with the following schedule:

i. Initiate work to fix the problem immediately after discovering the problem, and complete such work by the close of the next work day, if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance.

ii. When installation of a new erosion or sediment control or a significant repair is needed, you must install the new or modified control and make it operational, or complete the repair, by no later than 7 calendar days from the time of discovery where feasible. If it is infeasible to complete the installation or repair within 7 calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7-day timeframe and document your schedule for installing the stormwater control(s) and making it operational as soon as practicable after the 7-day timeframe. Where these actions result in changes to any of the stormwater controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within 7 calendar days of completing this work.

2.1.2. Erosion and Sediment Control Requirements Applicable to All Sites.

2.1.2.1 **Provide Natural Buffers or Equivalent Sediment Controls.** (These requirements only apply when a surface water is located within 50 feet of your project's earth disturbances).

Note: EPA does not consider stormwater control features (e.g., stormwater conveyance channels, storm drain inlets, sediment basins) to constitute "surface waters" for the purposes of triggering the requirement to comply with this Part.

Note: Areas that you do not own or that are otherwise outside your operational control may be considered areas of undisturbed natural buffer for purposes of compliance with this part.

You must ensure that any discharges to surface waters through the area between the disturbed portions of the property and any surface waters located within 50 feet of your site are treated by an area of undisturbed natural buffer and/or additional erosion and sediment controls in order to achieve a reduction in sediment load equivalent to that achieved by a 50-foot natural buffer. Refer to Appendix G (Buffer Guidance) for information to assist you in complying with this requirement, and to Part 2.1.2.1e for exceptions to this requirement.

a. **Compliance Alternatives.** You can comply with this requirement in one of the following ways:

i. Provide and maintain a 50-foot undisturbed natural buffer; or

Note: If your earth disturbances are located 50 feet or further from a surface water, then you have complied with this alternative.

ii. Provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer; or

iii. If it is infeasible to provide and maintain an undisturbed natural buffer of any size, you must implement erosion and sediment

controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

Note: For the compliance alternatives in Parts 2.1.2.1a.i and 2.1.2.1a.ii, you are not required to enhance the quality of the vegetation that already exists in the buffer, or provide vegetation if none exists (e.g., arid and semi-arid areas). You only need to retain and protect from disturbance the natural buffer that existed prior to the commencement of construction. Any preexisting structures or impervious surfaces are allowed in the natural buffer provided you retain and protect from disturbance the natural buffer area outside the preexisting disturbance. Similarly, for alternatives 2.1.2.1a.ii and 2.1.2.1a.iii, you are required to implement and maintain sediment controls that achieve the sediment load reduction equivalent to the undisturbed natural buffer that existed on the site prior to the commencement of construction. In determining equivalent sediment load reductions, you may consider naturally non-vegetated areas and prior disturbances. See Appendix G for a discussion of how to determine equivalent reductions.

You must document the compliance alternative you have selected in your SWPPP, and comply with the applicable additional requirements described in Parts 2.1.2.1b and 2.1.2.1c below.

The compliance alternative selected above must be maintained throughout the duration of permit coverage, except that you may select a different compliance alternative during your period of permit coverage, in which case you must modify your SWPPP to reflect this change.

b. **Additional Requirements for the Compliance Alternatives in Parts 2.1.2.1a.i and 2.1.2.1a.ii.** If you choose either of the compliance alternatives in Parts 2.1.2.1a.i or 2.1.2.1a.ii above, throughout your period of coverage under this permit, you must comply with the following additional requirements:

   i. Ensure that all discharges from the area of earth disturbance to the natural buffer are first treated by the site's erosion and sediment controls, and use velocity dissipation devices if necessary to prevent erosion caused by stormwater within the buffer;

   ii. Document in your SWPPP the natural buffer width retained on the property, and show the buffer boundary on your site plan; and

   iii. Delineate, and clearly mark off, with flags, tape, or other similar marking device all natural buffer areas.

c. **Additional Requirements for the Compliance Alternatives in Parts 2.1.2.1a.ii and 2.1.2.1a.iii.** If you choose either of the compliance alternatives in Parts 2.1.2.1a.ii and 2.1.2.1a.iii, you must document in your SWPPP the erosion and sediment control(s) you will use to achieve an equivalent sediment reduction, and any information you relied upon to demonstrate the equivalency.

d. **Additional Requirement for the Compliance Alternative in Part 2.1.2.1a.iii.** If you choose the compliance alternative in Part 2.1.2.1a.iii, you must also

include in your SWPPP a description of why it is infeasible for you to provide and maintain an undisturbed natural buffer of any size.

e. **Exceptions.**

i. If there is no discharge of stormwater to surface waters through the area between your site and any surface waters located within 50 feet of your site, you are not required to comply with the requirements in this Part. This includes situations where you have implemented control measures, such as a berm or other barrier, that will prevent such discharges.

ii. Where no natural buffer exists due to preexisting development disturbances *(e.g., structures, impervious surfaces)* that occurred prior to the initiation of planning for the current development of the site, you are not required to comply with the requirements in this Part, unless you will remove portions of the preexisting development.

Where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, you are required to comply with the requirements in this Part. For the purposes of calculating the sediment load reduction for either Part 2.1.2.1a.ii or 2.1.2.1a.iii above, you are not expected to compensate for the reduction in buffer function from the area covered by these preexisting disturbances. See Appendix G for further information on how to comply with the compliance alternatives in Part 2.1.2.1a.ii or 2.1.2.1a.iii above.

If during your project, you will disturb any portion of these preexisting disturbances, the area disturbed will be deducted from the area treated as natural buffer.

iii. For "linear construction projects" (see Appendix A), you are not required to comply with the requirements in this Part if site constraints (*e.g., limited right-of-way*) prevent you from meeting any of the compliance alternatives in Part 2.1.2.1a, provided that, to the extent practicable, you limit disturbances within 50 feet of the surface water and/or you provide supplemental erosion and sediment controls to treat stormwater discharges from earth disturbances within 50 feet of the surface water. You must also document in your SWPPP your rationale as to why it is infeasible for you to comply with the requirements in Part 2.1.2.1a, and describe any buffer width retained and/or supplemental erosion and sediment controls installed.

iv. For "small residential lot" construction (*i.e., a lot being developed for residential purposes that will disturb less than 1 acre of land, but is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre*), you have the option of complying with the requirements in Appendix G (Part G.2.3).

v. The following disturbances within 50 feet of a surface water are exempt from the requirements in this Part:

- Construction approved under a CWA Section 404 permit; or
- Construction of a water-dependent structure or water access area *(e.g., pier, boat ramp, trail)*.

You must document in your SWPPP if any of the above disturbances will occur within the buffer area on your site.

2.1.2.2 ***Install Perimeter Controls.***

a. **Installation Requirements:** You must install sediment controls along those perimeter areas of your site that will receive stormwater from earth-disturbing activities.[8]

For linear projects with rights-of-way that restrict or prevent the use of such perimeter controls, you must maximize the use of these controls where practicable and document in your SWPPP why it is impracticable in other areas of the project.

b. **Maintenance Requirements:** You must remove sediment before it has accumulated to one-half of the above-ground height of any perimeter control.

2.1.2.3 ***Minimize Sediment Track-Out.*** You must minimize the track-out of sediment onto off-site streets, other paved areas, and sidewalks from vehicles exiting your construction site. To comply with this requirement, you must:

a. Restrict vehicle use to properly designated exit points;

b. Use appropriate stabilization techniques[9] at all points that exit onto paved roads so that sediment removal occurs prior to vehicle exit;

c. Where necessary, use additional controls[10] to remove sediment from vehicle tires prior to exit; and

d. Where sediment has been tracked-out from your site onto the surface of off-site streets, other paved areas, and sidewalks, you must remove the deposited sediment by the end of the same work day in which the track-out occurs or by the end of the next work day if track-out occurs on a non-work day. You must remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. You are prohibited from hosing or sweeping tracked-out sediment into any stormwater conveyance (unless it is connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water.

Note: EPA recognizes that some fine grains may remain visible on the surfaces of off-site streets, other paved areas, and sidewalks even after you have implemented sediment removal practices. Such "staining" is not a violation of Part 2.1.2.3.

2.1.2.4 **Control Discharges from Stockpiled Sediment or Soil.** For any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil, you must comply with the following requirements:

[8] Examples of perimeter controls include, but are not limited to, filter berms, silt fences, and temporary diversion dikes.

[9] Examples of appropriate stabilization techniques include the use of aggregate stone with an underlying geotextile or non-woven filter fabric, or turf mats.

[10] Examples of additional controls to remove sediment from vehicle tires include, but are not limited to, wheel washing, rumble strips, and rattle plates.

Note: For the purposes of this permit, sediment or soil stockpiles are defined as the storage for multiple days of soil or other sediment material to be used in the construction project.

a. Locate the piles outside of any natural buffers established under Part 2.1.2.1a and physically separated from other stormwater controls implemented in accordance with Part 2.1;

b. Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier;[11]

c. Where practicable, provide cover or appropriate temporary stabilization to avoid direct contact with precipitation or to minimize sediment discharge;

d. Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water; and

e. Unless infeasible, contain and securely protect from wind.

2.1.2.5 ***Minimize Dust.*** In order to avoid pollutants from being discharged into surface waters, to the extent feasible, you must minimize the generation of dust through the appropriate application of water or other dust suppression techniques.

2.1.2.6 ***Minimize the Disturbance of Steep Slopes.*** You must minimize the disturbance of "steep slopes" (see definition in Appendix A).

Note: The permit does not prevent or prohibit disturbance on steep slopes. For some projects, disturbance on steep slopes may be necessary for construction (e.g., a road cut in mountainous terrain). If a disturbance to steep slopes is required for the project, EPA would recognize that it is not economically achievable to avoid the disturbance to steep slopes. However, in cases where steep slope disturbances are required, minimizing the disturbances to steep slopes consistent with this requirement can be accomplished through the implementation of a number of standard erosion and sediment control practices, such as by phasing disturbances to these areas and using stabilization practices designed to be used on steep grades.

2.1.2.7 ***Preserve Topsoil.*** You must preserve native topsoil on your site, unless infeasible.

Note: Some projects may be designed to be highly impervious after construction, and therefore little or no vegetation is intended to remain. In these cases, preserving topsoil at the site would not be feasible. Some sites may not have space to stockpile topsoil on site for later use, in which case, it may also not be feasible to preserve topsoil.

Note: Stockpiling of topsoil at off-site locations, or transfer of topsoil to other locations, is an example of a practice that is consistent with the requirements in this Part.

2.1.2.8 ***Minimize Soil Compaction***. In areas of your site where final vegetative stabilization will occur or where infiltration practices will be installed, you must either:

[11] Examples include berms, dikes, fiber rolls, silt fences, sandbag, gravel bags, or straw bale.

a. **Restrict vehicle / equipment use.** Restrict vehicle and equipment use in these locations to avoid soil compaction; or

b. **Use soil conditioning techniques.** Prior to seeding or planting areas of exposed soil that have been compacted, use techniques that condition the soils to support vegetative growth, if necessary and feasible.

2.1.2.9 ***Protect Storm Drain Inlets.*** If you discharge to any storm drain inlet that carries stormwater flow from your site directly to a surface water (and it is not first directed to a sediment basin, sediment trap, or similarly effective control), and you have authority to access the storm drain inlet, you must:

a. **Installation Requirements.** Install inlet protection measures[12] that remove sediment from your discharge prior to entry into the storm drain inlet.

Note: Inlet protection measures can be removed in the event of flood conditions or to prevent erosion.

b. **Maintenance Requirements.** Clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, you must remove the deposited sediment by the end of the same work day in which it is found or by the end of the following work day if removal by the same work day is not feasible.

2.1.3. Requirements Applicable Only to Sites Using These Specific Stormwater Controls.

You are required to comply with the following requirements if you will install any of the following stormwater controls at your site:

2.1.3.1 ***Constructed Stormwater Conveyance Channels.*** Design stormwater conveyance channels to avoid unstabilized areas on the site and to reduce erosion, unless infeasible. Minimize erosion of channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters during discharge conditions through the use of erosion controls and velocity dissipation devices[13] within and along the length of any constructed stormwater conveyance channel, and at any outlet to provide a non-erosive flow velocity.

2.1.3.2 ***Sediment Basins.*** If you install a sediment basin , you must comply with the following:

a. **Design requirements.**

i. Provide storage for either (1) the calculated volume of runoff from a 2-year, 24-hour storm (see Appendix H), or (2) 3,600 cubic feet per acre drained;

ii. When discharging from the sediment basin, utilize outlet structures that withdraw water from the surface in order to minimize the discharge of pollutants, unless infeasible;

[12] Examples of inlet protection measures include fabric filters, sandbags, concrete blocks, and gravel barriers.

[13] Examples of velocity dissipation devices include check dams, sediment traps, riprap, or grouted riprap at outlets.

Note: EPA believes that the circumstances in which it is infeasible to design outlet structures in this manner are rare. Exceptions may include areas with extended cold weather, where surface outlets may not be feasible during certain time periods (although it is expected that they would be used during other periods). If you have determined that it is infeasible to meet this requirement, you must provide documentation in your SWPPP to support your determination.

iii. Prevent erosion of (1) the sediment basin using stabilization controls *(e.g., erosion control blankets)*, and (2) the inlet and outlet using erosion controls and velocity dissipation devices; and

iv. Sediment basins must be situated outside of surface waters and any natural buffers established under Part 2.1.2.1a, and must be designed to avoid collecting water from wetlands.

b. **Maintenance requirements.** Keep in effective operating condition and remove accumulated sediment to maintain at least ½ of the design capacity of the sediment basin at all times.

2.1.3.3 ***Use of Treatment Chemicals.*** If you are using polymers, flocculants, or other treatment chemicals at your site, you must comply with the following minimum requirements:

a. **Use conventional erosion and sediment controls prior to and after the application of treatment chemicals.** Use conventional erosion and sediment controls prior to chemical addition to ensure effective treatment. Chemicals may only be applied where treated stormwater is directed to a sediment control *(e.g., sediment basin, perimeter control)* prior to discharge.

b. **Select appropriate treatment chemicals**. Chemicals must be selected that are appropriately suited to the types of soils likely to be exposed during construction and discharged to locations where chemicals will be applied, and to the expected turbidity, pH, and flow rate of stormwater flowing into the chemical treatment system or area.

c. **Minimize discharge risk from stored chemicals.** Store all treatment chemicals in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures *(e.g., spill berms, decks, spill containment pallets),* or provide equivalent measures, designed and maintained to minimize the potential discharge of treatment chemicals in stormwater or by any other means *(e.g., storing chemicals in covered area or having a spill kit available on site)*.

d. **Comply with state/local requirements.** Comply with relevant state and local requirements affecting the use of treatment chemicals.

e. **Use chemicals in accordance with good engineering practices and specifications of the chemical provider/supplier.** You must also use treatment chemicals and chemical treatment systems in accordance with good engineering practices, and with dosing specifications and sediment removal design specifications provided by the provider/supplier of the applicable chemicals, or document specific departures from these practices or specifications and how they reflect good engineering practice.

f. **Ensure proper training.** Ensure that all persons who handle and use treatment chemicals at the construction site are provided with appropriate, product-specific training. Among other things, the training must cover proper dosing requirements.

g. **Comply with additional requirements for the approved use of cationic chemicals.** If you have been authorized to use cationic chemicals at your site pursuant to Part 1.2.4, and the authorization is conditioned on your compliance with additional requirements necessary to ensure that the use of such chemicals will not cause an exceedance of water quality standards, you are required to comply with all such requirements.

h. **Provide proper SWPPP documentation.** You must include documentation in your SWPPP consistent with Parts 7.2.6.9 and 7.2.10.2 on the specific chemicals and chemical treatment systems you will use, and how you will comply with the requirements in this Part.

2.1.3.4 ***Dewatering Practices.*** You are prohibited from discharging ground water or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation, unless such waters are first effectively managed by appropriate controls.[14] Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control.

You must also meet the following requirements for dewatering activities:

a. **Discharge requirements.**

i. Do not discharge visible floating solids or foam;

ii. Use an oil-water separator or suitable filtration device (such as a cartridge filter) that is designed to remove oil, grease, or other products if dewatering water is found to contain these materials;

iii. To the extent feasible, utilize vegetated, upland areas of the site to infiltrate dewatering water before discharge. In no case will surface waters be considered part of the treatment area;

iv. At all points where dewatering water is discharged, comply with the velocity dissipation requirements of Part 2.1.3.1;

v. With backwash water, either haul it away for disposal or return it to the beginning of the treatment process; and

vi. Replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

b. **Treatment chemical restrictions.** If you are using polymers, flocculants, or other treatment chemicals to treat dewatering water, you must comply with the requirements in Parts 2.1.3.3.

2.2. STABILIZATION REQUIREMENTS.

You are required to stabilize exposed portions of your site in accordance with the requirements of this Part.

[14] Examples of appropriate controls include, but are not limited to, sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, or filtration systems (e.g., bag or sand filters) that are designed to remove sediment.

Note: For the purposes of this permit, "exposed portions of your site" means areas of exposed soil that are required to be stabilized. Note that EPA does not expect that temporary or permanent stabilization measures to be applied to areas that are intended to be left unvegetated or unstabilized following construction (e.g., dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, or materials).

2.2.1. Deadlines for Initiating and Completing Stabilization.

2.2.1.1 ***Deadline to Initiate Stabilization.*** You must initiate soil stabilization measures immediately whenever earth-disturbing activities have permanently or temporarily ceased on any portion of the site.

Note: Earth-disturbing activities have permanently ceased when clearing and excavation within any area of your construction site that will not include permanent structures has been completed.

Note: Earth-disturbing activities have temporarily ceased when clearing, grading, and excavation within any area of the site that will not include permanent structures will not resume (i.e., the land will be idle) for a period of 14 or more calendar days, but such activities will resume in the future.

The 14 calendar day timeframe above begins counting as soon as you know that construction work on a portion of your site will be temporarily ceased. In circumstances where you experience unplanned or unanticipated delays in construction due to circumstances beyond your control (e.g., sudden work stoppage due to unanticipated problems associated with construction labor, funding, or other issues related to the ability to work on the site; weather conditions rendering the site unsuitable for the continuation of construction work) and you do not know at first how long the work stoppage will continue, your requirement to immediately initiate stabilization is triggered as soon as you know with reasonable certainty that work will be stopped for 14 or more additional calendar days. At that point, you must comply with Parts 2.2.1.1 and 2.2.1.2.

Note: For the purposes of this permit, EPA will consider any of the following types of activities to constitute the initiation of stabilization:

1. *prepping the soil for vegetative or non-vegetative stabilization;*
2. *applying mulch or other non-vegetative product to the exposed area;*
3. *seeding or planting the exposed area;*
4. *starting any of the activities in # 1 – 3 on a portion of the area to be stabilized, but not on the entire area; and*
5. *finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing stabilization in Parts 2.2.1.2 and 2.2.1.3.*

This list of examples is not exhaustive.

Note: The term "immediately" is used to define the deadline for initiating stabilization measures. In the context of this provision, "immediately" means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased.

2.2.1.2 ***Deadline to Complete Stabilization Activities.*** As soon as practicable, but no later than 14 calendar days after the initiation of soil stabilization measures consistent with Part 2.2.1.1[15], you are required to have completed:

[15] EPA may determine, based on an inspection carried out under Part 4.2 and corrective actions required under Part 5.3, that the level of sediment discharge on the site makes it necessary to require a faster schedule for completing stabilization. For instance, if sediment discharges from an area of exposed soil

a. For vegetative stabilization, all activities[16] necessary to initially seed or plant the area to be stabilized; and/or

b. For non-vegetative stabilization, the installation or application of all such non-vegetative measures.

2.2.1.3 ***Exceptions to the Deadlines for Initiating and Completing Stabilization.***

a. *Deadlines for projects occurring in arid or semi-arid areas, or drought-stricken areas*. These requirements apply if (1) your site is located in an arid area, a semi-arid area, or a drought-stricken area, as these terms are defined in Appendix A, (2) construction will occur during the seasonally dry period or during a period in which drought is predicted to occur, and (3) you are using vegetative cover for temporary or permanent stabilization. You may also comply with the deadlines in Part 2.2.1.1 instead. The deadlines for these types of projects are as follows:

i. Immediately initiate, and within 14 calendar days of a temporary or permanent cessation of work in any portion of your site complete, the installation of temporary non-vegetative stabilization measures to the extent necessary to prevent erosion;

ii. As soon as practicable, given conditions or circumstances on your site, complete all activities necessary to initially seed or plant the area to be stabilized; and

iii. If construction is occurring during the seasonally dry period, indicate in your SWPPP the beginning and ending dates of the seasonally dry period and your site conditions. You must also include the schedule you will follow for initiating and completing vegetative stabilization.

b. *Deadlines for projects that are affected by circumstances beyond the control of the permittee that delay the initiation and/or completion of vegetative stabilization as required in Parts 2.2.1.1 and/or 2.2.1.2*. If you are unable to meet the deadlines in Parts 2.2.1.1and/or 2.2.1.2 due to circumstances beyond your control[17], and you are using vegetative cover for temporary or permanent stabilization, you may comply with the following stabilization deadlines instead:

i. Immediately initiate, and within 14 calendar days complete, the installation of temporary non-vegetative stabilization measures to prevent erosion;

ii. Complete all soil conditioning, seeding, watering or irrigation installation, mulching, and other required activities related to the planting and initial establishment of vegetation as soon as conditions or circumstances allow it on your site; and

that is required to be stabilized are compromising the performance of existing stormwater controls, EPA may require stabilization to correct this problem.

[16] For example, such activities might include, but are not limited to, soil conditioning, application of seed or sod, planting of seedlings or other vegetation, application of fertilizer, and, as deemed appropriate, watering.

[17] Examples include problems with the supply of seed stock or with the availability of specialized equipment, unsuitability of soil conditions due to excessive precipitation and/or flooding.

Note: You are required to have stabilized the exposed portions of your site consistent with Part 2.2.2 prior to terminating permit coverage under Part 8.2.

iii. Document the circumstances that prevent you from meeting the deadlines required in Parts 2.2.1.1and/or 2.2.1.2 and the schedule you will follow for initiating and completing stabilization.

c. *Deadlines for sites discharging to sensitive waters.* For any portion of the site that discharges to a sediment or nutrient-impaired water (see Part 3.2) or to a water that is identified by your state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes (see Part 3.3), you are required to complete the stabilization activities specified in Parts 2.2.1.2a and/or 2.2.1.2b within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities.

Note: If you qualify for the deadlines for initiating and completing stabilization in Part 2.2.1.3a or b*, you may comply with the stabilization deadlines in Part 2.2.1.3a or* b *for any portion of your site that discharges to a sensitive water.*

2.2.2. Criteria for Stabilization.

To be considered adequately stabilized, you must meet the criteria below depending on the type of cover you are using, either vegetative or non-vegetative.

2.2.2.1 ***Vegetative Stabilization.***

a. ***For all sites, except those located in arid or semi-arid areas or on agricultural lands.***

i. If you are vegetatively stabilizing any exposed portion of your site through the use of seed or planted vegetation, you must provide established uniform vegetation *(e.g., evenly distributed without large bare areas)*, which provides 70 percent or more of the density of coverage that was provided by vegetation prior to commencing earth-disturbing activities. You should avoid the use of invasive species;

ii. For final stabilization, vegetative cover must be perennial; and

iii. Immediately after seeding or planting the area to be vegetatively stabilized, to the extent necessary to prevent erosion on the seeded or planted area, you must select, design, and install non-vegetative erosion controls that provide cover *(e.g., mulch, rolled erosion control products)* to the area while vegetation is becoming established.

b. ***For sites located in arid or semi-arid areas, or drought-stricken areas.*** If you are located in an arid or semi-arid area, or a drought-stricken area, as these terms are defined in Appendix A, you are considered to have completed final stabilization if both of the following criteria are met:

i. The area you have seeded or planted must within 3 years provide established vegetation that covers 70 percent or more of the density of vegetation prior to commencing earth-disturbing activities; and

ii. In addition to seeding or planting the area to be vegetatively stabilized, to the extent necessary to prevent erosion on the seeded

or planted area, you must select, design, and install non-vegetative erosion controls that provide cover for at least 3 years without active maintenance by you.

c. ***For sites located on land used for agriculture.*** Disturbed areas on land used for agricultural purposes *(e.g., pipelines across crop or range land, staging areas for highway construction*) that are restored to their pre-construction agricultural use are not subject to these final stabilization criteria. Areas disturbed that were not previously used for agricultural activities, and areas that are not being returned to preconstruction agricultural use, must meet the conditions for stabilization in this Part**.**

2.2.2.2 ***Non-Vegetative Stabilization.*** If you are using non-vegetative controls to stabilize exposed portions of your site, or if you are using such controls to temporarily protect areas that are being vegetatively stabilized, you must provide effective non-vegetative cover[18] to stabilize any such exposed portions of your site.

2.3. POLLUTION PREVENTION REQUIREMENTS.

You are required to design, install, and maintain effective pollution prevention measures in order to prevent the discharge of pollutants. Consistent with this requirement, you must:

- Eliminate certain pollutant discharges from your site (see Part 2.3.1);
- Properly maintain all pollution prevention controls (see Part 2.3.2); and
- Comply with pollution prevention standards for pollutant-generating activities that occur at your site (see Part 2.3.3).

These requirements apply to all areas of your construction site and any and all support activities covered by this permit consistent with Part 1.3.c.

2.3.1. Prohibited Discharges.

You are prohibited from discharging the following from your construction site:

2.3.1.1 Wastewater from washout of concrete, unless managed by an appropriate control as described in Part 2.3.3.4;

2.3.1.2 Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials, unless managed by an appropriate control as described in Part 2.3.3.4;

2.3.1.3 Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;

2.3.1.4 Soaps, solvents, or detergents used in vehicle and equipment washing; and

2.3.1.5 Toxic or hazardous substances from a spill or other release.

2.3.2. General Maintenance Requirements.

You must ensure that all pollution prevention controls installed in accordance with this Part remain in effective operating condition and are protected from activities that would reduce their effectiveness. You must inspect all pollutant-generating activities and

[18] For temporary stabilization, examples of temporary non-vegetative stabilization methods include, but are not limited to, hydromulch and erosion control blankets. For final stabilization, examples of permanent non-vegetative stabilization methods include, but are not limited to, riprap, gabions, and geotextiles.

pollution prevention controls in accordance with your inspection frequency requirements in Parts 4.1.2 or 3.2.2.1 to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater discharges to receiving waters, and must document your findings in accordance with Part 4.1.7. If you find that controls need to be replaced, repaired, or maintained, you must make the necessary repairs or modifications in accordance with the following:

2.3.2.1 Initiate work to fix the problem immediately after discovering the problem, and complete such work by the close of the next work day, if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance.

2.3.2.2 When installation of a new pollution prevention control or a significant repair is needed, you must install the new or modified control and make it operational, or complete the repair, by no later than 7 calendar days from the time of discovery. If it is infeasible to complete the installation or repair within 7 calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7 calendar day timeframe and document your schedule for installing the stormwater control(s) and making it operational as soon as practicable after the 7 calendar day timeframe. Where these actions result in changes to any of the pollution prevention controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within 7 calendar days of completing this work.

2.3.3. Pollution Prevention Standards.

You are required to comply with the pollution prevention standards in this Part if you conduct any of the following activities at your site or at any construction support activity areas covered by this permit (see Part 1.3.c):

- Fueling and maintenance of equipment or vehicles;
- Washing of equipment and vehicles;
- Storage, handling, and disposal of construction materials, products, and wastes; and
- Washing of applicators and containers used for paint, concrete, or other materials.

The pollution prevention standards are as follows:

2.3.3.1 ***Fueling and Maintenance of Equipment or Vehicles***. If you conduct fueling and/or maintenance of equipment or vehicles at your site, you must provide an effective means of eliminating the discharge of spilled or leaked chemicals, including fuel, from the area where these activities will take place.[19]

To comply with the prohibition in Part 2.3.1.3, you must:

a. If applicable, comply with the Spill Prevention Control and Countermeasures (SPCC) requirements in 40 CFR 112 and Section 311 of the CWA;

b. Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of used liquids;

[19] Examples of effective controls include, but are not limited to, locating activities away from surface waters and stormwater inlets or conveyances, providing secondary containment *(e.g., spill berms, decks, spill containment pallets)*and cover where appropriate, and/or having spill kits readily available.

c. Use drip pans and absorbents under or around leaky vehicles;

d. Dispose of or recycle oil and oily wastes in accordance with other federal, state, tribal, or local requirements;

e. Clean up spills or contaminated surfaces immediately, using dry clean up measures where possible, and eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge; and

f. Do not clean surfaces by hosing the area down.

2.3.3.2 ***Washing of Equipment and Vehicles.***

a. You must provide an effective means of minimizing the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other types of washing;[20] and

b. To comply with the prohibition in Part 2.3.1.4, for storage of soaps, detergents, or solvents, you must provide either (1) cover (*e.g., plastic sheeting or temporary roofs*) to prevent these detergents from coming into contact with rainwater, or (2) a similarly effective means designed to prevent the discharge of pollutants from these areas.

2.3.3.3 ***Storage, Handling, and Disposal of Construction Products, Materials, and Wastes.*** You must minimize the exposure to stormwater of any of the products, materials, or wastes specified below that are present at your site by complying with the requirements in this Part.

Note: These requirements do not apply to those products, materials, or wastes that are not a source of stormwater contamination or that are designed to be exposed to stormwater.

To ensure you meet this requirement, you must:

a. *For building products*[21]*:* In storage areas, provide either (1) cover (*e.g., plastic sheeting or temporary roofs*) to prevent these products from coming into contact with rainwater, or (2) a similarly effective means designed to prevent the discharge of pollutants from these areas.

b. *For pesticides, herbicides, insecticides, fertilizers, and landscape materials:*

i. In storage areas, provide either (1) cover (e.g., *plastic sheeting or temporary roofs*) to prevent these chemicals from coming into contact with rainwater, or (2) a similarly effective means designed to prevent the discharge of pollutants from these areas; and

ii. Comply with all application and disposal requirements included on the registered pesticide, herbicide, insecticide, and fertilizer label.

c. *For diesel fuel, oil, hydraulic fluids, other petroleum products, and other chemicals:*

[20] Examples of effective controls include, but are not limited to, locating activities away from surface waters and stormwater inlets or conveyances and directing wash waters to a sediment basin or sediment trap, using filtration devices, such as filter bags or sand filters, or using other similarly effective controls.

[21] Some examples of building products that are typically stored at construction sites include, but are not limited to, asphalt sealants, copper flashing, roofing materials, adhesives, concrete admixtures.

i. To comply with the prohibition in Part 2.3.1.3, store chemicals in water-tight containers, and provide either (1) cover *(e.g., plastic sheeting or temporary roofs)* to prevent these containers from coming into contact with rainwater, or (2) a similarly effective means designed to prevent the discharge of pollutants from these areas *(e.g., spill kits)*, or provide secondary containment *(e.g., spill berms, decks, spill containment pallets)*; and

ii. Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly. Do not clean surfaces or spills by hosing the area down. Eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.

d. *For hazardous or toxic waste*[22]*:*

i. Separate hazardous or toxic waste from construction and domestic waste;

ii. Store waste in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable federal, state, tribal, or local requirements;

iii. Store all containers that will be stored outside within appropriately-sized secondary containment *(e.g., spill berms, decks, spill containment pallets)* to prevent spills from being discharged, or provide a similarly effective means designed to prevent the discharge of pollutants from these areas *(e.g., storing chemicals in covered area or having a spill kit available on site)*;

iv. Dispose of hazardous or toxic waste in accordance with the manufacturer's recommended method of disposal and in compliance with federal, state, tribal, and local requirements; and

v. Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly. Do not clean surfaces or spills by hosing the area down. Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.

e. *For construction and domestic waste*[23]: Provide waste containers *(e.g., dumpster or trash receptacle)* of sufficient size and number to contain construction and domestic wastes. In addition, you must:

(1) On work days, clean up and dispose of waste in designated waste containers; and

(2) Clean up immediately if containers overflow.

[22] Examples of hazardous or toxic waste that may be present at construction sites include, but are not limited to, paints, solvents, petroleum-based products, wood preservatives, additives, curing compounds, acids.

[23] Examples of construction and domestic waste include, but are not limited to, packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, and other trash or building materials.

f. *For sanitary waste:* Position portable toilets so that they are secure and will not be tipped or knocked over.

2.3.3.4 **Washing of Applicators and Containers used for Paint, Concrete, or Other Materials.** To comply with the prohibition in Parts 2.3.1.1 and 2.3.1.2, you must provide an effective means of eliminating the discharge of water from the washout and cleanout of stucco, paint, concrete, form release oils, curing compounds, and other construction materials. To comply with this requirement, you must:

a. Direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation;

b. Handle washout or cleanout wastes as follows:

i. Do not dump liquid wastes in storm sewers;

ii. Dispose of liquid wastes in accordance with applicable requirements in Part 2.3.3.3; and

iii. Remove and dispose of hardened concrete waste consistent with your handling of other construction wastes in Part 2.3.3.3; and

c. Locate any washout or cleanout activities as far away as possible from surface waters and stormwater inlets or conveyances, and, to the extent practicable, designate areas to be used for these activities and conduct such activities only in these areas.

2.3.4. Emergency Spill Notification.

You are prohibited from discharging toxic or hazardous substances from a spill or other release, consistent with Part 2.3.1.5. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 or, in the Washington, DC metropolitan area, call (202) 267-2675 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as you have knowledge of the discharge. You must also, within 7 calendar days of knowledge of the release, provide a description of the release, the circumstances leading to the release, and the date of the release. State, tribal, or local requirements may necessitate additional reporting of spills or discharges to local emergency response, public health, or drinking water supply agencies.

2.3.5. Fertilizer Discharge Restrictions.

You are required to minimize discharges of fertilizers containing nitrogen or phosphorus. To meet this requirement, you must comply with the following requirements:

2.3.5.1 Apply at a rate and in amounts consistent with manufacturer's specifications, or document departures from the manufacturer specifications where appropriate in Part 7.2.7.2 of the SWPPP;

2.3.5.2 Apply at the appropriate time of year for your location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth;

2.3.5.3 Avoid applying before heavy rains that could cause excess nutrients to be discharged;

2.3.5.4 Never apply to frozen ground;

2.3.5.5 Never apply to stormwater conveyance channels with flowing water; and

2.3.5.6 Follow all other federal, state, tribal, and local requirements regarding fertilizer application.

3. WATER QUALITY-BASED EFFLUENT LIMITATIONS.

3.1. GENERAL EFFLUENT LIMITATION TO MEET APPLICABLE WATER QUALITY STANDARDS

Your discharge must be controlled as necessary to meet applicable water quality standards. You must also comply with any additional requirements that your state or tribe requires you to meet in Part 9.

In the absence of information demonstrating otherwise, EPA expects that compliance with the conditions in this permit will result in stormwater discharges being controlled as necessary to meet applicable water quality standards. If at any time you become aware, or EPA determines, that your discharge is not being controlled as necessary to meet applicable water quality standards, you must take corrective action as required in Part 5.2.1, and document the corrective actions as required in Part 5.2.2 and Part 5.4.

EPA will also impose additional water quality-based limitations on a site-specific basis, or require you to obtain coverage under an individual permit, if information in your NOI, or from other sources indicates that your discharges are not controlled as necessary to meet applicable water quality standards. This includes situations where additional controls are necessary to comply with a wasteload allocation in an EPA established or approved TMDL.

3.2. DISCHARGE LIMITATIONS FOR IMPAIRED WATERS

If you discharge to a surface water that is impaired for (1) sediment or a sediment-related parameter, such as total suspended solids (TSS) or turbidity, and/or (2) nutrients, including impairments for nitrogen and/or phosphorus, you are required to comply with the requirements in Part 3.2.2.

Note: For the purposes of this Part, "impaired waters" are waters identified as impaired on the appropriate CWA Section 303(d) list, or waters with an EPA-approved or established TMDL. Your construction site will be considered to discharge to an impaired water if the first surface water to which you discharge is identified by a state, tribe, or EPA pursuant to Section 303(d) of the CWA as not meeting an applicable water quality standard, or is included in an EPA-approved or established total maximum daily load (TMDL). For discharges that enter a storm sewer system prior to discharge, the first surface water to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

If you discharge to an impaired water that is impaired for a parameter other than a sediment-related parameter or nutrients, EPA will inform you if any additional limits or controls are necessary for your discharge to be controlled as necessary to meet water quality standards, including for it to be consistent with the assumptions of any available wasteload allocation in any applicable TMDL, or if coverage under an individual permit is necessary in accordance with Part 1.4.5.

If during your coverage under a previous permit, you were required to install and maintain stormwater controls specifically to meet the assumptions and requirements of an EPA-approved or established TMDL (for any parameter) or to otherwise control your discharge to meet water quality standards, you must continue to implement such controls as part of this permit.

3.2.1. Identify If You Discharge To An Impaired Water.

If you discharge to an impaired water, you must provide the following information in your NOI:

- A list of all impaired waters to which you discharge;
- The pollutant(s) for which the surface water is impaired; and

- Whether a TMDL has been approved or established for the waters to which you discharge.

3.2.2. Requirements for Discharges to Sediment or Nutrient-Impaired Waters.

If you discharge to a surface water that is impaired for (1) sediment or a sediment-related parameter *(e.g., total suspended solids (TSS) or turbidity)* and/or (2) nutrients *(e.g., nitrogen and/or phosphorus)*, including impaired waters for which a TMDL has been approved or established for the impairment, you are required to comply with the following stormwater control requirements, which supplement the requirements applicable to your site in other corresponding parts of the permit

3.2.2.1 ***Frequency of Site Inspection.*** You must conduct inspections at the frequency specified in Part 4.1.3.

3.2.2.2 ***Deadline to Complete Stabilization.*** You must comply with the deadlines for completing site stabilization as specified in Part 2.2.1.3c.

3.2.2.3 ***State and Tribal Requirements.*** You must comply with any additional state or tribal impairment-related requirements included in Part 9.

EPA will also impose additional water quality-based limitations on a site-specific basis, or require you to obtain coverage under an individual permit, if it is determined that the controls in the Part will not be sufficient to control discharges consistent with the assumptions and requirements of an applicable wasteload allocation of an approved or established TMDL or to prevent the site from contributing to the impairment.

3.3. DISCHARGES TO WATERS IDENTIFIED AS TIER 2, TIER 2.5, OR TIER 3.

3.3.1. Identify if You Discharge to a Tier 2, Tier 2.5, or Tier 3 Water.

If you discharge to a water identified by a state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 water, you must provide on your NOI a list of waters identified as Tier 2, Tier 2.5, or Tier 3 to which you discharge. See Appendix F for a list of Tier 2 and 3 waters.

Note: For the purposes of this permit, you are considered to discharge to a Tier 2, Tier 2.5, or Tier 3 water if the first surface water to which you discharge is identified by a state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3. Tiers 2, 2.5 and 3 refer to waters either identified by the state as high quality waters or Outstanding National Resource Waters under 40 CFR §131.12(a)(2) and (3). For discharges that enter a storm sewer system prior to discharge, the surface water to which you discharge is the first surface water that receives the stormwater discharge from the storm sewer system.

3.3.2. Requirements for New Projects Discharging to Tier 2, Tier 2.5, or Tier 3 Waters.

For new projects, if you will discharge to a Tier 2, Tier 2.5, or Tier 3 water, you are required to comply with the requirements in Parts 4.1.3 (inspection frequencies) and 2.2.1.3c (stabilization deadlines), and, if applicable, Part 9 (relevant state or tribal requirements). In addition, on a case-by-case basis, EPA may notify operators of such new projects or operators of existing projects with increased discharges that additional analyses, stormwater controls, or other permit conditions are necessary to comply with the applicable antidegradation requirements, or notify you that an individual permit application is necessary in accordance with Part 1.4.5.

4. INSPECTIONS.

4.1. SITE INSPECTIONS.

4.1.1. Person(s) Responsible for Inspecting Site.

The person(s) inspecting your site may be a person on your staff or a third party you hire to conduct such inspections. You are responsible for ensuring that the person who conducts inspections is a "qualified person."

Note: A "qualified person" is a person knowledgeable in the principles and practice of erosion and sediment controls and pollution prevention, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit.

4.1.2. Frequency of Inspections.

At a minimum, you must conduct a site inspection in accordance with one of the two schedules listed below, unless you are subject to Part 4.1.3 or Part 4.1.4:

4.1.2.1 At least once every 7 calendar days; or

4.1.2.2 Once every 14 calendar days and within 24 hours of the occurrence of a storm event of 0.25 inches or greater. To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that day in accordance with Part 4.1.7.1d.

Note: Inspections are only required during the project's normal working hours.

Note: You are required to specify in your SWPPP which schedule you will be following.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if you have elected to inspect bi-weekly in accordance with Part 4.1.2.2 and there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

4.1.3. Increase in Inspection Frequency for Sites Discharging to Sensitive Waters.

For any portion of the site that discharges to a sediment or nutrient-impaired water (see Part 3.2) or to a water that is identified by your state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes (see Part 3.3), instead of the inspection frequency specified in Part 4.1.2, you must conduct inspections in accordance with the following inspection frequencies:

4.1.3.1 Once every 7 calendar days; and

4.1.3.2 Within 24 hours of the occurrence of a storm event of 0.25 inches or greater. To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that

measures 0.25 inches or greater, you must record the total rainfall measured for that day in accordance with Part 4.1.7.1d.

Note: Inspections are only required during the project's normal working hours.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

Note: If you qualify for any of the reduced inspection frequencies in Part 4.1.4, you may conduct inspections in accordance with Part 4.1.4 for any portion of your site that discharges to a sensitive water.

4.1.4. Reductions in Inspection Frequency.

Your inspection frequency may be reduced as follows:

4.1.4.1 ***For Stabilized Areas.*** You may reduce the frequency of inspections to once per month in any area of your site where the stabilization steps in Parts 2.2.1.2a and 2.2.1.2b have been completed. If construction activity resumes in this portion of the site at a later date, the inspection frequency immediately increases to that required in Parts 4.1.2 or 4.1.3, if applicable. You must document the beginning and ending dates of this period in your records.

4.1.4.2 ***For Arid, Semi-Arid, or Drought-Stricken Areas.*** You may reduce the frequency of inspections to once per month and within 24 hours of the occurrence of a storm event of 0.25 inches or greater if your site is located in an arid, semi-arid, or drought-stricken area, as these terms are defined in Appendix A, and construction is occurring during the seasonally dry period or during a period in which drought is predicted to occur. You must document that you are using this reduced schedule and the beginning and ending dates of the seasonally dry period in your SWPPP. To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that day in accordance with Part 4.1.7.1d.

Note: Inspections are only required during the project's normal working hours.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

4.1.4.3 ***For Frozen Conditions.***

a. If you are suspending earth-disturbing activities due to frozen conditions, you may temporarily suspend inspections on your site until thawing conditions (see Appendix A) begin to occur if:

i. Runoff is unlikely due to continuous frozen conditions that are likely to continue at your site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, you must immediately resume your regular inspection frequency as described in Parts 4.1.2 or 4.1.3, if applicable;

ii. Land disturbances have been suspended; and

iii. All disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.

b. If you are still conducting earth-disturbing activities during frozen conditions, you may reduce your inspection frequency to once per month if:

i. Runoff is unlikely due to continuous frozen conditions that are likely to continue at your site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, you must immediately resume your regular inspection frequency as described in Parts 4.1.2 or 4.1.3 if applicable; and

ii. Except for areas in which you are actively conducting earth-disturbing activities, disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.

You must document the beginning and ending dates of this period in your SWPPP.

4.1.5. Areas that Need to Be Inspected. During your site inspection, you must at a minimum inspect the following areas of your site:

4.1.5.1 All areas that have been cleared, graded, or excavated and that have not yet completed stabilization consistent with Part 2.2;

4.1.5.2 All stormwater controls (including pollution prevention measures) installed at the site to comply with this permit;

4.1.5.3 Material, waste, borrow, or equipment storage and maintenance areas that are covered by this permit;

4.1.5.4 All areas where stormwater typically flows within the site, including drainageways designed to divert, convey, and/or treat stormwater;

4.1.5.5 All points of discharge from the site; and

4.1.5.6 All locations where stabilization measures have been implemented.

You are not required to inspect areas that, at the time of the inspection, are considered unsafe to your inspection personnel.

4.1.6. Requirements for Inspections. During your site inspection, you must at a minimum:

4.1.6.1 Check whether all erosion and sediment controls and pollution prevention controls are installed, appear to be operational, and are working as intended to minimize pollutant discharges. Determine if any controls need to be replaced, repaired, or maintained in accordance with Parts 2.1.1.4 and 2.3.2;

4.1.6.2 Check for the presence of conditions that could lead to spills, leaks, or other accumulations of pollutants on the site;

4.1.6.3 Identify any locations where new or modified stormwater controls are necessary to meet the requirements of Parts 2 and/or 3;

4.1.6.4 At points of discharge and, if applicable, the banks of any surface waters flowing within your property boundaries or immediately adjacent to your property, check for signs of visible erosion and sedimentation *(i.e., sediment deposits)* that have occurred and are attributable to your discharge; and

4.1.6.5 Identify any and all incidents of noncompliance observed.

4.1.6.6 If a discharge is occurring during your inspection, you are required to:

a. Identify all points of the property from which there is a discharge;

b. Observe and document the visual quality of the discharge, and take note of the characteristics of the stormwater discharge, including color, odor, floating, settled, or suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollutants; and

c. Document whether your stormwater controls are operating effectively, and describe any such controls that are clearly not operating as intended or are in need of maintenance.

4.1.6.7 Based on the results of your inspection, initiate corrective action under Part 5.

4.1.7. Inspection Report.

4.1.7.1 ***Requirement to Complete Inspection Report.*** You must complete an inspection report within 24 hours of completing any site inspection. Each inspection report must include the following:

a. The inspection date;

b. Names and titles of personnel making the inspection;

c. A summary of your inspection findings, covering at a minimum the observations you made in accordance with Part 4.1.6;

d. If you are inspecting your site at the frequency specified in Part 4.1.2.2, Part 4.1.3, or Part 4.1.4.2, and you conducted an inspection because of rainfall measuring 0.25 inches or greater, you must include the applicable rain gauge or weather station readings that triggered the inspection; and

e. If you have determined that it is unsafe to inspect a portion of your site, you must describe the reason you found it to be unsafe and specify the locations that this condition applied to.

4.1.7.2 ***Signature Requirements.*** Each inspection report must be signed in accordance with Appendix I, Part I.11 of this permit.

4.1.7.3 ***Recordkeeping Requirements.*** You are required to keep a current, copy of all inspection reports at the site or at an easily accessible location, so that it can be made available at the time of an onsite inspection or upon request by EPA. For purposes of this permit, your inspection reports may be kept electronically if the records are:

a. In a format that can be read in a similar manner as a paper record;

b. Legally dependable with no less evidentiary value than their paper equivalent; and

c. Accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form.

