Green Remediation Evaluation

SCHAUMBURG/MURZYN-ANDERSON PROPERTY
LPC NO.: 0314895231 – COOK COUNTY

ILLINOIS ENIRONMENTAL PROTECTION AGENCY REVOLVING LOAN PROJECT

July 12, 2013

Terracon Project No. 11117068B

Prepared for:
The Village of Schaumburg
Schaumburg, Illinois

Prepared by:
Terracon Consultants, Inc.
Naperville, Illinois

Terracon

July 12, 2013

Village of Schaumburg

Attn: Mr. Brad Hurban

Re: Green Remediation Evaluation
LPC No. 0314895231 -- Cook County
Schaumburg / Murzyn-Anderson Property
Terracon Project No. 11117068B

Dear Mr. Hurban:

Terracon Consultants, Inc. (Terracon) is pleased to submit this Green Remediation Evaluation for the Murzyn-Anderson Property located at 1001 West Irving Park Road, Schaumburg, Cook County, Illinois. This document is being submitted to fulfill the requirements of the Inter-government Agreement between the Illinois Environmental Protection Agency (IEPA) and the Village of Schaumburg. This evaluation has been conducted in general accordance with draft ASTM Standard Guide for Greener Cleanup (ASTM WK35161). Throughout the document, the section headers reference the corresponding sections in ASTM Guidance.

Sincerely,
Terracon Consultants, Inc.

Richard O'Brien, P.E.
Senior Project Manager

Linda Yang, P.G.
Environmental Department Manager

Cc: Mike Charles, IEPA

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TABLES

APPENDICES

35 IAC ..... Title 35 Illinois Administrative Code
bgs ..... below ground surface
City ..... City of Schaumburg
cm ..... centimeter(s)
CWS ..... Community Water Supply
ESA ..... Environmental Site Assessment
eV ..... electron-volt
f_{oc} ..... Organic Carbon Content
g ..... gram(s)
GIS ..... Geographical Information System
GRO ..... Groundwater Remediation Objective
Guidance ..... Draft ASTM Guidance for Greener Cleanup (WK35161)
IEPA ..... Illinois Environmental Protection Agency
IPCB ..... Illinois Pollution Control Board
ISGS ..... Illinois State Geological Survey
ISWS ..... Illinois State Water Survey
JULIE ..... Joint Utility Locating Information for Excavators
kg ..... kilogram(s)
L ..... liter(s)
MBRG ..... Municipal Brownfields Redevelopment Grant
mg ..... milligram(s)
mL ..... milliliter(s)
N/A ..... Not Applicable
NFR ..... No Further Remediation
OSE ..... IEPA Office of Site Evaluation
PAH ..... Polycyclic