Note: See Section IX.1.7 of the Fact Sheet for a discussion on ways to ensure that electronic records satisfy this requirement. See Appendix I, Part I.11.5 for requirements relating to electronic signature of these documents.

All inspection reports completed for this Part must be retained for at least 3 years from the date that your permit coverage expires or is terminated.

4.2. INSPECTIONS BY EPA.

You must allow EPA, or an authorized representative of the EPA, to conduct the following activities at reasonable times:

4.2.1. Enter onto areas of your site, including any construction support activity areas covered by this permit (see Part 1.3.c), and onto locations where records are kept under the conditions of this permit;

4.2.2. Access and copy any records that must be kept under the conditions of this permit;

4.2.3. Inspect your construction site, including any construction support activity areas covered by this permit (see Part 1.3.c) and any stormwater controls installed and maintained at the site; and

4.2.4. Sample or monitor for the purpose of ensuring compliance.

5. CORRECTIVE ACTIONS.

5.1. "CORRECTIVE ACTIONS" DEFINED.

Corrective actions are actions you take in compliance with this Part to:

- Repair, modify, or replace any stormwater control used at the site;
- Clean up and properly dispose of spills, releases, or other deposits; or
- Remedy a permit violation.

5.2. REQUIREMENTS FOR TAKING CORRECTIVE ACTION.

You must complete the following corrective actions in accordance with the deadlines specified in this Part. In all circumstances, you must immediately take all reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events.

Note: In this context, the term "immediately" requires construction operators to, on the same day a condition requiring corrective action is found, take all reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational. However, if the problem is identified at a time in the work day when it is too late to initiative corrective action, the initiation of corrective action must begin on the following work day.

5.2.1. For any of the following conditions on your site, you must install a new or modified control and make it operational, or complete the repair, by no later than 7 calendar days from the time of discovery. If it is infeasible to complete the installation or repair within 7 calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7 calendar day timeframe and document your schedule for installing the stormwater control(s) and making it operational as soon as practicable after the 7-day timeframe.

5.2.1.1 A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Parts 2 and/or 3; or

5.2.1.2 You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements in Part 3.1. In this case, you must notify your EPA Regional Office by the end of the next work day. You are required to submit your notification through EPA's electronic NOI system, or "eNOI", at www.epa.gov/npdes/cgpenoi; or

5.2.1.3 One of the prohibited discharges in Part 2.3.1 is occurring or has occurred.

5.2.2. Where your corrective actions result in changes to any of the stormwater controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within 7 calendar days of completing corrective action work.

5.3. CORRECTIVE ACTION REQUIRED BY EPA.

You must comply with any corrective actions required by EPA as a result of permit violations found during an inspection carried out under Part 4.2.

5.4. CORRECTIVE ACTION REPORT.

For each corrective action taken in accordance with this Part, you must complete a corrective action report, which includes the applicable information in Parts 5.4.1 and 5.4.2. Note that these reports must be maintained in your records but do not need to be provided to EPA except upon request.

5.4.1. Within 24 hours of discovering the occurrence of one of the triggering conditions in Part 5.2.1 at your site, you must complete a report of the following:

5.4.1.1 Which condition was identified at your site;

5.4.1.2 The nature of the condition identified; and

5.4.1.3 The date and time of the condition identified and how it was identified.

5.4.2. Within 7 calendar days of discovering the occurrence of one of the triggering conditions in Part 5.2.1 at your site, you must complete a report of the following:

5.4.2.1 Any follow-up actions taken to review the design, installation, and maintenance of stormwater controls, including the dates such actions occurred;

5.4.2.2 A summary of stormwater control modifications taken or to be taken, including a schedule of activities necessary to implement changes, and the date the modifications are completed or expected to be completed; and

5.4.2.3 Notice of whether SWPPP modifications are required as a result of the condition identified or corrective action.

5.4.3. Signature Requirements. Each corrective action report must be signed and certified in accordance with Appendix I, Part I.11 of this permit.

5.4.4. Recordkeeping Requirements. You are required to keep a current copy of all corrective action reports at the site or at an easily accessible location, so that it can be made available at the time of an onsite inspection or upon request by EPA. For purposes of this permit, your corrective action reports may be kept electronically if the records are:

5.4.4.1 In a format that can be read in a similar manner as a paper record;

5.4.4.2 Legally dependable with no less evidentiary value than their paper equivalent; and

5.4.4.3 Accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form.

Note: See Section IX.1.7 of the Fact Sheet for a discussion on ways to ensure that electronic records satisfy this requirement. See Appendix I, Part I.11.5 for requirements relating to electronic signature of these documents.

All corrective action reports completed for this Part must be retained for at least 3 years from the date that your permit coverage expires or is terminated.

6. STAFF TRAINING REQUIREMENTS.

Prior to the commencement of earth-disturbing activities or pollutant-generating activities, whichever occurs first, you must ensure that the following personnel understand the requirements of this permit and their specific responsibilities with respect to those requirements:

- Personnel who are responsible for the design, installation, maintenance, and/or repair of stormwater controls (including pollution prevention measures);
- Personnel responsible for the application and storage of treatment chemicals (if applicable);
- Personnel who are responsible for conducting inspections as required in Part 4.1.1; and
- Personnel who are responsible for taking corrective actions as required in Part 5.

Notes: (1) If the person requiring training is a new employee, who starts after you commence earth-disturbing or pollutant-generating activities, you must ensure that this person has the proper understanding as required above prior to assuming particular responsibilities related to compliance with this permit.

(2) For emergency-related construction activities, the requirement to train personnel prior to commencement of earth-disturbing activities does not apply, however, such personnel must have the required training prior to NOI submission.

You are responsible for ensuring that all activities on the site comply with the requirements of this permit. You are not required to provide or document formal training for subcontractors or other outside service providers, but you must ensure that such personnel understand any requirements of the permit that may be affected by the work they are subcontracted to perform.

At a minimum, personnel must be trained to understand the following if related to the scope of their job duties (e.g., only personnel responsible for conducting inspections need to understand how to conduct inspections):

- The location of all stormwater controls on the site required by this permit, and how they are to be maintained;
- The proper procedures to follow with respect to the permit's pollution prevention requirements; and
- When and how to conduct inspections, record applicable findings, and take corrective actions.

7. STORMWATER POLLUTION PREVENTION PLAN (SWPPP).

7.1. GENERAL REQUIREMENTS.

7.1.1. Requirement to Develop a SWPPP Prior to Submitting Your NOI.

All operators associated with a construction project to be covered under this permit must develop a SWPPP.

Note: You have the option of developing a group SWPPP where you are one of several operators who will be engaged in construction activities at your site. For instance, if both the owner and the general contractor of the construction site are permitted, the owner may be the party responsible for SWPPP development, and the general contractor can choose to use this same SWPPP, as long as the SWPPP addresses the general contractor's scope of construction work and obligations under this permit.

You are required to develop your site's SWPPP prior to submitting your NOI. At a minimum, your SWPPP must include the information required in Part 7.2 and as specified in other parts of the permit. [24] You must also update the SWPPP as required in Part 7.4.

Note: If your project is an "existing project" (see Part 1.4.2.b) or if you are a new operator of an existing project" (see Part 1.4.2.c), and it is infeasible for you to comply with a specific requirement in this Part or in Parts 2.1, and 2.3.3 through 2.3.5 (except for Parts 2.3.3.1, 2.3.3.2b, 2.3.3.3c.i, and 2.3.3.4) because (1) the provision was not part of the permit you were previously covered under (i.e., the 2003 or 2008 CGP), and (2) because you are prevented from compliance due to the nature or location of earth disturbances that commenced prior to February 16, 2012 (or prior to April 9, 2012 for projects in the State of Idaho (except for Indian country), or prior to April 13, 2012 for projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or prior to May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin), or because you are unable to comply with the requirement due to the manner in which stormwater controls have already been installed or were already designed prior to February 16, 2012 (or prior to April 9, 2012 for projects in the State of Idaho (except for Indian country), or prior to April 13, 2012 for projects in areas in the State of Washington (except for Indian country) subject to construction activity by a Federal Operator, or prior to May 9, 2012 for projects located in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin), you are required to include documentation of the reasons why it is infeasible for you to meet the specific requirement, and then you may be waived from complying with this requirement. You must include a separate justification why it is infeasible for you to meet each of the applicable requirements.

If you prepared a SWPPP for coverage under a previous version of this NPDES permit, you must review and update your SWPPP to ensure that this permit's requirements are addressed prior to submitting your NOI.

7.2. SWPPP CONTENTS.

Your SWPPP must include the following information, at a minimum.

[24] The SWPPP does not establish the effluent limits that apply to your site's discharges; these limits are established in this permit in Parts 2 and 3.

7.2.1. Stormwater Team.

Each operator, or group of multiple operators, must assemble a "stormwater team," which is responsible for overseeing the development of the SWPPP, any later modifications to it, and for compliance with the requirements in this permit.

The SWPPP must identify the personnel (by name or position) that are part of the stormwater team, as well as their individual responsibilities. Each member of the stormwater team must have ready access to an electronic or paper copy of applicable portions of this permit, the most updated copy of your SWPPP, and other relevant documents or information that must be kept with the SWPPP.

7.2.2. Nature of Construction Activities.

The SWPPP must describe the nature of your construction activities, including the size of the property (in acres) and the total area expected to be disturbed by the construction activities (in acres), construction support activity areas covered by this permit (see Part 1.3.c), and the maximum area expected to be disturbed at any one time.

7.2.3. Emergency-Related Projects.

If you are conducting earth-disturbing activities in response to a public emergency (see Part 1.2), you must document the cause of the public emergency *(e.g., natural disaster, extreme flooding conditions, etc.)*, information substantiating its occurrence *(e.g., state disaster declaration or similar state or local declaration)*, and a description of the construction necessary to reestablish effected public services.

7.2.4. Identification of Other Site Operators.

The SWPPP must include a list of all other operators who will be engaged in construction activities at your site, and the areas of the site over which each operator has control.

7.2.5. Sequence and Estimated Dates of Construction Activities.

The SWPPP must include a description of the intended sequence of construction activities, including a schedule of the estimated start dates and the duration of the activity, for the following activities:

7.2.5.1 Installation of stormwater control measures, and when they will be made operational, including an explanation of how the sequence and schedule for installation of stormwater control measures complies with Part 2.1.1.3a and of any departures from manufacturer specifications pursuant to Part 2.1.1.3b;

7.2.5.2 Commencement and duration of earth-disturbing activities, including clearing and grubbing, mass grading, site preparation (i.e., excavating, cutting and filling), final grading, and creation of soil and vegetation stockpiles requiring stabilization;

7.2.5.3 Cessation, temporarily or permanently, of construction activities on the site, or in designated portions of the site;

7.2.5.4 Final or temporary stabilization of areas of exposed soil. The dates for stabilization must reflect the applicable deadlines to which you are subject in Part 2.2.1; and

7.2.5.5 Removal of temporary stormwater conveyances/channels and other stormwater control measures, removal of construction equipment and vehicles, and cessation of any pollutant-generating activities.

Note: If plans change due to unforeseen circumstances or for other reasons, the requirement to describe the sequence and estimated dates of construction activities is not meant

to "lock in" the operator to meeting these projections. When departures from initial projections are necessary, this should be documented in the SWPPP itself or in associated records, as appropriate.

7.2.6. Site Map.

The SWPPP must include a legible site map, or series of maps, showing the following features of your project:

Note: Included in the project site are any construction support activities covered by this permit (see Part 1.3.c).

7.2.6.1 Boundaries of the property and of the locations where construction activities will occur, including:

a. Locations where earth-disturbing activities will occur, noting any phasing of construction activities;

b. Approximate slopes before and after major grading activities. Note areas of steep slopes, as defined in Appendix A;

c. Locations where sediment, soil, or other construction materials will be stockpiled;

d. Locations of any crossings of surface waters;

e. Designated points on the site where vehicles will exit onto paved roads;

f. Locations of structures and other impervious surfaces upon completion of construction; and

g. Locations of construction support activity areas covered by this permit (see Part 1.3.c).

7.2.6.2 Locations of all surface waters, including wetlands, that exist within or in the immediate vicinity of the site. Indicate which waterbodies are listed as impaired, and which are identified by your state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 waters;

7.2.6.3 The boundary lines of any natural buffers provided consistent with Part 2.1.2.1a;

7.2.6.4 Areas of federally-listed critical habitat for endangered or threatened species;

7.2.6.5 Topography of the site, existing vegetative cover (*e.g., forest, pasture, pavement, structures*), and drainage pattern(s) of stormwater and authorized non-stormwater flow onto, over, and from the site property before and after major grading activities;

7.2.6.6 Stormwater and allowable non-stormwater discharge locations, including:

a. Locations of any storm drain inlets on the site and in the immediate vicinity of the site; and

Note: The requirement to show storm drain inlets in the immediate vicinity of the site on your site map only applies to those inlets that are easily identifiable from your site or from a publicly accessible area immediately adjacent to your site.

b. Locations where stormwater or allowable non-stormwater will be discharged to surface waters (including wetlands) on or near the site.

7.2.6.7 Locations of all potential pollutant-generating activities identified in Part 7.2.7;

7.2.6.8 Locations of stormwater control measures; and

7.2.6.9 Locations where polymers, flocculants, or other treatment chemicals will be used and stored.

7.2.7. Construction Site Pollutants.

The SWPPP must include the following:

7.2.7.1 A list and description of all the pollutant-generating activities[25] on your site.

7.2.7.2 For each pollutant-generating activity, an inventory of pollutants or pollutant constituents *(e.g., sediment, fertilizers and/or pesticides, paints, solvents, fuels)* associated with that activity, which could be exposed to rainfall, or snowmelt, and could be discharged from your construction site. You must take into account where potential spills and leaks could occur that contribute pollutants to stormwater discharges. You must also document any departures from the manufacturer's specifications for applying fertilizers containing nitrogen and phosphorus, as required in Part 2.3.5.1.

7.2.8. Non-Stormwater Discharges.

The SWPPP must also identify all sources of allowable non-stormwater discharges listed in Part 1.3.d.

7.2.9. Buffer Documentation.

If you are required to comply with Part 2.1.2.1 because a surface water is located within 50 feet of your project's earth disturbances, you must describe which compliance alternative you have selected for your site, and comply with any additional requirements to provide documentation in Part 2.1.2.1.

7.2.10. Description of Stormwater Control Measures.

7.2.10.1 ***Stormwater Control Measures to be Used During Construction Activity.*** The SWPPP must describe all stormwater control measures that are or will be installed and maintained at your site to meet the requirements of Part 2. For each stormwater control measure, you must document:

a. Information on the type of stormwater control measure to be installed and maintained, including design information;

b. What specific sediment controls will be installed and made operational prior to conducting earth-disturbing activities in any given portion of your site to meet the requirement of Part 2.1.2.2a;

c. For exit points on your site, document stabilization techniques you will use and any additional controls that are planned to remove sediment prior to vehicle exit consistent with Part 2.1.2.3; and

d. For linear projects, where you have determined that the use of perimeter controls in portions of the site is impracticable, document why you believe this to be the case (see Part 2.1.2.2a).

7.2.10.2 ***Use of Treatment Chemicals.*** If you will use polymers, flocculants, or other treatment chemicals at your site, the SWPPP must include:

a. A listing of all soil types[26] that are expected to be exposed during construction and that will be discharged to locations where chemicals

[25] Examples of pollutant-generating activities include, but are not limited to: paving operations; concrete, paint, and stucco washout and waste disposal; solid waste storage and disposal; and dewatering operations.

will be applied. Also include a listing of soil types expected to be found in fill material to be used in these same areas, to the extent you have this information prior to construction.

b. A listing of all treatment chemicals to be used at the site, and why the selection of these chemicals is suited to the soil characteristics of your site;

c. If you have been authorized by your applicable EPA Regional Office to use cationic treatment chemicals, include the specific controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards;

d. The dosage of all treatment chemicals you will use at the site or the methodology you will use to determine dosage;

e. Information from any applicable Material Safety Data Sheets (MSDS);

f. Schematic drawings of any chemically-enhanced stormwater controls or chemical treatment systems to be used for application of the treatment chemicals;

g. A description of how chemicals will be stored consistent with Part 2.1.3.3b;

h. References to applicable state or local requirements affecting the use of treatment chemicals, and copies of applicable manufacturer's specifications regarding the use of your specific treatment chemicals and/or chemical treatment systems; and

i. A description of the training that personnel who handle and apply chemicals have received prior to permit coverage, or will receive prior to use of the treatment chemicals at your site.

7.2.10.3 ***Stabilization Practices.*** The SWPPP must describe the specific vegetative and/or non-vegetative practices that will be used to comply with the requirements in Part 2.2, including:

a. If you will be complying with the stabilization deadlines specified in Part 2.2.1.3a, you must indicate in your SWPPP the beginning and ending dates of the seasonally dry period and your site conditions; and

b. If you will be complying with the stabilization deadlines specified in Part 2.2.1.3b, you must document the circumstances that prevent you from meeting the deadlines specified in Parts 2.2.1.1 and/or 2.2.1.2.

7.2.11. Pollution Prevention Procedures.

7.2.11.1 ***Spill Prevention and Response Procedures.*** The SWPPP must describe procedures that you will follow to prevent and respond to spills and leaks consistent with Part 2.3, including:

a. Procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases. Identify the name or position of the employee(s) responsible for detection and response of spills or leaks; and

[26] Information on soils may be obtained at http://websoilsurvey.nrcs.usda.gov/app/.

b. Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity consistent with Part 2.3.4 and established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period. Contact information must be in locations that are readily accessible and available.

You may also reference the existence of Spill Prevention Control and Countermeasure (SPCC) plans developed for the construction activity under Part 311 of the CWA, or spill control programs otherwise required by an NPDES permit for the construction activity, provided that you keep a copy of that other plan onsite.

Note: Even if you already have an SPCC or other spill prevention plan in existence, your plans will only be considered adequate if they meet all of the requirements of this Part, either as part of your existing plan or supplemented as part of the SWPPP.

7.2.11.2 ***Waste Management Procedures.*** The SWPPP must describe procedures for how you will handle and dispose of all wastes generated at your site, including, but not limited to, clearing and demolition debris, sediment removed from the site, construction and domestic waste, hazardous or toxic waste, and sanitary waste.

7.2.12. Procedures for Inspection, Maintenance, and Corrective Action.

The SWPPP must describe the procedures you will follow for maintaining your stormwater control measures, conducting site inspections, and, where necessary, taking corrective actions, in accordance with Part 2.1.1.4, Part 2.3.2, Part 4, and Part 5 of the permit. The following information must also be included in your SWPPP:

7.2.12.1 Personnel responsible for conducting inspections;

7.2.12.2 The inspection schedule you will be following, which is based on whether your site is subject to Part 4.1.2 or Part 4.1.3, and whether your site qualifies for any of the allowances for reduced inspection frequencies in Part 4.1.4. If you will be conducting inspections in accordance with the inspection schedule in Part 4.1.2.2 or Part 4.1.3, the location of the rain gauge on your site or the address of the weather station you will be using to obtain rainfall data;

7.2.12.3 If you will be reducing your inspection frequency in accordance with Part 4.1.4.2, the beginning and ending dates of the seasonally-defined arid period for your area or the valid period of drought. If you will be reducing your inspection frequency in accordance with Part 4.1.4.3, the beginning and ending dates of frozen conditions on your site; and

7.2.12.4 Any inspection or maintenance checklists or other forms that will be used.

7.2.13. Staff Training.

The SWPPP must include documentation that the required personnel were trained in accordance with Part 6.

7.2.14. Documentation of Compliance with Other Federal Requirements.

7.2.14.1 *Endangered Species Act.* The SWPPP must include documentation supporting your determination with respect to Part 1.1.e and Appendix D.

7.2.14.2 *Historic Properties.* The SWPPP must include documentation required by Appendix E in relation to potential impacts to historic properties.

7.2.14.3 *Safe Drinking Water Act Underground Injection Control (UIC) Requirements for Certain Subsurface Stormwater Controls.* If you are using any of the following stormwater controls at your site, as they are described below, you must document any contact you have had with the applicable state agency or EPA Regional Office responsible for implementing the requirements for underground injection wells in the Safe Drinking Water Act and EPA's implementing regulations at 40 CFR Parts 144 -147. Such controls would generally be considered Class V UIC wells:

a. Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system);

b. Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow; and

c. Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system).

Note: For state UIC program contacts, refer to the following EPA website: http://water.epa.gov/type/groundwater/uic/whereyoulive.cfm.

7.2.15. SWPPP Certification.

You must sign and date your SWPPP in accordance with Appendix I, Part I.11.

7.2.16. Post-Authorization Additions to the SWPPP.

Once you are notified of your coverage under this permit, you must include the following documents as part of your SWPPP:

7.2.16.1 A copy of your NOI submitted to EPA along with any correspondence exchanged between you and EPA related to coverage under this permit;

7.2.16.2 A copy of the acknowledgment letter you receive from the NOI Processing Center or eNOI system assigning your permit tracking number;

7.2.16.3 A copy of this permit (an electronic copy easily available to the stormwater team is also acceptable).

7.3. ON-SITE AVAILABILITY OF YOUR SWPPP.

You are required to keep a current copy of your SWPPP at the site or at an easily accessible location so that it can be made available at the time of an on-site inspection or upon request by EPA; a state, tribal, or local agency approving stormwater management plans; the operator of a storm sewer system receiving discharges from the site; or representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).

EPA may provide access to portions of your SWPPP to a member of the public upon request. Confidential Business Information (CBI) will be withheld from the public, but may not be withheld from EPA, USFWS, or NMFS.

Note: Information covered by a claim of confidentiality will be disclosed by EPA only to the extent of, and by means of, the procedures set forth in 40 CFR Part 2, Subpart B. In general, submitted information protected by a business confidentiality claim may

be disclosed to other employees, officers, or authorized representatives of the United States concerned with implementing the CWA. The authorized representatives, including employees of other executive branch agencies, may review CBI during the course of reviewing draft regulations.

If an onsite location is unavailable to keep the SWPPP when no personnel are present, notice of the plan's location must be posted near the main entrance of your construction site.

7.4. REQUIRED SWPPP MODIFICATIONS.

7.4.1. List of Conditions Requiring SWPPP Modification.

You must modify your SWPPP, including the site map(s), in response to any of the following conditions:

7.4.1.1 Whenever new operators become active in construction activities on your site, or you make changes to your construction plans, stormwater control measures, pollution prevention measures, or other activities at your site that are no longer accurately reflected in your SWPPP. This includes changes made in response to corrective actions triggered under Part 5. You do not need to modify your SWPPP if the estimated dates in Part 7.2.5 change during the course of construction;

7.4.1.2 To reflect areas on your site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;

7.4.1.3 If inspections or investigations by site staff, or by local, state, tribal, or federal officials determine that SWPPP modifications are necessary for compliance with this permit;

7.4.1.4 Where EPA determines it is necessary to impose additional requirements on your discharge, the following must be included in your SWPPP:

a. A copy of any correspondence describing such requirements; and

b. A description of the stormwater control measures that will be used to meet such requirements.

7.4.1.5 To reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater control measures implemented at the site; and

7.4.1.6 If applicable, if a change in chemical treatment systems or chemically-enhanced stormwater control is made, including use of a different treatment chemical, different dosage rate, or different area of application.

7.4.2. Deadlines for SWPPP Modifications.

You must complete required revisions to the SWPPP within 7 calendar days following the occurrence of any of the conditions listed in Part 7.4.1.

7.4.3. SWPPP Modification Records.

You are required to maintain records showing the dates of all SWPPP modifications. The records must include the name of the person authorizing each change (see Part 7.2.15 above) and a brief summary of all changes.

7.4.4. Certification Requirements.

All modifications made to the SWPPP consistent with Part 7.4 must be authorized by a person identified in Appendix I, Part I.11.b.

7.4.5. Required Notice to Other Operators.

Upon determining that a modification to your SWPPP is required, if there are multiple operators covered under this permit, you must immediately notify any operators who may be impacted by the change to the SWPPP.

8. HOW TO TERMINATE COVERAGE.

Until you terminate coverage under this permit, you are required to comply with all conditions and effluent limitations in the permit. To terminate permit coverage, you must submit to EPA a complete and accurate Notice of Termination (NOT), which certifies that you have met the requirements for terminating in Part 8.

8.1. MINIMUM INFORMATION REQUIRED IN NOT.

You will be required to provide the following in your NOT:

8.1.1. NPDES permit tracking number provided by EPA when you received coverage under this permit;

8.1.2. Basis for submission of the NOT (see Part 8.2);

8.1.3. Operator contact information;

8.1.4. Name of project and address (or a description of location if no street address is available); and

8.1.5. NOT certification.

8.2. CONDITIONS FOR TERMINATING PERMIT COVERAGE.

You may terminate permit coverage only if one of the following conditions occurs at your site:

8.2.1. You have completed all earth-disturbing activities at your site and, if applicable, construction support activities covered by this permit (see Part 1.3.c), and you have met the following requirements:

8.2.1.1 For any areas that (1) were disturbed during construction, (2) are not covered over by permanent structures, and (3) over which you had control during the construction activities, you have met the requirements for final vegetative or non-vegetative stabilization in Part 2.2.2;

8.2.1.2 You have removed and properly disposed of all construction materials, waste and waste handling devices, and have removed all equipment and vehicles that were used during construction, unless intended for long-term use following your termination of permit coverage;

8.2.1.3 You have removed all stormwater controls that were installed and maintained during construction, except those that are intended for long-term use following your termination of permit coverage or those that are biodegradable; and

8.2.1.4 You have removed all potential pollutants and pollutant-generating activities associated with construction, unless needed for long-term use following your termination of permit coverage; or

8.2.2. You have transferred control of all areas of the site for which you are responsible under this permit to another operator, and that operator has submitted an NOI and obtained coverage under this permit; or

8.2.3. Coverage under an individual or alternative general NPDES permit has been obtained.

8.3. HOW TO SUBMIT YOUR NOT.

You are required to use EPA's electronic NOI system, or "eNOI system", to prepare and submit your NOT. The electronic NOT form you are required to complete is found at www.epa.gov/npdes/stormwater/cgpenoi. You will use your NOI tracking number *(i.e., the EPA number you were assigned upon authorization under the permit)* to upload the

fillable NOT form, which will ensure that EPA properly records your termination of coverage. If you have a problem with the use of the eNOI system, contact the EPA Regional Office that corresponds to the location of your site. If you are given approval by the EPA Regional Office to use a paper NOT, you must complete the form in Appendix K.

8.4. DEADLINE FOR SUBMITTING NOTS.

You must submit your NOT within 30 calendar days after any one of the triggering conditions in Part 8.2 occur.

8.5. EFFECTIVE DATE OF TERMINATION OF COVERAGE.

Your authorization to discharge under this permit terminates at midnight of the calendar day that a complete NOT is processed and posted on EPA's website (www.epa.gov/npdes/stormwater/cgpnoisearch).

9. PERMIT CONDITIONS APPLICABLE TO SPECIFIC STATES, INDIAN COUNTRY LANDS, OR TERRITORIES

The provisions in this Part provide modifications or additions to the applicable conditions of this permit to reflect specific additional conditions required as part of the state or tribal CWA Section 401 certification process, or the Coastal Zone Management Act (CZMA) certification process, or as otherwise established by the permitting authority. The specific additional revisions and requirements only apply to activities in those specific states, Indian country, and areas in certain states subject to construction projects by Federal Operators. States, Indian country, and areas subject to construction by Federal Operators not included in this Part do not have any modifications or additions to the applicable conditions of this permit

9.1. Region 1

9.1.1. MAR120000: Commonwealth of Massachusetts (except Indian country).

9.1.1.1 You must comply with the Massachusetts Clean Waters Act (Ch. 21, ss. 26-53).

9.1.1.2 You must comply with the conditions in 314 CMR 4.00- Massachusetts Surface Water Quality Standards.

9.1.1.3 You must comply with the conditions in 314 CMR 3.00- Massachusetts Surface Water Discharge Permit Program.

9.1.1.4 You must comply with the Wetlands Protection Act (Ch. 131 s. 40) and its regulations, 310 CMR 10.00 and any Order of Conditions issued by a Conservation Commission or a Superseding Order of Conditions issued by the Massachusetts Department of Environmental Protection.

9.1.1.5 You must comply with the Massachusetts Storm Water Performance Standards, as prescribed by state regulations promulgated under the authority of the Massachusetts Clean Waters Act, MGL Ch. 21, ss 26-53 and the Wetlands Protection Act, Ch. 131, s. 40.

9.1.1.6 You must comply with the conditions in 314 CMR 9.00 – Water Quality Certification for Discharges of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States within the Commonwealth.

9.1.1.7 You must comply with the Massachusetts Endangered Species Act (MESA), MGL Ch. 313A and regulations at 321 CMR 10.00 and any actions undertaken to comply with this stormwater general permit shall not result in non-compliance with the MESA.

9.1.1.8 Activities covered under this general permit shall not interfere with the implementation of mosquito control work conducted in accordance with Chapter 252 including s. 5A thereunder and MassDEP Guideline Number BRP G01-02, West Nile Virus Application of Pesticides to Wetland Resource Areas and Buffer Zones, and Public Water Supplies.

9.1.1.9 The Department may request a copy of the Stormwater Pollution Prevention Plan (SWPPP) and the permittee is required to submit the SWPPP to the Department within 14 days of such request. The Department may conduct an inspection of any facility covered by this permit to ensure compliance with state law requirements, including state water quality standards. The Department may enforce its certification conditions.

9.1.1.10 The Department may require the permit holder to perform water quality monitoring during the permit term if monitoring is necessary for the protection of public health or the environment as designated under the authority at 314 CMR 3.00.

9.1.1.11 The Department may require the permit holder to provide measurable verification of the effectiveness of Best Management Practices (BMPs) and other control measures used in the stormwater management program, including water quality monitoring.

9.1.1.12 The Department has determined that compliance with this permit does not protect the permit holder from enforcement actions deemed necessary by the Department under its associated regulations to address an imminent threat to public health or a significant adverse environmental impact which results in a violation of the Massachusetts Clean Waters Act, Ch. 21, ss. 26-53.

9.1.1.13 The Department reserves the right to modify this 401 Water Quality Certification if any changes, modifications, or deletions are made to this general permit. In addition, the Department reserves the right to add and/or alter the terms and conditions of this 401 Water Quality Certification to carry out its responsibilities during the term of this general permit with respect to water quality, including any revisions to 314 CMR 4.00, Massachusetts Surface Water Quality Standards.

9.1.1.14 Should any violation of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00, or the conditions of this 401 Water Quality Certification occur, the Department will direct the permit holder to correct the violation(s). The Department has the right to take any action as authorized by the General Laws of the Commonwealth to address the violation(s) of this permit or the Massachusetts Clean Waters Act and the regulations promulgated thereunder. Substantial civil and criminal penalties are authorized under MGL Ch. 21, s. 42 for discharging into Masachusetts' waters in violation of an order or permit issued by this Department. This 401 Water Quality Certification does not relieve the permit holder of the duty to comply with other applicable Massachusetts statutes and regulations.

9.1.2. NHR120000: State of New Hampshire.

9.1.2.1 If you disturb 100,000 square feet or more of contiguous area, you must also apply for an Alteration of Terrain (AoT) permit from DES pursuant to RSA 485-A:17 and Env-Ws 1500. This requirement also applies to a lower disturbance threshold of 50,000 square feet or more when construction occurs within the protected shoreline under the Shoreland Water Quality Protection Act (see RSA 483-B and Env-Ws 1400). A permit application must also be filed if your project disturbs an area of greater than 2,500 square feet, is within 50 feet of <u>any</u> surface water, and has a flow path of 50 feet or longer disturbing a grade of 25 percent or greater. Project sites with disturbances smaller than those discussed above, that have the potential to adversely affect state surface waters, are subject to the conditions of an AoT General Permit by Rule.

9.1.2.2 You must determine that any excavation dewatering discharges are not contaminated before they will be authorized as an allowable non-stormwater discharge under this permit (see Part 1.3.d). The water is considered uncontaminated if there is no groundwater contamination within 1,000 feet of the source of the groundwater to be treated and discharged.

Information on groundwater contamination can be generated over the Internet via the NHDES web site http://des.nh.gov/ at the OneStop Web Geographic Information System at http://www2.des.state.nh.us/gis/onestop. If it is determined that the groundwater to be dewatered is near a remediation or other waste site you must apply for the Remediation General Permit (see http://www.epa.gov/region1/npdes/rgp.html.)

9.1.2.3 You must treat any uncontaminated excavation dewatering discharges as necessary to remove suspended solids and turbidity. The discharges must be sampled at a location prior to mixing with stormwater at least once per week during weeks when discharges occur. Samples must be analyzed for total suspended solids (TSS) and must meet monthly average and daily maximum TSS limits of 50 milligrams per liter (mg/L) and 100 mg/L, respectively. TSS (a.k.a. Residue, Nonfilterable) sampling and analysis must be performed in accordance with Tables IB and II in 40 CFR 136.3 (see: http://www.access.gpo.gov/nara/cfr/waisidx_02/40cfr136_02.html). Records of any sampling and analysis must be maintained and kept with the SWPPP for at least three years after final site stabilization.

9.1.2.4 Construction site owners and operators must consider opportunities for post-construction groundwater recharge using infiltration best management practices (BMPs) during site design and preparation of the stormwater pollution prevention plan (SWPPP). If your construction site is in a town that is required to obtain coverage under the NPDES General Permit for discharges from Municipal Separate Storm Sewer Systems (MS4) you may be required to use such practices. The SWPPP must include a description of any on-site infiltration that will be installed as a post-construction stormwater management measure or reasons for not employing such measures such as 1) The facility is located in a wellhead protection area as defined in RSA 485-C:2; or 2) The facility is located in an area where groundwater has been reclassified to GAA, GAI or GA2 pursuant to RSA 485-C and Env-Ws 420; or 3) Any areas that would be exempt from the groundwater recharge requirements contained in Env-Ws 1507.04(e), including all land uses or activities considered to be a "High-load Area" (see Env-Wq 1502.26). For design considerations for infiltration measures see Volume II of the NH Stormwater Manual.

9.1.2.5 Appendix F contains a list of Tier 2, or high quality waters. Although there is no official list of tier 2 waters, it can be assumed that all NH surface waters are tier 2 for turbidity unless 1) the surface water that you are proposing to discharge into is listed as impaired for turbidity in the states listing of impaired waters (see Surface Water Quality Watershed Report Cards at http://des.nh.gov/organization/divisions/water/wmb/swqa/report_cards.htm or 2) sampling upstream of the proposed discharge location shows turbidity values greater than 10 NTU. A single grab sample collected during dry weather (no precipitation within 48 hours) is acceptable.

9.1.2.6 To ensure compliance with RSA 485-C, RSA 485-A, RSA 485-A:13, I(a), Env-Wq 1700 and Env-Wq 302, the following information may be requested by NHDES. This information must be kept on site unless you receive a written request from NHDES that it be sent to the address shown in Part 9.1.2.7.

a. A site map required in Part 7.2.6, showing the type and location of all post-construction infiltration BMPs utilized at the facility or the reason(s) why none were installed;

b. A list of all non-stormwater discharges that occur at the facility, including their source locations and the control measures being used (see Part 1.3.d).

c. Records of sampling and analysis of TSS required for construction dewatering discharges (see Part 9.1.2.3).

9.1.2.7 All required or requested documents must be sent to:

NH Department of Environmental Services, Wastewater Engineering Bureau, Permits & Compliance Section
P.O. Box 95
Concord, NH 03302-0095

9.1.2.8 When NHDES determines that additional water quality certification requirements are necessary to protect water quality, it may require individual discharges to meet additional conditions to obtain or continue coverage under the CGP. Any such conditions must be supplied to the permittee in writing. Any required pollutant loading analyses and any designs for structural best management practices necessary to protect water quality must be prepared by a civil or sanitary engineer registered in New Hampshire.

9.2. Region 4

9.2.1. FLR12000I: Indian country within the State of Florida.

9.2.1.1 **Seminole Tribe of Florida**. The following conditions apply only for discharges on federal trust lands of the Seminole Tribe of Florida (Big Cypress, Brighton, Hollywood, Immokalee, and Tampa Reservations):

a. Any discharges into waters of the Seminole Tribe of Florida shall not cause an exceedance in Turbidity of 29 NTU above natural background conditions.

b. Unless otherwise specified by previous permits or criteria, a storm event of three (3) day duration and twenty five (25) year return frequency shall be used in computing off-site discharge on Seminole Lands as agreed upon in the Water Rights Compact agreement attached to Public Law 100-228 (December 31, 1987), Seminole Indian Land Claims Settlement Act of 1987.

c. The Seminole Tribe of Florida accepts a 20' X 20' stabilization at entry/exit points.

9.3. Region 5

MNR12000I: Indian country within the State of Minnesota.

9.3.1.1 **Fond du Lac Band of Lake Superior Chippewa.** The following conditions apply only to discharges on the Fond du Lac Band of Lake Superior Chippewa Reservation.

a. A copy of the Storm Water Pollution Prevention Plan must be submitted to the following office at least thirty (30) days in advance of sending the Notice of Intent (NOI) to EPA:

Fond du Lac Reservation
Office of Water Protection
1720 Big Lake Road
Cloquet, MN 55720

CGP applicants are encouraged to work with the FDL Office of Water Protection in the identification of all proposed receiving waters.

b. Copies of the Notice of Intent (NOI) and the Notice of Termination (NOT) must be sent to the Fond du Lac Office of Water Protection at the same time they are submitted to EPA.

c. The turbidity limit shall NOT exceed 10% of natural background as determined by the Office of Water protection staff.

d. Turbidity sampling must take place within 24 hours of a ½ -inch or greater rainfall event. The results of the sampling must be reported to the Officce of Water Protection staff within 7 days of sample collection. All sample reporting must include the date and time, location (GPS:UTM/Zone 15), and NTU.

e. Discharges to receiving waters with open water must be sampled for turbidity prior to any authorized discharge as determined by Office of Water Protection staff.

f. This certification does not pertain to any new discharge to Outstanding Reservation Resource Waters (ORRW) as described in §105 b.3 of the Fond du Lac Water Quality Standards (Ordinance #12/98). Although additional waters may be designated in the future, currently Perch Lake, Rice Portage Lake, Miller Lake, Deadfish Lake and Jaskari Lake are designated as ORRWs. New dischargers wishing to discharge to an ORRW must obtain an individual permit for stormwater discharges from large and small construction activities.

g. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in the Water Quality Standards of the Fond du Lac Reservation, Ordinance 12/98 as amended. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of water of the Fond du Lac Reservation for any of the uses designated in the Water Quality Standards of the Fond du Lac Reservation. These uses include wildlife, aquatic life, warm and cold water fisheries, subsistence fishing (netting), primary contact recreation, cultural, wild rice areas, aesthetic waters, agriculture, navigation and commercial.

h. Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the Fond du Lac Reservation. All spills must be reported to the appropriate emergency management agency, and measures shall be taken immediately to prevent the pollution of waters of the Fond du Lac reservation, including groundwater.

i. This certification does not authorize impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for such listing.

9.3.1.2 **Grand Portage Band of Lake Superior Chippewa.** The following conditions apply only to discharges on the Grand Portage Band of Lake Superior Chippewa Reservation.

a. The CGP authorization is for construction activities that may occur within the exterior boundaries of the Grand Portage Reservation in

accordance to the Grand Portage Land Use Ordinance. The CGP regulates stormwater discharges associated with construction sites of one acre or more in size. Only those activities specifically authorized by the CGP are authorized by this certification (the "Certification"). This Certification does not authorize impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for listing as such.

b. All construction stormwater discharges authorized by the CGP must comply with the Water Quality Standards and Water Resources Ordinance, as well as Applicable Federal Standards (as defined in the Water Resources Ordinance). As such, appropriate steps must be taken to ensure that petroleum products or other chemical pollutants are prevented from entering the Waters of the Reservation (as defined in the Water Resources Ordinance). All spills must be reported to the appropriate emergency-management agency, and measures must be taken to prevent the pollution of the Waters of the Reservation, including groundwater.

c. A copy of the Storm Water Pollution Prevention Plan (the "Plan") required by the CGP must be submitted to the Board at least 30 days in advance of sending the requisite Notice of Intent to EPA. The Board may require monitoring of storm-water discharges as determined on a case-by-case basis. If the Board determines that a monitoring plan is necessary, the monitoring plan must be prepared and incorporated into the Plan before the Notice of Intent is submitted to the EPA. The Plan should be sent to:

   Grand Portage Environmental Resources Board
   P.O. Box 428
   Grand Portage, MN 55605

   Copies of the Notice of Intent and Notice of Termination required under the General Permit must be submitted to the Board at the address above at the same time they are submitted to the EPA.

d. If requested by the Grand Portage Environmental Department, the permittee must provide additional information necessary for a case-by-case eligibility determination to assure compliance with the Water Quality Standards and any Applicable Federal Standards.

e. Discharges that the Board has determined to be or that may reasonably be expected to be contributing to a violation of Water Quality Standards or Applicable Federal Standards are not authorized by this Certification.

f. The Board retains full authority provided by the Water Resources Ordinance to ensure compliance with and to enforce the provisions of the Water Resource Ordinance and Water Quality Standards, Applicable Federal Standards, and these Certification conditions.

g. Appeals related to Board actions taken in accordance with any of the preceding conditions may be heard by the Grand Portage Tribal Court.

9.3.2. WIR12000I: Indian country within the State of Wisconsin.

9.3.2.1 **Bad River Band of the Lake Superior Tribe of Chippewa Indians.** The following conditions apply only to discharges on the Bad River Band of the Lake Superior Tribe of Chippewa Indians Reservation.

a. Only those activities specifically authorized by the CGP are authorized by this Certification. This Certification does not authorize impacts to cultural properties, or historical sites, or properties that may be eligible for listing as such.[27, 28]

b. Operators are not eligible to obtain authorization under the CGP for all new discharges to an Outstanding Tribal Resource Water (or Tier 3 water).[29] Outstanding Tribal Resource Waters, or Tier 3 waters, include the following: Kakagon Slough and the lower wetland reaches of its tributaries that support wild rice, Kakagon River, Bad River Slough, Honest John Lake, Bog Lake, a portion of Bad River, from where it enters the Reservation through the confluence with the White River, and Potato River.[30]

c. Projects utilizing cationic treatment chemicals[31] within the Bad River Reservation boundaries are not eligible for coverage under the CGP.[32]

d. All projects which are eligible for coverage under the CGP and are located within the exterior boundaries of the Bad River Reservation shall be implemented in such a manner that is consistent with the Tribe's Water Quality Standards (WQS).[33]

e. An operator proposing to discharge to an Outstanding Resource Water (or Tier 2.5 water) under the CGP must comply with the antidegradation provisions of the Tribe's WQS. Outstanding Resource Waters, or Tier 2.5 waters, include the following: a portion of Bad River, from downstream the confluence with the White River to Lake Superior, White River, Marengo River, Graveyard Creek, Bear Trap Creek, Wood Creek, Brunsweiler River, Tyler Forks, Bell Creek, and Vaughn Creek.[34] The antidegradation demonstration materials described in provision E.4.iii. must be submitted to the following address:

   Bad River Tribe's Natural Resources Department
   Attn: Water Resources Specialist
   P.O. Box 39
   Odanah, WI 54861

f. An operator proposing to discharge to an Exceptional Resource Water (or Tier 2 water) under the CGP must comply with the antidegradation provisions of the Tribe's WQS. Exceptional Resource Waters, or Tier 2 waters, include the following: any surface water within the exterior boundaries of the Reservation that is not specifically classified as an Outstanding Resource Water (Tier 2.5 water) or an Outstanding Tribal

[27] Bad River Band of Lake Superior Tribe of Chippewa Indians Water Quality Standards adopted by Resolution No. 7-6-11-441 (hereafter, Tribe's WQS).

[28] 36 C.F.R §800.16(l)(2).

[29] Tribe's WQS: See provisions E.3.ii and E.4.iv.

[30] Tribe's WQS: See provision E.2.iii.

[31] See definition of cationic treatment chemicals in Appendix A of the CGP

[32] Tribe's WQS: See provisions E.6.ii.a and E.6.ii.c.

[33] See Footnote 27.

[34] Tribe's WQS: See provision E.2.ii.

Resource Water (Tier 3 water).[35] The antidegradation demonstration materials described in provision E.4.ii. must be submitted to the following address:

Bad River Tribe's Natural Resources Department
Attn: Water Resources Specialist
P.O. Box 39
Odanah, WI 54861

g. A discharge to a surface water within the Bad River Reservation boundaries shall not cause or contribute to an exceedance of the turbidity criterion included in the Tribe's WQS, which states: Turbidity shall not exceed 5 NTU over natural background turbidity when the background turbidity is 50 NTU or less, or turbidity shall not increase more than 10% when the background turbidity is more than 50 NTU.[36]

h. All projects which are eligible for coverage under the CGP within the exterior boundaries of the Bad River Reservation must comply with the Bad River Reservation Wetland and Watercourse Protection Ordinance, or Chapter 323 of the Bad River Tribal Ordinances, including the erosion and sedimentation control, natural buffer, and stabilization requirements. Questions regarding Chapter 323 and requests for permit applications can be directed to the Wetlands Specialist in the Tribe's Natural Resources Department at (715) 682-7123 or wetlands@badriver-nsn.gov.

i. An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must notify the Tribe prior to the commencing earth-disturbing activities.[37] The operator must submit a copy of the Notice of Intent (NOI) to the following addresses at the same time it is submitted to the U.S. EPA:

Bad River Tribe's Natural Resources Department
Attn: Water Resources Specialist
P.O. Box 39
Odanah, WI 54861

Bad River Tribe's Natural Resources Department
Attn: Tribal Historic Preservation Officer (THPO)
P.O. Box 39
Odanah, WI 54861

The operator must also submit a copy of the Notice of Termination (NOT) to the above addresses at the same time it is submitted to the U.S. EPA.

j. The THPO must be provided 30 days to comment on the project.[38]

k. The operator must obtain THPO concurrence in writing. This written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties. For more information regarding the specifics

[35] Tribe's WQS: See provision E.2.i.

[36] Tribe's WQS: See provision E.7.iii.

[37] See footnotes 27 and 28.

[38] 36 C.F.R. § 800.3(c)(4).

of the cultural resources process, see 36 CFR Part 800. A best practice for an operator is to consult with the THPO during the planning stages of an undertaking.[39]

l. An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must submit a copy of the Stormwater Pollution Prevention Plan (SWPPP) to the following address at the same time as submitting the NOI:[40]

Bad River Tribe's Natural Resources Department
Attn: Water Resources Specialist
P.O. Box 39
Odanah, WI 54861

m. Any corrective action reports that are required under the CGP must be submitted to the following address within one (1) working day of the report completion:[41]

Bad River Tribe's Natural Resources Department
P.O. Box 39
Odanah, WI 54861

n. An operator shall be responsible for meeting any additional permit requirements imposed by the U.S. EPA necessary to comply with the Tribe's antidegradation policies if the discharge point is located upstream of waters designated by the Tribe.[42]

9.3.2.2 **Lac du Flambeau Band of Lake Superior Chippewa Indians.** The following conditions apply only to discharges on the Lac du Flambeau Band of Lake Superior Chippewa Indians Reservation.

a. A copy of the Storm Water Pollution Prevention Plan must be submitted to the following office at least thirty (30) days in advance of sending the Notice of Intent (NOI) to EPA:

Lac du Flambeau
Tribal Land Management
P. O. Box 279
Lac du Flambeau, WI 54538

CGP applicants are encouraged to work with the LdF Office of Water Protection in the identification of all proposed receiving waters.

b. Copies of the NOI and the Notice of Termination (NOT) must be sent to the LdF Water Resource Program at the same time they are submitted to EPA.

c. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in the Water Quality Standards of the Lac du Flambeau Reservation. This includes, but is not limited to, the

[39] 36 C.F.R. § 800.3(b).

[40] See footnote 27.

[41] See footnote 27.

[42] See footnote 27.

prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of water of the Lac du Flambeau Reservation for any of the uses designated in the Water Quality Standards of the Lac du Flambeau Reservation.

d. Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the Lac du Flambeau Reservation. All spills must be reported to the appropriate emergency management agency, and measures shall be taken immediately to prevent the pollution of waters of the Lac du Flambeau Reservation, including groundwater.

e. This certification does not authorize impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for such listing.

Note: Facilities within the Sokaogon Chippewa Community are not eligible for stormwater discharge coverage under this permit. Contact the Region 5 office for an individual permit application.

9.4. Region 6

9.4.1. NMR120000: State of New Mexico, except Indian country.

9.4.1.1 In addition to all other provisions of this permit, operators who intend to obtain authorization under this permit for all new and existing stormwater discharges must satisfy the following condition:

The SWPPP must include site-specific interim and permanent stabilization, managerial, and structural solids, erosion, and sediment control best management practices (BMPs) and/or other controls that are designed to prevent to the maximum extent practicable an increase in the sediment yield and flow velocity from pre-construction, pre-development conditions to assure that applicable standards in 20.6.4 NMAC, including the antidegradation policy, or waste load allocations (WLAs) are met. This requirement applies to discharges both during construction and after construction operations have been completed. The SWPPP must identify, and document the rationale for selecting these BMPs and/or other controls. The SWPPP must also describe design specifications, construction specifications, maintenance schedules (including a long term maintenance plan), criteria for inspections, and expected performance and longevity of these BMPs. BMP selection must be made based on the use of appropriate soil loss prediction models (e.g., SEDCAD 4.0, RUSLE, SEDIMOT II, MULTISED, etc.), or equivalent, generally accepted (by professional erosion control specialists), soil loss prediction tools. The operator(s) must demonstrate, and include documentation in the SWPPP, that implementation of the site-specific practices will assure that the applicable standards or WLAs are met, and will result in sediment yields and flow velocities that, to the maximum extent practicable, will not be greater than the sediment yield levels and flow velocities from pre-construction, pre-development conditions. The SWPPP must be prepared in accordance with good engineering practices by qualified (e.g., CPESC certified, engineers with appropriate training, etc.) erosion control specialists familiar with the use of soil loss prediction models and design of erosion and sediment control systems based on these models (or equivalent soil loss prediction tools). Qualifications of the preparer (e.g., professional certifications, description of appropriate training) must be

documented in the SWPPP. The operator(s) must design, implement, and maintain BMPs in the manner specified in the SWPPP.

9.4.1.2 Operators are not eligible to obtain authorization under this permit for all new and existing stormwater discharges to outstanding national resource waters (ONRWs) (also referred to as "Tier 3" waters).

9.4.1.3 For temporary stabilization, instead of the deadline for initiating and completing stabilization in Part 2.2.1.3a, operators must comply with the deadlines in Parts 2.2.1.1 and 2.2.1.2.

9.4.1.4 Instead of the criteria for vegetative stabilization in Part 2.2.2.1.a, operators must provide a uniform vegetation (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background vegetative cover for all unpaved areas and areas not covered by permanent structures. The adjustment to allow for less than 100 % native vegetative cover (e.g., 50 % native vegetative cover x 70 % = 35 %) is acceptable.

9.4.1.5 The following replaces the criteria for final vegetative stabilization in Part 2.2.2.1.b:

- The area you have seeded and planted must within 3 years provide established vegetation that achieves 70% of the native background vegetative cover for all unpaved areas and areas not covered by permanent structures; and
- In addition to to seeding or planting the area to be vegetatively stabilized, you must select, design, and install non-vegetative erosion controls that provide cover for at least 3 years without active maintenance by you.

In addition, permittees are only authorized to used this option as a method for final vegetative stabilization for purposes of filing a Notice of Termination (NOT) under the following conditions:

If this option is selected, you must notify NMED at the address listed in Part 9.4.1.6 at the time the NOT is submitted to EPA. The information to be submitted includes:

- A copy of the NOT;
- Contact information, including individual name or title, address, and phone number for the party responsible for implementing the final stabilization measures; and
- The date that the permanent vegetative stabilization practice was implemented and the projected timeframe that the 70 % native vegetative cover requirements are expected to be met. (Note that if more than three years is required to establish 70 % of the natural vegetative cover, this technique cannot be used or cited for fulfillment of the final stabilization requirement – you remain responsible for establishment of final stabilization).

NMED also requires that operators periodically (minimum once/year) inspect and properly maintain the area until the criteria for final stabilization, as specified in Part 2.2 of the CGP, have been met. Operators must prepare an inspection report documenting the findings of these inspections and signed in accordance with Appendix I, Part I.11. This inspection record must be

retained along with the SWPPP for three years after the NOT is submitted for the site and additionally submitted to NMED at the address listed in Part 9.4.1.6. The inspections at a minimum must include the following:

- Observations of all areas of the site disturbed by construction activity;
- Best Management Practices (BMPs)/post-construction stormwater controls must be observed to ensure they are effective;
- An assessment of the status of vegetative re-establishment; and
- Corrective actions required to ensure vegetative success within three years, and control of pollutants in stormwater runoff from the site, including implementation dates.

9.4.1.6 Copies of all documents submitted to EPA in non-electronic format must be sent to the following address:

Program Manager
Point Source Regulation Section
Surface Water Quality Bureau
New Mexico Environment Department
P.O. Box 5469
Santa Fe, New Mexico 87502

9.4.2. NMR12000I: Indian country within the State of New Mexico.

9.4.2.1 **Pueblo of Sandia**. The following conditions apply only to discharges on the Pueblo of Sandia Reservation:

a. Copies of all Notices of Intent submitted to the EPA must also be sent concurrently to the Pueblo of Sandia at the following address. Discharges are not authorized by this permit unless an accurate and complete NOI has been submitted to the Pueblo of Sandia.

Regular U.S. Delivery Mail:
Pueblo of Sandia Environment Department
Attention: Water Quality Manager
481 Sandia Loop
Bernalillo, New Mexico 87004

b. The Pueblo of Sandia will not allow the Rainfall Erosivity Waivers (see Appendix C) to be granted for any small construction activities.

c. The Stormwater Pollution Prevention Plan (SWPPP) must be available to the Pueblo of Sandia Environment either electronically or hard copy upon request for review. The SWPPP must be made available at least fourteen (14) days before construction begins. The fourteen (14) day period will give Tribal staff time to become familiar with the project site, prepare for construction inspections, and determine compliance with the Pueblo of Sandia Water Quality Standards. Failure to provide a SWPPP to the Pueblo of Sandia may result in denial of the discharge or construction delay.

d. An "Authorization to Proceed Letter" with site specific mitigation, site and project requirements will be sent out to the permittee when a review of the NOI and SWPPP is completed by the Pueblo of Sandia

Environment Department. This approval will allow the construction to proceed if all applicable requirements are met.

e. Before submitting a Notice of Termination (NOT), permittees must clearly demonstrate to the Pueblo of Sandia Environment Department though a site visit or documentation that requirements for site stabilization have been met and any temporary erosion control structures have been removed. A short letter stating the stabilization requirements have been met will be sent to the permittee to add to the permittees NOT submission to EPA.

f. Copies of all NOT submitted to the EPA must also be sent concurrently to the Pueblo of Sandia at the following address:

Regular U.S. Delivery Mail:
Pueblo of Sandia Environment Department
Attention: Water Quality Manager
481 Sandia Loop
Bernalillo, New Mexico 87004

9.4.3. OKR12000F: Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).

In accordance with Section 303 of the Clean Water Act and Oklahoma's Water Quality Standards (OAC 785: 45):

9.4.3.1 For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, this permit may only be used to authorize discharges from temporary construction activities. Certification is denied for any on-going activities such as sand and gravel mining or any mineral mining.

9.4.3.2 For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, certification is denied for any discharges originating from support activities, including concrete and asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, or borrow areas.

9.5. Region 8

9.5.1. MTR12000I: Indian country within the State of Montana

9.5.1.1 **The Confederated Salish and Kootenai Tribes of the Flathead Nation**. The following conditions apply only to discharges on the Confederated Salish and Kootenai Tribes of the Flathead Nation Reservation:

a. Permittees must send the Stormwater Pollution Prevention Plan (SWPPP) to the Tribes at least 30 days before construction starts.

b. Before submitting the Notice of Termination (NOT), permittees must clearly demonstrate to an appointed tribal staff person during an on-site inspection that requirements for site stabilization have been met.

c. The permittee must send a copy of the Notice of Intent (NOI) and the Notice of Termination (NOT) to the tribes.

d. Permittees may submit their SWPPPs and NOTs electronically to clintf@cskt.org.

Written NOI's, SWPPPs and NOT's may be mailed to:
Clint Folden, Water Quality Regulatory Specialist
Confederated Salish and Kootenai Tribes
Natural Resources Department
P.O. Box 278
Pablo, MT 59855

9.5.1.2 Fort Peck Tribes. The following conditions apply only to discharges on the Fort Peck Reservation:

Permittees must notify the Fort Peck Office of Environmental Protection (OEP) two weeks prior to commencing construction.

9.6. Region 9

9.6.1. AZR12000I: Indian country within the State of Arizona.

9.6.1.1 **Hualapai Tribal Lands**. The following condition applies only for discharges on the Hualapai Reservation:

All notices of intent for proposed stormwater discharges under the CGP and all pollution prevention plans for stormwater discharges on Hualapai Tribal lands shall be submitted to Water Resources Program through the Tribal Chairman for review and approval, P.O. Box 179, Peach Springs, AZ 86434.

9.6.2. CAR12000I: Indian country within the State of California.

9.6.2.1 **Big Pine Paiute Tribe of the Owens Valley**. Big Pine Tribal Water Quality Standards Section VII(e): If a proposed action has the possibility to adversely affect the water quality of Big Pine Creek, an application must be filed with the Tribal Environmental Office. The application must describe the action proposed and its effects on the creek, how this information was derived, and a justification for the action. Upon satisfying these requirements, the Tribal Environmental Office will recommend or not recommend this proposal to be considered by the Tribal Council. Tribal Council will make a determination whether to consider the proposal further. If the Tribal Council wishes to consider the application further, the public participation process will take place (see paragraph VII(d)). The Tribal Council has the sole authority in permitting degradation to Big Pine Creek. If the Tribal Council makes the decision to allow degradation, they will submit their decision to the USEPA for review and approval.

9.6.3. GUR120000: The Island of Guam. Permittees must adhere with imposed conditions for the project, in accordance with section 307(c)(1), of the Coastal Zone Management Act, 15 CFR part 930.

9.6.4. MPR120000: Commonwealth of the Northern Mariana Islands (CNMI).

9.6.4.1 An Earthmoving and Erosion Control Permit must be obtained from DEQ prior to any construction activity covered under the NPDES General Permit.

9.6.4.2 All conditions and requirements set forth in the United States Environmental Protection Agency (USEPA), National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Construction Activities must be complied with.

9.6.4.3 A stormwater pollution prevention plan (SWPPP) for stormwater discharges from construction activities must be approved by the Director of DEQ prior to submission of the Notice of Intent (NOI).

9.6.4.4 A NOI to be covered by the General Permit for Discharges from Construction Activities must be submitted to DEQ and USEPA, Region IX, in the form prescribed by USEPA, accompanied by a SWPPP approval letter from DEQ.

9.6.4.5 The NOI must be postmarked fourteen (14) calendar days prior to any stormwater discharges and a copy is submitted to the Director of DEQ no later than seven (7) calendar days prior to any stormwater discharges.

9.6.4.6 Copies of all monitoring reports required by the NPDES General Permit are submitted to DEQ.

9.6.4.7 In accordance with Section 10.3(h) and (i) of the CNMI Water Quality Standards, DEQ reserves the right to deny coverage under this permit and require submittal of an application for an individual NPDES permit based on review of the NOI or other information made available to the Director.

9.6.5. NVR12000I: Indian country within the State of Nevada.

9.6.5.1 **Pyramid Lake Paiute Tribe**. The following conditions apply only for discharges on the Pyramid Lake Paiute Reservation:

a. A SWPPP for stormwater discharges from project construction activities must be submitted to, and approved by, the PLPT Environmental Department director, prior to the submission of a Notice of Intent (NOI or eNOI) to EPA.

b. The applicant is to submit a hard copy of the Notice of Intent (NOI or eNOI) and a draft or final copy of the Stormwater Pollution Prevention Plan (SWPPP) by U.S. Mail to the Pyramid Lake Environmental Department at the address below:

Pyramid Lake Tribe Environmental Department
P.O. Box 256
Nixon, NV 89424

c. The applicant is to concurrently submit to the PLPT Environmental Department, hard copies of any other forms submitted to the EPA, including waivers, reporting, and Notice of Termination (NOT).

9.7. Region 10

9.7.1. IDR120000: The State of Idaho, except those located on Indian country.

For the complete text of Idaho's certification including the full anti-degradation analysis, please visit the IDEQ website at http://www.deq.idaho.gov/media/821491-usepa-npdes-general-permit-storm-water-discharges-401-certification-final-0412.pdf

9.7.1.1 The Idaho Department of Environmental Quality's (DEQ) certification of this permit does not constitute authorization of your permitted activities by any other state or federal agency or private person or entity. DEQ's certification does not excuse you from the obligation to obtain any other necessary

approvals, authorizations or permits, including without limitation, the approval from the owner of a private water conveyance system, if one is required, to use the system in connection with the permitted activities.

9.7.1.2 Idaho's Antidegradation Policy. Idaho Water Quality Standards (WQS) (IDAPA 58.01.02) contain an antidegradation policy providing three levels of protection to water bodies in Idaho (IDAPA 58.01.02.051).

a. Tier 1 Protection. The first level of protection applies to all water bodies subject to Clean Water Act jurisdiction and ensures that existing uses of a water body and the level of water quality necessary to protect those existing uses will be maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, a Tier 1 review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.05).
b. Tier 2 Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.06).
c. Tier 3 Protection. The third level of protection applies to water bodies that have been designated outstanding resource waters and requires that activities not cause a lowering of water quality (IDAPA 58.01.02.051.03; 58.01.02.052.07).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (Idaho Code § 39-3603(2)(b)(i)). Any water body not fully supporting its beneficial uses will be provided Tier 1 protection for that use, unless specific circumstances warranting Tier 2 protection are met (Idaho Code § 39-3603(2)(b)(iii)). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (Idaho Code § 39-3603(2)(b)). The primary pollutants of concern associated with stormwater discharges from construction activities are sediment and turbidity (as Total Suspended Solids). Other potential pollutants include the following: phosphorus, nitrogen and other nutrients from fertilizers; pesticides; petroleum products; construction chemicals; and solid wastes.

9.7.1.3 Protection and Maintenance of Existing Uses (Tier 1 Protection). In order to protect and maintain designated and existing beneficial uses, a permitted discharge must comply with narrative and numeric criteria of the Idaho WQS, as well as other provisions of the WQS such as Section 055, which addresses water quality limited waters. The permittee must notify the appropriate DEQ Regional Office (see table in Part 9.7.1.8 below for contact information) of any potential discharges to impaired waters - water bodies identified as "impaired" for sediment or a sediment-related parameter, such as total suspended solids (TSS) or turbidity, and/or nutrients, including impairments for nitrogen and/or phosphorus.

To determine the support status of the affected water body, the permittee must use the most current EPA-approved Integrated Report, available on Idaho DEQ's website: http://www.deq.idaho.gov/water-quality/surface-water/monitoring-assessment/integrated-report.aspx. Impaired waters are identified in Categories 4 and 5 of the Integrated Report. Category 4(a) reflects impaired waters for which a TMDL has been approved by EPA. Category 5

contains waters which have been identified as "impaired" but do not yet have an EPA-approved TMDL.

DEQ's webpage also has a link to the state's map-based Integrated Report which presents information from the Integrated Report in a searchable, map-based format: http://mapcase.deq.idaho.gov/wq2010/.

In addition to complying with the Part 3.2.2 requirements for any sediment or nutrient-impaired waters, permittee(s) must also comply with Idaho's numeric turbidity criteria, developed to protect aquatic life uses. The criterion states, "Turbidity shall not exceed background turbidity by more than 50 NTU instantaneously or more than 25 NTU for more than 10 consecutive days" (IDAPA 58.01.02250.02.e). For Waters of the State which have been identified as impaired due to sedimentation/siltation, the permittee must conduct turbidity monitoring as described below in Part 9.7.1.6

9.7.1.4 Protection of High-Quality Waters (Tier 2 Protection). To determine the support status of the affected water body, the permittee must use the most current EPA-approved Integrated Report, available on Idaho DEQ's website: http://www.deq.idaho.gov/water-quality/surface-water/monitoring-assessment/integrated-report.aspx. DEQ's webpage also has a link to the state's map-based Integrated Report which presents information from the Integrated Report in a searchable, map-based format: http://mapcase.deq.idaho.gov/wq2010/.

DEQ retains the authority to determine that a 303(d) listed water body is actually a high quality water body if there is biological, chemical or physical data to support such a determination. In cases where information submitted with the NOI, or available from other sources, indicates that further Tier 2 analysis is necessary and/or additional conditions are needed, either for a new project or an existing project with a significantly increased discharge, EPA and DEQ will conduct a review and require any appropriate additional controls. If during this review, EPA and DEQ decide that an additional Tier 2 protection is warranted, then EPA may either change the terms of coverage or terminate coverage under the CGP and require an individual permit.

9.7.1.5 Protection of Outstanding Resource Waters (Tier 3 Protection). Idaho's antidegradation policy requires that the quality of outstanding resource waters (ORWs) be maintained and protected from the impacts of point source discharges. No water bodies in Idaho have been designated as outstanding resource waters to date; however, it is possible that waters may become designated during the term of the CGP. Any applicant proposing to discharge to an ORW must obtain an individual NPDES permit from EPA.

9.7.1.6 Turbidity Monitoring. For Waters of the State which are identified in the Integrated Report as impaired for sedimentation/siltation, the permittee must conduct turbidity monitoring each day during construction activities when the project is not stabilized per Part 2.2 or shut down per Part 4.1.4.3 of the CGP. A properly and regularly calibrated turbidimeter is required.

A sample must be taken twice daily at an undisturbed area immediately upstream of the project area to establish background turbidity levels for each monitoring event. Background turbidity, location, date and time must be recorded prior to monitoring downstream of the project area.

A sample must also be taken twice daily immediately downstream from any point of discharge, and within any visible plume. The turbidity, location, date

and time must be recorded. The downstream sample(s) must be taken immediately following the upstream sample(s) in order to obtain meaningful and representative results.

Results from the compliance point sampling or observation must be compared to the background levels to determine whether project activities are causing an exceedance of state WQS. If the downstream turbidity is 50 NTUs or more than the upstream turbidity, or a plume is observed, then the project is causing an exceedance of the WQS. The permittee must inspect the condition of project BMPs. If the BMPs are functioning to their fullest capability, then the permittee must modify project activities and/or BMPs to correct the violation.

Copies of daily logs for turbidity monitoring must be available to DEQ upon request. The report must describe all exceedances and subsequent actions taken, including the effectiveness of the action.

9.7.1.7 Equivalent Analysis Waiver. Use of the "Equivalent Analysis Waiver" in Appendix C (Part C.3) of the CGP is not authorized.

9.7.1.8 Reporting of Discharges Containing Hazardous Materials or Petroleum Products. Any spill of hazardous materials must be immediately reported to the appropriate DEQ regional office (see table of contacts, below) (IDAPA 58.01.02.850.03). Spills of petroleum products that exceed 25 gallons or that cause a visible sheen on nearby surface waters should be reported to DEQ within 24-hours. Petroleum product spills of less than 25 gallons or spills that do not cause a sheen on nearby surface waters shall only be reported to DEQ if clean-up cannot be accomplished within 24-hours (IDAPA 58.01.02.851.04).

DEQ Regional Office	Contact Name	Phone Number
Boise	Lance Holloway	208-373-0550
Coeur d'Alene	June Bergquist	208-769-1422
Idaho Falls	Troy Saffle	208-528-2650
Lewiston	John Cardwell	208-799-4370
Pocatello	Greg Mladenka	208-236-6160
Twin Falls	Balthasar Buhidar	208-736-2190

Outside of regular business hours, qualified spills shall be reported to the State Communications Center (1-800-632-8000 or 208-846-7610).

9.7.2. ORR12000I: Indian country within the State of Oregon.

9.7.2.1 **Confederated Tribes of the Umatilla Indian Reservation**. The following conditions apply only to discharges on the Umatilla Indian Reservation:

a. The operator shall be responsible for achieving compliance with the Confederated Tribes of the Umatilla Indian Reservations (CTUIR) Water Quality Standards.

b. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the CTUIR Water Resources Program at the address below, at the same time it is submitted to EPA.

c. The operator shall be responsible for submitting all Stormwater Pollution Prevention Plans (SWPPP) required under this permit to the CTUIR Water Resources Program for review and determination that the SWPPP is sufficient to meet Tribal Water Quality Standards, prior to the beginning of any discharge activities taking place.

d. The operator shall be responsible for reporting an exceedance to Tribal Water Quality Standards to the CTUIR Water Resources Program at the same time it is reported to EPA.

Confederated Tribes of the Umatilla Indian Reservation
Water Resources Program
46411 Timine Way
Pendleton, OR 97801

e. The CTUIR Tribal Historic Preservation Office (THPO) requests copies of each NOI which will define whether or not the undertaking has the potential to affect historic properties, and if so, define the undertaking's area of potential effect (APE).

f. The THPO must be provided 30 days to comment on the APE as defined in the permit application.

g. If the project is an undertaking, a cultural resource investigation must occur. All fieldwork must be conducted by qualified personnel (as outlined by the Secretary of Interior's Standards and Guidelines; http://www.nps.gov/history/local-law/arch_stnds_0.htm) and documented using Oregon Reporting Standards (http://egov.oregon.gov/OPRD/HCD/ARCH/arch_pubsandlinks.shtml). The resulting report must be submitted to the THPO and the THOP must concur with the findings and recommendations before any ground disturbing work can occur. The THPO requires 30 days to review all reports.

h. The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties.

i. For more information regarding the specifics of the cultural resources process, see 36 CFR Part 800.

Confederated Tribes of the Umatilla Indian Reservation
Cultural Resources Protection Program
Tribal Historic Preservation Office
46411 Timine Way
Pendleton, OR 97801

9.7.2.2 Confederated Tribes of the Warm Springs Reservation of Oregon. The following conditions apply only for discharges on the Warm Springs Reservation:

a. All activities covered by this NPDES general permit occurring within a designated riparian buffer zone as established in Ordinance 74 (Integrated Resource Management Plan or IRMP) must be reviewed, approved and permitted through the Tribe's Hydraulic Permit Application process, including payment of any applicable fees.

b. All activities covered by this NPDES permit must follow all applicable land management and resource conservation requirements specified in the IRMP.

c. Operators of activities covered by this NPDES general permit must submit a Storm Water Pollution Prevention Plan to the Tribe's Water Control Board at the following address for approval at least 30 days prior to beginning construction activity:

Chair, Warm Springs Water Control Board
P.O. Box C
Warm Springs, Oregon 97761

d. The operator shall be responsible for achieving compliance with the Water Quality Standards of the Confederated Tribes of the Warm Springs Reservation of Oregon. The operator shall be responsible for reporting an exceedance to Tribal Water Quality Standards to the Water Control Board at the address above.

e. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the CTWS, Branch of Natural Resources, Tribal Environmental Office at the address above, at the same time it is submitted to EPA.

f. The CTWS Tribal Historic Preservation Officer (THPO) requests copies of each NOI which will define whether or not the undertaking has the potential to affect historic properties, and if so, define the undertaking's area of potential effect (APE).

g. The THPO must be provided 30 days to comment on the APE as defined in the permit application.

h. If the project is an undertaking, a cultural resource investigation must occur. All fieldwork must be conducted by qualified personnel (as outlined by the Secretary of Interior's Standards and Guidelines; http://www.nps.gov/history/local-law/arch_stnds_0.htm) and documented using Oregon Reporting Standards (http://egov.oregon.gov/OPRD/HCD/ARCH/arch_pubsandlinks.shtml). The resulting report must be submitted to the THPO and the THOP must concur with the findings and recommendations before any ground disturbing work can occur. The THPO requires 30 days to review all reports.

i. The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties.

j. For more information regarding the specifics of the cultural resources process, see 36 CFR Part 800.

9.7.3. WAR12000F: Areas in the State of Washington, except those located on Indian country, subject to construction by Federal Operators.

9.7.3.1 Discharges shall not cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 CFR Part 131.36). Discharges that are not in compliance with these standards are not authorized.

9.7.3.2 Prior to the discharge of stormwater and non-stormwater to waters of the state, the permittee shall apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), with all appropriate best management practices (BMPs) installed and maintained in accordance with the SWPPP and the terms and conditions of this permit.

9.7.3.3 Sampling & Numeric Effluent Limitations – For Sites Discharging to Certain Waterbodies on the 303(d) List

a. Permittees that discharge to water bodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH or phosphorus, shall conduct water quality sampling according to the requirements of this subsection.

Parameter identified in 303(d) listing	Parameter/Units	Analytical Method	Sampling Frequency	Water Quality Standard
Turbidity Fine Sediment Phosphorus	Turbidity/NTU	SM2130 or EPA180.1	Weekly, if discharging	If background is 50 NTU or less: 5 NTU over background; or If background is more than 50 NTU: 10% over background
High pH	pH/Standard Units	pH meter	Weekly, if discharging	In the range of 6.5 – 8.5

b. The operator must retain all monitoring results required by this section as part of the SWPPP. All data and related monitoring records must be provided to EPA or the Washington State Department of Ecology (Ecology) upon request.

c. The operator must notify EPA when the discharge turbidity or discharge pH exceeds the water quality standards as defined in 5.b and 6.b below. All such reports must be submitted within 30 day s of measurement to EPA at the following address:

USEPA – Region 10
NPDES Compliance Unit - Attn: Federal Facilities Compliance Officer
1200 6th Avenue, Suite 900
OCE-133
Seattle, WA 98101
(206) 553-1846

d. All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current EPA approved listing of impaired waters that exists on January 29, 2009, or the date when the operator's complete NOI is received by EPA, whichever is later. The most

recent EPA approved 303(d) list is available on Ecology's website at www.ecy.wa.gov/programs/wq/303d/2008/index.html.

e. Discharges to waterbodies on the 303(d) list for turbidity, fine sediment, or phosphorus

i. Permittees which discharge to waterbodies on the 303(d) list for turbidity, fine sediment, or phosphorus shall conduct turbidity sampling at the following locations to evaluate compliance with the water quality standard for turbidity:

(1) Background turbidity shall be measured in the 303(d) listed receiving water immediately upstream (upgradient) or outside the area of influence of the discharge.

(2) Discharge turbidity shall be measured at the point of discharge into the 303(d) listed receiving waterbody, inside the area of influence of the discharge; or

(3) Alternatively, discharge turbidity may be measured at the point where the discharge leaves the construction site, rather than in the receiving waterbody.

Based on sampling, if the discharge turbidity ever exceeds the water quality standard for turbidity (more than 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or more than a 10% increase in turbidity when the background turbidity is more than 50 NTU), all future discharges shall comply with a numeric effluent limit which is equal to the water quality standard for turbidity. If the receiving water background turbidity is 50 NTU or less, the water quality standard is 5 NTU over background. If the receiving water background turbidity is more than 50 NTU, the water quality standard is 10% over background.

If a future discharge exceeds the water quality standard for turbidity, the permittee shall:

(1) Review the SWPPP for compliance with the permit and make appropriate revisions within seven days of the discharge that exceeded the standard.

(2) Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but no later than ten days of the discharge that exceeded the standard.

(3) Document BMP implementation and maintenance in the site log book.

(4) Continue to sample daily until discharge turbidity meets the water quality standard for turbidity.

f. Discharges to waterbodies on the 303(d) list for High pH

i. Permittees which discharge to waterbodies on the 303(d) list for high pH shall conduct sampling one of the following locations to evaluate compliance with the water quality standard for pH (in the range of 6.5 – 8.5):

(1) pH shall be measured at the point of discharge into the 303(d) listed waterbody, inside the area of influence of the discharge; or,

(2) Alternatively, pH may be measured at the point where the discharge leaves the construction site, rather than in the receiving water.

ii. Based on the sampling set forth above, if the pH ever exceeds the water quality standard for pH (in the range of 6.5 – 8.5), all future discharges shall comply with a numeric effluent limit which is equal to the water quality standard for pH. If a future discharge exceeds the water quality standard for pH, the permittee shall:

(1) Review the SWPPP for compliance with the permit and make appropriate revisions within 7 days of the discharge.

(2) Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but no later than 10 days of the discharge that exceeded the standards.

(3) Document BMP implementation and maintenance in the site log book.

(4) Continue to sample daily until discharge meets the water quality standard for pH (in the range of 6.5 – 8.5).

9.7.3.4 Sampling & Limitations – For Sites Discharging to TMDLs

a. Discharges to a waterbodies subject to an applicable Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus, shall be consistent with the assumptions and requirements of the TMDL.

i. Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges shall be consistent with any specific waste load allocations or requirements established by the applicable TMDL.

(1) Discharges shall be sampled weekly, or as otherwise specified by the TMDL, to evaluate compliance with the specific waste load allocations or requirements.

(2) Analytical methods used to meet the monitoring requirements shall conform to the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136.

ii. Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but no specific requirements have been identified, compliance with this permit will be assumed to be consistent with the approved TMDL.

iii. Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with this permit will be assumed to be consistent with the approved TMDL.

iv. Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

b. Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which has been completed and approved by EPA prior to February 16, 2012, or prior to the date the operator's complete NOI is received by EPA, whichever is later.

Completed TMDLs are available on Ecology's website at www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyWria/TMDLbyWria.html, or by phone at (360) 407-6460.

9.7.4. WAR12000I: Indian country within the State of Washington

9.7.4.1 **Kalispel Tribe**. The following conditions apply only for discharges on the Kalispel Reservation:

a. The operator shall be responsible for achieving compliance with the Kalispel Tribe's Water Quality Standards, and;

b. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the Kalispel Tribe Natural Resources Department (KNRD) at the same time as it is submitted to the EPA, and;

c. The operator shall submit all Storm Water Pollution Prevention Plans (SWPPP) to KNRD thirty (30) days prior to beginning any discharge activities for review, and;

d. The operator shall be responsible for reporting any exceedance of Tribal Water Quality Standards to KNRD at the same time it is reported to EPA, and;

e. Prior to any land disturbing activities on the Kalispel Indian Reservation and its dependent communities, the operator shall attain a cultural resource clearance letter from KNRD.

f. All tribal correspondence pertaining to the General Permit for Discharges from Construction Activities shall be sent to:

Kalispel Tribe Natural Resources Department
Water Resources Program
PO Box 39
Usk, WA 99180

9.7.4.2 **Lummi Nation**. The following conditions apply only for discharges on the Lummi Reservation:

a. Pursuant to Lummi Code of Laws (LCL) 17.05.020(a), the operator must also obtain a land use permit from the Lummi Planning Department as provided in Title 15 of the Lummi Code of Laws and regulations adopted thereunder.

b. Pursuant to LCL 17.05.020(a), each operator shall develop and submit a Stormwater Pollution Prevention Plan to the Lummi Water Resources Division for review and approval by the Water Resources Manager prior to beginning any discharge activities.

c. Pursuant to LCL Title 17, each operator shall be responsible for achieving compliance with the Water Quality Standards for Surface Waters of the Lummi Indian Reservation (Lummi Administrative Regulations [LAR] 17 LAR 07.010 together with supplements and amendments thereto).

d. Each operator shall submit a signed hard copy of the Notice of Intent (NOI) to the Lummi Water Resources Division at the same time it is submitted electronically to the Environmental Protection Agency (EPA) and shall provide the Lummi Water Resources Division the acknowledgement of receipt of the NOI from the EPA and the associated NPDES tracking number provided by the EPA within 7 calendar days of receipt by EPA.

e. Each operator shall submit a signed hard copy of the Notice of Termination (NOT) to the Lummi Water Resources Division at the same time it is submitted electronically to the EPA and shall provide the Lummi Water Resources Division the EPA acknowledgement of receipt of the NOT.

f. Stormwater Pollution Prevention Plans, Notice of intent, Notice of Termination and associated correspondence with the EPA shall be submitted to:

Lummi Natural Resources Department
ATTN: Water Resources Manager
2616 Kwina Road
Bellingham, WA 98226-9298

g. Please see the Lummi Nation website (www.lummi-nsn.gov) and/or the Lummi Natural Resources Department website (http://lnnr.lummi-nsn.gov/LummiWebsite/Website.php?PageID=53) to review a copy of Title 17 of the Lummi Code of Laws, associated regulations, and the references upon which the conditions identified above are based.

9.7.4.3 **Makah Tribe**. The following conditions apply only for discharges on the Makah Reservation:

a. The operator shall be responsible for achieving compliance with the Makah Tribe's Water Quality Standards.

b. The operator shall submit a Storm Water Pollution Prevention Plan to the Makah Tribe Water Quality Program and Makah Fisheries Habitat Division for review and approval at least thirty (30) days prior to beginning any discharge activities.

c. The operator shall submit a copy of the Notice of Intent to the Makah Tribe Water Quality Program and Makah Fisheries Habitat Division at the same time it is submitted to EPA.

d. Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Ray Colby
Makah Tribal Water Quality
Water Quality Specialist
(360) 645-3162
colby.ray@centurytel.net
PO Box 115
Neah Bay, WA 98357

9.7.4.4 **Puyallup Tribe of Indians**. The following conditions apply only for discharges on the Puyallup Reservation:

a. Each permittee shall be responsible for achieving compliance with the Puyallup Tribe's Water Quality Standards, including antidegradation provisions. The Puyallup Natural Resources Department will conduct an antidegradation review for permitted activities that have the potential to lower water quality. The antidegradation review will be consistent with the Tribe's Antidegradation Implementation Procedures.

b. The permittee shall be responsible for meeting any additional permit requirements imposed by EPA necessary to comply with the Puyallup Tribe's antidegradation policies if the discharge point is located within 1 linear mile upstream of waters designated by the Tribe.

c. Each permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the Puyallup tribal Natural Resources Department at the address listed below at the same time it is submitted to EPA.

Puyallup Tribe of Indians
3009 E. Portland Avenue
Tacoma, WA 98404
ATTN: Natural Resources Department – Bill Sullivan and Char Naylor

d. All supporting documentation and certifications in the NOI related to coverage under the general permit for Endangered Species Act purposes shall be submitted to Bill Sullivan and Char Naylor in the Puyallup Tribal Natural Resources Department for review.

e. If EPA requires coverage under an individual or alternative permit, the permittee shall submit a copy of the permit to Bill Sullivan and Char Naylor in the Puyallup Tribal Natural Resources Department at the address listed above.

f. The permittee shall submit all stormwater pollution prevention plans to Bill Sullivan and Char Naylor in the Puyallup Tribal Natural Resources Department for review and approval prior to beginning any activities resulting in a discharge to tribal waters.

g. The permittee shall conduct benchmark monitoring for turbidity and nutrients, complying with Section 3 monitoring requirements.

h. The permittee shall notify Bill Sullivan and Char Naylor prior to conducting inspections at construction sites generating stormwater discharged to tribal waters.

Appendix A - Definitions and Acronyms

Definitions

"Action Area" – all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. See 50 CFR 402. For the purposes of this permit and for application of the Endangered Species Act requirements, the following areas are included in the definition of action area:

- The areas on the construction site where stormwater discharges originate and flow toward the point of discharge into the receiving waters (including areas where excavation, site development, or other ground disturbance activities occur) and the immediate vicinity. (Example: Where bald eagles nest in a tree that is on or bordering a construction site and could be disturbed by the construction activity or where grading causes stormwater to flow into a small wetland or other habitat that is on the site that contains listed species.)
- The areas where stormwater discharges flow from the construction site to the point of discharge into receiving waters. (Example: Where stormwater flows into a ditch, swale, or gully that leads to receiving waters and where listed species (such as listed amphibians) are found in the ditch, swale, or gully.)
- The areas where stormwater from construction activities discharge into receiving waters and the areas in the immediate vicinity of the point of discharge. (Example: Where stormwater from construction activities discharges into a stream segment that is known to harbor listed aquatic species.)
- The areas where stormwater controls will be constructed and operated, including any areas where stormwater flows to and from the stormwater controls. (Example: Where a stormwater retention pond would be built.)
- The areas upstream and/or downstream from the stormwater discharge into a stream segment that may be affected by these discharges. (Example: Where sediment discharged to a receiving stream settles downstream and impacts a breeding area of a listed aquatic species.)

"Agricultural Land" - cropland, grassland, rangeland, pasture, and other agricultural land, on which agricultural and forest-related products or livestock are produced and resource concerns may be addressed. Agricultural lands include cropped woodland, marshes, incidental areas included in the agricultural operation, and other types of agricultural land used for the production of livestock.

"Antidegradation Policy" or "Antidegradation Requirements" - the water quality standards regulation that requires States and Tribes to establish a three-tiered antidegradation program:

1. Tier 1 maintains and protects existing uses and water quality conditions necessary to support such uses. An existing use can be established by demonstrating that fishing, swimming, or other uses have actually occurred since November 28, 1975, or that the water quality is suitable to allow such uses to occur. Where an existing use is established, it must be protected even if it is not listed in the water quality standards as a designated use. Tier 1 requirements are applicable to all surface waters.
2. Tier 2 maintains and protects "high quality" waters -- water bodies where existing conditions are better than necessary to support CWA § 101(a)(2) "fishable/swimmable"

uses. Water quality can be lowered in such waters. However, State and Tribal Tier 2 programs identify procedures that must be followed and questions that must be answered before a reduction in water quality can be allowed. In no case may water quality be lowered to a level which would interfere with existing or designated uses.

3. Tier 3 maintains and protects water quality in outstanding national resource waters (ONRWs). Except for certain temporary changes, water quality cannot be lowered in such waters. ONRWs generally include the highest quality waters of the United States. However, the ONRW classification also offers special protection for waters of exceptional ecological significance, i.e., those which are important, unique, or sensitive ecologically. Decisions regarding which water bodies qualify to be ONRWs are made by States and authorized Indian Tribes.

"Arid Areas" – areas with an average annual rainfall of 0 to 10 inches.

"Bank" (e.g., stream bank or river bank) – the rising ground bordering the channel of a water of the U.S.

"Bluff" – a steep headland, promontory, riverbank, or cliff.

"Borrow Areas" – the areas where materials are dug for use as fill, either onsite or off-site.

"Bypass" – the intentional diversion of waste streams from any portion of a treatment facility. See 40 CFR 122.41(m)(1)(i).

"Cationic Treatment Chemical" – polymers, flocculants, or other chemicals that contain an overall positive charge. Among other things, they are used to reduce turbidity in stormwater discharges by chemically bonding to the overall negative charge of suspended silts and other soil materials and causing them to bind together and settle out. Common examples of cationic treatment chemicals are chitosan and cationic PAM.

"Commencement of Earth-Disturbing Activities" - the initial disturbance of soils (or 'breaking ground') associated with clearing, grading, or excavating activities or other construction-related activities (e.g., stockpiling of fill material).

"Commencement of Pollutant-Generating Activities" – at construction sites (for the purposes of this permit) occurs in any of the following circumstances:

- Clearing, grubbing, grading, and excavation has begun;
- Raw materials related to your construction activity, such as building materials or products, landscape materials, fertilizers, pesticides, herbicides, detergents, fuels, oils, or other chemicals have been placed at your site;
- Use of authorized non-stormwater for washout activities, or dewatering activities, have begun; or
- Any other activity has begun that causes the generation of or the potential generation of pollutants.

"Construction Activities" – earth-disturbing activities, such as the clearing, grading, and excavation of land.

"Construction and Development Effluent Limitations and New Source Performance Standards" (C&D Rule) – as published in 40 CFR § 450 is the regulation requiring effluent limitations guidelines

(ELG's) and new source performance standards (NSPS) for controlling the discharge of pollutants from construction sites.

"Construction Site" – the land or water area where construction activities will occur and where stormwater controls will be installed and maintained. The construction site includes construction support activities, which may be located at a different part of the property from where the primary construction activity will take place, or on a different piece of property altogether. The construction site is often a smaller subset of the lot or parcel within which the project is taking place.

"Construction Support Activities" – a construction-related activity that specifically supports the construction activity and involves earth disturbance or pollutant-generating activities of its own, and can include activities associated with concrete or asphalt batch plants, equipment staging yards, materials storage areas, excavated material disposal areas, and borrow areas.

"Construction Waste" – discarded material (such as packaging materials, scrap construction materials, masonry products, timber, steel, pipe, and electrical cuttings, plastics, and styrofoam).

"Conveyance Channel" – a temporary or permanent waterway designed and installed to safely convey stormwater flow within and out of a construction site.

"Corrective Action" – for the purposes of the permit, any action taken to (1) repair, modify, or replace any stormwater control used at the site; (2) clean up and dispose of spills, releases, or other deposits found on the site; and (3) remedy a permit violation.

"Critical Habitat" – as defined in the Endangered Species Act at 16 U.S.C. 1531 for a threatened or endangered species, (i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act, upon a determination by the Secretary that such areas are essential for the conservation of the species.

"CWA" – the Clean Water Act or the Federal Water Pollution Control Act, 33 U.S.C. section 1251 et seq.

"Dewatering" – the act of draining rainwater and/or groundwater from building foundations, vaults, and trenches.

"Discharge" – when used without qualification, means the "discharge of a pollutant."

"Discharge of a Pollutant" – any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. See 40 CFR 122.2.

"Discharge Point" – for the purposes of this permit, the location where collected and concentrated stormwater flows are discharged from the construction site.

"Discharge-Related Activity" – activities that cause, contribute to, or result in stormwater and allowable non-stormwater point source discharges, and measures such as the siting, construction, and operation of stormwater controls to control, reduce, or prevent pollutants from being discharged.

"Discharge to an Impaired Water" – for the purposes of this permit, a discharge to an impaired water occurs if the first water of the U.S. to which you discharge is identified by a State, Tribe, or EPA pursuant to Section 303(d) of the Clean Water Act as not meeting an applicable water quality standard, or is included in an EPA-approved or established total maximum daily load (TMDL). For discharges that enter a storm sewer system prior to discharge, the water of the U.S. to which you discharge is the first water of the U.S. that receives the stormwater discharge from the storm sewer system.

"Domestic Waste" – for the purposes of this permit, typical household trash, garbage or rubbish items generated by construction activities.

"Drainageway" – an open linear depression, whether constructed or natural, that functions for the collection and drainage of surface water.

"Drought-Stricken Area" – for the purposes of this permit, an area in which the National Oceanic and Atomospheric Administration's U.S. Seasonal Drought Outlook indicates for the period during which the construction will occur that any of the following conditions are likely: (1) "Drought to persist or intensify", (2) "Drought ongoing, some improvement", (3) "Drought likely to improve, impacts ease", or (4) "Drought development likely". See http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.gif.

"Earth-Disturbing Activity" or "Land-Disturbing Activity" – actions taken to alter the existing vegetation and/or underlying soil of a site, such as clearing, grading, site preparation (e.g., excavating, cutting, and filling), soil compaction, and movement and stockpiling of top soils.

"Effective Operating Condition" – for the purposes of this permit, a stormwater control is kept in effective operating condition if it has been implemented and maintained in such a manner that it is working as designed to minimize pollutant discharges.

"Effluent Limitations" – for the purposes of this permit, any of the Part 2 or Part 3 requirements.

"Effluent Limitations Guideline" (ELG) – defined in 40 CFR § 122.2 as a regulation published by the Administrator under section 304(b) of CWA to adopt or revise effluent limitations.

"Electronic Notice of Intent" (eNOI) – EPA's online system for submitting electronic Construction General Permit forms.

"Eligible" – for the purposes of this permit, refers to stormwater and allowable non-stormwater discharges that are authorized for coverage under this general permit.

"Emergency-Related Project" – a project initiated in response to a public emergency (e.g., natural disaster, disruption in essential public services), for which the related work requires immediate authorization to avoid imminent endangerment to human health or the environment, or to reestablish essential public services.

"Endangered Species" – defined in the Endangered Species Act at 16 U.S.C. 1531 as any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary to constitute a pest whose

protection under the provisions of this Act would present an overwhelming and overriding risk to man.

"Excursion" – a measured value that exceeds a specified limit.

"Existing Project" – a construction project that commenced construction activities prior to February 16, 2012 (April 9, 2012 for the State of Idaho, except for Indian Country; April 13, 2012 for areas in the state of Washington, except for Indian Country, subject to construction activity by a Federal Operator; May 9, 2012 for projects in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin).

"Exit Points" – any points of egress from the construction site to be used by vehicles and equipment during construction activities.

"Exposed Soils" – for the purposes of this permit, soils that as a result of earth-disturbing activities are left open to the elements.

"Federal Operator" – an entity that meets the definition of "Operator" in this permit and is either any department, agency or instrumentality of the executive, legislative, and judicial branches of the Federal government of the United States, or another entity, such as a private contractor, performing construction activity for any such department, agency, or instrumentality.

"Final Stabilization" – on areas not covered by permanent structures, either (1) vegetation has been established, or for arid or semi-arid areas, will be established that provides a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the natural background vegetative cover, or (2) non-vegetative stabilization methods have been implemented to provide effective cover for exposed portions of the site.

"Hazardous Materials" or "Hazardous Substances" or "Hazardous or Toxic Waste" – for the purposes of this permit, any liquid, solid, or contained gas that contain properties that are dangerous or potentially harmful to human health or the environment. See also 40 CFR §261.2.

"Historic Property" – as defined in the National Historic Preservation Act regulations means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

"Impaired Water" or "Water Quality Impaired Water" or "Water Quality Limited Segment" – for the purposes of this permit, waters identified as impaired on the CWA Section 303(d) list, or waters with an EPA-approved or established TMDL. Your construction site will be considered to discharge to an impaired water if the first water of the U.S. to which you discharge is identified by a state, tribe, or EPA pursuant to Section 303(d) of the CWA as not meeting an applicable water quality standard, or is included in an EPA-approved or established total maximum daily load (TMDL). For discharges that enter a storm sewer system prior to discharge, the first water of the U.S. to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

"Impervious Surface" – for the purpose of this permit, any land surface with a low or no capacity for soil infiltration including, but not limited to, pavement, sidewalks, parking areas and driveways, packed gravel or soil, or rooftops.

"Indian Country" or "Indian Country Lands" – defined at 40 CFR §122.2 as:

1. All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;
2. All dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and
3. All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-ways running through the same.

"Infeasible" – for the purpose of this permit, infeasible means not technologically possible or not economically practicable and achievable in light of best industry practices. EPA notes that it does not intend for any permit requirement to conflict with state water rights law.

"Install" or "Installation" – when used in connection with stormwater controls, to connect or set in position stormwater controls to make them operational.

"Intermittent (or Seasonal) Stream" – one which flows at certain times of the year when groundwater provides water for stream flow, as well as during and immediately after some precipitation events or snowmelt.

"Jar test" – a test designed to simulate full-scale coagulation/flocculation/sedimentation water treatment processes by taking into account the possible conditions.

"Landward" – positioned or located away from a waterbody, and towards the land.

"Level Spreader" – a temporary stormwater control used to spread stormwater flow uniformly over the ground surface as sheet flow to prevent concentrated, erosive flows from occurring.

"Linear Project" – includes the construction of roads, bridges, conduits, substructures, pipelines, sewer lines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities in a long, narrow area.

"Minimize" – to reduce and/or eliminate to the extent achievable using stormwater controls that are technologically available and economically practicable and achievable in light of best industry practices.

"Municipal Separate Storm Sewer System" or "MS4" – defined at 40 CFR §122.26(b)(8) as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

1. Owned and operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
2. Designed or used for collecting or conveying stormwater;
3. Which is not a combined sewer; and

4. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR §122.2.

"National Pollutant Discharge Elimination System" (NPDES) – defined at 40 CFR §122.2 as the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA. The term includes an 'approved program.'

"Native Topsoil" – the uppermost layer of naturally occurring soil for a particular area, and is often rich in organic matter, biological activity, and nutrients.

"Native Vegetation" – the species of plants that have developed for a particular region or ecosystem and are considered endemic to that region or ecosystem.

"Natural Buffer" – for the purposes of this permit, an area of undisturbed natural cover surrounding surface waters within which construction activities are restricted. Natural cover includes the vegetation, exposed rock, or barren ground that exists prior to commencement of earth-disturbing activities.

"Natural Vegetation" – vegetation that occurs spontaneously without regular management, maintenance or species introductions, removals, and that generally has a strong component of native species.

"New Operator of a New or Existing Project" – an operator that through transfer of ownership and/or operation replaces the operator of an already permitted construction project.

"New Project" – a construction project that commences construction activities on or after February 16 (or on or after April 9, 2012 for the State of Idaho, except for Indian Country; April 13, 2012 for areas in the state of Washington, except for Indian Country, subject to construction activity by a Federal Operator; May 9, 2012 for projects in the following areas: the Fond du Lac Band and Grand Portage Band of Lake Superior Chippewa in Minnesota; and the Bad River Band and Lac du Flambeau Band of Lake Superior Chippewa in Wisconsin).

"New Source" – for the purpose of this permit, a construction project that commenced construction activities after February 1, 2010.

"New Source Performance Standards (NSPS)" – for the purposes of this permit, NSPS are technology-based standards that apply to construction sites that are new sources under 40 CFR 450.24.

"Non-Stormwater Discharges" – discharges that do not originate from storm events. They can include, but are not limited to, discharges of process water, air conditioner condensate, non-contact cooling water, vehicle wash water, sanitary wastes, concrete washout water, paint wash water, irrigation water, or pipe testing water.

"Non-Turbid" – a discharge that does not cause or contribute to an exceedence of turbidity-related water quality standards.

"Notice of Intent" (NOI) – the form (electronic or paper) required for authorization of coverage under the Construction General Permit.

"Notice of Termination" (NOT) – the form (electronic or paper) required for terminating coverage under the Construction General Permit.

"Operational" – for the purpose of this permit, stormwater controls are made "operational" when they have been installed and implemented, are functioning as designed, and are properly maintained.

"Operator" – for the purpose of this permit and in the context of stormwater discharges associated with construction activity, any party associated with a construction project that meets either of the following two criteria:

1. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
2. The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the permit).

This definition is provided to inform permittees of EPA's interpretation of how the regulatory definitions of "owner or operator" and "facility or activity" are applied to discharges of stormwater associated with construction activity.

"Ordinary High Water Mark" – the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, and/or the presence of litter and debris.

"Outfall" – see "Discharge Point."

"Permitting Authority" – for the purposes of this permit, EPA, a Regional Administrator of EPA, or an authorized representative.

"Point(s) of Discharge" – see "Discharge Point."

"Point Source" – any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

"Pollutant" – defined at 40 CFR §122.2. A partial listing from this definition includes: dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial or municipal waste.

"Pollutant-Generating Activities" – at construction sites (for the purposes of this permit), those activities that lead to or could lead to the generation of pollutants, either as a result of earth-disturbance or a related support activity. Some of the types of pollutants that are typically found at construction sites are:

- sediment;
- nutrients;
- heavy metals;
- pesticides and herbicides;
- oil and grease;
- bacteria and viruses;

- trash, debris, and solids;
- treatment polymers; and
- any other toxic chemicals.

"Pollution Prevention Measures" – stormwater controls designed to reduce or eliminate the addition of pollutants to construction site discharges through analysis of pollutant sources, implementation of proper handling/disposal practices, employee education, and other actions.

"Polymers" – for the purposes of this permit, coagulants and flocculants used to control erosion on soil or to enhance the sediment removal capabilities of sediment traps or basins. Common construction site polymers include polyacrylamide (PAM), chitosan, alum, polyaluminum chloride, and gypsum.

"Prohibited Discharges" – discharges that are not allowed under this permit, including:

1. Wastewater from washout of concrete;
2. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
4. Soaps or solvents used in vehicle and equipment washing;
5. Toxic or hazardous substances from a spill or other release; and
6. Waste, garbage, floatable debris, construction debris, and sanitary waste from pollutant-generating activities.

"Provisionally Covered Under this Permit" – for the purposes of this permit, EPA provides temporary coverage under this permit for emergency-related projects prior to receipt of a complete and accurate NOI. Discharges from earth-disturbing activities associated with the emergency-related projects are subject to the terms and conditions of the permit during the period of temporary coverage.

"Receiving Water" – a "Water of the United States" as defined in 40 CFR §122.2 into which the regulated stormwater discharges.

"Run-On" – sources of stormwater that drain from land located upslope or upstream from the regulated site in question.

"Semi-Arid Areas" – areas with an average annual rainfall of 10 to 20 inches.

"Site" – for construction activities, the land or water area where earth-disturbing activities take place, including construction support activities.

"Small Construction Activity" – defined at 40 CFR §122.26(b)(15) and incorporated here by reference. A small construction activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than one (1) acre and less than five (5) acres of land or will disturb less than one (1) acre of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one (1) acre and less than five (5) acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site.

"Small Residential Lot" – for the purpose of this permit, a lot being developed for residential purposes that will disturb less than 1 acre of land, but is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre.

"Snowmelt" – the conversion of snow into overland stormwater and groundwater flow as a result of warmer temperatures.

"Spill" – for the purpose of this permit, the release of a hazardous or toxic substance from its container or containment.

"Stabilization" – the use of vegetative and/or non-vegetative cover to prevent erosion and sediment loss in areas exposed through the construction process.

"Steep Slopes" – where a state, Tribe, local government, or industry technical manual (e.g., stormwater BMP manual) has defined what is to be considered a "steep slope", this permit's definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 15 percent or greater in grade.

"Storm Sewer System" – a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) designed or used for collecting or conveying stormwater.

"Stormwater" – stormwater runoff, snow melt runoff, and surface runoff and drainage.

"Stormwater Control Measure" - refers to any stormwater control, BMP, or other method (including narrative effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the United States.

"Stormwater Controls" – see "Stormwater Control measure."

"Stormwater Discharge Associated with Construction Activity" – as used in this permit, a discharge of pollutants in stormwater to waters of the United States from areas where land-disturbing activities (e.g., clearing, grading, or excavation) occur, or where construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck chute washdown, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants), are located.

"Stormwater Inlet" – a structure placed below grade to conduct water used to collect stormwater runoff for conveyance purposes.

"Stormwater Team" – the group of individuals responsible for oversight of the development and modifications of the SWPPP, and oversight of compliance with the permit requirements. The individuals on the "Stormwater Team" must be identified in the SWPPP.

"Storm Event" – a precipitation event that results in a measurable amount of precipitation.

"Storm Sewer" – a system of pipes (separate from sanitary sewers) that carries stormwater runoff from buildings and land surfaces.

"Subcontractor" – for the purposes of this permit, an individual or company that takes a portion of a contract from the general contractor or from another subcontractor.

"Surface Water" – a "Water of the United States" as defined in 40 CFR §122.2.

"SWPPP" (Stormwater Pollution Prevention Plan) – a site-specific, written document that, among other things: (1) identifies potential sources of stormwater pollution at the construction site; (2) describes stormwater control measures to reduce or eliminate pollutants in stormwater discharges from the construction site; and (3) identifies procedures the operator will implement to comply with the terms and conditions of this general permit.

"Temporary Stabilization" – a condition where exposed soils or disturbed areas are provided a temporary vegetative and/or non-vegetative protective cover to prevent erosion and sediment loss. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either final stabilization can be achieved or until further construction activities take place to re-disturb this area.

"Thawing Conditions" – for the purposes of this permit, thawing conditions are expected based on the historical likelihood of two or more days with daytime temperatures greater than 32˚F. This date can be determined by looking at historical weather data. Note: the estimation of thawing conditions is for planning purposes only. During construction the permittee will be required to conduct site inspections based upon actual conditions (i.e., if thawing conditions occur sooner than expected, the permittee will be required to conduct inspections at the regular frequency).

"Threatened Species" – defined in the Endangered Species Act at 16 U.S.C. 1531 as any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

"Tier 2 Waters" – for antidegradation purposes, pursuant to 40 CFR 131.12(a)(2), those waters thatare characterized as having water quality that exceeds the levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water.

"Tier 2.5 Waters" – for antidegradation purposes, those waters designated by States or Tribes as requiring a level of protection equal to and above that given to Tier 2 waters, but less than that given Tier 3 waters. Some States have special requirements for these waters.

"Tier 3 Waters" – for antidegradation purposes, pursuant to 40 CFR 131.12(a)(3), Tier 3 waters are identified by states as having high quality waters constituting an Outstanding Natural Resource Water (ONRW), such as waters of National Parks and State Parks, wildlife refuges, and waters of exceptional recreational or ecological significance.

"Total Maximum Daily Load" or "TMDL" – the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.

"Toxic Waste" – see "Hazardous Materials."

"Turbidity" – a condition of water quality characterized by the presence of suspended solids and/or organic material.

"Uncontaminated Discharge" – a discharge that does not cause or contribute to an exceedence of applicable water quality standards.

"Upland" - the dry land area above and 'landward' of the ordinary high water mark.

"Upset" – Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. See 40 CFR 122.41(n)(1).

"Water-Dependent Structures" – structures or facilities that are required to be located directly adjacent to a waterbody or wetland, such as a marina, pier, boat ramp, etc.

"Water Quality Standards" – defined in 40 CFR § 131.3, and are provisions of State or Federal law which consist of a designated use or uses for the waters of the United States, water quality criteria for such waters based upon such uses, and an antidegradation policy to protect high-quality waters. Water quality standards protect the public health or welfare, enhance the quality of water and serve the purposes of the Act.

"Waters of the United States" – defined at 40 CFR §122.2 as:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
    a. Which are or could be used by interstate or foreign travelers for recreational or other purposes;
    b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    c. Which are used or could be used or could be used for industrial purposes by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under this definition;
5. Tributaries of waters identified in paragraphs (1) through (4) of this definition;
6. The territorial sea; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

In applying this definition, EPA will consider applicable Court cases and current guidance.

"Wetland" – those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. On-site evaluations are typically required to confirm the presence and boundaries of wetlands.

"Work day" – for the purposes of this permit, a work day is a calendar day on which construction activities will take place.

Acronyms

C&D – Construction & Development

CGP – Construction General Permit

CFR – Code of Federal Regulations

CWA – Clean Water Act

eNOI – Electronic Notice of Intent

EPA – United States Environmental Protection Agency

ESA – Endangered Species Act

FWS – United States Fish and Wildlife Service

MS4 – Municipal Separate Storm Sewer System

MSGP – Multi-Sector General Permit

NMFS – United States National Marine Fisheries Service

NOI – Notice of Intent

NOT – Notice of Termination

NPDES – National Pollutant Discharge Elimination System

NRC – National Response Center

NRCS – National Resources Conservation Service

POTW – Publicly Owned Treatment Works

SPCC – Spill Prevention Control and Countermeasure

SWPPP – Stormwater Pollution Prevention Plan

TMDL – Total Maximum Daily Load

USGS – United States Geological Survey

WQS – Water Quality Standard

Appendix B - Permit Areas Eligible for Coverage

Permit coverage for stormwater discharges from construction activity occurring within the following areas is provided by legally separate and distinctly numbered permits:

B.1 EPA Region 1: CT, MA, ME, NH, RI, VT

US EPA, Region 01
Office of Ecosystem Protection
NPDES Stormwater Program
5 Post Office Square
Boston, MA 02109-3912

The States of Connecticut, Maine, Rhode Island, and Vermont are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
CTR12000I	Indian country within the State of Connecticut
MAR120000	Commonwealth of Massachusetts (except Indian country)
MAR12000I	Indian country within the State of Massachusetts
NHR120000	State of New Hampshire
RIR12000I	Indian country within the State of Rhode Island
VTR12000F	Areas in the State of Vermont subject to construction by a Federal Operator

B.2 EPA Region 2: NJ, NY, PR, VI

For NJ, NY, and VI:
US EPA, Region 02
NPDES Stormwater Program
290 Broadway, 24th Floor
New York, NY 10007-1866

For PR:
US EPA, Region 02
Caribbean Environmental Protection Division
NPDES Stormwater Program
1492 Ponce de Leon Ave
Central Europa Building, Suite 417
San Juan, PR 00907-4127

The State of New York is the NPDES Permitting Authority for the majority of discharges within its state. The State of New Jersey and the Virgin Islands are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
NYR12000I	Indian country within the State of New York
PRR120000	Commonwealth of Puerto Rico

B.3 EPA Region 3: DE, DC, MD, PA, VA, WV

US EPA, Region 03
NPDES Stormwater Program
1650 Arch St
Philadelphia, PA 19103

The State of Delaware is the NPDES Permitting Authority for the majority of discharges within its state. Maryland, Pennsylvania, Virginia, and West Virginia are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
DCR120000	District of Columbia
DER12000F	Areas in the State of Delaware subject to construction by a Federal Operator

B.4 EPA Region 4: AL, FL, GA, KY, MS, NC, SC, TN

US EPA, Region 04
Water Protection Division
NPDES Stormwater Program
61 Forsyth St SW
Atlanta, GA 30303-3104

The States of Alabama, Florida, Mississippi, and North Carolina are the NPDES Permitting Authority for the majority of discharges within their respective States. EPA Region 4 is the NPDES Permitting Authority for all Indian country lands within any other Region 4 State except Catawba lands in South Carolina.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
ALR12000I	Indian country within the State of Alabama
FLR12000I	Indian country within the State of Florida
MSR12000I	Indian country within the State of Mississippi
NCR12000I	Indian country within the State of North Carolina
RE412000I	Indian country within any other Region 4 State (except Catawba lands in South Carolina)

B.5 EPA Region 5: IL, IN, MI, MN, OH, WI

US EPA, Region 05
NPDES & Technical Support
NPDES Stormwater Program
77 W Jackson Blvd
(WN-16J)
Chicago, IL 60604-3507

The States of Michigan, Minnesota, and Wisconsin are the NPDES Permitting Authority for the majority of discharges within their respective states. The States of Illinois, Indiana, and Ohio are the NPDES Permitting Authorities for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
MIR10000I	Indian country within the State of Michigan
MNR10000I	Indian country within the State of Minnesota
WIR10000I	Indian country within the State of Wisconsin, except the Sokaogon Chippewa (Mole Lake) Community

B.6 EPA Region 6: AR, LA, OK, TX, NM (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands)

US EPA, Region 06
NPDES Stormwater Program
1445 Ross Ave, Suite 1200
Dallas, TX 75202-2733

The States of Louisiana, Oklahoma, and Texas are the NPDES Permitting Authority for the majority of discharges within their respective state. The State of Arkansas is the NPDES Permitting Authority for all discharges within its respective state.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
LAR12000I	Indian country within the State of Louisiana
NMR120000	State of New Mexico, except Indian country
NMR12000I	Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I.
OKR12000I	Indian country within the State of Oklahoma
OKR12000F	Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).
TXR12000F	Discharges in the State of Texas that are not under the authority of the Texas Commission on Environmental Quality (formerly TNRCC), including activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline.
TXR12000I	Indian country within the State of Texas

B.7 EPA Region 7: IA, KS, MO, NE (except see Region 8 for Pine Ridge Reservation Lands)

US EPA, Region 07
NPDES Stormwater Program
901 N 5th St
Kansas City, KS 66101

The States of Iowa, Kansas, and Nebraska are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Missouri is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
IAR12000I	Indian country within the State of Iowa
KSR12000I	Indian country within the State of Kansas
NER12000I	Indian country within the State of Nebraska, except Pine Ridge Reservation lands (see Region 8)

B.8 EPA Region 8: CO, MT, ND, SD, WY, UT (except see Region 9 for Goshute Reservation and Navajo Reservation Lands), the Ute Mountain Reservation in NM, and the Pine Ridge Reservation in NE.

US EPA, Region 08
NPDES Stormwater Program
999 18th St, Suite 300
(EPR-EP)
Denver, CO 80202-2466

The States of Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
COR12000F	Areas in the State of Colorado, except those located on Indian country, subject to construction activity by a Federal Operator
COR12000I	Indian country within the State of Colorado, as well as the portion of the Ute Mountain Reservation located in New Mexico
MTR12000I	Indian country within the State of Montana
NDR12000I	Indian country within the State of North Dakota, as well as that portion of the Standing Rock Reservation located in South Dakota (except for the portion of the lands within the former boundaries of the Lake Traverse Reservation which is covered under South Dakota permit SDR10000I listed below)
SDR12000I	Indian country within the State of South Dakota, as well as the portion of the Pine Ridge Reservation located in Nebraska and the portion of the lands within the former boundaries of the Lake Traverse Reservation located in North Dakota (except for the Standing Rock Reservation which is covered under North Dakota permit NDR10000I listed above)
UTR12000I	Indian country within the State of Utah, except Goshute and Navajo Reservation lands (see Region 9)
WYR12000I	Indian country within the State of Wyoming

B.9 EPA Region 9: CA, HI, NV, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Goshute Reservation in UT and NV, the Navajo Reservation in UT, NM, and AZ, the Duck Valley Reservation in ID, and the Fort McDermitt Reservation in OR.

US EPA, Region 09
NPDES Stormwater Program
75 Hawthorne St
San Francisco, CA 94105-3901

The States of Arizona, California and Nevada are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Hawaii is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
ASR120000	Island of American Samoa
AZR12000I	Indian country within the State of Arizona, as well as Navajo Reservation lands in New Mexico and Utah
CAR12000I	Indian country within the State of California
GUR120000	Island of Guam
JAR120000	Johnston Atoll
MPR120000	Commonwealth of the Northern Mariana Islands
MWR120000	Midway Island and Wake Island
NVR12000I	Indian country within the State of Nevada, as well as the Duck Valley Reservation in Idaho, the Fort McDermitt Reservation in Oregon and the Goshute Reservation in Utah

B.10 EPA Region 10: AK, WA, ID (except see Region 9 for Duck Valley Reservation Lands), and OR (except see Region 9 for Fort McDermitt Reservation).

US EPA, Region 10
NPDES Stormwater Program
1200 6th Ave (OW-130)
Seattle, WA 98101-1128
Phone: (206) 553-6650

The States of Oregon and Washington are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
AKR12000I	Indian country within the State of Alaska
AKR12-000F	Areas in the the Denali National Park and Preserve subject to construction by a Federal Operator
IDR120000	State of Idaho, except Indian country
IDR12000I	Indian country within the State of Idaho, except Duck Valley Reservation lands (see Region 9)
ORR12000I	Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9)
WAR12000F	Areas in the State of Washington, except those located on Indian country, subject to construction activity by a Federal Operator
WAR12000I	Indian country within the State of Washington

Appendix C - Small Construction Waivers and Instructions

These waivers are only available to stormwater discharges associated with small construction activities (i.e., 1-5 acres). As the operator of a small construction activity, you may be able to qualify for a waiver in lieu of needing to obtain coverage under this general permit based on: (A) a low rainfall erosivity factor, (B) a TMDL analysis, or (C) an equivalent analysis that determines allocations for small construction sites are not needed. Each operator, otherwise needing permit coverage, must notify EPA of its intention for a waiver. It is the responsibility of those individuals wishing to obtain a waiver from coverage under this general permit to submit a complete and accurate waiver certification as described below. Where the operator changes or another is added during the construction project, the new operator must also submit a waiver certification to be waived.

C.1 Rainfall Erosivity Waiver

Under this scenario the small construction project's rainfall erosivity factor calculation ("R" in the Revised Universal Soil Loss Equation) is less than 5 during the period of construction activity. The operator must certify to EPA that construction activity will occur only when the rainfall erosivity factor is less than 5. The period of construction activity begins at initial earth disturbance and ends with final stabilization. Where vegetation will be used for final stabilization, the date of installation of a stabilization practice that will provide interim non-vegetative stabilization can be used for the end of the construction period, provided the operator commits (as a condition of waiver eligibility) to periodically inspect and properly maintain the area until the criteria for final stabilization as defined in the construction general permit have been met. If use of this interim stabilization eligibility condition was relied on to qualify for the waiver, signature on the waiver with its certification statement constitutes acceptance of and commitment to complete the final stabilization process. The operator must submit a waiver certification to EPA prior to commencing construction activities.

> *Note: The rainfall erosivity factor "R" is determined in accordance with Chapter 2 of Agriculture Handbook Number 703, Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE), pages 21–64, dated January 1997; United States Department of Agriculture (USDA), Agricultural Research Service.*

EPA has developed an online rainfall erosivity calculator to help small construction sites determine potential eligibility for the rainfall erosivity waiver. You can access the calculator from EPA's website at:www.epa.gov/npdes/stormwater/lew. The R factor can easily be calculated by using the construction site latitude/longitude or address and estimated start and end dates of construction. This calculator may also be useful in determining the time periods during which construction activity could be waived from permit coverage. You may find that moving your construction activity by a few weeks or expediting site stabilization will allow you to qualify for the waiver. Use this online calculator or the Construction Rainfall Erosivity Waiver Fact Sheet (www.epa.gov/npdes/pubs/fact3-1.pdf) to assist in determining the R Factor for your small construction site.

If you are the operator of the construction activity and eligible for a waiver based on low erosivity potential, you can submit a rainfall erosivity waiver electronically via EPA's eNOI system (www.epa.gov/npdes/cgpenoi) or provide the following information on the waiver certification form in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The rainfall erosivity factor calculation that applies to the active construction phase at your project site; and
5. A statement, signed and dated by an authorized representative as provided in Appendix I, Subsection I.11, which certifies that the construction activity will take place during a period when the value of the rainfall erosivity factor is less than five.

You can access the waiver certification form from EPA's website at: (http://www.epa.gov/npdes/pubs/construction_waiver_form.pdf). Paper copies of the form must be sent to one of the addresses listed in Part C.4 of this section.

Note: If the R factor is 5 or greater, you cannot apply for the rainfall erosivity waiver, and must apply for NPDES permit coverage, unless you qualify for the Water Quality Waiver as described in section B below.

If your small construction project continues beyond the projected completion date given on the waiver certification, you must recalculate the rainfall erosivity factor for the new project duration. If the R factor is below five (5), you must update all applicable information on the waiver certification and retain a copy of the revised waiver as part of your records. The new waiver certification must be submitted prior to the projected completion date listed on the original waiver form to assure your exemption from permitting requirements is uninterrupted. If the new R factor is 5 or above, you must obtain NPDES permit coverage.

C.2 TMDL Waiver

This waiver is available if EPA has established or approved a TMDL that addresses the pollutant(s) of concern for the impaired water and has determined that controls on stormwater discharges from small construction activity are not needed to protect water quality. The pollutant(s) of concern include sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. Information on TMDLs that have been established or approved by EPA is available from EPA online at http://www.epa.gov/owow/tmdl/ and from state and tribal water quality agencies.

If you are the operator of the construction activity and eligible for a waiver based on compliance with an EPA-established or approved TMDL, you must provide the following information on the Waiver Certification form in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;

3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the waterbody(s) that would be receiving stormwater discharges from your construction project;
5. The name and approval date of the TMDL;
6. A statement, signed and dated by an authorized representative as provided in Appendix I, Subsection I.11, that certifies that the construction activity will take place and that the stormwater discharges will occur, within the drainage area addressed by the TMDL.

C.3 Equivalent Analysis Waiver

This waiver is available for non-impaired waters only. The operator can develop an equivalent analysis that determines allocations for his/her small construction site for the pollutant(s) of concern or determines that such allocations are not needed to protect water quality. This waiver requires a small construction operator to develop an equivalent analysis based on existing in-stream concentrations, expected growth in pollutant concentrations from all sources, and a margin of safety.

If you are a construction operator who wants to use this waiver, you must develop your equivalent analysis and provide the following information to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the waterbody(s) that would be receiving stormwater discharges from your construction project;
5. Your equivalent analysis;
6. A statement, signed and dated by an authorized representative as provided in Appendix I, Subsection I.11, that certifies that the construction activity will take place and that the stormwater discharges will occur, within the drainage area addressed by the equivalent analysis.

C.4 Waiver Deadlines and Submissions

1. Waiver certifications must be submitted prior to commencement of construction activities.
2. If you submit a TMDL or equivalent analysis waiver request, you are not waived until EPA approves your request. As such, you may not commence construction activities until receipt of approval from EPA.
3. Late Notifications: Operators are not prohibited from submitting waiver certifications after initiating clearing, grading, excavation activities, or other construction activities. The Agency reserves the right to take enforcement for any unpermitted discharges that occur between the time construction commenced and waiver authorization is granted.

Submittal of a waiver certification is an optional alternative to obtaining permit coverage for discharges of stormwater associated with small construction activity, provided you qualify for the waiver. Any discharge of stormwater associated with small construction activity not covered by either a permit or a waiver may be considered an unpermitted discharge under the Clean Water Act. As mentioned above, EPA reserves the right to take enforcement for any unpermitted discharges that occur between the time construction commenced and either discharge authorization is granted or a complete and accurate waiver certification is submitted. EPA may notify any operator covered by a waiver that they must apply for a permit. EPA may notify any operator who has been in non-compliance with a waiver that they may no longer use the waiver for future projects. Any member of the public may petition EPA to take action under this provision by submitting written notice along with supporting justification.

Complete and accurate Rainfall Erosivity waiver certifications not otherwise submitted electronically via EPA's eNOI system (www.epa.gov/npdes/cgpenoi) must be sent to one of the following addresses:

Regular U.S. Mail Delivery
EPA Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Overnight/Express Mail Delivery
EPA Stormwater Notice Processing Center
Room 7420
U.S. EPA
1201Constitution Avenue, NW
Washington, DC 20004

Complete and accurate TMDL or equivalent analysis waiver requests must be sent to the applicable EPA Region office specified in Appendix B.

Appendix D - Endangered Species Act Requirements

The purpose of this guidance is to assist you in complying with the requirements in Part 1.1.e of the permit requiring you to demonstrate that you meet one of the criteria listed in this appendix with respect to the protection of any and all species that are federally-listed as endangered or threatened under the Endangered Species Act (ESA) or of habitat that is federally-designated as "critical habitat" under the ESA in order to be eligible for coverage under this permit.

This guidance provides you information on the following:

- **Section D.1:** ESA Eligibility Criteria
- **Section D.2:** Guidance for Determining Which ESA Criteria Applies

D.1 ESA Eligibility Criteria

You must certify in your NOI that you meet one of the eligibility criteria listed below in order to be eligible for coverage under this permit. You must also specify in the NOI the basis for your selection of the applicable eligibility criterion.

> Note: (1) Regardless of the criterion selected, you must provide documentation in your SWPPP that is sufficient to support your determination that you satisfy the requirements of the particular criterion. (2) While coordination between you and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service (together, the "Services") is not necessarily required in all cases, EPA encourages you to coordinate with the Services and to do so early in the planning process prior to submitting your NOI.

Criterion A. No federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's "action area" as defined in Appendix A of this permit.

Criterion B. The construction site's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your action area under eligibility Criterion A, C, D, E, or F and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the "action area". To certify your eligibility under this Criterion, there must be no lapse of NPDES permit coverage in the other operator's certification. By certifying eligibility under this Criterion, you agree to comply with any effluent limitations or conditions upon which the other operator's certification was based. You must include in your NOI the tracking number from the other operator's notification of authorization under this permit. If your certification is based on another operator's certification under Criterion C, you must provide EPA with the relevant supporting information required of existing dischargers in Criterion C in your NOI form.

Criterion C. Federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in or near your site's "action area," and your site's discharges and discharge-related activities are not likely to adversely affect listed threatened or endangered species or critical habitat. This determination may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to adversely affect listed species and critical habitat. To make this certification, you must include the following in your NOI: 1) any federally listed species and/or designated habitat located in your "action area"; and 2) the distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site map with your NOI.

Criterion D. Coordination between you and the Services has been concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and must have resulted in a written concurrence from the relevant Service(s) that your site's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

Criterion E. Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded. The consultation must have addressed the effects of the construction site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat. The result of this consultation must be either:

i. a biological opinion that concludes that the action in question (taking into account the effects of your site's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species, nor the destruction or adverse modification of critical habitat; or

ii. written concurrence from the applicable Service(s) with a finding that the site's discharges and discharge-related activities are not likely to adversely affect federally-listed species or federally-designated habitat.

You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

Criterion F. Your construction activities are authorized through the issuance of a permit under section 10 of the ESA, and this authorization addresses the effects of the site's discharges and discharge-related activities on federally-listed species and federally-designated critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

You must comply with any applicable terms, conditions, or other requirements developed in the process of meeting the eligibility criteria in this section to remain eligible for coverage under this permit. Documentation of these requirements must be kept as part of your SWPPP (see Part 7.2.14.1).

D.2 Guidance for Determining Which Criterion Applies

Part 1.1.5 of the permit requires that you meet one of the six criteria listed above in order to be eligible for coverage under the permit.

You must follow the procedures in Steps 1through 6 to determine the ESA criterion under which your site is eligible for permit coverage.

D.2.1 Step 1 - Determine if Your Discharges and Discharge-Related Activities Were Already Addressed in Another Operator's Valid Certification that Included Your Action Area.

- **If your discharges and discharge-related activities <u>were</u> already addressed in another operator's valid certification that included your action area** (e.g., a general contractor or developer may have completed and filed an NOI for the entire action area with the necessary ESA certifications (Criterion A, C, D, E, or F)), *you may select eligibility Criterion B on your Notice of Intent form*.

  By certifying eligibility under Criterion B, you must comply with any terms and conditions imposed under the eligibility requirements of Criterion A, C, D, E, or F to ensure that your discharges and discharge-related activities are protective of listed species and/or critical habitat.

  > Note: If you are unable to meet these eligibility requirements, then you may either establish eligibility under one of the other criterion, or you may consider applying to EPA for an individual permit.

  Under Criterion B, you must provide documentation in your SWPPP of any of these terms and conditions, as well as the other operator's basis for establishing eligibility. You must also provide a description of the basis for your selection of Criterion B on your NOI form, including the eligibility criterion (A, C, D, E, or F) that was certified to by the previous operator, and must provide the Tracking Number from the other operator's notification of authorization under this permit.

  If your certification is based on another operator's certification under criterion C, you must provide the documentation required in the NOI for criterion C, namely: 1) what federally listed species and/or designated habitat are located in your "action area"; and 2) what is the distance between your site and the listed species or designated critical habitat (in miles).

- **If discharges and discharge-related activities from your site <u>were not</u> addressed in another operator's valid certification that included your action area,** you must follow the applicable procedures in Steps 2 through 5 below.

D.2.2 Step 2 - Determine if Listed Threatened or Endangered Species or their Designated Critical Habitat(s) are Likely to Occur in your Site's Action Area

You must determine, to the best of your knowledge, whether species listed as either threatened or endangered, or their critical habitat(s) (see definitions of these terms in Appendix A), are located in your site's action area. To make this determination, you should first determine if listed species and/or critical habitat are expected to exist in your county or township. The local offices of the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), and State or Tribal Heritage Centers often maintain lists of federally listed endangered or threatened species on their internet sites. For FWS

terrestrial and aquatic species information, you can use FWS' on-line mapping tool, the Information, Planning, and Consultation (IPAC) System, located at http://www.fws.gov/ipac/.

Note: To determine the field office that corresponds to your project site, visit http://www.fws.gov/endangered/regions/index.html and http://www.nmfs.noaa.gov/ (under the left tabe for "Regions").

In most cases, species and/or critical habitat lists allow you to determine if any such species or habitat exists in your county or township. You can also find critical habitat designations and associated requirements at 50 CFR Parts 17 and 226. http://www.access.gpo.gov.

- ***If there <u>are</u> listed species and/or critical habitat in your county or township***, you should contact your local FWS, NMFS, or State or Tribal Heritage Center to determine if the listed species are known to exist in your action area and if any critical habitat areas have been designated that overlap your action area.
    - If your local FWS, NMFS, or State or Tribal Heritage Center indicates that these species and/or critical habitat could exist in your action area, you must:
        - Do **one or more** of the following:
            - Conduct visual inspections. This method may be particularly suitable for construction sites that are smaller in size or located in non-natural settings such as highly urbanized areas or industrial parks where there is little or no natural habitat, or for construction activities that discharge directly into municipal stormwater collection systems.
            - Conduct a formal biological survey. In some cases, particularly for larger construction sites with extensive stormwater discharges, biological surveys may be an appropriate way to assess whether species are located in the action area and whether there are likely to be adverse effects to such species. Biological surveys are frequently performed by environmental consulting firms. A biological survey may in some cases be useful to conduct in conjunction with Steps Two, Three, or Four of these instructions.
            - If required, conduct an environmental assessment under the National Environmental Policy Act (NEPA). Some construction activities might require review under NEPA for specific reasons, such as federal funding or other federal involvement in the project. Note: Coverage under the CGP does not trigger such a review for individual projects/sites. EPA has complied with NEPA in the issuance of the CGP.

        and

- Follow the instructions in Steps 3 – 5 below, as applicable. Note that many but not all measures imposed to protect listed species under these steps will also protect critical habitat. Thus, meeting the eligibility requirements of this CGP may require measures to protect critical habitat that are separate from those to protect listed species.

- ***If there are <u>no</u> listed species in your county or township and <u>no</u> critical habitat areas in your action area,*** *you may check eligibility criterion A on your NOI form*. You must also provide a description of the basis for the criterion selected on your NOI form and provide documentation supporting the criterion selected in your SWPPP.

D.2.3 Step 3 - Determine if the Construction Activity's Discharges or Discharge-Related Activities Are Likely to Adversely Affect Listed Threatened or Endangered Species or Designated Critical Habitat

If in Step 2 you determine based on communication with your local FWS, NMFS, or State or Tribal Heritage Center, or other determination, that listed species and/or critical habitat could exist in your action area, you must next assess whether your discharges or discharge-related activities are likely to adversely affect listed threatened or endangered species or designated critical habitat.

Potential adverse effects from discharges and discharge-related activities include:

- *Hydrological*. Stormwater discharges may cause siltation, sedimentation or induce other changes in receiving waters such as temperature, salinity or pH. These effects will vary with the amount of stormwater discharged and the volume and condition of the receiving water. Where a stormwater discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely. Construction activity itself may also alter drainage patterns on a site where construction occurs that can impact listed species or critical habitat.

- *Habitat*. Excavation, site development, grading, and other surface disturbance activities from construction activities, including the installation or placement of stormwater controls, may adversely affect listed species or their habitat. Stormwater may drain or inundate listed species habitat.

- *Toxicity*. In some cases, pollutants in stormwater may have toxic effects on listed species.

The scope of effects to consider will vary with each site. If you are having difficulty determining whether your project is likely to adversely affect listed species or critical habitat, or one of the Services has already raised concerns to you, you should contact the appropriate office of the FWS, NMFS or Natural Heritage Center for assistance.

- ***If adverse effects to listed threatened or endangered species or their critical habitat <u>are not</u> likely****, then you may select eligibility criterion C on the NOI form*. You must provide the following specific information on your NOI form: 1) what federally listed species and/or designated habitat are located in your "action area"; and 2) what is the distance between your site and the listed species or

designated critical habitat (in miles). You must also provide a copy of your site map with your NOI.

- ***If adverse effects to listed threatened or endangered species or their critical habitat <u>are</u> likely,*** you must follow Step 4 below.

D.2.4 Step 4 - Determine if Measures Can Be Implemented to Avoid Adverse Effects

If you make a preliminary determination in Step 3 that adverse effects from your construction activity's discharges or discharge-related activities are likely to occur, you can still receive coverage under eligibility criterion C of the CGP if appropriate measures are undertaken to avoid or eliminate the likelihood of adverse effects prior to applying for CGP coverage.

These measures may involve relatively simple changes to construction activities such as re-routing a stormwater discharge to bypass an area where species are located, relocating stormwater controls, or by modifying the "footprint" of the construction activity. If you are unable to ascertain which measures to implement to avoid the likelihood of adverse effects, you must coordinate or enter into consultation with the FWS and/or NMFS, in which case you would not be eligible for coverage under eligibility criterion C, but may instead be eligible for coverage under eligibility criterion D, E, or F (described in more detail in Step 5).

- **If you are able to install and implement appropriate measures to avoid the likelihood of adverse effects,** *then you may check eligibility criterion C on the NOI form.* The measures you adopt to avoid or eliminate adverse affects must be implemented for the duration of the construction project and your coverage under the CGP. You must also provide a description of the basis for the criterion selected , and the following specific information on your NOI form: 1) what federally listed species and/or designated habitat are located in your "action area"; and 2) what is the distance between your site and the listed species or designated critical habitat (in miles).

- **If you cannot ascertain which measures to implement to avoid the likelihood of adverse effects,** you must follow the procedures in Step 5**.**

D.2.5 Step 5 - Determine if the Eligibility Requirements of Criterion D, E, or F Can Be Met

If in Step 4 you cannot ascertain which measures to implement to avoid the likelihood of adverse effects, you must contact the FWS and/or NMFS. You may still be eligible for CGP coverage if any likely adverse effects can be addressed through meeting criterion D, E, or F.

- **Criterion D:** You have coordinated with the Services and have addressed the effects of your site's discharges on federally-listed threatened or endangered species and federally-designated critical habitat, which resulted in a written concurrence from the relevant Service(s) that your site's discharges are not likely to adversely affect listed species or critical habitat.

  If you have met the requirements of criterion D, *you may select eligibility criterion D on the NOI form.* You must provide a description of the basis for the criterion selected on your NOI form and must include copies of the correspondence between you and the applicable Service in your SWPPP.

- **Criterion E:** Formal or informal ESA section 7 consultation is performed with the FWS and/or NMFS and that consultation addresses the effects of your discharges and discharge-related activities on federally-listed and threatened species and designated critical habitat. In order to be eligible for coverage under this permit, consultation must result in a "no jeopardy opinion" or a written concurrence by the Service(s) on a finding that your stormwater discharge(s) and stormwater discharge-related activities are not likely to adversely affect listed species or critical habitat (For more information on consultation, see 50 CFR §402). If you receive a "jeopardy opinion," you may continue to work with the FWS and/or NMFS and your permitting authority to modify your project so that it will not jeopardize listed species or designated critical habitat.

  Note that most consultations are accomplished through informal consultation. When conducting informal ESA section 7 consultation as a non-federal representative, you must follow the procedures found in 50 CFR Part 402 of the ESA regulations. You must notify FWS and/or NMFS of your intention and agreement to conduct consultation as a non-federal representative.

  Consultation may occur in the context of another federal action at the construction site (e.g., where ESA section 7 consultation was performed for issuance of a wetlands dredge and fill permit for the project or where a NEPA review is performed for the project that incorporates a section 7 consultation). Any terms and conditions developed through consultations to protect listed species and critical habitat must be incorporated into the SWPPP. As noted above, operators may, if they wish, initiate consultation with the Services at Step Four.

  Whether ESA section 7 consultation must be performed with either the FWS, NMFS or both Services depends on the listed species that may be affected by the operator's activity. In general, NMFS has jurisdiction over marine, estuarine, and anadromous species. Operators should also be aware that while formal section 7 consultation provides protection from incidental takings liability, informal consultation does not.

  If you have met the requirements of criterion E, *you may select eligibility criterion E on the NOI form.* You must provide a description of the basis for the criterion selected on your NOI form and must include copies of the correspondence between yourself and the Services in your SWPPP.

- **Criterion F:** Your construction activities are authorized through the issuance of a permit under section 10 of the ESA, and that authorization addresses the effects of your discharge(s) and discharge-related activities on federally-listed species and designated critical habitat. You must follow FWS and/or NMFS procedures when applying for an ESA Section 10 permit (see 50 CFR §17.22(b)(1) for FWS and §222.22 for NMFS). Application instructions for section 10 permits for FWS and NMFS can be obtained by accessing the FWS and NMFS websites (http://www.fws.gov and http://www.nmfs.noaa.gov) or by contacting the appropriate FWS and NMFS regional office.

  If you have met the requirements of criterion F, *you may select eligibility criterion F on the NOI form.* You must provide a description of the basis for the criterion selected on your NOI form and must include copies of the correspondence between yourself and the Services in your SWPPP.

Appendix E – Historic Property Screening Process

Background

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of Federal "undertakings", such as the issuance of this permit, on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. To address any issues relating to historic properties in connection with the issuance of this permit, EPA has developed the screening process in this appendix that enables construction operators to appropriately consider the potential impacts, if any, of their installation of stormwater controls on historic properties and to determine whether actions can be taken, if applicable, to mitigate any such impacts. Although the coverages of individual construction sites under this permit do not constitute separate Federal undertakings, the screening process in this appendix provides an appropriate site-specific means of addressing historic property issues in connection with EPA's issuance of the permit.

Key Terms

Historic property- prehistoric or historic districts, sites, buildings, structures, or objects that are included in or eligible for inclusion in the National Register of Historic Places, including artifacts, records, and remains that are related to and located within such properties

SHPO – The State Historic Preservation Officer for a particular state

THPO or Tribal representative – The Tribal Historic Preservation Officer for a particular Tribe or, if there is no THPO, the representative designated by such Tribe for NHPA purposes

Instructions for All Construction Operators

You are required to follow the screening process in this appendix to determine if your installation of stormwater controls on your site has the potential to cause effects to historic properties, and whether or not you need to contact your SHPO, THPO, or other tribal representative for further information. You may not submit your NOI until you have completed this screening process. The following four steps describe how applicants can meet the historic property requirements under this permit:

Step 1 *Are you installing any stormwater controls that require subsurface earth disturbance?*

The first step of the screening process is to determine if you will install stormwater controls that cause subsurface earth disturbance. The installation of the following types of stormwater controls require subsurface earth disturbance:

- Dikes
- Berms
- Catch Basins
- Ponds
- Ditches
- Trenches
- Culverts
- Channels
- Perimeter Drains

- Swales

Note: This list is not intended to be exhaustive. Other stormwater controls that are not on this list may involve earth-disturbing activities and must also be examined for the potential to affect historic properties.

Note: You are only required to consider earth-disturbing activities related to the installation of stormwater controls in the NHPA screening process. You are not reqired to conside other earth-disturbing activities a the site. If you are installing one of the above stormwater controls or another type of control that requires subsurface earth disturbance, your project has the potential to have an effect on historic properties. If this is the case, then you must proceed to Step 2.

If you are not installing one of the above stormwater controls or another type of control that requires subsurface earth disturbance, then you may indicate this on your NOI, and no further screening is necessary. During the 14-day waiting period after submitting your NOI, the SHPO, THPO, or other tribal representative may request that EPA hold up authorization based on concerns about potential adverse impacts to historic properties. EPA will evaluate any such request and notify you if any additional measures to address adverse impacts to historic properties are necessary.

Step 2 *Have prior professional cultural resource surveys or other evaluations determined that historic properties do not exist, or have prior disturbances precluded the existence of historic properties?*

If you are installing a stormwater control that requires subsurface earth disturbance, you must next determine if it has already been determined that no historic properties exist on your site based on prior professional cultural resource surveys or other evaluations, or that the existence of historic properties has been precluded because of prior earth disturbances.

If prior to your project it has already been determined that no historic properties exist at your site based on available information, including information that may be provided by your applicable SHPO, THPO, or other tribal representative, then you may indicate this on your NOI, and no further screening steps are necessary. Similarly, if earth disturbances that have occurred prior to your project have eliminated the possibility that historic properties exist on your site, you may indicate this on your NOI, and no further screening steps are necessary. After submitting your NOI, and during the 14-day waiting period, the SHPO, THPO, or other tribal representative may request that EPA hold up authorization based on concerns about potential adverse impacts to historic properties. EPA will evaluate any such request and notify you if any additional measures to address adverse impacts to historic properties are necessary.

If neither of these circumstances exists for your project, you must proceed to Step 3.

Step 3 *If you are installing any stormwater controls that require subsurface earth disturbance, you must determine if these activities will have an effect on historic properties.*

If your answer to the questions in Steps 1 and 2 is "no", *then you must assess whether your earth-disturbing activities related to the installation of stormwater controls will have an effect on historic properties. This assessment may be based on historical sources, knowledge of the area, an assessment of the types of earth-disturbing activities you are engaging in, considerations of*

any controls and/or management practices you will adopt to ensure that your stormwater control-related earth-disturbing activities will not have an effect on historic properties, and any other relevant factors. If you determine based on this assessment that earth disturbances related to the installation of yous stormwater controls will not cause effects to historic properties, you may indicate this on your NOI, and document the basis for your determinatioin in your SWPPP and no further screening steps are necessary. In this case you must also attach a copy of your site map to your NOI. After submitting your NOI, and during the 14-day waiting period, the SHPO, THPO, or other tribal representative may request that EPA hold up authorization based on concerns about potential adverse impacts to historic properties. EPA will evaluate any such request and notify you if any additional measures to address adverse impacts to historic properties are necessary.

If none of the circumstances in Steps 1-3 exist for your project, you must proceed to Step 4.

Step 4: *If you are installing any stormwater controls that require subsurface earth disturbance and you have not satisfied the conditions in Steps 1-3, you must contact and consult with the appropriate historic preservation authorities.*

Where you are installing stormwater controls that require subsurface earth disturbance, and you cannot determine in Step 3 that these activities will not have effects on historic properties, then you must contact the relevant SHPO, THPO, or other tribal representative to request their views as to the likelihood that historic properties are potentially present on your site and may be impacted by the installation of these controls.

> *Note: Addresses for SHPOs and THPOs may be found on the Advisory Council on Historic Preservation's website (www.achp.gov/programs.html). In instances where a Tribe does not have a THPO you should contact the appropriate Tribal government office designated by the Tribe for this purpose when responding to this permit eligibility condition.*

You must submit the following minimum information in order to properly initiate your request for information:

1. Project name (*i.e.*, the name or title most commonly associated with your project);
2. A narrative description of the project;
3. Name, address, phone and fax number, and email address (if available) of the operator;
4. Most recent U.S. Geological Survey (USGS) map section (7.5 minute quadrangle) showing actual project location and boundaries clearly indicated; and
5. Sections of SWPPP site map (see Part 7.2.6) that show locations where stormwater controls that will cause subsurface earth disturbance will be installed (see Step 1).

Without submitting this minimum information, you will not have been considered to have properly initiated your request. You will need to provide the SHPO, THPO, or other tribal representative a minimum of15 calendar days after they receive these materials to respond to your request for information about your project. You are advised to get a receipt from the post office or other carrier confirming the date on which your letter was received.

If you do not receive a response within15 calendar days after receipt by the SHPO, THPO, or other tribal representative of your request, then you may indicate this on your NOI, and no further screening steps are necessary. Or, if the applicable SHPO, THPO, or other tribal representative responds to your request with an indication that no historic properties will be affected by the installation of stormwater controls at your site, then you may indicate this on your NOI, and no further screening steps are necessary. After submitting your NOI, and during the 14-day waiting period, the SHPO, THPO, or other tribal representative may request that EPA hold up authorization based on concerns about potential adverse impacts to historic properties. EPA will evaluate any such request and notify you if any additional measures to address adverse impacts to historic properties are necessary.

If within 15 calendar days of receipt of your request the applicable SHPO, THPO, or other tribal representative responds with a request for additional information or for further consultation regarding appropriate measures for treatment or mitigation of effects on historic properties caused by the installation of stormwater controls on your site, you must comply with this request and proceed to Step 5.

Step 5: *Consultation with your applicable SHPO, THPO, or other tribal representative.*

If, following your discussions with the appropriate historic preservation authorities in Step 4, the applicable SHPO, THPO, or other tribal represenative requests additional information or further consultation, you must respond with such information or to consult to determine impacts to historic properties that may be caused by the installation of stormwater controls on your site and appropriate measures for treatment or mitigation of such impacts. If as a result of your discussions with the applicable SHPO, THPO, or tribal representative, you enter into, and comply with, a written agreement regarding treatment and/or mitigation of impacts on your site, then you may indicate this on your NOI, and no further screening steps are necessary.

If, however, agreement on an appropriate treatment or mitigation plan cannot be reached between you and the SHPO, THPO, or other tribal representative within 30 days of your response to the SHPO, THPO, or other tribal representative's request for additional information or further consultation, you may submit your NOI, but you must indicate that you have not negotiated measures to avoid or mitigate such effects. You must also include in your SWPPP the following documentation:

1. Copies of any written correspondence between you and the SHPO, THPO, or other tribal representative; and
2. A description of any significant remaining disagreements as to mitigation measures between you and the SHPO, THPO, or other tribal representative.

After submitting your NOI, and during the 14-day waiting period, the SHPO, THPO, ACHP or other tribal representative may request that EPA place a hold on authorization based upon concerns regarding potential adverse effects to historic properties. EPA, in coordination with the ACHP, will evaluate any such request and notify you if any additional measures to address adverse effects to historic properties are necessary.

Appendix F - List of Tier 3, Tier 2, and Tier 2.5 Waters

EPA's CGP has special requirements for discharges to waters designated by a state or tribe as Tier 2/2.5 or Tier 3 for antidegradation purposes under 40 CFR 131.12(a). See Parts 1.2.3 and 3.3.

The list below is provided as a resource for operators who must determine whether they discharge to a Tier 2/2.5 or Tier 3 water. Only Tier 2/2.5 or Tier 3 waters specifically identified by a water quality standard authority (e.g., a state, territory, or tribe) are identified in the table below. Many authorities evaluate the existing and protected quality of the receiving water on a pollutant-by-pollutant basis and determine whether water quality is better than the applicable criteria that would be affected by a new discharge or an increase in an existing discharge of the pollutant. In instances where water quality is better, the authority may choose to allow lower water quality, where lower water quality is determined to be necessary to support important social and economic development. Permittees are not required to identify those waters which are evaluated on an individual basis.

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
MAR120000	**Commonwealth of Massachusetts, except Indian Country lands**	
	Tier 2 and Tier 2.5 waters are identified and listed in 314 CMR 4.06 Basin Classification. (314 CMR 4 can be found at DEP's web page at http://www.mass.gov/dep/service/regulations/314cmr04.pdf)	
	Tier 2	Tier 2 waters are listed on a parameter-by-parameter basis.
	Tier 2.5	Tier 2.5 waters are listed as "outstanding resource waters" on the website: http://www.mass.gov/dep/water/laws/tblfig.pdf
NHR120000	**State of New Hampshire**	
	Tier 2/2.5	There is no list of Tier 2/Tier 2.5 waters. New dischargers should contact Ken Edwardson at Kenneth.Edwardson@des.nh.gov.
	Tier 3	Env-Ws 1708.05(a) Surface waters of national forests and surface waters designated as "natural" under RSA 483:7-a, I shall be considered outstanding resource waters (ORW). "Natural waters" are listed at http://www.gencourt.state.nh.us/rsa/html/L/483/483-15.htm. Surface waters of national forests are not included in an official list. For further questions, new dischargers should contact Thelma Murphy (EPA Region 1's stormwater coordinator) at murphy.thelma@epa.gov.
PRR120000	**Commonwealth of Puerto Rico**	
	Tier 3	Tier III waters are those which are classified as either Class SA or Class SE. Class SA waters are defined as "Coastal waters and estuarine waters of high quality and/or exceptional ecological or recreational value whose existing characteristics shall not be altered, except by natural causes, in order to preserve the existing natural phenomena." Class SA waters include bioluminiscent lagoons and bays such as La Parguera and Monsio José on the Southern Coast, Bahía de Mosquito in Vieques, and any other coastal or estuarine waters of exceptional quality of high ecological value or recreational which may be designated by Puerto Rico, through Resolution, as requiring this classification for protection of the waters. Class SE waters are defined

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		as "Surface waters and wetlands of exceptional ecological value, whose existing characteristics should not be altered in order to preserve the existing natural phenomena." Class SE waters include Laguna Tortuguero, Laguna Cartagena and any other surface water bodies of exceptional ecological value as may be designated by Puerto Rico through Resolution.
DCR120000	**District of Columbia**	
	Tier 2/2.5	Rock Creek and its tributaries and Battery Kemble Creek and its tributaries are considered Special Waters of the District of Columbia (SWDC) under its antidegradation program.
MNR12000I	**Fond du Lac Band of MN Chippewa**	
	Tier 3	Six lakes are presently identified as Tier 3: (1) Dead Fish, (2) Jaskari, (3) Miller (Mud), (4) Perch, (5) Rice Portage, (6) Wild Rice.
	Grand Portage Band of MN Chippewa	
	Tier 2/2.5	All waters, not already classified as Tier 3, are high quality Tier 2 waters. (see Grand Portage Reservation Water Quality Standards, Section VI & VII, Pages 14-16).
	Tier 3	"The portion of Lake Superior north of latitude 47 degrees, 57 minutes, 13 seconds, east of Hat Point, south of the Minnesota-Ontario boundary, and west of the Minnesota-Michigan boundary." (see Section VII, Page 16).
WIR12000I	**Lac du Flambeau Band of the Lake Superior Chippewa**	
	Tier 2	All named waters, including wetlands, not specified under an antidegradation classification.
	Tier 2.5	Bills Lake, Birch Lake, Bobidosh Lake, Bog Lake (SE SE Sec. 31, T40NR6E), Bolton Lake, Broken Bow Lake, Chewalah Lake, Clear Lake (Sec. 2, T39NR4E), Corn Great, Great, Corn Lake, Little "Least/Lesser", Crawling Stone Lake, Big, Crawling Stone Lake, Little, Crescent Lake, Crooked Lake, Big, David Lake, Ellerson Lake, Middle, Ellerson Lake, West, Elsie Lake "Boundary Lake", Fat Lake, Fence Lake, Gresham Creek, Green Lake (NW NW Sec. 19, T41R6E), Grey Lake, Gunlock Lake, Haskell Lake, Headflyer Lake (Sec. 19, T41NR5E), Highway Lake (NW NW Sec. 19, T41NR5E), Horsehead Lake (SE SW Sec. 9, T40NR5E), Hutton's Creek, Ike Walton Lake, Lily Lake (SE SW Sec. 35, T40NR5E), Little Ten Lake, Lodge Lake "L. Rice" (NW NW Sec. 8, T41NR6E), Lucy Lake, Mindys Lake (Sec. 8, T40NR5E), Minette Lake, Mitten Lake, Monk's Lake (Sec. 13, T40NR5E), Moving Cloud Lake, Mud Creek, Muskesin Lake, Patterson Lake, Placid Twin Lake (North), Placid Twin Lake (South), Plummer Lake, Poupart Lake, Prairie Lake (NE SW Sec. 13, T40NR4E), Raven Lake, Ross Allen Lake, Sand Lake, Little, Scott Lake (Sec. 22, T40N, R4E), Shishebogama Lake, Signal Lake, Snort Lake (Sec. 5, T41N, R6E), Spring Lake "Jerms", Squirrel Lake, Statenaker Lake "Hollow", Stearns Lake "Hourglass", Sugarbush "Hidden Lake" (NW NW Sec. 17, T41NR5E), Sugarbush Creek, Sugarbush Lake, Little, Sugarbush Lake, Lower, Sugarbush Lake, Middle, Sugarbush Lake, Upper, Sunfish Lake, Tippecanoe Lake, Tomahawk River, To-To Tom Lake, Toulish Lake, Trout River, Warrior Lake, White Sand Lake, Whitefish Lake

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		"Cattail Lake" (Sec. 34, T40N5R), Wishow Lake, Wyandock Lake
	Tier 3	Bear River (1st bridge to Reservation boundary), Big Springs (Sec. 25, T40NR4E), Black Lake, Cranberry Lake, Doud Lake, Eagle Lake, Gene Lake, Johnson Springs, Little Trout Lake, Lost Lake (Sect. 1, T41NR4E), Mishonagon Creek, Munnomin (Jesse, Duck) Lake, Negani (Hegani) Lake, Reservation Line Lake, Spring Creek, Tank Lake, Thomas Lake, Wild Rice Lake, Zee Lake
NMR120000	**State of New Mexico**	
	Tier 3	(1) Rio Santa Barbara, including the west, middle and east forks from their headwaters downstream to the boundary of the Pecos Wilderness; and (2) the waters within the United States forest service Valle Vidal special management unit including: (a) Rio Costilla, including Comanche, La Cueva, Fernandez, Chuckwagon, Little Costilla, Holman, Gold, Grassy, LaBelle and Vidal creeks, from their headwaters downstream to the boundary of the United States forest service Valle Vidal special management unit; (b) Middle Ponil creek, including the waters of Greenwood Canyon, from their headwaters downstream to the boundary of the Elliott S. Barker wildlife management area; (c) Shuree lakes; (d) North Ponil creek, including McCrystal and Seally Canyon creeks, from their headwaters downstream to the boundary of the United States forest service Valle Vidal special management unit; and (e) Leandro creek from its headwaters downstream to the boundary of the United States forest service Valle Vidal special management unit. (3) the named perennial surface waters of the state, identified in Subparagraph (a) below, located within United States department of agriculture forest service wilderness. Wilderness are those lands designated by the United States congress as wilderness pursuant to the Wilderness Act. Wilderness areas included in this designation are the Aldo Leopold wilderness, Apache Kid wilderness, Blue Range wilderness, Chama River Canyon wilderness, Cruces Basin wilderness, Dome wilderness, Gila wilderness, Latir Peak wilderness, Pecos wilderness, San Pedro Parks wilderness, Wheeler Peak wilderness, and White Mountain wilderness. (a) The following waters are designated in the Rio Grande basin: (i) in the Aldo Leopold wilderness: Byers Run, Circle Seven creek, Flower canyon, Holden Prong, Indian canyon, Las Animas creek, Mud Spring canyon, North Fork Palomas creek, North Seco creek, Pretty canyon, Sids Prong, South Animas canyon, Victorio Park canyon, Water canyon; (ii) in the Apache Kid wilderness Indian creek and Smith canyon; (iii) in the Chama River Canyon wilderness: Chavez canyon, Ojitos canyon, Rio Chama; (iv) in the Cruces Basin wilderness: Beaver creek, Cruces creek, Diablo creek, Escondido creek, Lobo creek, Osha creek; (v) in the Dome wilderness: Capulin creek, Medio creek, Sanchez

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		canyon/creek; (vi) in the Latir Peak wilderness: Bull creek, Bull Creek lake, Heart lake, Lagunitas Fork, Lake Fork creek, Rito del Medio, Rito Primero, West Latir creek; (vii) in the Pecos wilderness: Agua Sarca, Hidden lake, Horseshoe lake (Alamitos), Jose Vigil lake, Nambe lake, Nat lake IV, No Fish lake, North Fork Rio Quemado, Rinconada, Rio Capulin, Rio de las Trampas (Trampas creek), Rio de Truchas, Rio Frijoles, Rio Medio, Rio Molino, Rio Nambe, Rio San Leonardo, Rito con Agua, Rito Gallina, Rito Jaroso, Rito Quemado, San Leonardo lake, Santa Fe lake, Santa Fe river, Serpent lake, South Fork Rio Quemado, Trampas lake (East), Trampas lake (West); (viii) in the San Pedro Parks wilderness: Agua Sarca, Cañon Madera, Cave creek, Cecilia Canyon creek, Clear creek (North SPP), Clear creek (South SPP), Corralitos creek, Dove creek, Jose Miguel creek, La Jara creek, Oso creek, Rio Capulin, Rio de las Vacas, Rio Gallina, Rio Puerco de Chama, Rito Anastacio East, Rito Anastacio West, Rito de las Palomas, Rito de las Perchas, Rito de los Pinos, Rito de los Utes, Rito Leche, Rito Redondo, Rito Resumidero, San Gregorio lake; (ix) in the Wheeler Peak wilderness: Black Copper canyon, East Fork Red river, Elk lake, Horseshoe lake, Lost lake, Sawmill creek, South Fork lake, South Fork Rio Hondo, Williams lake. (b) The following waters are designated in the Pecos River basin: (i) in the Pecos wilderness: Albright creek, Bear creek, Beatty creek, Beaver creek, Carpenter creek, Cascade canyon, Cave creek, El Porvenir creek, Hollinger creek, Holy Ghost creek, Horsethief creek, Jack's creek, Jarosa canyon/creek, Johnson lake, Lake Katherine, Lost Bear lake, Noisy brook, Panchuela creek, Pecos Baldy lake, Pecos river, Rio Mora, Rio Valdez, Rito Azul, Rito de los Chimayosos, Rito de los Esteros, Rito del Oso, Rito del Padre, Rito las Trampas, Rito Maestas, Rito Oscuro, Rito Perro, Rito Sebadilloses, South Fork Bear creek, South Fork Rito Azul, Spirit lake, Stewart lake, Truchas lake (North), Truchas lake (South), Winsor creek; (ii) in the White Mountain wilderness: Argentina creek, Aspen creek, Bonito creek, Little Bonito creek, Mills canyon/creek, Rodamaker creek, South Fork Rio Bonito, Turkey canyon/creek. (c) The following waters are designated in the Gila River basin: (i) in the Aldo Leopold wilderness: Aspen canyon, Black Canyon creek, Bonner canyon, Burnt canyon, Diamond creek, Falls canyon, Fisherman canyon, Running Water canyon, South Diamond creek; (ii) in the Gila wilderness: Apache creek, Black Canyon creek, Brush canyon, Canyon creek, Chicken Coop canyon, Clear creek, Cooper canyon, Cow creek, Cub creek, Diamond creek, East Fork Gila river, Gila river, Gilita creek, Indian creek, Iron creek, Langstroth canyon, Lilley canyon, Little creek, Little Turkey creek, Lookout canyon, McKenna creek, Middle Fork Gila river, Miller Spring canyon, Mogollon creek, Panther canyon, Prior creek, Rain creek, Raw Meat creek, Rocky canyon, Sacaton creek, Sapillo creek, Sheep Corral canyon, Skeleton canyon, Squaw creek, Sycamore canyon, Trail canyon, Trail creek, Trout creek, Turkey creek, Turkey Feather creek, Turnbo canyon,

Permit Number	Areas of Coverage/Where EPA Is Permitting Authority	
		West Fork Gila river, West Fork Mogollon creek, White creek, Willow creek, Woodrow canyon. (d) The following waters are designated in the Canadian River basin: in the Pecos wilderness Daily creek, Johns canyon, Middle Fork Lake of Rio de la Casa, Middle Fork Rio de la Casa, North Fork Lake of Rio de la Casa, Rito de Gascon, Rito San Jose, Sapello river, South Fork Rio de la Casa, Sparks creek (Manuelitas creek). (e) The following waters are designated in the San Francisco River basin: (i) in the Blue Range wilderness: Pueblo creek; (ii) in the Gila wilderness: Big Dry creek, Lipsey canyon, Little Dry creek, Little Whitewater creek, South Fork Whitewater creek, Spider creek, Spruce creek, Whitewater creek. (f) The following waters are designated in the Mimbres Closed basin: in the Aldo Leopold wilderness Corral canyon, Mimbres river, North Fork Mimbres river, South Fork Mimbres river. (g) The following waters are designated in the Tularosa Closed basin: in the White Mountain wilderness Indian creek, Nogal Arroyo, Three Rivers. (h) The wetlands designated are identified on the maps and list of wetlands within United States forest service wilderness areas designated as outstanding national resource waters published at the New Mexico state library and available on the department's website.

Appendix G – Buffer Guidance.

The purpose of this guidance is to assist you in complying with the requirements in Part 2.1.2.1 of the permit regarding the establishment of natural buffers or equivalent sediment controls. This guidance is organized as follows:

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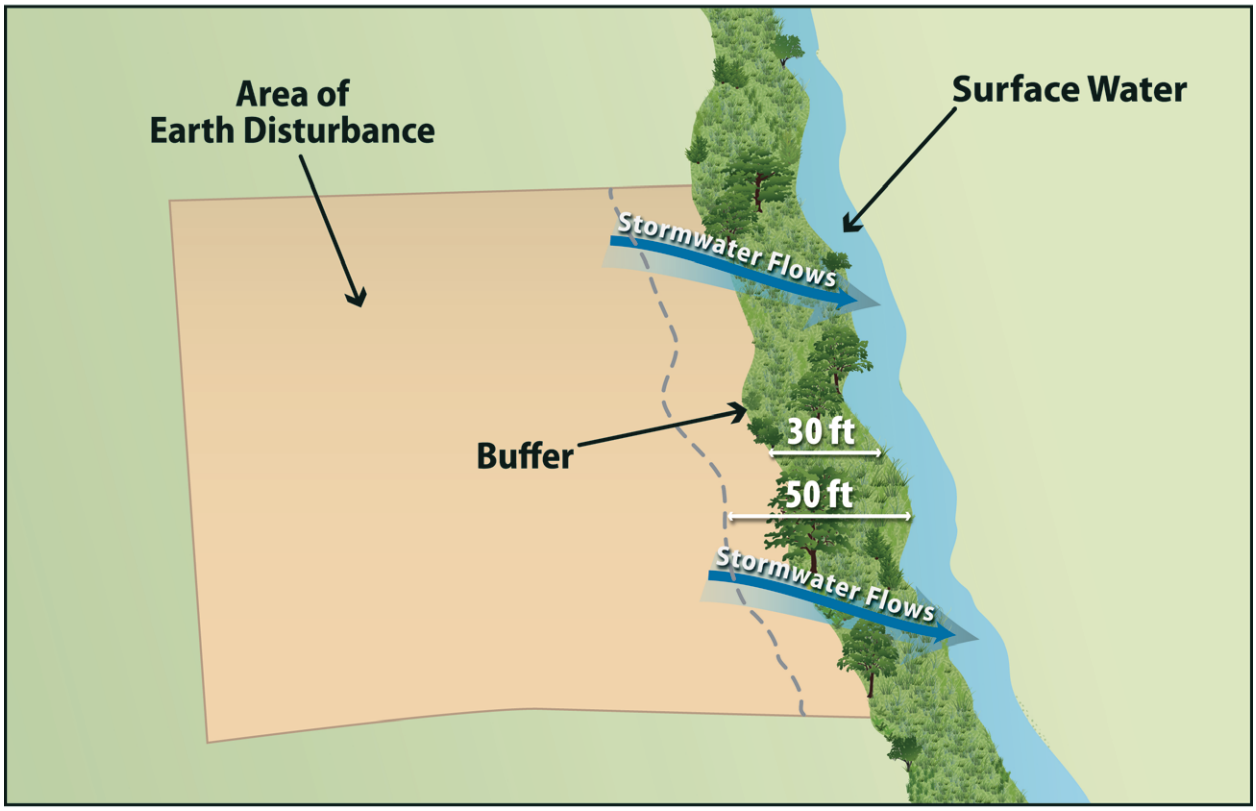
G.1 Sites That Are Required to Comply with Part 2.1.2.1

The purpose of this part is to help you determine if the requirements in Part 2.1.2.1 apply to your site.

G.1.1 Step 1 - Determine if Your Site is Within 50 Feet of a Surface Water

Part 2.1.2.1 applies to you only if your earth-disturbing activities will occur within 50 feet of a surface water that receives stormwater discharges from your site. Figure G – 1 illustrates when a site would be required to comply with the requirements in Part 2.1.2.1 due to their proximity to a surface water. If the surface water is not located within 50 feet of the earth-disturbing activities, Part 2.1.2.1 does not apply.

Figure G - 1. Example of earth-disturbing activities within 50 feet of a surface water.



If you determine that your earth-disturbing activities will occur within 50 feet of a surface water that receives stormwater discharges from your site, the requirements in Part 2.1.2.1 apply, except for certain circumstances that are described in Step 2.

Note that where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, or if a portion of area within 50 feet of the surface water is owned by another party and is not under your control, the buffer requirements in Part 2.1.2.1 still apply, but with some allowances.

Clarity about how to implement the compliance alternatives for these situations is provided in G.2.1.2 and G.2.2.2 below.

Note that EPA does not consider designed stormwater control features *(e.g., stormwater conveyance channels, storm drain inlets, stormwater basins)* that direct storm water to surface waters more than 50 feet from the disturbance to constitute surface waters for the purposes of determining if the buffer requirements apply.

G.1.2 Step 2 - Determine if Any Exceptions to the Requirements in Part 2.1.2.1 Apply

The following exceptions apply to the requirements in Part 2.1.2.1:

- If there is no discharge of stormwater to surface waters through the area between the disturbed portions of the site and any surface waters located within 50 feet of your site, you are not required to comply with the requirements in this Part. This includes situations where you have implemented controls measures, such as a berm or other barrier, that will prevent such discharges.
- Where no natural buffer exists due to preexisting development disturbances *(e.g., structures, impervious surfaces)* that occurred prior to the initiation of planning for the current development of the site, you are not required to comply with the requirements in this Part.

  Where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, you <u>are</u> required to comply with the requirements in this Part. For the purposes of calculating the sediment load reduction for either compliance alternative 2 or 3 below, you are not expected to compensate for the reduction in buffer function that would have resulted from the area covered by these preexisting disturbances. Clarity about how to implement the compliance alternatives for these situations is provided in G.2.1.2 and G.2.2.2 below.

  If during your project, you will disturb any portion of these preexisting disturbances, the area removed will be deducted from the area treated as natural buffer.
- For "linear construction projects" (see Appendix A), you are not required to comply with this requirement if site constraints *(e.g., limited right-of-way)* prevent you from complying with the requirements of the alternatives in Part 2.1.2.1a, provided that, to the extent practicable, you limit disturbances within 50 feet of the surface water and/or you provide supplemental erosion and sediment controls to treat stormwater discharges from earth disturbances within 50 feet of the surface water. You must also document in your SWPPP your rationale for why it is infeasible for you to comply with the requirements in Part 2.1.2.1a, and describe any buffer width retained and/or supplemental erosion and sediment controls installed.
- For "small residential lot" construction *(i.e., a lot being developed for residential purposes that will disturb less than 1 acre of land, but is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre),* you have the option of complying with the requirements in Part G.2.3 of this appendix.
- The following disturbances within 50 feet of a surface water are exempt from the requirements in this Part:

  - Construction approved under a CWA Section 404 permit; or

- Construction of a water-dependent structure or water access areas *(e.g., pier, boat ramp, trail)*.

Note that you must document in your SWPPP if any disturbances related to any of the above exceptions occurs within the buffer area on your site.

G.2 COMPLIANCE ALTERNATIVES GUIDANCE

If in Part G.1 of this guidance you determine that the buffer requirements apply to your site, you have three compliance alternatives from which you can choose:

1. Provide and maintain a 50-foot buffer undisturbed natural buffer (Part 2.1.2.1a.i);[1] or
2. Provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer (Part 2.1.2.1a.ii);[1] or
3. If it is infeasible to provide and maintain an undisturbed natural buffer of any size, you must implement erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer (Part 2.1.2.1a.iii).[1]

The compliance alternative selected above must be maintained throughout the duration of permit coverage.

The following provides detailed guidance for how you can comply with each of the compliance alternatives. Part G.2.1 below provides guidance on how to provide and maintain natural buffers consistent with the alternatives 1 and 2, above. Part G.2.2 below provides guidance on how to comply with the requirement to provide a 50-foot buffer equivalent through erosion and sediment controls consistent with alternatives 2 and 3, above.

G.2.1 Guidance for Providing and Maintaining Natural Buffers

The following guidance is intended to assist you in complying with the requirements to provide and maintain a natural buffer during construction. This part of the guidance applies to you if you choose either alternative 1 (50-foot buffer) or alternative 2 (a buffer of < 50 feet supplemented by additional erosion and sediment controls that achieve the equivalent sediment load reduction as the 50-foot buffer), or if you are providing a buffer in compliance with one of the small residential lot compliance alternatives in Part G.2.3 below.

[1] *For the compliance alternatives in 1 and 2, you are not required to enhance the quality of the vegetation that already exists in the buffer, or provide vegetation if none exists (e.g., arid and semi-arid areas). You only need to retain and protect from disturbance the natural buffer that existed prior to the commencement of construction. Any preexisting structures or impervious surfaces are allowed in the natural buffer provided you retain and protect from disturbance the natural buffer area outside the preexisting disturbance. Similarly, for alternatives 2 and 3, you are required to implement and maintain sediment controls that achieve the sediment load reduction equivalent to the undisturbed natural buffer that existed on the site prior to the commencement of construction. In determining equivalent sediment load reductions, you may consider naturally non-vegetated areas and prior disturbances. See Part G.2.2 of this Appendix for a discussion of how to determine equivalent reductions.*

G.2.1.1 *Buffer Width Measurement*

Where you are retaining a buffer of any size, the buffer should be measured perpendicularly from any of the following points, whichever is further landward from the water:

1. The ordinary high water mark of the water body, defined as the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, and/or the presence of litter and debris; or
2. The edge of the stream or river bank, bluff, or cliff, whichever is applicable.

Refer to Figure G – 2 and Figure G - 3. You may find that specifically measuring these points is challenging if the flow path of the surface water changes frequently, thereby causing the measurement line for the buffer to fluctuate continuously along the path of the waterbody. Where this is the case, EPA suggests that rather than measuring each change or deviation along the water's edge, it may be easier to select regular intervals from which to conduct your measurement. For instance, you may elect to conduct your buffer measurement every 5 to 10 feet along the length of the water.

Additionally, note that if earth-disturbing activities will take place on both sides of a surface water that flows through your site, to the extent that you are establishing a buffer around this water, it must be established on both sides. For example, if you choose alternative 1 above, and your project calls for disturbances on both sides of a small stream, you would need to retain the full 50 feet of buffer on both sides of the water. However, if your construction activities will only occur on one side of the stream, you would only need to retain the 50-foot buffer on the side of the stream where the earth-disturbance will occur.

Figure G - 2. This image shows buffer measurement from the ordinary high water mark of the water body, as indicated by a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, and/or the presence of litter/debris.

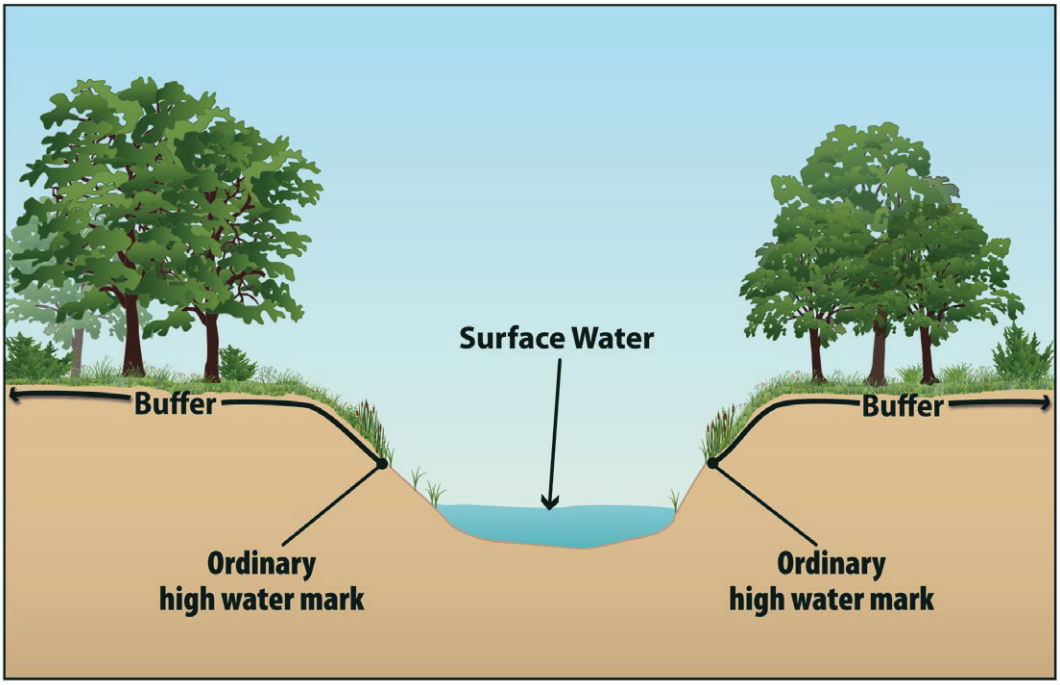
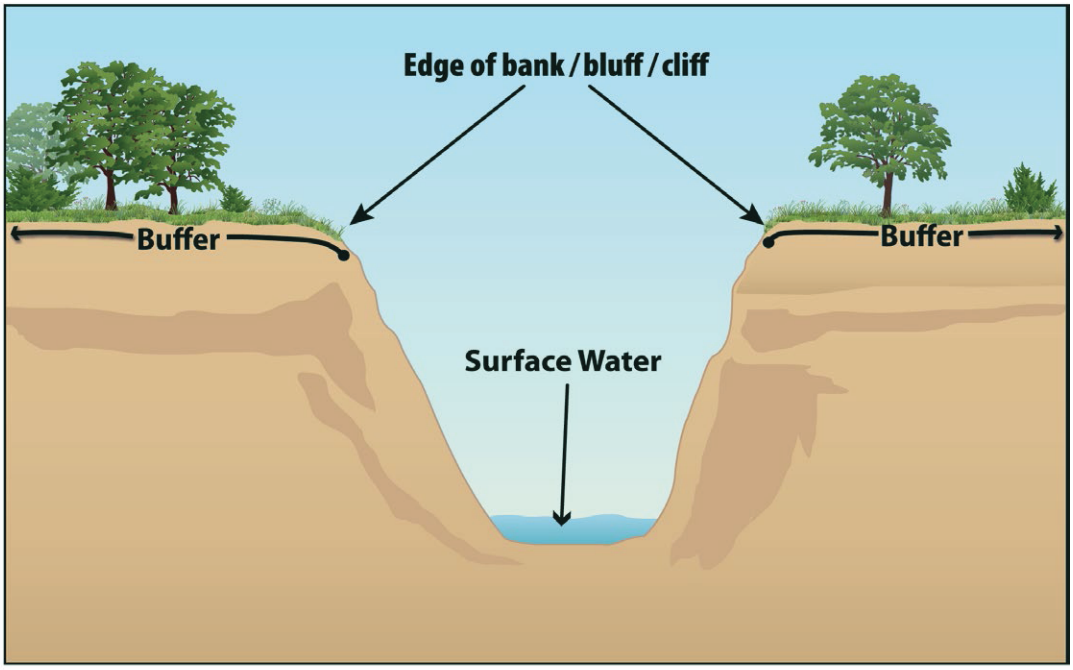


Figure G - 3. This image shows buffer measurement from the edge of the bank, bluff, or cliff, whichever is applicable.



G.2.1.2 *Limits to Disturbance Within the Buffer*

You are considered to be in compliance with this requirement if you retain and protect from construction activities the natural buffer that existed prior to the commencement of construction. If the buffer area contains no vegetation prior to the commencement of construction (e.g., sand or rocky surface), you are not required to plant any additional vegetation. As noted above, any preexisting structures or impervious surfaces are allowed in the buffer provided you retain and protect from disturbance the vegetation in the buffer outside the preexisting disturbance.

To ensure that the water quality protection benefits of the buffer are retained during construction, you are prohibited from conducting any earth-disturbing activities within the buffer during permit coverage. In furtherance of this requirement, prior to commencing earth-disturbing activities on your site, you must delineate, and clearly mark off, with flags, tape, or a similar marking device, the buffer area on your site. The purpose of this requirement is to make the buffer area clearly visible to the people working on your site so that unintended disturbances are avoided.

While you are not required to enhance the quality of the vegetation that already exists within the buffer, you are encouraged to do so where such improvements will enhance the water quality protection benefits of the buffer. (Note that any disturbances within the buffer related to buffer enhancement are permitted and do not constitute construction disturbances.) For instance, you may want to consider targeted plantings where limited vegetation exists, or replacement of existing vegetation where invasive or noxious plant species (see http://plants.usda.gov/java/noxiousDriver) have taken over. In the case of invasive or noxious species, you may want to remove and replace them with a diversity of native trees, shrubs, and herbaceous plants that are well-adapted to the climatic, soil, and hydrologic conditions on the site. You are also encouraged to limit the removal of naturally deposited leaf litter, woody debris, and other biomass, as this material contributes to the ability of the buffer to retain water and filter pollutants.

If a portion of the buffer area adjacent to the surface water is owned by another party and is not under your control, you are only required to retain and protect from construction activities the portion of the buffer area that is under your control. For example, if you elect alternative 1 above (provide and maintain a 50-foot buffer), but 10 feet of land immediately adjacent to the surface water is owned by a different party than the land on which your construction activities are taking place and you do not have control over that land, you must only retain and protect from construction activities the 40-foot buffer area that occurs on the property on which your construction activities are taking place. EPA would consider you to be in compliance with this requirement regardless of the activities that are taking place in the 10-foot area that is owned by a different party than the land on which your construction activities are taking place that you have no control over.

G.2.1.3 *Discharges to the Buffer*

You must ensure that all discharges from the area of earth disturbance to the natural buffer are first treated by the site's erosion and sediment controls (*for example, you must comply with the Part 2.1.2.2 requirement to establish sediment controls around the downslope perimeter of your site disturbances*), and if necessary to prevent erosion caused by stormwater flows within the buffer, you must use velocity dissipation devices. The purpose of this requirement is to decrease the rate of stormwater flow and

encourage infiltration so that the pollutant filtering functions of the buffer will be achieved. To comply with this requirement, construction operators typically will use devices that physically dissipate stormwater flows so that the discharge entering the buffer is spread out and slowed down.

G.2.1.4 *SWPPP Documentation*

You are required to document in your SWPPP the natural buffer width that is retained. For example, if you are complying with alternative 1, you must specify in your SWPPP that you are providing a 50-foot buffer. Or, if you will be complying with alternative 2, you must document the reduced width of the buffer you will be retaining (and you must also comply with the requirements in Part 2.1.2.1c to describe the erosion and sediment controls you will use to achieve an equivalent sediment reduction, as described in Part G.2.2 below). Note that you must also show any buffers on your site plan in your SWPPP consistent with Part 7.2.6.3. Additionally, if any disturbances related to the exceptions in Part 2.1.2.1e occur within the buffer area, you must document this in the SWPPP.

G.2.2 Guidance for Providing the Equivalent Sediment Reduction as the 50-foot Buffer

If you are selecting Alternative 2 (provide and maintain a buffer that is less than 50 feet that is supplemented by additional erosion and sediment controls that, together, achieve the equivalent sediment load reduction as the 50-foot buffer) or Alternative 3 (implement erosion and sediment controls that achieve the equivalent sediment load reduction as the 50-foot buffer), the following guidance is intended to assist you in demonstrating that you will achieve the equivalent sediment reduction as the 50-foot buffer.

G.2.2.1 *Determine Whether it is Feasible to Provide a Reduced Buffer*

EPA recognizes that there will be a number of situations in which it will be infeasible to provide and maintain a buffer of any width. While some of these situations may exempt you from the buffer requirement entirely (see G.1.2), if you do not qualify for one of these exemptions, there still may be conditions or circumstances at your site that make it infeasible to provide a natural buffer. For example, there may be sites where a significant portion of the property on which the earth-disturbing activities will occur is located within the buffer area, thereby precluding the retention of natural buffer areas. EPA believes there are likely to be other examples of situations that make it infeasible to provide any buffer area.

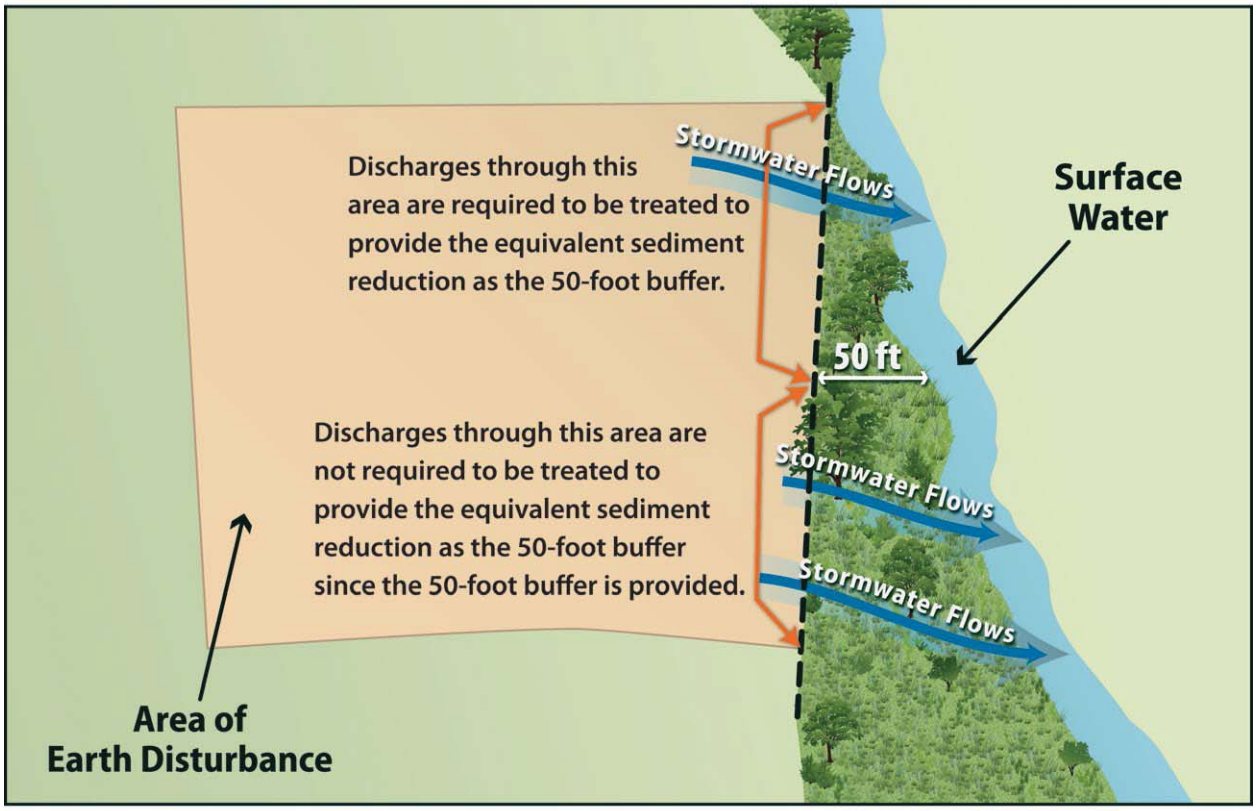
Therefore, in choosing between the 2 different compliance alternatives (Alternative 2 or 3), you should only elect to comply with Alternative 2 if it is feasible for you to retain any natural buffer on your site. (Note: For any buffer width retained, you are required to comply with the requirements in Part G.2.1, above, concerning the retention of vegetation and restricting earth disturbances.) Similarly, if you determine that it is infeasible to provide a natural buffer of any size during construction, you should elect to comply with Alternative 3. After making this determination, you should proceed to Part G.2.2.2 to determine how to provide controls that, together with any buffer areas that is being retained, if applicable, will achieve an equivalent sediment load reduction as the 50-foot buffer.

G.2.2.2 *Design Controls That Provide Equivalent Sediment Reduction as 50-foot Buffer*

You must next determine what additional controls must be implemented on your site that, alone or in combination with any retained natural buffer, achieve a reduction in sediment equivalent to that achieved by a 50-foot buffer.

Note that if only a portion of the natural buffer is less than 50 feet, you are only required to implement erosion and sediment controls that achieve the sediment load reduction equivalent to the 50-foot buffer for discharges through that area. You would not be required to provide treatment of stormwater discharges that flow through 50 feet or more of natural buffer. See Figure G - 4.

Figure G - 4 Example of how to comply with the requirement to provide the equivalent sediment reduction when only a portion of your earth-disturbances discharge to a buffer of less than 50-feet.



To comply with this requirement, you are required to do the following:

Step1 - Estimate the sediment reduction expected from your site if you had retained a 50-foot natural buffer;

Step 2 - Design controls that alone or in combination with any width of buffer retained achieve the equivalent sediment removal efficiency as that expected from the 50-foot buffer; and

Step 3 - Document in your SWPPP how your controls will achieve the equivalent sediment removal efficiency of the 50-foot buffer.

Guidelines to help you work through these requirements are provided below.

a. <u>Step 1 - Estimate the Sediment Reduction from the 50-foot Buffer</u>

In order to design controls that match the sediment removal efficiency of a 50-foot buffer, you first need to know what this efficiency is for your site. The sediment removal efficiencies of natural buffers vary according to a number of site-specific factors, including precipitation, soil type, land cover, slope length, width, steepness, and the types of sediment controls used to reduce the discharge of sediment prior to the buffer. EPA has simplified this calculation by developing buffer performance tables covering a range of vegetation and soil types for the areas covered by the CGP. See Attachment 1, Tables G - 8 through G - 15. Note: buffer performance values in Tables G - 8 through G - 15 represent the percent of sediment captured through the use of perimeter controls (e.g., silt fences) and 50-foot buffers at disturbed sites of fixed proportions and slopes.[2]

Using Tables G - 8 through G - 15 (see Attachment 1), you can determine the sediment removal efficiency of a 50-foot buffer for your geographic area by matching the vegetative cover type that best describes your buffer area and the type of soils that predominate at your site. For example, if your site is located in Massachusetts (Table G - 9), and your buffer vegetation corresponds most closely with that of tall fescue grass, and the soil type at your site is best typified as sand, your site's sediment removal efficiency would be 81 percent.

In this step, you should choose the vegetation type in the tables that most closely matches the vegetation that would exist naturally in the buffer area on your site regardless of the condition of the buffer. However, because you are not required to plant any additional vegetation in the buffer area, in determining what controls are necessary to meet this sediment removal equivalency in Step 2 below, you will be able to take credit for this area as a fully vegetated "natural buffer."

Similarly, if a portion of the buffer area adjacent to the surface water is owned by another party and is not under your control, you can treat the area of land not

[2] EPA used the following when developing the buffer performance tables:

- The sediment removal efficiencies are based on the U.S. Department of Agriculture's RUSLE2 ("Revised Universal Soil Loss Equation 2") model for slope profiles using a 100-foot long denuded slopes.
- Sediment removal was defined as the annual sediment delivered at the downstream end of the 50-foot natural buffer (tons/yr/acre) divided by the annual yield from denuded area (tons/yr/acre).
- As perimeter controls are also required by the CGP, sediment removal is in part a function of the reduction due to a perimeter control (i.e., silt fence) located between the disturbed portion of the site and the upstream edge of the natural buffer and flow traveling through a 50-foot buffer of undisturbed natural vegetation.
- It was assumed that construction sites have a relatively uniform slope without topographic features that accelerate the concentration for erosive flows.
- It was assumed that vegetation has been removed from the disturbed portion of the site and a combination of cuts and fills have resulted in a smooth soil surface with limited retention of near-surface root mass

To represent the influence of soil, EPA analyzed 11 general soil texture classifications in its evaluation of buffer performance. To represent different types of buffer vegetation, EPA evaluated 4 or more common vegetative types for each state/territory covered under the permit. For each vegetation type evaluated, EPA considered only permanent, non-grazed and non-harvested vegetation, on the assumption that a natural buffer adjacent to the surface water will typically be undisturbed. EPA also evaluated slope steepness and found that sediment removal efficiencies present in Tables G -8 through G - 15 are achievable for slopes that are less than nine percent.

under control as having the equivalent vegetative cover and soil type that predominates on the portion of the property on which your construction activities are occurring.

> *For example, if your earth-disturbances occur within 50 feet of a surface water, but the 10 feet of land immediately adjacent to the surface water is owned by a different party than the land on which your construction activities are taking place and you do not have control over that land, you can treat the 10 foot area adjacent to the stream as having the equivalent soil and vegetation type as predominates in the 40 foot area under your control. You would then make the same assumption in Step 2 for purposes of determining the equivalent sediment removal.*

Alternatively, you may do your own calculation of the effectiveness of the 50-foot buffer based upon your site-specific conditions, and may use this number as your sediment removal equivalency standard to meet instead of using Tables G - 8 through G - 15. This calculation must be documented in your SWPPP.

b. <u>Step 2 - Design Controls That Match the Sediment Removal Efficiency of the 50-foot Buffer</u>

Once you have determined the estimated sediment removal efficiency of a 50-foot buffer for your site in Step 1, you will be required to select stormwater controls that will provide an equivalent sediment load reductions. These controls can include the installation of a single designed control, such as a sediment pond, additional perimeter controls, or other type of device. Alternatively, you may elect to install a combination of stormwater controls and to retain some amount of a buffer. Whichever control(s) you select, you must demonstrate in your SWPPP that the controls will provide at a minimum the same sediment removal capabilities as the 50-foot buffer (Step 1). You are allowed to take credit for the removal efficiencies of your required perimeter controls in your calculation of equivalency, because these were included in calculating the buffer removal efficiencies in tables G - 8 through G - 15. (Note: You are reminded that the controls must be kept in effective operating condition until you have completed final stabilization on the disturbed portions of the site discharging to the surface water.)

To make the determination that your controls and/or buffer area achieve an equivalent sediment load reduction as the 50-foot buffer, you will need to use a model or other type of calculator. As mentioned above, there are a variety of models available that can be used to support your calculation, including USDA's RUSLE-series programs and the WEPP erosion model, SEDCAD, SEDIMOT, or other models. A couple of examples are provided in Attachment 3 to help illustrate how this determination could be made.

If you are retaining a buffer of less than 50 feet, you may take credit for the removal that will occur from the reduced buffer and only need to provide additional controls to make up the difference between the removal efficiency of a 50 foot buffer and the removal efficiency of the narrower buffer. For example, if you are retaining a 30 foot buffer, you can account for the sediment removal provided by the 30-foot buffer retained, and you will only need to design controls to make up for the additional removal provided by the 20-foot of buffer that is not being provided. To do this, you would plug the width of the buffer that is

retained into RUSLE or another model, along with other stormwater controls that will together achieve a sediment reduction equivalent to a natural 50-foot buffer.

As described in Step 1 above, you can take credit for the area you have retained as a "natural buffer" as being fully vegetated, regardless of the condition of the buffer area.

> *For example, if your earth-disturbances occur 30 feet from a surface water, but the 10 feet of land immediately adjacent to the surface water is owned by a different party than the land on which your construction activities are taking place and you do not have control over that land, you can treat the 10-foot area as a natural buffer, regardless of the activities that are taking place in the area. Therefore, you can assume (for purposes of your equivalency calculation) that your site is providing the sediment removal equivalent of a 30-foot buffer, and you will only need to design controls to make up for the additional removal provided by the 20-foot of buffer that is not being provided.*

c. <u>Step 3 - Document How Site-Specific Controls Will Achieve the Sediment Removal Efficiency of the 50-foot Buffer</u>

In Steps 1 and 2, you determined both the expected sediment removal efficiency of a 50-foot buffer at your site, and you used this number as a performance standard to design controls to be installed at your site, which alone or in combination with any retained natural buffer, achieves the expected sediment removal efficiency of a 50-foot buffer at your site. The final step is to document in your SWPPP the information you relied on to calculate the equivalent sediment reduction as an undisturbed natural buffer.

EPA will consider your documentation to be sufficient if it generally meets the following:

- For Step 1, refer to the table in Attachment 1 that you used to derive your estimated 50-foot buffer sediment removal efficiency performance. Include information about the buffer vegetation and soil type that predominate at your site, which you used to select the sediment load reduction value in Tables G - 8 through G - 15. Or, if you conducted a site-specific calculation for sediment removal efficiency, provide the specific removal efficiency, and the information you relied on to make your site-specific calculation.
- For Step 2: (1) Specify the model you used to estimate sediment load reductions from your site; and (2) the results of calculations showing how your controls will meet or exceed the sediment removal efficiency from Step 1.

If you choose Alternative 3, you must also include in your SWPPP a description of why it is infeasible for you to provide and maintain an undisturbed natural buffer of any size.

G.2.3 Small Residential Lot Compliance Alternatives

In this part of Appendix G, EPA provides additional compliance alternatives for operators of small residential lots. In accordance with Part 2.1.2.1e.iv, operators of small residential lots who do not provide a 50-foot buffer are not required to make the demonstration outlined in Part G.2.2.2. Instead, qualifying operators can comply with the buffer requirement by choosing to implement a set of traditional sediment and erosion controls from the menu of practices provided in Part G.2.3.2.

A **small residential lot** is a lot or grouping of lots being developed for residential purposes that will disturb less than 1 acre of land, but that is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre.

EPA has developed two different alternatives for compliance. The following steps describe how a small residential lot operator would achieve compliance with these 2 alternatives.

G.2.3.1 *Step 1 – Determine if You are Eligible for the Small Residential Lot Compliance Alternatives*

In order to be eligible for the small residential lot compliance alternatives, the following conditions must be met:

a. The lot or grouping of lots meets the definition of "small residential lot"; and

b. The operator must comply with all other requirements in Part 2.1.2.1, including:

i. Ensure that all discharges from the area of earth disturbance to the natural buffer are first treated by the site's erosion and sediment controls, and use velocity dissipation devices if necessary to prevent erosion caused by stormwater within the buffer;

ii. Document in the SWPPP the natural buffer width retained on the property, and show the buffer boundary on your site plan; and

iii. Delineate, and clearly mark off, with flags, tape, or other similar marking device, all natural buffer areas.

G.2.3.2 *Step 2 – Implement the Requirements of the Small Residential Lot Compliance Alternative Selected*

You must next choose from one of two small residential lot compliance alternatives and implement the stormwater control practices associated with that alternative.

Note: The compliance alternatives provided below are not mandatory. Operators of small residential lots can alternatively choose to comply with the any of the options that are available to other sites in Part 2.1.2.1a, described in Parts G.2.1 and G.2.2 in this appendix.

a. <u>Small Residential Lot Compliance Alternative 1</u>

Alternative 1 is a straightforward tiered- technology approach that specifies the controls that a small residential lot must implement based on the buffer width retained. To achieve compliance with Alternative 1, you must implement the

controls specified in Table G – 1 based on the buffer width to be retained. See footnote 3, below, for a description of the controls you must implement.

For example, if you are an operator of a small residential lot that will be retaining a 35-foot buffer and you choose Small Residential Lot Compliance Alternative 1, you must implement double perimeter controls between earth disturbances and the surface water.

In addition to implementing the applicable control, you must also document in your SWPPP how you will comply with Alternative 1.

Table G - 1. Alternative 1 Requirements[3]

Retain 50-foot Buffer	Retain <50 and >30 foot Buffer	Retain ≤ 30 foot Buffer
No Additional Requirements	Double Perimeter Controls	Double Perimeter Controls and 7-Day Site Stabilization

b. <u>Small Residential Lot Compliance Alternative 2</u>

Alternative 2 specifies the controls that a builder of a small lot must implement based on both the buffer width retained and their risk of sediment discharge. By incorporating the sediment risk, this approach may result in the implementation of controls that are more appropriate for the site's specific conditions.

Step 1 – Determine Your Site's Sediment Risk Level

To meet the requirements of Alternative 2, you must first determine your site's sediment discharge "risk level" based on the site's slope, location, and soil type. To help you to determine your site's sediment risk level, EPA has developed five different tables for different slope conditions. You must select the table that most closely corresponds to your site's average slope.

For example, if your site's average slope is 7 percent, you would use Table G – 4 to determine your site's sediment risk.

After you determine which table applies to your site, you must then use the table to determine the "risk level" (e.g., "low", "moderate", or "high") that corresponds to your site's location and predominant soil type.[4]

For example, based on Table G - 3, a site located in New Hampshire with a 4 percent average slope and with predominately sandy clay loam soils would fall into the "moderate" risk level.

[3] **Description of Additional Controls Applicable to Small Residential Lot Compliance Alternatives 1 and 2:**

- **No Additional Requirements:** If you implement a buffer of 50 feet or greater, then you are not subject to any additional requirements. Note that you are required to install perimeter controls between the disturbed portions of your site and the buffer in accordance with Part 2.1.2.2.
- **Double Perimeter Control:** In addition to the reduced buffer width retained on your site, you must provide a double row of perimeter controls between the disturbed portion of your site and the surface water spaced a minimum of 5 feet apart.
- **Double Perimeter Control and 7-Day Site Stabilization:** In addition to the reduced buffer width retained on your site and the perimeter control implemented in accordance with Part 2.1.2.2, you must provide a double row of perimeter controls between the disturbed portion of your site and the surface water spaced a minimum of 5 feet apart, and you are required to complete the stabilization activities specified in Parts 2.2.1.2a and/or 2.2.1.2b within 7 calendar days of the temporary or permanent cessation of earth-disturbing activities.

[4] One source for determining your site's predominant soil type is the USDA's Web Soil Survey located at http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

Table G - 2. Risk Levels for Sites with Average Slopes of ≤ 3 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	Moderate	Moderate	Moderate	Moderate	High
Puerto Rico	Moderate	Moderate	Moderate	Moderate	High
Virgin Islands	Low	Moderate	Low	Moderate	Moderate
American Samoa	Moderate	Moderate	Moderate	Moderate	High
Massachusetts and New Hampshire	Low	Moderate	Low	Low	Moderate
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Low	Low	Low	Low
Washington D.C.	Low	Moderate	Low	Low	Moderate

Table G - 3. Risk Levels for Sites with Average Slopes of > 3 Percent and ≤ 6 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	Moderate	Moderate	Moderate	Moderate	High
Puerto Rico	Moderate	Moderate	Moderate	Moderate	High
Virgin Islands	Moderate	Moderate	Moderate	Moderate	High
American Samoa	High	High	Moderate	High	High
Massachusetts and New Hampshire	Moderate	Moderate	Low	Moderate	High
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Low	Low	Low	Moderate
Washington D.C.	Moderate	Moderate	Moderate	Moderate	High

Table G - 4. Risk Levels for Sites with Average Slopes of > 6 Percent and ≤ 9 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	Moderate	High	Moderate	High	High
Puerto Rico	Moderate	High	Moderate	Moderate	High
Virgin Islands	Moderate	Moderate	Moderate	Moderate	High
American Samoa	High	High	High	High	High
Massachusetts and New Hampshire	Moderate	Moderate	Moderate	Moderate	High
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Low	Low	Low	Moderate
Washington D.C.	Moderate	Moderate	Moderate	Moderate	High

Table G - 5. Risk Levels for Sites with Average Slopes of > 9 Percent and ≤ 15 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	High	High	High	High	High
Puerto Rico	High	High	High	High	High
Virgin Islands	Moderate	High	Moderate	High	High
American Samoa	High	High	High	High	High
Massachusetts and New Hampshire	Moderate	Moderate	Moderate	Moderate	High
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Moderate	Low	Moderate	Moderate
Washington D.C.	Moderate	High	Moderate	Moderate	High

Table G - 6. Risk Levels for Sites with Average Slopes of > 15 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
Guam	High	High	High	High	High
Puerto Rico	High	High	High	High	High
Virgin Islands	High	High	High	High	High
American Samoa	High	High	High	High	High
Massachusetts and New Hampshire	High	High	Moderate	High	High
Idaho	Low	Low	Low	Low	Moderate
New Mexico	Moderate	Moderate	Moderate	Moderate	High
Washington D.C.	High	High	Moderate	High	High

Step 2 – Determine Which Additional Controls Apply

Once you determine your site's "risk level", you must next determine the additional controls you need to implement on your site, based on the width of buffer you plan to retain. Table G - 7 specifies the requirements that apply based on the "risk level" and buffer width retained. See footnote 3, above, for a description of the additional controls that are required.

> *For example, if you are the operator of a small residential lot that falls into the "moderate" risk level, and you decide to retain a 20-foot buffer, using Table G-7 you would determine that you need to implement double perimeter controls to achieve compliance with Part 2.1.2.1.*

You must also document in your SWPPP your compliance with Alternative 2.

Table G - 7. Alternative 2 Requirements[2]

Risk Level Based on Estimated Soil Erosion	Retain ≥ 50' Buffer	Retain <50' and >30' Buffer	Retain ≤30' and >10' Buffer	Retain ≤ 10' Buffer
Low Risk	No Additional Requirements	No Additional Requirements	Double Perimeter Control	Double Perimeter Control
Moderate Risk	No Additional Requirements	Double Perimeter Control	Double Perimeter Control	Double Perimeter Control and 7-Day Site Stabilization
High Risk	No Additional Requirements	Double Perimeter Control	Double Perimeter Control and 7-Day Site Stabilization	Double Perimeter Control and 7-Day Site Stabilization

-

ATTACHMENT 1

Sediment Removal Efficiency Tables[5]

EPA recognizes that very high removal efficiencies, even where theoretically achievable by a 50-foot buffer, may be very difficult to achieve in practice using alternative controls. Therefore in the tables below, EPA has limited the removal efficiencies to a maximum of 90%. Efficiencies that were calculated at greater than 90% are shown as 90%, and this is the minimum percent removal that must be achieved by alternative controls.

Table G - 8. Estimated 50-foot Buffer Performance in Idaho*

	Estimated % Sediment Removal				
Type of Buffer Vegetation**	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Tall Fescue Grass	42	52	44	48	85
Medium-density Weeds	28	30	28	26	60
Low-density Warm-season Native Bunchgrass (i.e., Grama Grass)	25	26	24	24	55
Northern Mixed Prairie Grass	28	30	28	26	50
Northern Range Cold Desert Shrubs	28	28	24	26	50

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 9. Estimated 50-foot Buffer Performance in Massachusetts and New Hampshire*

	Estimated % Sediment Removal				
Type of Buffer Vegetation**	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Warm-season Grass (i.e., Switchgrass, Lemongrass)	79	90	90	90	90
Cool-season Dense Grass (Kentucky Bluegrass, Smooth Bromegrass, Timothy)	78	90	90	90	90
Tall Fescue Grass	76	90	81	89	90
Medium-density Weeds	66	76	60	72	66

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

[5] The buffer performances were calculated based on a denuded slope upgradient of a 50-foot buffer and a perimeter controls, as perimeter controls are a standard requirement (see Part 2.1.2.2).

Table G - 10. Estimated 50-foot Buffer Performance in New Mexico*

	Estimated % Sediment Removal				
Type of Buffer Vegetation **	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Tall Fescue grass	71	85	80	86	90
Medium-density Weeds	56	73	55	66	78
Low-density Warm-season Native Bunchgrass (i.e., Grama Grass)	53	70	51	62	67
Southern Mixed Prairie Grass	53	71	52	63	50
Southern Range Cold Desert Shrubs	56	73	55	65	53

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 11. Estimated 50-foot Buffer Performance in Washington, DC*

	Estimated % Sediment Removal				
Type of Buffer Vegetation **	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Warm-season Grass (i.e., Switchgrass, Lemongrass)	82	90	90	90	90
Cool-season Dense Grass (Kentucky Bluegrass, Smooth Bromegrass, Timothy)	81	90	90	90	90
Tall Fescue Grass	79	90	83	89	90
Medium-density Weeds	71	79	66	75	74

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 12. Estimated 50-foot Buffer Performance in American Samoa*

	Estimated % Sediment Removal				
Type of Buffer Vegetation **	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Bahiagrass (Permanent cover)	82	90	90	90	83
Warm-season Grass (i.e., Switchgrass, Lemongrass)	82	90	90	90	85
Dense Grass	82	90	90	90	83
Tall Fescue Grass	82	89	82	89	79
Medium-density Weeds	70	73	62	75	59

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 13. Estimated 50-foot Buffer Performance in Guam*

	Estimated % Sediment Removal				
Type of Buffer Vegetation **	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Bahiagrass (Permanent cover)	80	90	90	90	89
Warm-season Grass (i.e., Switchgrass, Lemongrass)	80	90	90	90	90
Dense Grass	79	90	90	90	89
Tall Fescue Grass	76	90	80	88	87
Medium-density Weeds	63	73	53	68	61

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 14. Estimated 50-foot Buffer Performance in Puerto Rico*

	Estimated % Sediment Removal				
Type of Buffer Vegetation**	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Bahiagrass (Permanent cover)	83	90	90	90	90
Warm-season Grass (i.e., Switchgrass, Lemongrass)	83	90	90	90	90
Dense Grass	83	90	90	90	90
Tall Fescue Grass	82	90	84	90	89
Medium-density Weeds	72	78	65	76	64

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

Table G - 15. Estimated 50-foot Buffer Performance in Virgin Islands*

Type of Buffer Vegetation**	**Clay**	**Silty Clay Loam or Clay-Loam**	**Sand**	**Sandy Clay Loam, Loamy Sand or Silty Clay**	**Loam, Silt, Sandy Loam or Silt Loam**
Bahiagrass (Permanent cover)	85	90	90	90	90
Warm-season Grass (i.e., Switchgrass, Lemongrass)	86	90	90	90	90
Dense Grass	85	90	90	90	90
Tall Fescue Grass	85	90	88	90	89
Medium-density Weeds	75	77	71	78	63

* Applicable for sites with less than nine percent slope
** Characterization focuses on the under-story vegetation

ATTACHMENT 2

Using the Sediment Removal Efficiency Tables – Questions and Answers

- *What if my specific buffer vegetation is not represented in Tables G - 8 through G - 15?* Tables G - 8 through G - 15 provide a wide range of factors affecting buffer performance; however, there may be instances where the specific buffer vegetation type on your site is not listed. If you do not see a description of the type of vegetation present at your site, you should choose the vegetation type that most closely matches the vegetation type on your site. You can contact your local Cooperative Extension Service Office (www.csrees.usda.gov/Extension) for assistance in determining the vegetation type in Tables G - 8 through G - 15 that most closely matches your site-specific vegetation.
- *What if there is high variability in local soils?* EPA recognizes that there may be a number of different soil type(s) on any given construction site. General soil information can be obtained from USDA soil survey reports (http://websoilsurvey.nrcs.usda.gov) or from individual site assessments performed by a certified soil expert. Tables G - 8 through G - 15 present eleven generic soil texture classes, grouping individual textures where EPA has determined that performance is similar. If your site contains different soil texture classes, you should use the soil type that best approximates the predominant soil type at your site.
- *What if my site slope is greater than 9 percent after final grade is reached?* As indicated in the buffer performance tables, the estimated sediment removal efficiencies are associated with disturbed slopes of up to 9 percent grade. Where your graded site has an average slope of greater than 9 percent, you should calculate a site-specific buffer performance.
- *How do I calculate my own estimates for sediment reduction at my specific site?* If you determine that it is necessary to calculate your own sediment removal efficiency using site-specific conditions (e.g., slopes at your site are greater than 9 percent), you can do so by choosing from a range of available mathematical models that are available to facilitate this calculation, including USDA's RUSLE-series programs and the WEPP erosion model, SEDCAD, SEDIMOT, or other equivalent models.
- *What is my estimated buffer performance if my site location is not represented by Tables G - 8 through G - 15?* If your site is located in an area not represented by Tables G - 8 through G - 15, you should use the table that most closely approximates conditions at your site. You may also choose to conduct a site-specific calculation of the buffer performance.
- *What if only a portion of my site drains to the buffer area?* If only a portion of your site drains to a surface water, where that water is within 50 feet of your construction activities, you are only required to meet the equivalency requirement for the stormwater flows corresponding to those portions of the site. See Example 2 below for an example of how this is expected to work.

ATTACHMENT 3

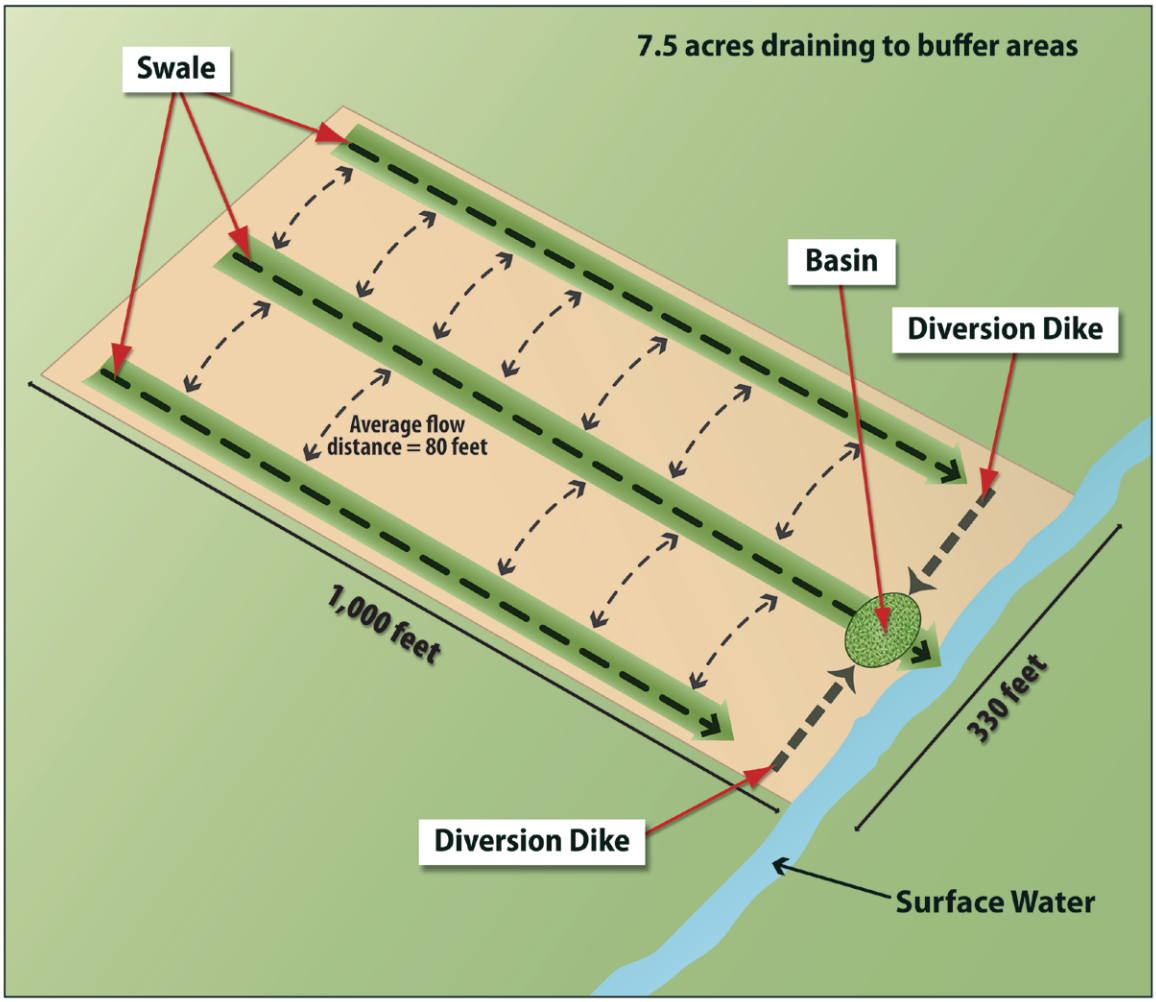
Examples of How to Use the Sediment Removal Efficiency Tables

Example 1. Comparatively Wet Location (7.5 acre site located in Massachusetts)

The operator of a 7.5-acre construction site in Massachusetts has determined that it is infeasible to establish a buffer of any size on their site, and is now required to select and install controls that will achieve an equivalent sediment load reduction as that estimated in G - 9 for their site conditions. The first step is to identify what percentage of eroded sediment is estimated to be retained from a 50-foot buffer. For this example, it is assumed that the site has a relatively uniform gentle slope (3 percent), so Table G - 9 can be used to estimate the 50-foot buffer sediment load reduction. If the site's buffer vegetation is best typified by cool-season dense grass and the underlying soil is of a type best described as loamy sand, the 50-foot buffer is projected to capture 90 percent of eroded sediment from the construction site.

The second step is to determine what sediment controls can be selected and installed in combination with the perimeter controls already required to be implemented at the site (see Part 2.1.2.2), which will achieve the 90 percent sediment removal efficiency from Table G - 9. For this example, using the RUSLE2 profile model, it was determined that installing a pair of shallow-sloped diversion ditches to convey runoff to a well-designed and maintained sediment basin provides 99 percent sediment removal. Because the estimated sediment reduction is greater than the required 90 percent that a 50-foot buffer provides, the operator will have met the buffer requirements. See Figure G - 5. The operator could also choose a different set of controls, as long as they achieve at least a 90 percent sediment removal efficiency.

Figure G - 5. Example 1 – Equivalent Sediment Load Reductions at a 7.5 ac Site in MA.



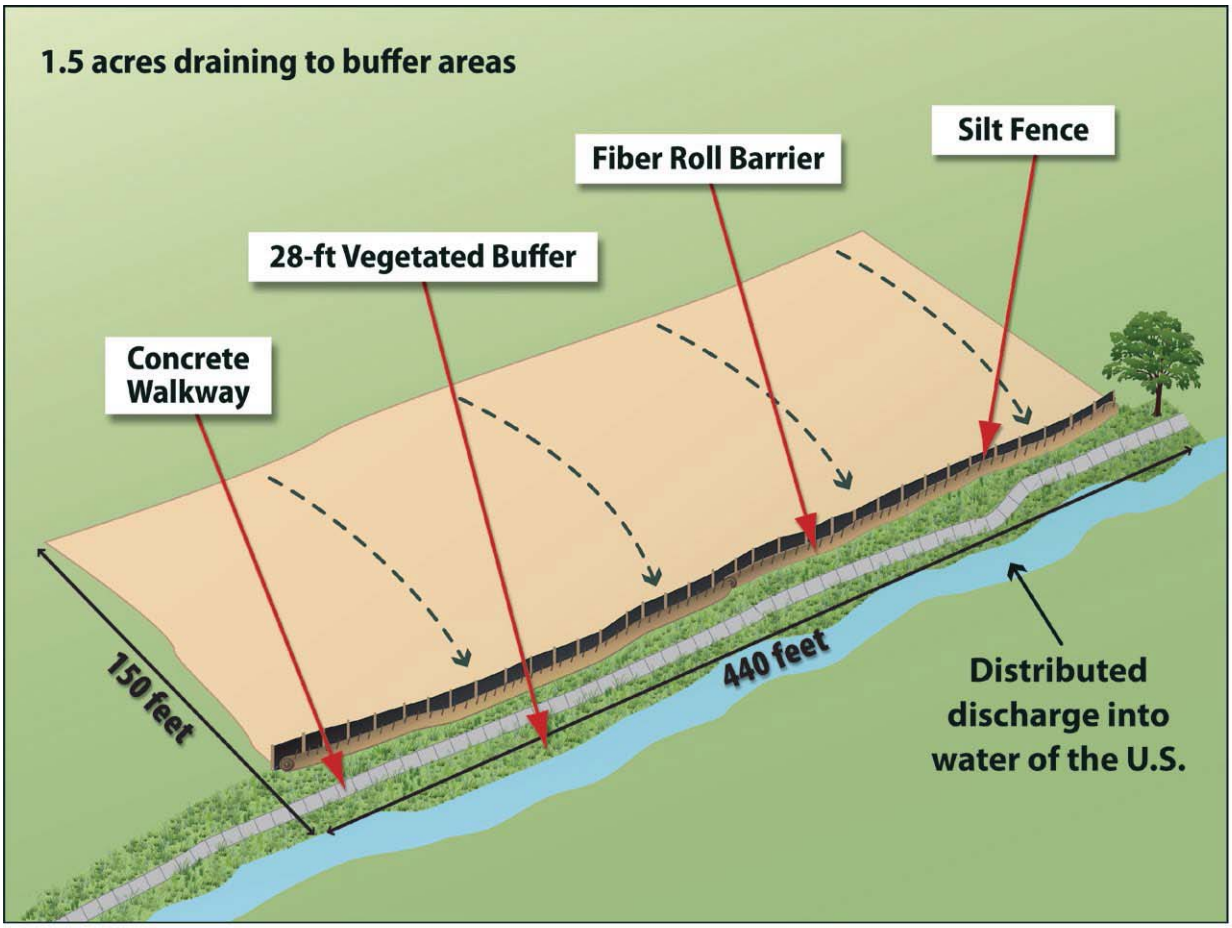
Example 2. Arid Location With Pre-existing Disturbances in the Natural Buffer (6.5 acre site located in New Mexico)

An operator of a site in New Mexico determines that it is not practicable to provide a 50-foot buffer, but a 28-foot buffer can be provided. Because the operator will provide a buffer that is less than 50 feet, the operator must determine which controls, in combination with the 28-foot buffer, achieve a sediment load reduction equivalent to the 50-foot buffer. In this example, the project will disturb 6.5 acres of land, but only 1.5 acres of the total disturbed area drains to the buffer area. Within the 28-foot buffer area is a preexisting concrete walkway. Similar to Example 1, the equivalence analysis starts with Step 1 (Part G.2.2.2) with a review of the New Mexico buffer performance (Table G - 10). The operator determines that the predominate vegetation type in the buffer area is prairie grass and the soil type is similar to silt, and that the site is of a uniform, shallow slope (e.g., 3 percent grade). Although the operator will take credit for the disturbance caused by the concrete walkway as a natural buffer in Step 2, here the operator can treat the entire buffer area as being naturally vegetated with prairie grass. Based on this information, the operator refers to Table G - 10 to estimate that the 50-foot buffer would retain 50 percent of eroded soil.

The second step is to determine, based on the 50 percent sediment removal efficiency found in Table G - 10, what sediment controls in combination with the 28-foot buffer area, can be

implemented to reduce sediment loads by 50 percent or more. The operator does not have to account the reduction in buffer function caused by the preexisting walkway, and can take credit for the entire 28-foot buffer being fully vegetated in the analysis. For this example, using the RUSLE2 profile model, the operator determined that installing a fiber roll barrier between the silt fence (already required by Part 2.1.2.2) and the 28-foot buffer will achieve an estimated 84 percent sediment removal efficiency. See Figure G - 6. Note that this operator is subject to the requirement in Part 2.1.2.1b.i to ensure that discharges through the silt fence, fiber roll barrier, and 28-foot buffer do not cause erosion within the buffer. The estimated sediment reduction is greater than the required 50 percent; therefore the operator will have met the buffer alternative requirement.

Figure G - 6. Example 2 – Equivalent Sediment Load Reductions at a 6.5 ac Site in NM.



Appendix H – 2-Year, 24-Hour Storm Frequencies

Part 2.1.3.2 of the permit indicates that if you install a sediment basin, one of the design requirements is to provide storage for either (1) the calculated volume of runoff from a 2-year, 24-hour storm, or (2) 3,600 cubic feet per acre drained. This appendix is intended to provide a guide to permittees to determine the volume of precipitation associated with their local 2-year, 24-hour storm event.

The permittee should start out by determining their local 2-year, 24-hour storm volume. The rainfall frequency atlases, technical papers, and the Precipitation Frequency Data Server (PFDS) developed by the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS) serve as national standards for rainfall intensity at specified frequencies and durations in the United States. Operators of construction projects subject to the numeric effluent limits can use these standards to determine their local 2-year, 24-hour storm. Table H-1 identifies methods for determining precipitation frequency based on permit area. EPA notes that permittees may also use alternative peer-reviewed data sources not listed in Table H - 1 to determine the 2-year, 24-hour storm for their site.

Table H -1 – Method to Determine Precipitation Frequency Based on Permit Area

PERMIT AREA	METHOD TO DETERMINE PRECIPITATION FREQUENCY
District of Columbia	PFDS; NOAA Atlas 14, Vol. 2
Idaho	NOAA Atlas 2, Vol. 5; Technical Paper 40
Massachusetts	Technical Paper 40
New Hampshire	Technical Paper 40
New Mexico	PFDS; Technical Paper 40
Selected Pacific Islands	PFDS; Technical Paper 40
Puerto Rico and the U.S Virgin Islands	PFDS; Technical Paper 40
Other	PFDS; Technical Paper 40; NOAA Atlas 2 or 14

How to Determine Your Local 2-year, 24-hour Storm Size

Projects located in the **District of Columbia, New Mexico, Puerto Rico, U.S. Virgin Islands, or Pacific Island**s can use the PFDS at http://hdsc.nws.noaa.gov/hdsc/pfds/index.html or use NOAA's Atlas 14 Volumes 2, 3, and 5, respectively at http://www.nws.noaa.gov/oh/hdsc/currentpf.htm to determine their precipitation frequency.

The PFDS is an easy to use, point-and-click interface to official U.S. precipitation frequency estimates and intensities. The opening PFDS screen is a clickable map of the United States. Upon clicking on a state, a state-specific interface appears. From this page the user selects the following:

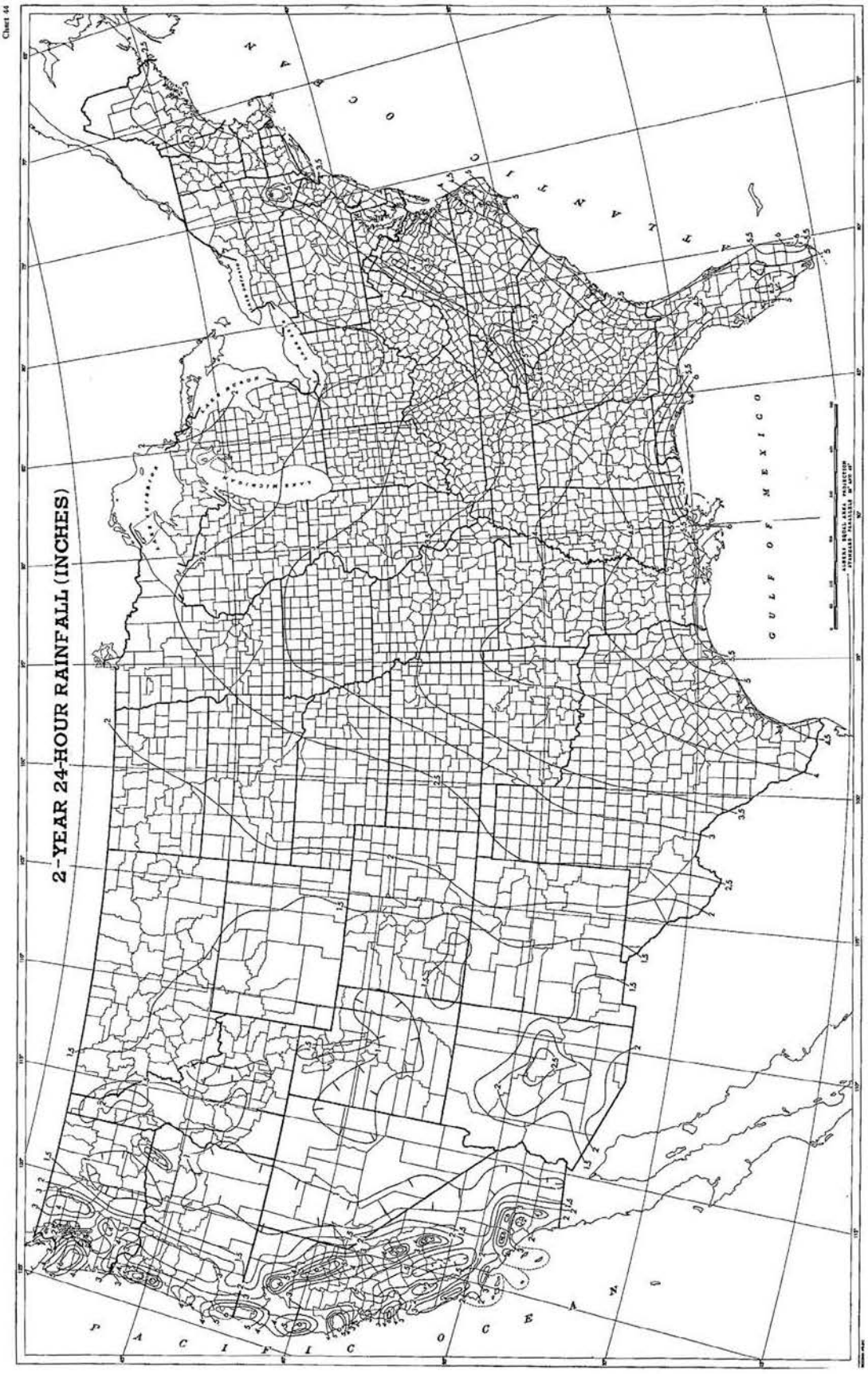
- A location: Either via clicking on the map or manually entering a longitude/latitude coordinate;
- Type of output: Depth-Duration Frequency (DDF) or Intensity-Duration-Frequency (IDF)
- Units: millimeters or inches; and
- Type of estimate: Point or areal.

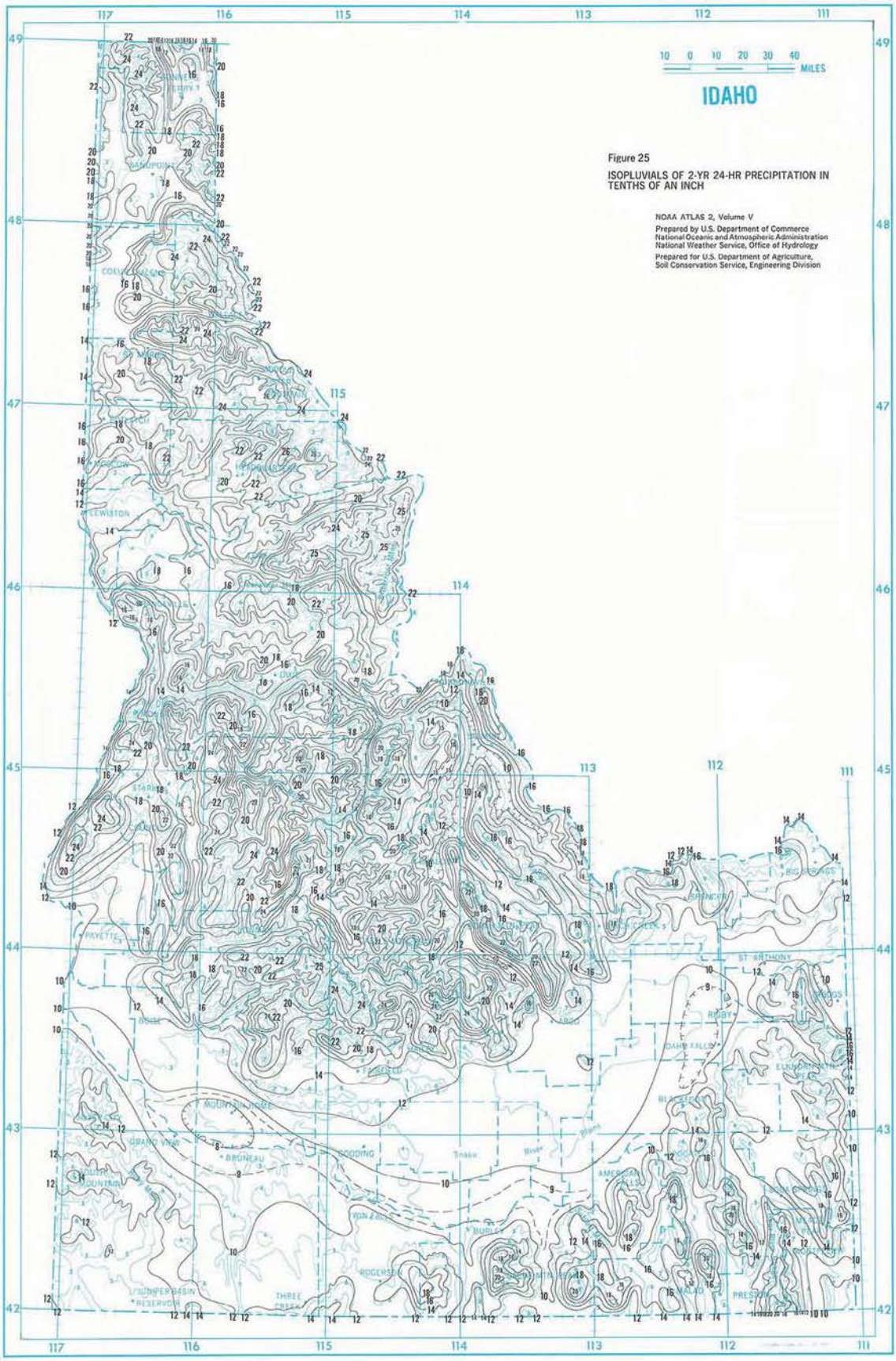
Additionally, PFDS also serves as a tool for providing references and other information for other current precipitation frequency standards that are not yet updated.

Projects located in the **District of Columbia, Puerto Rico, U.S. Virgin Islands, or Pacific Islands** can use NOAA's Atlas 14 Volumes 2, 3, and 5, respectively at http://www.nws.noaa.gov/oh/hdsc/currentpf.htm or access the PFDS at http://hdsc.nws.noaa.gov/hdsc/pfds/index.html to determine their precipitation frequency.

Projects located in **Massachusetts and New Hampshire**, or other areas not covered by the PFDS or NOAA Atlases will need to use TP-40 to identify the precipitation frequency. TP-40 provides a map of the continental U.S. for the 2-year, 24-hour rainfall. TP40 can be accessed at http://www.nws.noaa.gov/oh/hdsc/PF_documents/TechnicalPaper_No40.pdf. (See also attached map of TP-40)

Projects located in **Idaho** can use the NOAA Atlas 2, Vol. 5 to determine their precipitation frequency. NOTE: Precipitation Frequencies on the NOAA Atlas 2, Vol. 5 are in tenths of an inch and will have to be converted to inches to determine precipitation frequency. NOAA Atlas 2, Vol. 5 can be accessed at http://www.nws.noaa.gov/oh/hdsc/PF_documents/Atlas2_Volume5.pdf. (See also attached map of NOAA Atlas 2, Vol. 5)


2-YEAR 24-HOUR RAINFALL (INCHES)
GULF OF MEXICO
PACIFIC OCEAN


10 0 10 20 30 40
MILES
IDAHO
Figure 25
ISOPLUVIALS OF 2-YR 24-HR PRECIPITATION IN TENTHS OF AN INCH
NOAA ATLAS 2, Volume V
Prepared by U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Department of Agriculture,
Soil Conservation Service, Engineering Division

Appendix I - Standard Permit Conditions

Standard permit conditions in Appendix I are consistent with the general permit provisions required under 40 CFR 122.41.

I.1 Duty To Comply.

You must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

I.1.1 You must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards, even if the permit has not yet been modified to incorporate the requirement.

I.1.2 Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (61 FR 252, December 31, 1996, pp. 69359-69366, as corrected in 62 FR 54, March 20, 1997, pp.13514-13517) as mandated by the Debt Collection Improvement Act of 1996 for inflation on a periodic basis. This rule allows EPA's penalties to keep pace with inflation. The Agency is required to review its penalties at least once every 4 years thereafter and to adjust them as necessary for inflation according to a specified formula. The civil and administrative penalties following were adjusted for inflation starting in 1996.

I.1.2.1 *Criminal Penalties.*

a. *Negligent Violations*. The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than $2,500 nor more than $25,000 per day of violation, or imprisonment of not more than one year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than two years, or both.

b. *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

c. *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon

conviction of violating the imminent danger provision be subject to a fine of not more than $1,000,000 and can fined up to $2,000,000 for second or subsequent convictions.

d. *False Statement*. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

I.1.2.2 *Civil Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $37,500 per day for each violation).

I.1.2.3 *Administrative Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty, as follows

a. *Class I Penalty*. Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $16,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $37,500).

b. *Class II Penalty*. Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $177,500).

I.2 Duty to Reapply.

If you wish to continue an activity regulated by this permit after the expiration date of this permit, you must apply for and obtain authorization as required by the new permit once EPA issues it.

I.3 Need to Halt or Reduce Activity Not a Defense.

It shall not be a defense for you in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

I.4 Duty to Mitigate.

You must take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

I.5 Proper Operation and Maintenance.

You must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by you to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by you only when the operation is necessary to achieve compliance with the conditions of this permit.

I.6 Permit Actions.

This permit may be modified, revoked and reissued, or terminated for cause. Your filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

I.7 Property Rights.

This permit does not convey any property rights of any sort, or any exclusive privileges.

I.8 Duty to Provide Information.

You must furnish to EPA or an authorized representative (including an authorized contractor acting as a representative of EPA), within a reasonable time, any information that EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. You must also furnish to EPA or an authorized representative upon request, copies of records required to be kept by this permit.

I.9 Inspection and Entry.

You must allow EPA or an authorized representative (including an authorized contractor acting as a representative of EPA), upon presentation of credentials and other documents as may be required by law, to:

I.9.1 Enter upon your premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

I.9.2 Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

I.9.3 Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

I.9.4 Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

I.10 Monitoring and Records.

I.10.1 Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the monitored activity.

I.10.2 You must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date the permit expires or the date the permittee's authorization is terminated. This period may be extended by request of EPA at any time.

I.10.3 Records of monitoring information must include:

I.10.3.1 The date, exact place, and time of sampling or measurements;

I.10.3.2 The individual(s) who performed the sampling or measurements;

I.10.3.3 The date(s) analyses were performed

I.10.3.4 The individual(s) who performed the analyses;

I.10.3.5 The analytical techniques or methods used; and

I.10.3.6 The results of such analyses.

I.10.4 Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the permit.

I.10.5 The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

I.11 Signatory Requirements.

I.11.1 All applications, including NOIs, must be signed as follows:

I.11.1.1 For a corporation: By a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

I.11.1.2 For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

I.11.1.3 For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive

officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

I.11.2 Your SWPPP, including changes to your SWPPP, inspection reports, and any other compliance documentation required under this permit, must be signed by a person described in Appendix I, Subsection I.11.1 above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

I.11.2.1 The authorization is made in writing by a person described in Appendix I, Subsection I.11.1;

I.11.2.2 The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

I.11.2.3 The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

I.11.3 Changes to Authorization. If an authorization under Part 1.7 is no longer accurate because a different operator has responsibility for the overall operation of the construction site, a new NOI satisfying the requirements of Part 1.7 must be submitted to EPA. See Table 1 in Part 1.7.2 of the permit. However, if the only change that is occurring is a change in contact information or a change in the facility's address, the operator need only make a modification to the existing NOI submitted for authorization.

I.11.4 Any person signing documents in accordance with Appendix I, Subsections I.11.1 or I.11.2 above must include the following certification:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

I.11.5 For persons signing documents electronically, in addition to meeting other applicable requirements in Appenidx I, Subsection I.11, such signatures must meet the same signature, authentication, and identity-proofing standards set forth at 40 CFR § 3.2000(b) for electronic reports (including robust second-factor authentication).

I.11.6 The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

I.12 Reporting Requirements.

I.12.1 Planned changes. You must give notice to EPA as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

I.12.1.1 The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or

I.12.1.2 The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1).

I.12.2 Anticipated noncompliance. You must give advance notice to EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

I.12.3 Transfers. This permit is not transferable to any person except after notice to EPA. Where a facility wants to change the name of the permittee, the original permittee (the first owner or operators) must submit a Notice of Termination pursuant to Part 8. The new owner or operator must submit a Notice of Intent in accordance with Part 1.7 and Table 1. See also requirements in Appendix I, Subsections I.11.1 and I.11.2.

I.12.4 Monitoring reports. Monitoring results must be reported at the intervals specified elsewhere in this permit.

I.12.4.1 Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by EPA for reporting results of monitoring of sludge use or disposal practices.

I.12.4.2 If you monitor any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by EPA.

I.12.5 Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

I.12.6 Twenty-four hour reporting. In addition to reports required elsewhere in this permit:

I.12.6.1 You must report any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours from the time you become aware of the circumstances. A written submission must also be provided within five days of the time you become aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

I.12.6.2 The following shall be included as information which must be reported within 24 hours under this paragraph.

a. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR 122.41(m)(3)(ii))

b. Any upset which exceeds any effluent limitation in the permit

c. Violation of a maximum daily discharge limit for any numeric effluent limitation. (See 40 CFR 122.44(g).)

I.12.6.3 EPA may waive the written report on a case-by-case basis for reports under Appendix I, Subsection I.12.6.2 if the oral report has been received within 24 hours.

I.12.7 Other noncompliance. You must report all instances of noncompliance not reported under Appendix I, Subsections I.12.4, I.12.5, and I.12.6, at the time monitoring reports are submitted. The reports must contain the information listed in Appendix I, Subsection I.12.6.

I.12.8 Other information. Where you become aware that you failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Permitting Authority, you must promptly submit such facts or information.

I.13 Bypass.

I.13.1 Definitions.

I.13.1.1 Bypass means the intentional diversion of waste streams from any portion of a treatment facility See 40 CFR 122.41(m)(1)(i).

I.13.1.2 Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 CFR 122.41(m)(1)(ii).

I.13.2 Bypass not exceeding limitations. You may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Appendix I, Subsections I.13.3 and I.13.4. See 40 CFR 122.41(m)(2).

I.13.3 Notice.

I.13.3.1 Anticipated bypass. If you know in advance of the need for a bypass, you must submit prior notice, if possible at least ten days before the date of the bypass. See 40 CFR 122.41(m)(3)(i).

I.13.3.2 Unanticipated bypass. You must submit notice of an unanticipated bypass as required in Appendix I, Subsection I.12.6 (24-hour notice). See 40 CFR 122.41(m)(3)(ii).

I.13.4 Prohibition of bypass. See 40 CFR 122.41(m)(4).

I.13.4.1 Bypass is prohibited, and EPA may take enforcement action against you for bypass, unless:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. You submitted notices as required under Appendix I, Subsection I.13.3.

I.13.4.2 EPA may approve an anticipated bypass, after considering its adverse effects, if EPA determines that it will meet the three conditions listed above in Appendix I, Subsection I.13.4.1.

I.14 Upset.

I.14.1 Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. See 40 CFR 122.41(n)(1).

I.14.2 Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Appendix I, Subsection I.14.3 are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. See 40 CFR 122.41(n)(2).

I.14.3 Conditions necessary for a demonstration of upset. See 40 CFR 122.41(n)(3). A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

I.14.3.1 An upset occurred and that you can identify the cause(s) of the upset;

I.14.3.2 The permitted facility was at the time being properly operated; and

I.14.3.3 You submitted notice of the upset as required in Appendix I, Subsection I.12.6.2.b (24 hour notice).

I.14.3.4 You complied with any remedial measures required under Appendix I, Subsection I.4.

I.14.4 Burden of proof. In any enforcement proceeding, you, as the one seeking to establish the occurrence of an upset, have the burden of proof. See 40 CFR 122.41(n)(4).

I.15 Retention of Records.

Copies of the SWPPP and all documentation required by this permit, including records of all data used to complete the NOI to be covered by this permit, must be retained for at least three years from the date that permit coverage expires or is terminated. This period may be extended by request of EPA at any time.

I.16 Reopener Clause.

I.16.1 Procedures for modification or revocation. Permit modification or revocation will be conducted according to 40 CFR §122.62, §122.63, §122.64 and §124.5.

I.16.2 Water quality protection. If there is evidence indicating that the stormwater discharges authorized by this permit cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, you may be required to obtain an individual permit in accordance with Part 1.7.5 of this permit, or the permit may be modified to include different limitations and/or requirements.

I.16.3 Timing of permit modification. EPA may elect to modify the permit prior to its expiration (rather than waiting for the new permit cycle) to comply with any new statutory or regulatory requirements, such as for effluent limitation guidelines that may be promulgated in the course of the current permit cycle.

I.17 Severability.

Invalidation of a portion of this permit does not necessarily render the whole permit invalid. EPA's intent is that the permit is to remain in effect to the extent possible; in the event that any part of this permit is invalidated, EPA will advise the regulated community as to the effect of such invalidation.

Appendix J - Notice of Intent (NOI) Form and Instructions

Part 1.4.1 requires you to use the electronic NOI system, or "eNOI" system, to prepare and submit your NOI. However, if you are given approval by the EPA Regional Office to use a paper NOI form, and you elect to use it, you must complete and submit the following form.

NPDES FORM 3510-9	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF INTENT (NOI) FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER AN NPDES GENERAL PERMIT	Form Approved. OMB No. 2040-0004

Submission of this Notice of Intent (NOI) constitutes notice that the operator identified in Section II of this form requests authorization to discharge pursuant to the NPDES Construction General Permit (CGP) permit number identified in Section I of this form. Submission of this NOI also constitutes notice that the operator identified in Section II of this form meets the eligibility requirements of Parts 1.1 and 1.2 of the CGP for the project identified in Section III of this form. Permit coverage is required prior to commencement of construction activity until you are eligible to terminate coverage as detailed in Part 8 of the CGP. To obtain authorization, you must submit a complete and accurate NOI form. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage. Refer to the instructions at the end of this form.

I. Approval to Use Paper NOI Form

Have you been given approval from the Regional Office to use this paper NOI form*? ☐ YES ☐ NO

If yes, provide the reason you need to use this paper form, the name of the EPA Regional Office staff person who approved your use of this form, and the date of approval:

Reason for using paper form:

Name of EPA staff person:

Date approval obtained: / /

*** Note: You are required to obtain approval from the applicable Regional Office prior to using this paper NOI form.**

II. Permit Information

Tracking Number (EPA Use Only):

Permit Number: (see Appendix B of the CGP for the list of eligible permit numbers)

III. Operator Information

Name:

Phone: - - Ext. Fax (optional): - -

E-mail:

IRS Employer Identification Number (EIN): –

Point of Contact:

First Name, Middle Initial, Last Name:

Mailing Address:

Street:

City: State: Zip Code: -

NOI Preparer (Complete if NOI was prepared by someone other than the certifier):

Prepared by:

First Name, Middle Initial, Last Name:

Organization:

Phone: - - Ext. Fax (optional): - -

E-mail:

IV. Project/Site Information

Project/Site Name:

Project/Site Address:

Street/Location:

City: State: Zip Code: -

County or similar government subdivision:

For the project/site for you are seeking permit coverage, provide the following information:

Latitude/Longitude (Use one of three possible formats, and specify method):

Latitude 1. ___ ___° ___ ___' ___ ___" N (degrees, minutes, seconds)
2. ___ ___° ___ ___. ___ ___' N (degrees, minutes, decimal)
3. ___ ___. ___ ___ ___ ___° N (degrees decimal)

Longitude 1. ___ ___ ___° ___ ___' ___ ___" W (degrees, minutes, seconds)
2. ___ ___ ___° ___ ___. ___ ___' W (degrees, minutes, decimal)
3. ___ ___ ___. ___ ___ ___ ___° W (degrees decimal)

Latitude/Longitude Data Source: ☐ U.S.G.S. topographic map ☐ EPA web site ☐ GPS ☐ Other: _____

If you used a U.S.G.S. topographic map, what was the scale? _____

Horizontal Reference Datum: ☐ NAD 27 ☐ NAD 83 or WGS 84 ☐ Unknown

Is your project/site located in Indian country lands? ☐ YES ☐ NO

If yes, provide the name of the Indian tribe associated with the area of Indian country (including name of Indian reservation, if applicable):

_____

Are you requesting coverage under this NOI as a "federal operator" as defined in Appendix A? ☐ YES ☐ NO

Estimated Project Start Date: / / Estimated Project Completion Date: / /

Estimated Area to be Disturbed (to the nearest quarter acre): .

Have earth-disturbing activities commenced on your project/site? ☐ YES ☐ NO

If yes, is your project an "emergency-related project? ☐ YES ☐ NO

Have stormwater discharges from your project/site been covered previously under an NPDES permit? ☐ YES ☐ NO

If yes, provide the Tracking Number if you had coverage under EPA's CGP or the NPDES permit number if you had coverage under an EPA individual permit:

V. Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? ☐ YES ☐ NO

Are there any surface waters within 50 feet of your project's earth disturbances? ☐ YES ☐ NO

Receiving Waters and Wetlands Information: (Attach a separate list if necessary)

Provide the name(s) of the first surface water that received stormwater directly from your site and/or from the MS4:	**Provide the names of any impaired waters to which you discharge and the pollutant(s) for which they are impaired**		**Provide the names of any waters to which you discharge for which there is an EPA approved or established TMDL, the name of the TMDL, and the pollutant(s) for which there is a TMDL**		
	Surface water name:	**Pollutant(s) causing the impairment:**	**Surface water name:**	**TMDL name:**	**Pollutant(s) for which there is a TMDL:**

Impaired Waters

Describe the methods you used to complete the above table:

Are any of the surface waters to which you discharge designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) or as a Tier 3 water (Outstanding Natural Resource Water)? (See Appendix F).

☐ YES ☐ NO

If yes, name(s) of receiving water(s) and its designation (Tier 2, Tier 2.5 or Tier 3):

VI. Chemical Treatment Information

Will you use polymers, flocculants, or other treatment chemicals at your construction site? ☐ YES ☐ NO

If yes, will you use cationic treatment chemicals at your construction site*? ☐ YES ☐ NO

If yes, have you been authorized to use cationic treatment chemicals by your applicable EPA Regional Office in advance of filing your NOI*? ☐ YES ☐ NO

If you have been authorized to use cationic treatment chemicals by your applicable EPA Regional Office, attach a copy of your authorization letter and include documentation of the appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

Please indicate the treatment chemicals that you will use:

* Note: You are ineligible for coverage under this permit unless you notify your applicable EPA Regional Office in advance and the EPA office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

VII. Stormwater Pollution Prevention Plan (SWPPP) Information

Has the SWPPP been prepared in advance of filing this NOI? ☐ YES ☐ NO

SWPPP Contact Information:

First Name, Middle Initial Last Name:

Organization Name:

Phone: - - Ext. Fax (optional): - -

E-mail:

VIII. Endangered Species Protection

Using the instructions in Appendix D of the CGP, under which criterion listed in Appendix D are you eligible for coverage under this permit (only check 1 box)?

☐ A ☐ B ☐ C ☐ D ☐ E ☐ F

Provide a brief summary of the basis for criterion selection listed in Appendix D (e.g., communication with U.S. Fish and Wildlife Service or National Marine Fisheries Service, specific study):

If you select criterion B, provide the Tracking Number from the other operator's notification of authorization under this permit:

If you select criterion C, you must attach a copy of your site map (see Part 7.2.6 of the permit), and you must answer the following questions:

What federally-listed species or federally-designated critical habitat are located in your "action area":

What is the distance between your site and the listed species or critical habitat (miles):

If you select criterion D, E, or F, attach copies of any letters or other communications between you and the U.S. Fish and Wildlife Service or National Marine Fisheries Service.

IX. Historic Preservation

If your project/site is not located in Indian country lands, is your project/site located on a property of religious or cultural significance to an Indian tribe?

☐ YES ☐ NO

If yes, provide the name of the Indian tribe associated with the property: _____

Are you installing any stormwater controls as described in Appendix E that require subsurface earth disturbance? (Appendix E, Step 1) ☐ YES ☐ NO

If yes, have prior surveys or evaluations conducted on the site have already determined historic properties do not exist, or that prior disturbances have precluded the existence of historic properties? (Appendix E, Step 2) ☐ YES ☐ NO

If no, have you determined that your installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties? (Appendix E, Step 3) ☐ YES ☐ NO

If no, did the SHPO, THPO, or other tribal representative (whichever applies) respond to you within the 15 calendar days to indicate whether the subsurface earth disturbances caused by the installation of stormwater controls affect historic properties? (Appendix E, Step 4) ☐ YES ☐ NO

If yes, describe the nature of their response:

- ☐ Written indication that adverse effects to historic properties from the installation of stormwater controls can be mitigated by agreed upon actions
- ☐ No agreement has been reached regarding measures to mitigate effects to historic properties from the installation of stormwater controls
- ☐ Other:

X. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

First Name, Middle Initial, Last Name: _____

Title: _____

Signature: _____ Date: __ / __ / ____

Email: _____

Instructions for Completing EPA Form 3510-9

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

NPDES Form Date (2/16) This Form Replaces Form 3510-9 (11/08) Form Approved OMB No. 2040-0004

Who Must File an NOI Form

Under the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et. seq.; the Act), federal law prohibits stormwater discharges from certain construction activities to waters of the U.S. unless that discharge is covered under a National Pollutant Discharge Elimination System (NPDES) permit. Operator of construction sites where one or more acres are disturbed, smaller sites that are part of a larger common plan of development or sale where there is a cumulative disturbance of at least one acre, or any other site specifically designated by the Director, must submit an NOI to obtain coverage under an NPDES general permit. Each person, firm, public organization, or any other entity that meets either of the following criteria must file this form: (1) they have operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (2) they have day-to-day operational control of those activities at the project necessary to ensure compliance with the permit conditions. If you have questions about whether you need a NPDES stormwater permit, or if you need information to determine whether EPA or your state agency is the permitting authority, refer to www.epa.gov/npdes/stormwater/cgp or telephone EPA's NOI Processing Center at (866) 352-7755.

Completing the Form

Obtain and read a copy of the 2012 Construction General Permit, viewable at www.epa.gov/npdes/stormwater/cgp. To complete this form, type or print uppercase letters, in the appropriate areas only. Please place each character between the marks (abbreviate if necessary to stay within the number of characters allowed for each item). Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions on this form, refer to www.epa.gov/npdes/stormwater/cgp or telephone EPA's NOI Processing Center at (866) 352-7755. Please submit the original document with signature in ink - do not send a photocopied signature.

Section I. Approval to Use Paper NOI Form

You must indicate whether you have been given approval by the EPA Regional Office to use a paper NOI. Note that you are not authorized to use this paper NOI form unless the Regional Office has approved its use. Verbal approval from the Regional Office is sufficient. Where you have obtained approval to use this form, indicate the reason you need to use this form, the name of the EPA Regional Office staff person who provided approval for use of this form, and the date that approval was provided. See www.epa.gov/npdes/stormwater/contacts for a list of EPA Regional Office contacts.

Section II. Permit Number

Provide the number of the permit under which you are applying for coverage (see Appendix B of the general permit for the list of eligible permit numbers).

Section III. Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application. Refer to Appendix A of the permit for the definition of "operator". Provide the employer identification number (EIN from the Internal Revenue Service; IRS), also commonly referred to as your taxpayer ID. If the applicant does not have an EIN enter "NA" in the space provided. Also provide a point of contact, the operator's mailing address, telephone number, fax number (optional) and e-mail address (to be notified via e-mail of NOI approval when available). Correspondence for the NOI will be sent to this address.

If the NOI was prepared by someone other than the certifier (for example, if the NOI was prepared by the facility SWPPP contact or a consultant for the certifier's signature), include the full name, organization, phone number and email address of the NOI preparer.

Section IV. Project/Site Information

Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for permit coverage to be granted.

Provide the latitude and longitude of your facility either in degrees, minutes, seconds; degrees, minutes, decimal; or degrees decimal format. The latitude and longitude of your facility can be determined in several different ways, including through the use of global positioning system (GPS) receivers, U.S. Geological Survey (U.S.G.S.) topographic or quadrangle maps, and EPA's web-based siting tools, among others. Refer to www.epa.gov/npdes/stormwater/cgp for further guidance on the use of these methodologies. For consistency, EPA requests that measurements be taken from the approximate center of the construction site. Applicants must specify which method they used to determine latitude and longitude. If a U.S.G.S. topographic map is used, applicants are required to specify the scale of the map used. If known, enter the horizontal reference datum for your latitude and longitude. The horizontal reference datum used on USGS topographic maps is shown on the bottom left corner of USGS topographic maps; it is also available for GPS receivers. If you use EPA's web siting tool, or if you are unsure of the horizontal reference datum for your site, please check the "unknown" box.

Indicate whether the project is in Indian country lands, and if so, provide the name of the Indian tribe associated with the area of Indian country (including name of Indian reservation, if applicable).

Indicate whether you are seeking coverage under this permit as a "federal operator" as defined in Appendix A.

Enter the estimated construction start and completion dates using four digits for the year (i.e., 10/06/2012). Indicate to the nearest quarter acre the estimated area to be disturbed.

Indicate whether earth-disturbing activities have already commenced on your project/site. If earth-disturbing activities have commenced on your site because stormwater discharges from the site have been previously covered under a NPDES permit, you must provide the CGP Tracking Number or the NPDES permit number if coverage was under an individual permit.

Section V. Discharge Information

Indicate whether discharges from the site will enter into a municipal separate storm sewer system (MS4), as defined in Appendix A.

Also, indicate whether any surface waters (as defined in Appendix A) exist either on or within 50 feet from your site. Note that if "yes", you are required to comply with the requirement in Part 2.1.2.1 of the permit to provide natural buffers or equivalent sediment controls.

You must specify the names of any surface waters that receive stormwater directly from your site and/or from the MS4 to which you discharge. You must also specify the names of any surface waters that you discharge to that are listed as "impaired" as defined in Appendix A, including any waters for which there is an approved or established TMDL, and the pollutants for which the water is impaired or for which there is a TMDL. This information will be used to determine if the site discharges to an impaired waterbody, which triggers additional requirements in Part 3.2.2 of the permit. Applicants must specify which method they used to determine whether or not their site discharges to impaired waters. Also, if a TMDL has been approved or established, identify the title or reference of the TMDL document.

Indicate whether discharges from the site will enter into a surface water that is designated as a Tier 2, Tier 2.5, or Tier 3 water. A list of Tier 2, 2.5, and 3 waters is provided as Appendix F. If the answer is "yes", name all waters designated as Tier 2, Tier 2.5, or Tier 3 to which the site will discharge.

Section VI. Chemical Treatment Information

Indicate whether the site will use polymers, flocculants, or other treatment chemicals. Indicate whether the site will employ cationic treatment chemicals. If the answer is "yes" to either question, indicate which chemical(s) you will use. Note that you are not eligible for coverage under this permit to use cationic treatment chemicals unless you notify your applicable EPA Regional Office in advance and the EPA office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards. If you have been authorized to use cationic treatment chemicals by your applicable EPA Regional Office, attach a copy of your authorization letter and include documentation of the appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards. Examples of cationic treatment chemicals include, but are not limited to, cationic polyacrylamide (C-PAM), PolyDADMAC (POLYDIALLYLDIMETHYLAMMONIUM CHLORIDE), and chitosan.

Section VII. Stormwater Pollution Prevention Plan (SWPPP) Information

All sites eligible for coverage under this permit are required to prepare a SWPPP in advance of filing the NOI, in accordance with Part 7. Indicate whether the SWPPP has been prepared in advance of filing the NOI.

Indicate the street, city, state, and zip code where the SWPPP can be found. Indicate the contact information (name, organization, phone, fax (optional), and email) for the person who developed the SWPPP for this project.

Section VIII. Endangered Species Information

Using the instructions in Appendix D, indicate under which criterion (i.e., A, B, C, D, E, or F) of the permit the applicant is eligible with regard to protection of federally listed endangered and threatened species and designated critical habitat. A description of the basis for the criterion selected must also be provided.

If criterion B is selected, provide the Tracking Number for the other operator who had previously certified their eligibility under criterion A, C, D, E, or F. The Tracking Number was assigned when the operator received coverage under this permit, and is included in the notice of authorization.

If criterion C is selected, you must attach copies of your site map. See Part 7.2.6 of the permit for information about what is required to be in your site map. You must also specify the federally-listed species or federally-designated critical habitat that are located in the "action area" of the project, and provide the distance between the construction site and any listed endangered species or their critical habitat.

If criterion D, E, or F is selected, attach copies of any communications between you and the U.S. Fish and Wildlife Service and National Marine Fisheries Service.

Section IX. Historic Preservation

If the project is not located in Indian country lands, indicate whether the project is located on a property of religious or cultural significance to an Indian tribe, and if so, provide the name of the Indian tribe associated with the property. Use the instructions in Appendix E to complete the questions on the NOI form regarding historic preservation.

Section X. Certification Information

All applications, including NOIs, must be signed as follows:

For a corporation: By a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall

operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA). Include the name and title of the person signing the form and the date of signing. An unsigned or undated NOI form will not be considered eligible for permit coverage.

Modifying Your NOI

If after submitting your NOI you need to correct or update any fields on this NOI form, you may do so by submitting a paper modification form, which you can obtain at the following link: http://www.epa.gov/npdes/pubs/cgp_modify.pdf

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 3.7 hours. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch 2136, U.S. Environmental Protection, Agency, 1200 Pennsylvania Avenue, NW, Washington, D.C. 20460. Include the OMB control number on any correspondence. Do not send the completed form to this address.

Submitting Your Form

Submit your NOI form by mail to one of the following addresses:

For Regular U.S. Mail Delivery:
Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:
Stormwater Notice Processing Center
EPA East Building - Room 7420
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

Visit this website for instructions on how to submit electronically:
www.epa.gov/npdes/stormwater/cgpenoi

Appendix K - Notice of Termination (NOT) Form and Instructions

Part 8.3 requires you to use the electronic NOI system, or "eNOI" system, to prepare and submit your NOT. However, where your EPA Regional Office specifically authorizes you to use a paper NOT form, you are required to complete and submit the following form.

NPDES FORM 3510-13	EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF TERMINATION (NOT) FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER AN NPDES GENERAL PERMIT	Form Approved. OMB No. 2040-0004

Submission of this Notice of Termination constitutes notice that the operator identified in Section II of this form is no longer authorized discharge pursuant to the NPDES Construction General Permit (CGP) from the site identified in Section III of this form. All necessary information must be included on this form. Refer to the instructions at the end of this form.

I. Approval to Use Paper NOT Form

Have you been given approval from the Regional Office to use this paper NOT form*? ☐ YES ☐ NO

*** Note: You must have been given approval by the Regional Office prior to using this paper NOT form.**

II. Permit Information

NPDES Stormwater General Permit Tracking Number:

Reason for Termination (Check only one):

- ☐ You have completed earth-disturbing activities at your site, and you have met all other requirements in Part 8.2.1.
- ☐ Another operator has assumed control over all areas of the site and that operator has submitted an NOI and obtained coverage under the CGP.
- ☐ You have obtained coverage under an individual permit or another general NPDES permit addressing stormwater discharges from the construction site.

III. Operator Information

Name:

IRS Employer Identification Number (EIN): –

Mailing Address:

Street:

City: State: Zip Code: -

Phone: - - Ext. Fax (optional): - -

E-mail:

IV. Project/Site Information

Project/Site Name:

Project/Site Address:

Street/Location:

City: State: Zip Code: -

County or similar government subdivision:

V. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

First Name, Middle Initial, Last Name:

Title:

Signature: ______________________ Date: / /

Email:

Instructions for Completing EPA Form 3510-13

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

NPDES Form Date (2/16) This Form Replaces Form 3510-13 (12/08) Form Approved OMB No. 2040-0004

Who May File an NOT Form

Permittees who are presently covered under the EPA-issued 2012 Construction General Permit (CGP) for Stormwater Discharges Associated with Construction Activity may submit an NOT form when: (1) earth-disturbing activities at the site are completed and the conditions in Parts 8.2.1.1 thru 8.2.1.5 are met; or (2) the permittee has transferred all areas under its control to another operator, and that operator has submitted and obtained coverage under this permit; or (3) the permittee has obtained coverage under a different NPDES permit for the same discharges.

Completing the Form

Type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, refer to www.epa.gov/npdes/stormwater/cgp or telephone EPA's NOI Processing Center at (866) 352-7755. Please submit original document with signature in ink - do not send a photocopied signature.

Section I. Approval to Use Paper NOT Form

You must indicate whether you have been given approval by the EPA Regional Office to use a paper NOT. Note that you are not authorized to use this paper NOT form unless the Regional Office has approved its use.

Section II. Permit Number

Enter the existing NPDES Stormwater General Permit Tracking Number assigned to the project by EPA's Stormwater Notice Processing Center. If you do not know the permit tracking number, refer to http://www.epa.gov/npdes/stormwater/cgp or contact EPA's NOI Processing Center at (866) 352-7755.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box. Check only one:

You have completed earth-disturbing activities at your site and, if applicable, construction support activities covered by this permit (see Part 1.6.3) and you have met all other requirements in Part 8.2.1.

Another operator has assumed control over all areas of the site and that operator has submitted an NOI and obtained coverage under the CGP.

You have obtained coverage under an individual permit or another general NPDES permit addressing stormwater discharges from the construction site.

Section III. Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application and is covered by the permit tracking number identified in Section I. Refer to Appendix A of the permit for the definition of "operator". Provide the employer identification number (EIN from the Internal Revenue Service; IRS). If the applicant does not have an EIN enter "NA" in the space provided. Enter the complete mailing address, telephone number, and email address of the operator. Optional: enter the fax number of the operator.

Section IV. Project/Site Information

Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for termination of permit coverage to be valid.

Section V. Certification Information

All applications, including NOIs, must be signed as follows:

For a corporation: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

Include the name, title, and email address of the person signing the form and the date of signing. An unsigned or undated NOT form will not be considered valid termination of permit coverage.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 0.5 hours per notice, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Include the OMB number on any correspondence. Do not send the completed form to this address.

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

NPDES Form Date (2/16) This Form Replaces Form 3510-13 (12/08) Form Approved OMB No. 2040-0004

Submitting Your Form:
Submit your NOI form by mail to one of the following addresses:

For Regular U.S. Mail Delivery:
Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:
Stormwater Notice Processing Center
EPA East Building - Room 7420
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

Visit this website for instructions on how to submit electronically:
www.epa.gov/npdes/stormwater/cgpenoi

Appendix B

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Storm Water Drainage Map with Erosion Controls

[See Attached]

NOTE:
1. STRAW BALE OR FIBER ROLLS MAY BE USED AS NEEDED ALONG WITH THE SILT FENCING TO PROVIDE ADDITIONAL POLLUTANT REMOVAL
2. A 50-FOOT BUFFER ZONE WILL BE MAINTAINED FROM THE CREEK BED
3. ROCK CHECK DAMS, STRAW WADDLES, OR EROSION CONTROL BLANKERS WILL BE USED ON STEEP SLOPES AS APPLICABLE
4. A SPECIFIC AREA WILL BE ESTABLISHED FOR EQUIPEMENT MAINTENANCE AND FUELING. THIS AREA WILL BE ADDED TO THE PLAN WHEN ESTABLISHED.
5. EROSION CONTROL MEASURE SPECIFIC TO THE ROAD CONSTRUCTION ARE SHOWN ON DRAWINGS 002 AND 007 OF HAUL ROAD PLANS

NOTE:
1. AREAS WEST OF CONSTRUCTION FENCING IN GRIDS 08, 09, 14, 15, 19, 20, AND 21 REQUIRE OVERSIGHT PRESENCE OF THE QUAPAW TRIBE OR BIA BEFORE ANY EXCAVATION ACTIVITY IS CONDUCTED.

DENOTES SURFACE WATER FLOW

BUILDING LOCATIONS:
- #1 WATER TOWER
- #2 LARGE DORMITORY FOUNDATION
- #3 POSSIBLE PRESBYTERY - FOUNDATION WITH CELLAR
- #4 UNKNOWN FUNCTION - SHED ROOF, TRUNCATED BY CHAT
- #5 UNKNOWN FUNCTION - FOUNDATION
- #6 STONE-LINED WELL
- #7 UNKNOWN FUNCTION - RUINS WITH GABLE ROOF
- #8 RUINS - POSSIBLE CLASSROOM/SISTERS QUARTERS
- #9 ANIMAL PEN

FIELD RECONNAISSANCE AREAS OF INTEREST

RECONNAISSANCE NOTES

ALTERNATE ACCESS MAY BE FROM THE NORTH THROUGH AN ADJACENT PROPERTY NEAR THE WEST END OF THE CB, DEPENDING UPON WHETHER ACCESS CAN BE OBTAINED FROM THOSE PROPERTY OWNERS. WE DID NOT GET TO ASSESS THE NORTHERN ACCESS DUE TO LACK OF ACCESS TO THE PROPERTY. THE EXTENT OF THE CHAT BASE AS INDICATED ON THE DRAWING IS CLOSE TO WHAT IS OBSERVED IN THE FIELD, ALTHOUGH PART OF THE SOUTHEAST PORTION OF THE CHAT BASE IS MORE OF A CHAT PILE THAN A BASE. THE EASTERN EDGE OF THE CB APPEARS TO GO UP THE SIDE OF A HILL. THERE IS ALSO AN AREA WHERE CHAT APPEARS TO HAVE WASHED OFF OF THE CHAT BASE, NEAR THE SOUTHEAST CORNER OF THE BASE. TWO AREAS OF APPARENT FINE TAILINGS ARE LOCATED ON THE SOUTHERN PORTION OF THE CB AREA. DEVELOPMENT ROCK IS PRESENT ON THE NORTH SIDE OF AN AREA OF CONCRETE FOUNDATION BLOCKS ON THE EAST SIDE OF THE CB. THERE ARE AREAS OF ASPHALT COVERING THE CHAT, NEAR THE WEST END AND ON THE WEST-CENTRAL PORTION OF THE CB. A BARB-WIRE FENCE PASSES THROUGH THE CB FROM EAST TO WEST, SEPARATING THE NORTHERN 1/3 OF THE CB FROM THE SOUTHERN 2/3 OF THE CB.

NO.	DSGN	DATE	DR	CHK	APVD	BY	REVISION
	KR CHANG		C CHILDRESS	M WILSON	M WILSON	APVD	

EPA
TAR CREEK SOURCE MATERIAL
OPERABLE UNIT 4
OTTAWA COUNTY, OKLAHOMA

CIVIL
DISTAL AREA 8 CHAT BASE CB011 RECONNAISSANCE PLAN

1" = 60'
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

DATE	DECEMBER 2011
PROJ	388745
DWG	CB011-C-2201DA8
SHEET	

ISSUED FOR CLIENT REVIEW

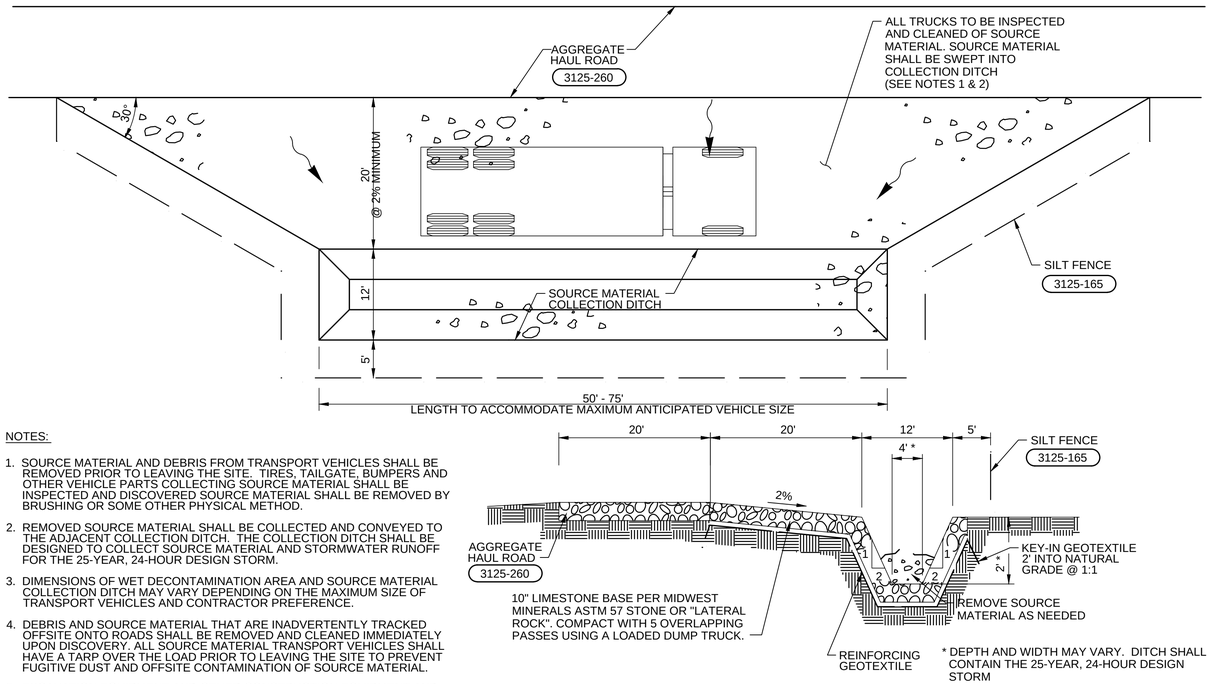
PW SERVER LOCATION: WBG FILENAME: $FILENAME PLOT DATE: $PLOTDATE PLOT TIME: $PLOTTIME

Appendix C

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Erosion Control Diagrams/Specifications

[See Attached]



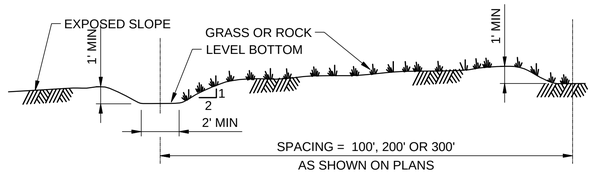
NOTES:

1. SOURCE MATERIAL AND DEBRIS FROM TRANSPORT VEHICLES SHALL BE REMOVED PRIOR TO LEAVING THE SITE. TIRES, TAILGATE, BUMPERS AND OTHER VEHICLE PARTS COLLECTING SOURCE MATERIAL SHALL BE INSPECTED AND DISCOVERED SOURCE MATERIAL SHALL BE REMOVED BY BRUSHING OR SOME OTHER PHYSICAL METHOD.
2. REMOVED SOURCE MATERIAL SHALL BE COLLECTED AND CONVEYED TO THE ADJACENT COLLECTION DITCH. THE COLLECTION DITCH SHALL BE DESIGNED TO COLLECT SOURCE MATERIAL AND STORMWATER RUNOFF FOR THE 25-YEAR, 24-HOUR DESIGN STORM.
3. DIMENSIONS OF WET DECONTAMINATION AREA AND SOURCE MATERIAL COLLECTION DITCH MAY VARY DEPENDING ON THE MAXIMUM SIZE OF TRANSPORT VEHICLES AND CONTRACTOR PREFERENCE.
4. DEBRIS AND SOURCE MATERIAL THAT ARE INADVERTENTLY TRACKED OFFSITE ONTO ROADS SHALL BE REMOVED AND CLEANED IMMEDIATELY UPON DISCOVERY. ALL SOURCE MATERIAL TRANSPORT VEHICLES SHALL HAVE A TARP OVER THE LOAD PRIOR TO LEAVING THE SITE TO PREVENT FUGITIVE DUST AND OFFSITE CONTAMINATION OF SOURCE MATERIAL.
5. EXCAVATION EQUIPMENT AND OTHER CONSTRUCTION EQUIPMENT AND TRAILERS SHALL BE SIMILARLY DECONTAMINATED PRIOR TO LEAVING THE SITE.

TRUCK DRY DECONTAMINATION AREA

NTS

3125–136



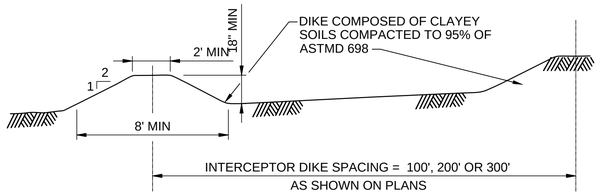
BOTTOM WIDTH: 2' MINIMUM, THE BOTTOM WIDTH SHALL BE LEVEL

DEPTH: 1' MINIMUM

SIDE SLOPE: 2H:1V OR FLATTER

GRADE: MAXIMUM 5 PERCENT WITH POSITIVE DRAINAGE TO A SUITABLE OUTLET (SUCH AS A SEDIMENTATION POND)

INTERCEPTOR SWALE



TEMPORARY INTERCEPTOR DIKES

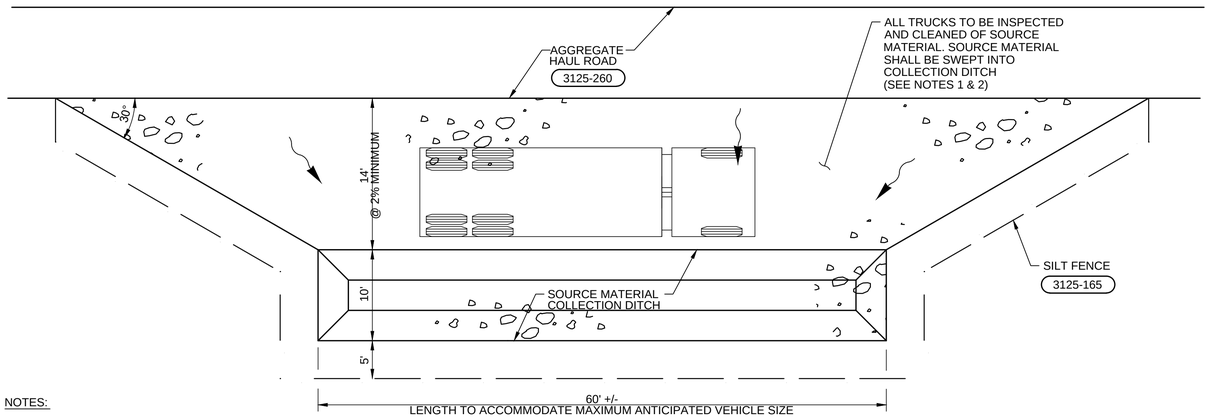
NOTES:

1. DIKE MATERIAL SHALL BE CLASSIFIED AS SP, SM OR CL IN ACCORDANCE WITH ASTMD-2487.

INTERCEPTOR SWALES AND DIKES

NTS

3125–145



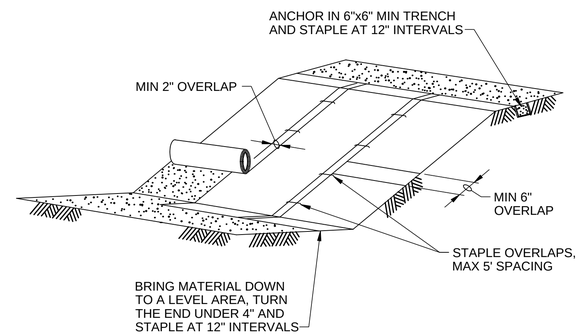
NOTES:

1. SOURCE MATERIAL AND DEBRIS FROM TRANSPORT VEHICLES SHALL BE REMOVED PRIOR TO LEAVING THE SITE. TIRES, TAILGATE, BUMPERS AND OTHER VEHICLE PARTS COLLECTING SOURCE MATERIAL SHALL BE INSPECTED AND DISCOVERED SOURCE MATERIAL SHALL BE REMOVED BY BRUSHING OR SOME OTHER PHYSICAL METHOD.
2. REMOVED SOURCE MATERIAL SHALL BE COLLECTED AND CONVEYED TO THE ADJACENT COLLECTION DITCH. THE COLLECTION DITCH SHALL BE DESIGNED TO COLLECT SOURCE MATERIAL AND STORMWATER RUNOFF FOR THE 25-YEAR, 24-HOUR DESIGN STORM.
3. DIMENSIONS OF WET DECONTAMINATION AREA AND SOURCE MATERIAL COLLECTION DITCH MAY VARY DEPENDING ON THE MAXIMUM SIZE OF TRANSPORT VEHICLES AND CONTRACTOR PREFERENCE.
4. DEBRIS AND SOURCE MATERIAL THAT ARE INADVERTENTLY TRACKED OFFSITE ONTO ROADS SHALL BE REMOVED AND CLEANED IMMEDIATELY UPON DISCOVERY. ALL SOURCE MATERIAL TRANSPORT VEHICLES SHALL HAVE A TARP OVER THE LOAD PRIOR TO LEAVING THE SITE TO PREVENT FUGITIVE DUST AND OFFSITE CONTAMINATION OF SOURCE MATERIAL.
5. EXCAVATION EQUIPMENT AND OTHER CONSTRUCTION EQUIPMENT AND TRAILERS SHALL BE SIMILARLY DECONTAMINATED PRIOR TO LEAVING THE SITE.
6. HDPE GEOMEMBRANE SHALL BE MANUFACTURED BY GSE LINING TECHNOLOGY, INC., HOUSTON, TX OR EQUIVALENT. INSTALL AND WELD ALL SEEMS IN ACCORDANCE WITH THE GEOMEMBRANE MANUFACTURER'S RECOMMENDATION.

TRUCK WET DECONTAMINATION AREA

NTS

3125–137



NOTES:

1. IF THERE IS A BERM AT THE TOP OF SLOPE, ANCHOR UPSLOPE OF THE BERM.
2. SLOPE SURFACE SHALL BE SMOOTH BEFORE PLACEMENT FOR PROPER SOIL CONTACT.
3. DO NOT STRETCH BLANKETS/MATTINGS TIGHT, ALLOW THE ROLLS TO MOLD TO ANY IRREGULARITIES.
4. STAPLING PATTERN AS PER MANUFACTURER'S RECOMMENDATIONS.
5. FOR SLOPES LESS THAN 3:1, ROLLS MAY BE PLACED IN HORIZONTAL STRIPS.
6. LIME, FERTILIZE AND SEED BEFORE INSTALLATION. PLANTING OF SHRUBS, TREES, ETC SHOULD OCCUR AFTER INSTALLATION.

EROSION AND SEDIMENT CONTROL BLANKET ON SLOPE

NTS

3125–150

NO.	DATE	DSGN	DR	CHK	REVISION	BY	APVD
		T MALONE	C CHILDRESS	KR CHANG	APVD		M WILSON

EPA

TAR CREEK SOURCE MATERIAL OPERABLE UNIT 4
OTTAWA COUNTY, OKLAHOMA

CIVIL

DISTAL AREA 7 DETAILS

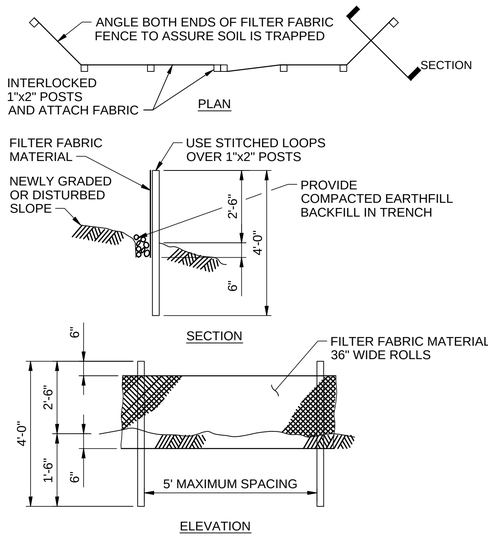
VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

DATE	FEBRUARY 2012
PROJ	413831
DWG	DT003-C-5001DA7
SHEET	

ISSUED FOR CLIENT REVIEW

PW SERVER LOCATION: WRG FILENAME: $FILENAME PLOT DATE: $PLOTDATE PLOT TIME: $PLOTTIME



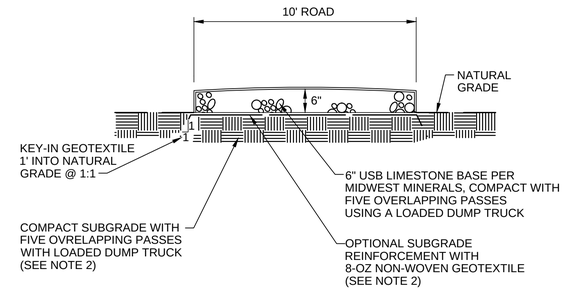
NOTES:

1. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
2. 1"x2" WOOD OR STEEL FENCE POSTS.
3. STITCHED LOOPS TO BE INSTALLED DOWNHILL SIDE OF SLOPE.
4. COMPACT ALL AREAS OF FILTER FABRIC TRENCH.

SILT FENCE

NTS

3125–165



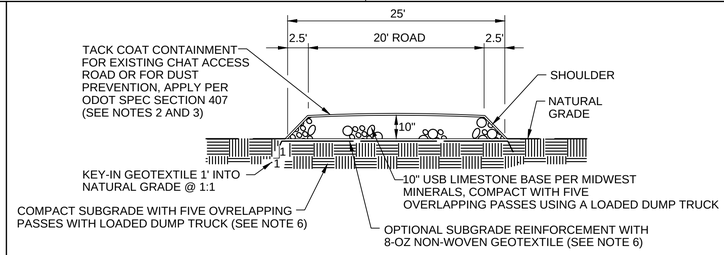
NOTES:

1. THE AGGREGATE ROAD SHALL BE CONSTRUCTED TO MAINTAIN THE EXISTING DRAINAGE PATTERNS AND SHALL NOT TRAP STORMWATER RUNOFF. DEPRESSIONS IN THE ROADWAY OR CULVERTS MAY BE REQUIRED IN SOME AREAS TO ALLOW STORMWATER TO FLOW FREELY. CONTRACTOR TO COORDINATE WITH ENGINEER WHEN EVALUATING DRAINAGE CONDITIONS.
2. CONTRACTOR TO COORDINATE WITH ENGINEER REGARDING THE PROPOSED ROAD SUBGRADE. FOR MOST PROPOSED ROAD SEGMENTS, COMPACTING THE SUBGRADE WITH 5 OVERLAPPING PASSES WITH A LOADED DUMP TRUCK IS SUFFICIENT. HOWEVER, IF A ROAD SEGMENT IS DEEMED TOO SOFT OR WET, THEN A SUGRADE REINFORCEMENT GEOTEXTILE MAY BE REQUIRED.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE ROAD FOR THE DURATION OF LOCALIZED SITE REMEDIATION.

AGGREGATE ACCESS ROAD

NTS

3125–259



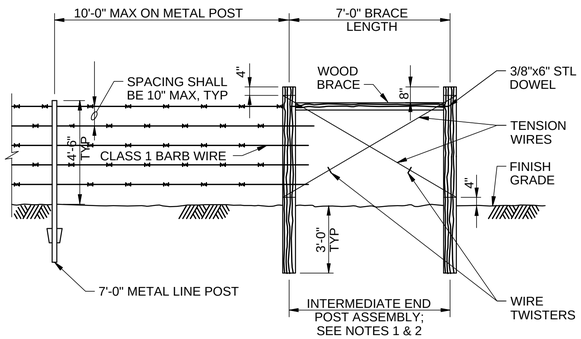
NOTES:

1. CONTRACTOR TO ASSESS THE ACCESS ROUTE TO EACH SOURCE AREA. IF THE EXISTING ROUTE IS INADEQUATE OR IF NO ROAD IS PRESENT, THE CONTRACTOR SHALL INSTALL AN AGGREGATE ACCESS ROAD PER THIS DETAIL.
2. IF THE CONTACTOR IS TO USE AN EXISTING ROAD AND THE ROAD IS COMPOSED OF CHAT MATERIAL, THE CONTRACTOR HAS TWO OPTIONS:
   a. OPTION 1 IS TO REPLACE THE CHAT ROAD WITH THIS DETAIL. THE EXCAVATED CHAT ROAD SHALL BE DISPOSED PER THE SPECIFICATIONS.
   b. OPTION 2 IS TO APPLY AN ASPHALTIC TACK COAT OVER THE CHAT ROAD TO PREVENT THE GENERATION OF HAZARDOUS CHAT DUST.
3. THE ASPHALTIC TACK COAT SHALL BE IN ACCORDANCE WITH ODOT SPEC SECTION 407 AND APPLIED AS NECESSARY TO PREVENT THE GENERATION OF DUST. THE TACK COAT CAN BE USED TO CONTAIN EXISTING CHAT ROADS OR TO PREVENT DUST FROM NEW AGGREGATE ROADS, IF DUST IS PROBLEMATIC.
4. THE AGGREGATE ROAD SHALL BE CONSTRUCTED TO MAINTAIN THE EXISTING DRAINAGE PATTERNS AND SHALL NOT TRAP STORMWATER RUNOFF. DEPRESSIONS IN THE ROADWAY OR CULVERTS MAY BE REQUIRED IN SOME AREAS TO ALLOW STORMWATER TO FLOW FREELY. CONTRACTOR TO COORDINATE WITH ENGINEER WHEN EVALUATING DRAINAGE CONDITIONS.
5. AFTER SOURCE EXCAVATION IS COMPLETE, THE AGGREGATE ACCESS ROAD AND/OR THE EXISTING CHAT ROAD SHALL BE REMOVED. ADDITIONALLY, ALL EVIDENCE OF TACK COAT SHALL BE REMOVED FROM SITE.
6. CONTRACTOR TO COORDINATE WITH ENGINEER REGARDING THE PROPOSED ROAD SUBGRADE. FOR MOST PROPOSED ROAD SEGMENTS, COMPACTING THE SUBGRADE WITH 5 OVERLAPPING PASSES WITH A LOADED DUMP TRUCK IS SUFFICIENT. HOWEVER, IF A ROAD SEGMENT IS DEEMED TOO SOFT OR WET, THEN A SUGRADE REINFORCEMENT GEOTEXTILE MAY BE REQUIRED.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE ROAD FOR THE DURATION OF LOCALIZED SITE REMEDIATION.

AGGREGATE ACCESS ROAD & TACK COAT CONTAINMENT

NTS

3125–260



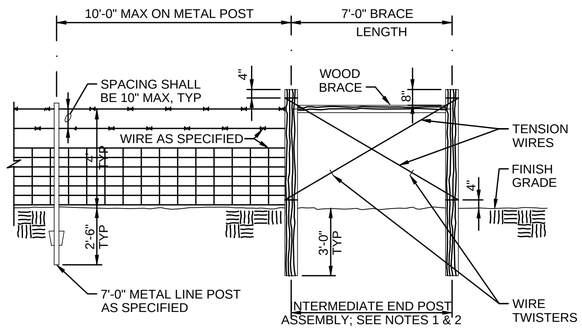
NOTES:

1. SPACING FOR INTERMEDIATE END POST ASSEMBLIES SHALL BE 400 FT MAXIMUM.
2. 6"x6"x8'-0" WOOD POSTS TO BE TREATED WITH PRESERVATIVE.

BARBED WIRE FENCE

NTS

3231–450



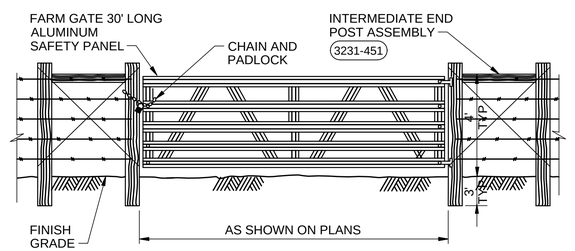
NOTES:

1. SPACING FOR INTERMEDIATE END POST ASSEMBLIES SHALL BE 400 FT MAXIMUM, UNLESS OTHERWISE NOTED.
2. 6"x6"x8'-0" WOOD POSTS TO BE TREATED WITH PRESERVATIVE AS SPECIFIED.

WIRE FIELD FENCE

NTS

3231–451



NOTE:
1. POST SPACING AND POST DEPTH PER FENCE INSTALLER RECOMMENDATIONS.

FIELD GATE

NTS

3231–458

NO.	DSGN	DATE	REVISION	BY	APVD
	DR		APVD		M.WILSON
			CHK		KR CHANG
					C.CHILDRESS
					T.MALONE

EPA

TAR CREEK SOURCE MATERIAL
OPERABLE UNIT 4
OTTAWA COUNTY, OKLAHOMA

CIVIL

DISTAL AREA 8
DETAILS

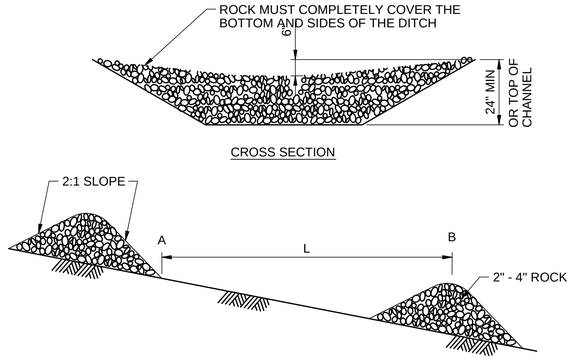
VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	APRIL 2012
PROJ	413831
DWG	DT006-C-5001DA8
SHEET	

ISSUED FOR CLIENT REVIEW

PW SERVER LOCATION: WBG FILENAME: $FILENAME PLOT DATE: $PLOTDATE PLOT TIME: $PLOTTIME



L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATIONS

DAM SPACING

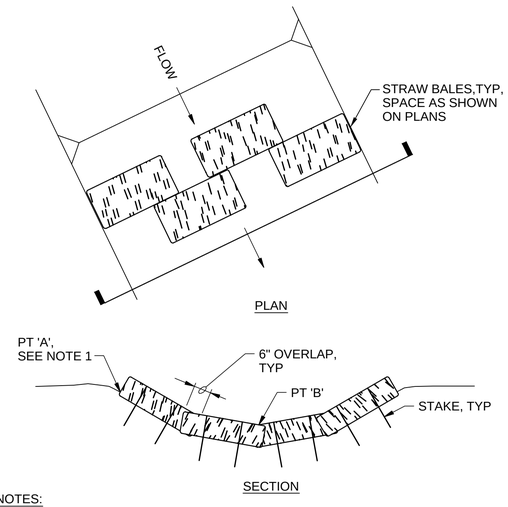
NOTES

1. ANY SEDIMENT DEPOSITION OF MORE THAN 0.5 FEET SHALL BE REMOVED SO THAT THE CHANNEL IS RESTORED TO ITS DESIGN CAPACITY.
2. THE CHANNEL SHALL BE EXAMINED FOR SIGNS OF SCOURING AND EROSION OF THE BED AND BANKS. IF SCOURING OR EROSION HAS OCCURRED, AFFECTED AREAS SHALL BE PROTECTED BY RIP-RAP OR AN EROSION CONTROL BLANKET.
3. BULL ROCK OR DEVELOPMENT ROCK IS SUITABLE FOR USE IN CHECK DAMS.

CHECK DAMS

NTS

3125–160



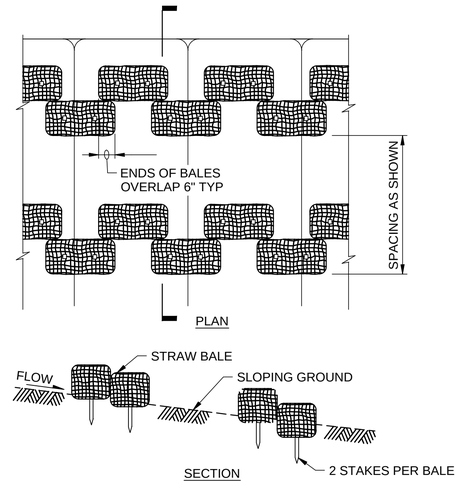
NOTES:

1. POINT 'A' MUST BE 6" MINIMUM HIGHER THAN PT 'B'.
2. STAKING OF BALES IS REQUIRED USING (2)2"x2"x3' LONG WOOD STAKES OR APPROVED EQUAL PER BALE.
3. DRIVE STAKES MINIMUM 12" INTO GROUND AND FLUSH WITH TOP OF BALES.
4. EMBED BALES MINIMUM OF 4" INTO GROUND SURFACE.
5. BIOFILTER BAGS TO BE USED, IF SPECIFIED.

STRAW BALES IN DITCHES

NTS

3125–170



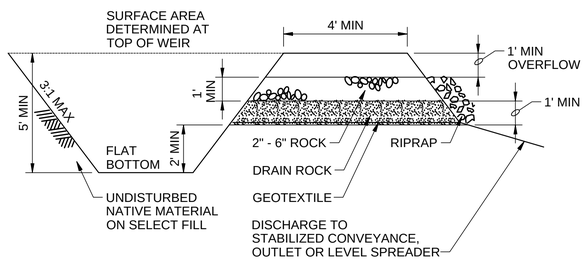
NOTES:

1. STAKING OF BALES IS REQUIRED USING (2) 2"x2"x3' LONG WOOD STAKES OR APPROVED EQUAL PER BALE.
2. DRIVE STAKES MINIMUM 12" INTO GROUND AND FLUSH WITH TOP OF BALES.
3. EMBED BALES MINIMUM OF 4" INTO GROUND SURFACE.
4. BIOFILTER BAGS TO BE USED, IF SPECIFIED.

STRAW BALES FOR OVERLAND FLOW

NTS

3125–171



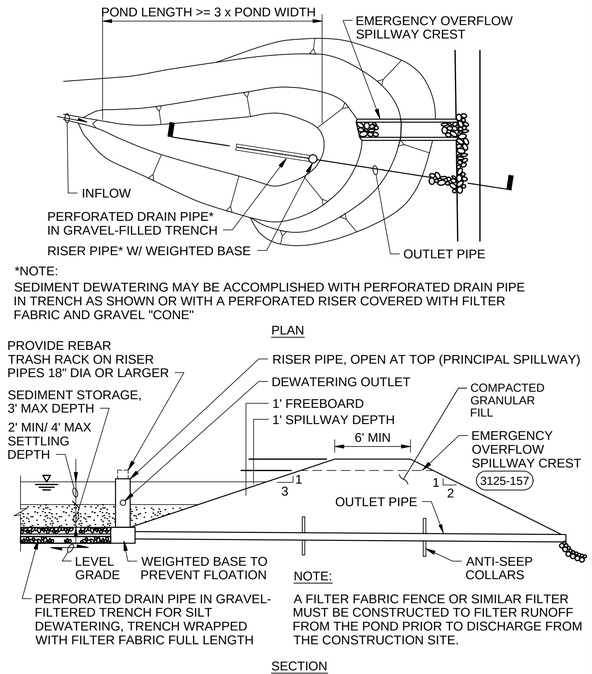
NOTES

1. SEDIMENT SHALL BE REMOVED FROM THE TRAP WHEN IT REACHES 1 FOOT IN DEPTH.
2. ANY DAMAGE TO THE TRAP EMBANKMENTS OR SLOPES SHALL BE REPAIRED.

SEDIMENT TRAP

NTS

3125–175



*NOTE:
SEDIMENT DEWATERING MAY BE ACCOMPLISHED WITH PERFORATED DRAIN PIPE IN TRENCH AS SHOWN OR WITH A PERFORATED RISER COVERED WITH FILTER FABRIC AND GRAVEL "CONE"

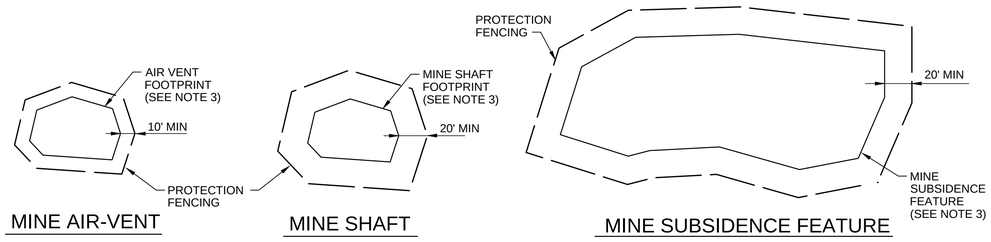
NOTE:

A FILTER FABRIC FENCE OR SIMILAR FILTER MUST BE CONSTRUCTED TO FILTER RUNOFF FROM THE POND PRIOR TO DISCHARGE FROM THE CONSTRUCTION SITE.

SEDIMENT POND

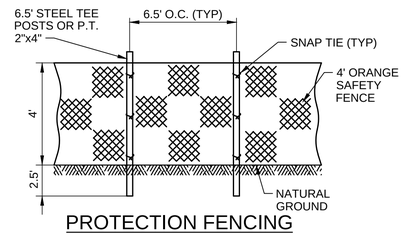
NTS

3125–180



NOTES:

1. MINE OPENINGS AND SUBSIDENCE FEATURES ARE SUSCEPTIBLE TO ADDITIONAL COLLAPSE AND INSTABILITY DURING SOURCE REMOVAL. OTHER AREAS WITHIN THE SITE AND ALONG THE SITE ACCESS ROAD MAY HAVE SUBSURFACE VOIDS CAPABLE OF COLLAPSE AT ANY TIME. THE CONTRACTOR SHALL BE ALERTED TO THESE SAFETY HAZARDS AND REMAIN CAUTIOUS WHEN WORKING AROUND MINE OPENINGS AND SUBSIDENCE FEATURES.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SAFETY AT ALL AREAS OF THE SITE.
3. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL MINE OPENINGS AND SUBSIDENCE FEATURES PRIOR TO SOURCE REMOVAL. CONTRACTOR SHALL FLAG THE LIMITS OF EACH FEATURE AND PLACE PROTECTION FENCING AT A MINIMUM OF 10 FEET FROM MINE AIR VENTS AND 20 FEET FROM MINE SHAFTS AND SUBSIDENCE FEATURES.
4. APPROXIMATE LOCATIONS FOR MINE OPENING AND SUBSIDENCE FEATURES ARE SHOWN ON THE PLANS. HOWEVER, NO FIELD VERIFICATION OF THESE LOCATIONS HAVE TAKEN PLACE. THEREFORE, THE CONTRACTOR SHALL LOCATE ALL FEATURES PRIOR TO WORK AND REPORT ANY DISCREPANCIES TO THE PROJECT MANAGER.
5. THE CONTRACTOR IS RESPONSIBLE FOR ASSESSING THE STABILITY OF EACH OPENING AND SUBSIDENCE FEATURE. CONTRACTOR MAY REQUIRE A GEOTECHNICAL INVESTIGATION OR GEOPHYSICAL INVESTIGATION TO FULLY ASSESS MINE FEATURES TO DETERMINE THEIR STABILITY AND THE CORRESPONDING LOCATION OF PROTECTION FENCING TO ENSURE WORKER SAFETY.



MINING OPENING AND SUBSIDENCE PROTECTION FENCING

NTS

3125–200

NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
		T MALONE	C CHILDRESS	KR CHANG	APVD	M WILSON	

EPA

TAR CREEK SOURCE MATERIAL OPERABLE UNIT 4
OTTAWA COUNTY, OKLAHOMA

CIVIL

DISTAL AREA 8 DETAILS

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

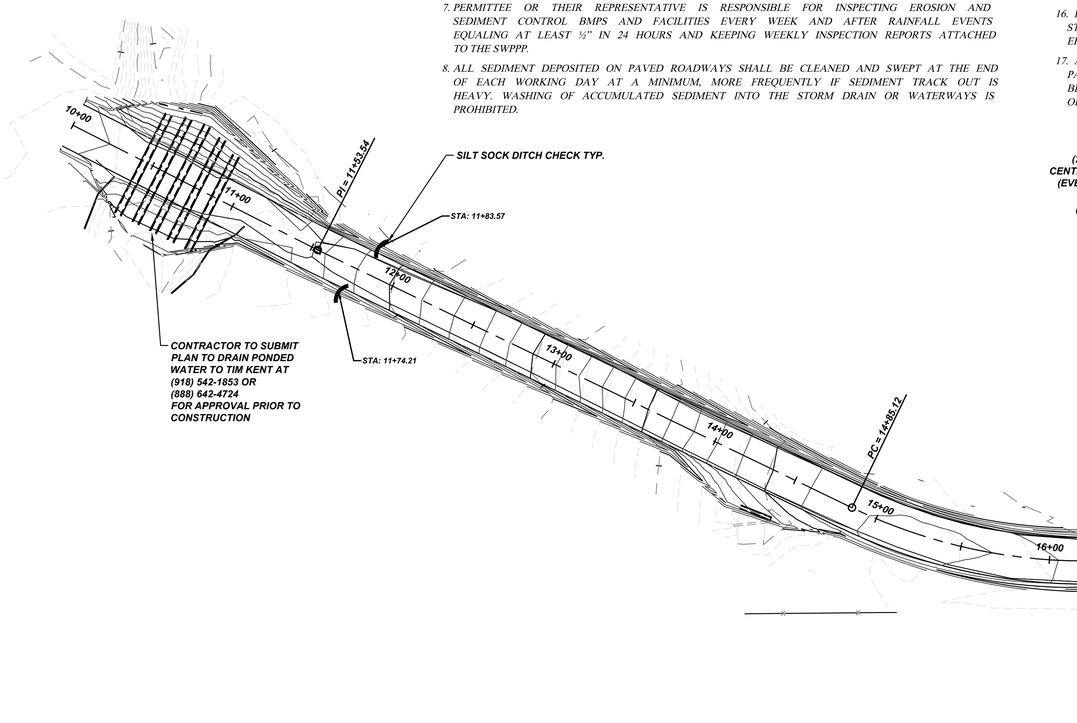
DATE	APRIL 2012
PROJ	413831
DWG	DT005-C-5001DA8
SHEET	

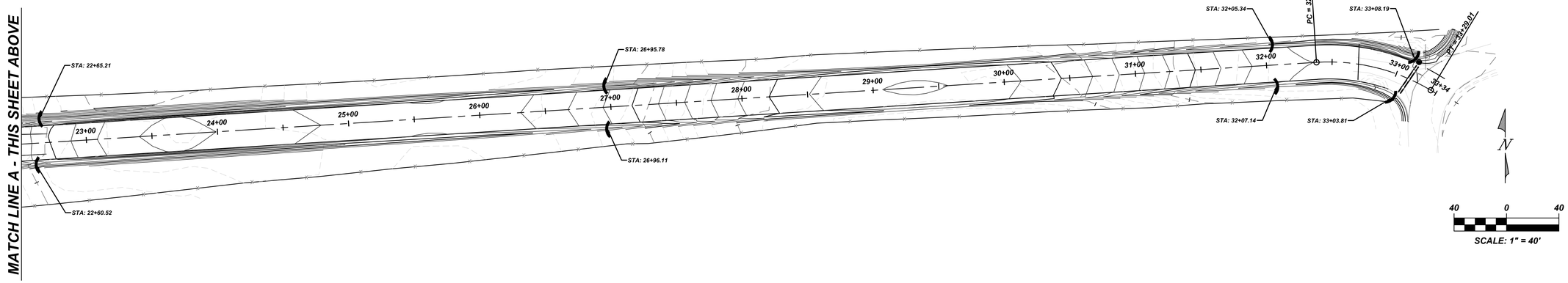
ISSUED FOR CLIENT REVIEW

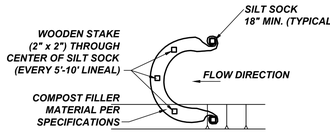
PW SERVER LOCATION: WBG FILENAME: $FILENAME PLOT DATE: $PLOTDATE PLOT TIME: $PLOTTIME

SEDIMENT AND EROSION CONTROL GENERAL NOTES:

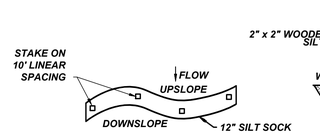
1. THIS PLAN SHOWS THE LOCATION AND DETAILS PRIMARY SEDIMENT CONTROLS TO BE CONSTRUCTED. THE PERMITTEE OR THEIR REPRESENTATIVE IS RESPONSIBLE FOR CONTROLLING EROSION AND DISCHARGE OF SEDIMENT FROM THE SITE AT ALL TIMES DURING CONSTRUCTION. THE PERMITTEE OR THEIR REPRESENTATIVE SHALL PROVIDE NECESSARY MEASURES DURING ALL PHASES OF CONSTRUCTION REGARDLESS OF WHETHER THEY ARE SPECIFICALLY NOTED ON THIS PLAN AND SHALL MAINTAIN AND REPLACE CONTROLS AS NECESSARY DURING CONSTRUCTION TO PREVENT THE MOVEMENT OF SEDIMENT DOWNSTREAM.
2. ALL EROSION AND SEDIMENT CONTROL BMPS SHALL BE INSTALLED AND MAINTAINED ACCORDING TO THE SPECIFICATIONS.
3. THE PERMITTEE OR THEIR REPRESENTATIVE IS RESPONSIBLE FOR INFORMING ALL PARTIES ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE SWPPP.
4. THE LIMITS OF CLEARING, GRADING, AND DISTURBANCE, AS SHOWN ON THE PLAN(S), SHALL BE KEPT TO A MINIMUM WITHIN THE APPROVED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE THE LIMITS OF DISTURBANCE SHALL REMAIN TOTALLY UNDISTURBED. PHASING SHALL BE USED TO MINIMIZE THE AMOUNT OF DISTURBED AREA AT ANY GIVEN TIME.
5. SEDIMENT BASINS, IF SHOWN ON THIS PLAN, MUST BE INSTALLED WITHIN 10 CALENDAR DAYS AFTER CONSTRUCTION BEGINS OR PRIOR TO 2 OR MORE ACRES BEING DISTURBED, WHICHEVER OCCURS FIRST.
6. A COPY OF THE SWPPP AND INSPECTION REPORTS MUST BE ACCESSIBLE AT THE CONSTRUCTION SITE.
7. PERMITTEE OR THEIR REPRESENTATIVE IS RESPONSIBLE FOR INSPECTING EROSION AND SEDIMENT CONTROL BMPS AND FACILITIES EVERY WEEK AND AFTER RAINFALL EVENTS EQUALING AT LEAST ½" IN 24 HOURS AND KEEPING WEEKLY INSPECTION REPORTS ATTACHED TO THE SWPPP.
8. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE CLEANED AND SWEPT AT THE END OF EACH WORKING DAY AT A MINIMUM, MORE FREQUENTLY IF SEDIMENT TRACK OUT IS HEAVY. WASHING OF ACCUMULATED SEDIMENT INTO THE STORM DRAIN OR WATERWAYS IS PROHIBITED.
9. DUST SHALL BE CONTROLLED DURING CONSTRUCTION AND CONSTRUCTION AREAS SHALL BE WATERED WHENEVER CONDITIONS WARRANT.
10. SEDIMENT REMOVED FROM EROSION AND SEDIMENT CONTROLS AND FACILITIES SHALL NOT BE PLACED ON STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND SHALL BE IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.
11. SEDIMENT ACCUMULATION IN BASINS SHALL BE REMOVED UPON ACCUMULATION OF 6 INCHES OF SEDIMENT.
12. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH AN APPROVED SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER NON DISTURBED AREAS.
13. THE PERMITTEE OR THEIR REPRESENTATIVE IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS OFF-SITE BORROW AND FILL AREAS.
14. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT DEPOSITION, THE PERMITTEE OR THEIR REPRESENTATIVE SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT DEPOSITION.
15. THE PERMITTEE OR THEIR REPRESENTATIVE SHALL STABILIZE ALL DISTURBED AREAS NOT SUBJECT TO CONSTRUCTION ACTIVITY WITHIN 14 CALENDAR DAYS AFTER ACTIVITY HAS CEASED.
16. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITHIN 7 CALENDAR DAYS OF ESTABLISHMENT WITH SOD OR SEED WITH APPROVED EROSION CONTROL MATTING OR BY OTHER APPROVED MEASURES.
17. ALL DISTURBED AREAS NOT RECEIVING OTHER PERMANENT STABILIZATION SUCH AS PAVEMENT, ROOFS, SOD, ETC., SHALL BE SEEDED AND MULCHED, AS SPECIFIED IN THE SWPPP BEFORE TEMPORARY SEDIMENT CONTROLS CAN BE REMOVED AND PRIOR TO FINAL APPROVAL OF CONSTRUCTION.
18. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
19. AFTER FINAL STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS SHALL BE STABILIZED IMMEDIATELY.
20. SILT AND DEBRIS MUST BE REMOVED FROM STORM DRAINS, CONVEYANCE CHANNELS, BASINS OR ANY PART OF THE STORMWATER SYSTEM PRIOR TO FINAL SITE STABILIZATION APPROVAL.
21. THE FOLLOWING WILL BE IMPLEMENTED ACCORDING TO LOCAL, STATE, AND FEDERAL REGULATIONS: LIQUID AND SOLID WASTE MANAGEMENT, CHEMICAL AND MATERIAL DELIVERY AND STORAGE, CONCRETE WASTE, PAINTING AND DRYWALL WORK, VEHICLE FUELING, MAINTENANCE AND CLEANING, ASPHALT, SAWCUTTING, CORING, AND GRINDING ACTIVITIES, BUILDING BLASTING AND CLEANING, CEMENT, GROUT AND MORTAR WORK, SANITARY AND SEPTIC WASTES, WATER LINE DISINFECTION, FLUSHING, DEWATERING, AND OTHER NON-STORMWATER DISCHARGES, HAZARDOUS WASTE MANAGEMENT, AND PROHIBITED DISCHARGES.
22. PERMITTEE OR THEIR REPRESENTATIVE SHALL CLOSE OUT THEIR LAND DISTURBANCE PERMIT AT THE END OF CONSTRUCTION ACTIVITIES AND AFTER FINAL STABILIZATION MEASURE AND REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROLS HAVE BEEN REVIEWED.
23. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS.
24. PERMITTEE OR THEIR REPRESENTATIVE SHALL MEET ALL OTHER STATE AND FEDERAL CLEAN WATER REQUIREMENTS.



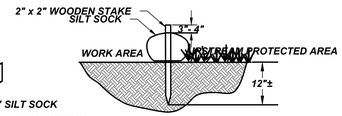




DITCH CHECK PLAN VIEW



SLOPE PROTECTION PLAN VIEW



SECTION

EROSION CONTROL BARRIER DETAIL

NOTES:

1. INSTALL ACCORDING TO MANUFACTURER SPECIFICATIONS.
2. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY INSPECTOR.

Prepared by:
CJW
CJW Transportation Consultants, L.L.C.
CJW Transportation Consultants, L.L.C. Engineering MO C.A. #2006012385
5051 S. National Suite 4-110 Springfield, MO 65810
Tel: 417.889.3400 Fax: 417.889.3402 www.GoCJW.com

LICENSED PROFESSIONAL ENGINEER
DANE SEILER PE24862
10/15/13
OKLAHOMA

HAUL ROAD
QUAPAW TRIBE OF OKLAHOMA
OTTAWA COUNTY, OKLAHOMA

No.:	Description:	Date:
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SURVEY BY	CJW
DATE	10/15/13
DWG	0000-PLAN
DESIGN	CJW
DRAWN	CJW
CHECKED	CJW
SCALE HOR.	1"=20'
SCALE VERT.	N/A

TEMP EROSION CONTROL

SHEET NO.
007
CJW NO. 1379 OF 07

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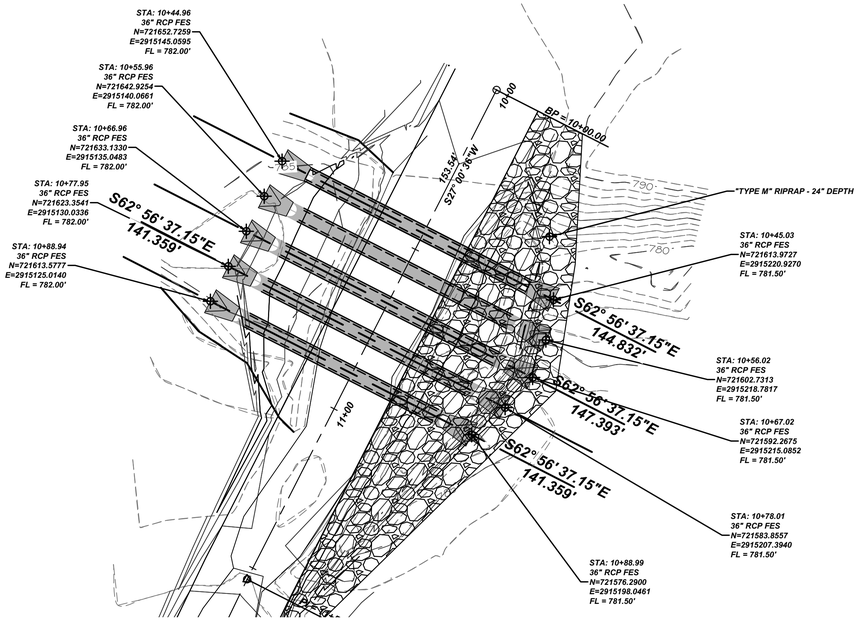
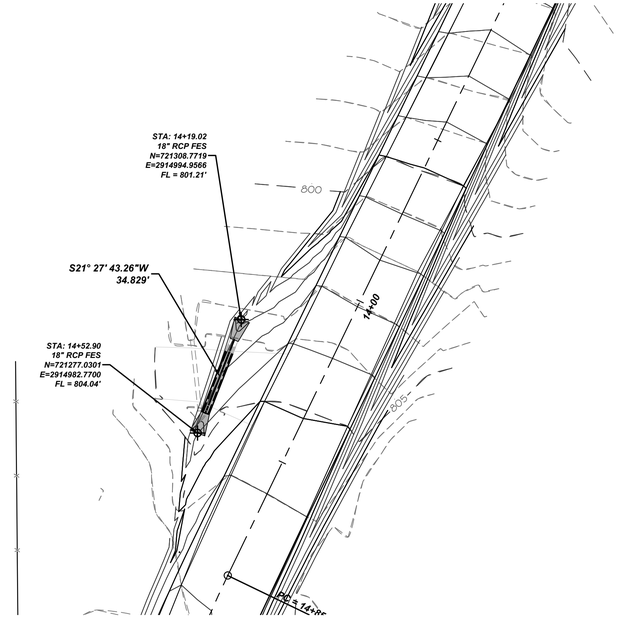
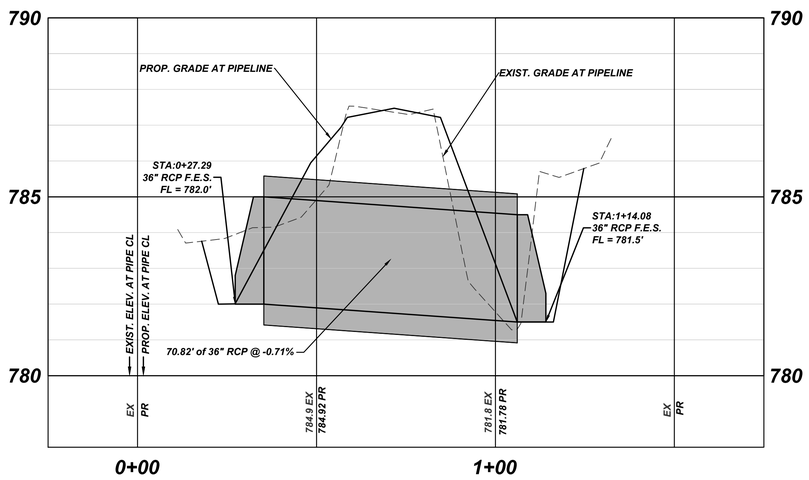


CULVERT PLAN A

NOTE: PLAN STATIONS AND OFFSETS ARE BASED ON HAUL RD.

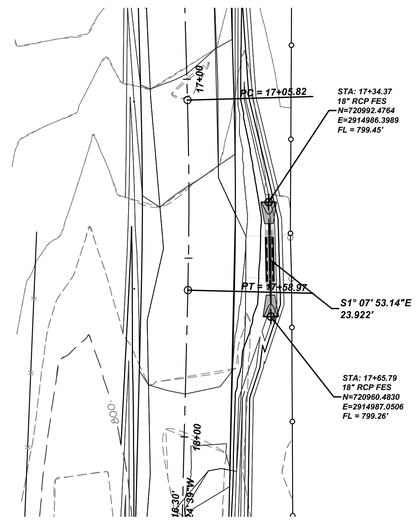


WEST DRIVEWAY CULVERT PLAN



CENTERLINE MIDDLE PIPE PROFILE

SCALE: 1"=20' HORZ.
1"=2' VERT.



EAST DRIVEWAY STORM PLAN

N

20 0 20

SCALE: 1" = 20'

Prepared by:
CJW
CJW Transportation Consultants, L.L.C.
CJW Transportation Consultants, L.L.C. Engineering MO C.A. #2006012385
5051 S. National Suite 4-110 Springfield, MO 65810
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LICENSED PROFESSIONAL ENGINEER
DANE SEILER
PE24862
10/15/13
OKLAHOMA

HAUL ROAD
QUAPAW TRIBE OF OKLAHOMA
OTTAWA COUNTY, OKLAHOMA

No.:	Description:	Date:
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SURVEY BY	CJW
DATE	10/15/13
DWG	CUL P&P
DESIGN	CJW
DRAWN	CJW
CHECKED	CJW
SCALE HOR.	1" = 20'
SCALE VERT.	1" = 2'

CULVERT PLAN & PROFILE

SHEET NO.
005
CJW NO. 1379 OF 07

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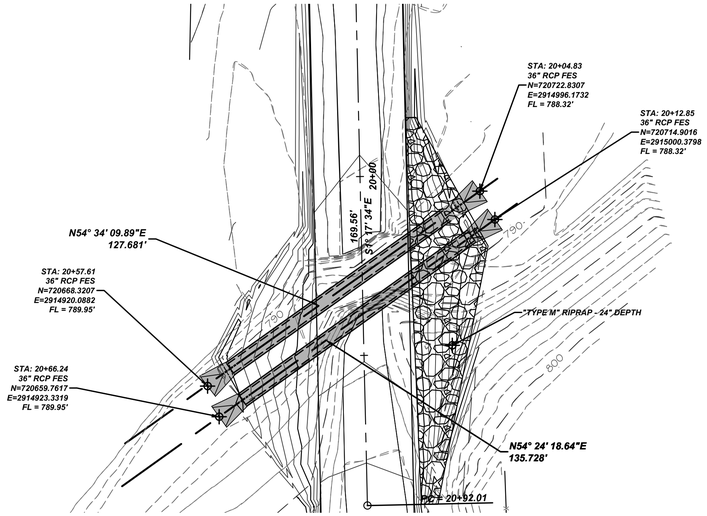
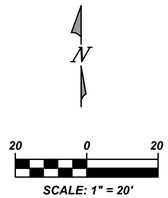
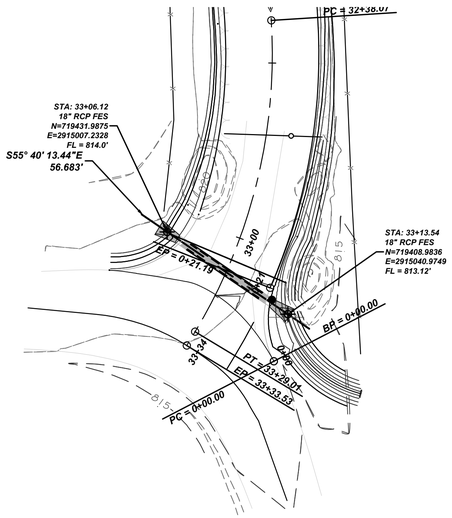


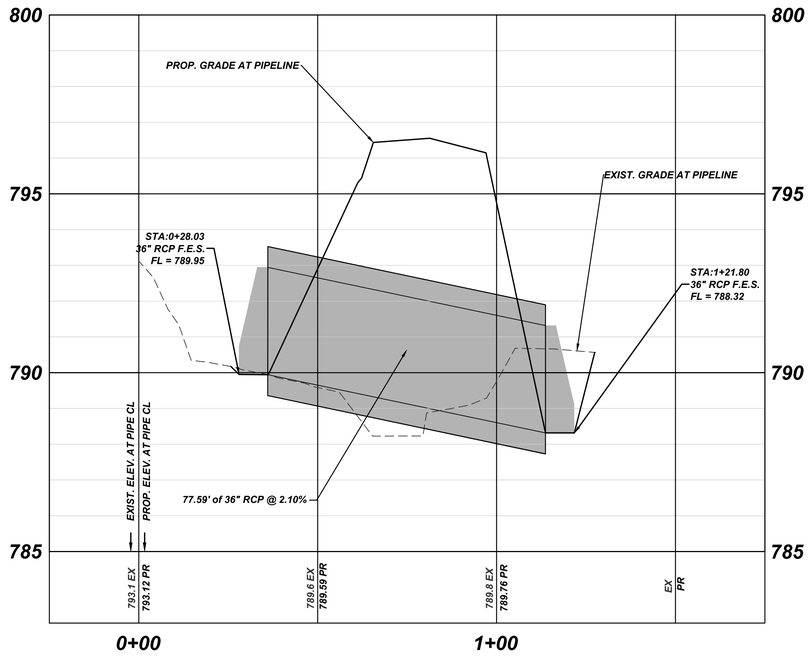
CULVERT PLAN B

NOTE: PLAN STATIONS AND OFFSETS ARE BASED ON HAUL RD.





HAUL RD. & E. 57TH RD. STORM PLAN



CENTERLINE PLAN PROFILE

SCALE: 1"=20' HORZ.
1"=2' VERT.

Prepared by:
CJW
CJW Transportation Consultants, L.L.C.
CJW Transportation Consultants, L.L.C. Engineering MO C.A. #2006012385
3051 S. National Suite 4110 Springfield, MO 65810
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LICENSED PROFESSIONAL ENGINEER
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10/15/13
OKLAHOMA

HAUL ROAD
QUAPAW TRIBE OF OKLAHOMA
OTTAWA COUNTY, OKLAHOMA

No.	Description:	Date:
---	---	--/--/--

SURVEY BY	CJW
DATE	10/15/13
DWG	CUL P&P
DESIGN	CJW
DRAWN	CJW
CHECKED	CJW
SCALE HOR.	1" = 20'
SCALE VERT.	1" = 2'

CULVERT PLAN & PROFILE

SHEET NO.
006
CJW NO. 1379 OF 07

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Appendix D

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Chemical Inventory List

[See Attached]

Record of Chemical Usage

The Primary Contractor and the associated subcontractors will maintain the following inventory list of the type and amount of all hazardous and/or toxic chemicals that will be used at the construction site. This includes, but is not restricted to any insecticide, herbicide, other pesticide, lubricating fluids, and fuels. Construction personnel should be trained for the proper storage and use of such chemicals.

Chemical Name/Type	Amount Stored /Location	Date Brought To Site

Reporting of Incidents

An incident reporting and recordkeeping system to document incidents such as spills, leaks, accidents, and near misses has been developed for the construction project. The purpose of this system is to minimize recurrence, expedite mitigation or cleanup activities, and comply with regulatory requirements. The reporting system delineates the avenue for reporting and communications by including the following list of names and phone numbers of key personnel that are responsible for specific work areas.

Name/Title	Phone Number

Releases in Excess of Reportable Quantities

For activities that require the use of hazardous substances and/or oil the type and quantity of such substances that will be used and/or stored at the construction site should be identified. In the event of a spill or release of a hazardous substance or oil in an amount equal to, or in excess of, a reportable quantity established under 40 CFR Parts 110, 117, and 302 during a 24 hour period, the following actions must be taken:

Any person in charge of the facility is required to notify the National Response Center (NRC) at **1-800-424-8802** in accordance with the requirements of §110, §117, or §302 as soon as he/she has knowledge of the release.

- The responsible construction personnel are required to notify the designated management representative of the Primary Site Contractor and the Tribal Official immediately.
- The Primary Site contractor and/or the Tribal Representative will prepare and submit a written record of a description of the type of release, the date of the release, an estimation of the amount of the release, the circumstances leading to the release, and the preventative measures to avoid the recurrence of a release, within 14 calendar days.

Additionally, the SWPPP Plan will be reviewed, and modified where appropriate, to identify measures to prevent the reoccurrence of such releases and to respond to such releases.

Incident/Spill Report

Name of Person Preparing Report:	Date Completed:
Date of Incident:	
Time Incident Occurred:	
Description of Spill or Leak:	
Location:	
Type of Material Released:	
Quantity Released:	
Amount of Material Recovered:	
Duration of Release:	
Pollutants Involved:	
Cause of the Incident:	
Weather Conditions During Incident:	
Quantity of Stormwater Released:	
Parties Notified:	
Is Clean-Up Complete?	
Preventive Measures Taken to Prevent Recurrence:	
Additional Information:	

Contact List
National Response Center – 1-800-424-8802

Appendix E

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Inspection Form / Recordkeeping Documents

[See Attached]

APPENDIX E
SWPPP INSPECTION CHECKLIST

Location of Inspection:_____ **Date:**_____

Inspector:_____ **Company:**_____

Inspection Procedure	Yes/No	Comments	Corrective Action Needed	Date Corrective Action Taken
Is there any evidence of sediment leaving the site? Is so, note areas				
Have any adverse impacts, such as, flooding, structural damage, erosion, spillage, or accumulation of sediment, debris or litter occurred on adjacent property, wetlands or surface waters?				
Have the stormwater BMPs been placed in accordance with approved design documents and are they working effectively?				
Are the stormwater BMPs functioning as intended?				
Is there evidence of discharges or spills of fuels or lubricants?				
Erosion blankets (if used) – Is the fabric damaged, loose, or in need of repairs				
Is the mulch distributed uniformly? Is there evidence that mulch has blown or washed away?				

SWPPP INSPECTION CHECKLIST

Inspection Procedure	Yes/No	Comments	Corrective Action Needed	Date Corrective Action Taken
Is any silt fence damaged or deteriorated, un-trenched, or ineffective? Has sediment been removed from behind the fence? Are the fences properly installed and positioned correctly?				
Are straw bales damaged or deteriorated or ineffective? Is maintenance or replacement needed?				
In areas where seeding has taken place: Is the seed protected with mulch? Has erosion occurred? Is there evidence of vehicle tracking on the seeded area?				
Vehicle Entry/Exit: Is the gravel surface clogged with mud or sediment? Is the gravel surface sinking into the ground? Has the sediment been tracked onto public roads? If so, has clean up occurred?				
Velocity Dissipation Devices (where used): Is there evidence of scouring at the outfall? Is there erosion around or below any riprap areas? Have stones been dislodged or removed? Is sediment accumulating on the rocks?				

SWPPP INSPECTION CHECKLIST

Inspection Procedure	Yes/No	Comments	Corrective Action Needed	Date Corrective Action Taken
In Stream BMP: Are the dams on each side of the culvert area installed as required? Are the dams functioning as designed? Is the filtration box effective and functioning as designed?				

Appendix F

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Official USFWS Endangered Species List

[See Attached]

United States Department of the Interior

FISH AND WILDLIFE SERVICE
OKLAHOMA ECOLOGICAL SERVICES FIELD OFFICE
9014 EAST 21ST STREET
TULSA, OK 74129
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URL: www.fws.gov/southwest/es/Oklahoma/

Consultation Tracking Number: 02EKOK00-2013-SLI-1611 September 03, 2013
Project Name: Quapaw Tribe of Oklahoma

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species 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

Non-federal entities conducting activities that may result in take of listed species should consider seeking coverage under section 10 of the ESA, either through development of a Habitat Conservation Plan (HCP) or, by becoming a signatory to the General Conservation Plan (GCP) currently under development for the American burying beetle. Each of these mechanisms provides the means for obtaining a permit and coverage for incidental take of listed species during otherwise lawful activities.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

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 Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit through our Project Review step-wise process http://www.fws.gov/southwest/es/oklahoma/OKESFO%20Permit%20Home.htm.

If your species list does not contain the American burying beetle and your projects falls within Marshall, Love, Carter, Murray, Garvin, McClain, Cleveland, Pottawatomie or Adair counties,

the Service reccomends that you consider the American burying beetle in your project planning process. There is evidence to suggest (Crawford and Hoagland 2010), that the American burying beetle may occur in these counties.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Quapaw Tribe of Oklahoma

Official Species List

Provided by:

OKLAHOMA ECOLOGICAL SERVICES FIELD OFFICE
9014 EAST 21ST STREET
TULSA, OK 74129
(918) 581-7458
http://www.fws.gov/southwest/es/Oklahoma/

Consultation Tracking Number: 02EKOK00-2013-SLI-1611
Project Type: Land - Restoration / Enhancement
Project Description: The project includes the remediation and removal of chat (mine waste).

Project Location Map:

Project Location Measurements: Area : 40.0 ac., Length : 1.0 mi.

Project Coordinates: MULTIPOLYGON (((-94.7615155 36.9400396, -94.7591552 36.9400568, -94.7566146 36.9400165, -94.7564729 36.9367124, -94.7614297 36.9367304, -94.7615155 36.9400396)))

Project Counties: Ottawa, OK

Endangered Species Act Species List

Species lists are not entirely based upon the current range of a species but may also take into consideration actions that affect a species that exists in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Please contact the designated FWS office if you have questions.

American Burying beetle *(Nicrophorus americanus)*

Population: Entire

Listing Status: Endangered

Arkansas darter *(Etheostoma cragini)*

Listing Status: Candidate

Gray bat *(Myotis grisescens)*

Population: Entire

Listing Status: Endangered

Least tern *(Sterna antillarum)*

Population: interior pop.

Listing Status: Endangered

Condition(s):

- Wind Turbines and Wind Farms
- Towers (i.e. radio, television, cellular, microwave, meterological)

Neosho madtom *(Noturus placidus)*

Population: Entire

Listing Status: Threatened

Neosho Mucket *(Lampsilis rafinesqueana)*

Listing Status: Proposed Endangered

Ozark Big-Eared bat *(Corynorhinus (=plecotus) townsendii ingens)*

Population: Entire

Listing Status: Endangered

Ozark cavefish *(Amblyopsis rosae)*

Population: Entire

Listing Status: Threatened

Piping Plover *(Charadrius melodus)*

Population: except Great Lakes watershed

Listing Status: Threatened

Winged Mapleleaf *(Quadrula fragosa)*

Population: Entire; except where listed as experimental populations

Listing Status: Endangered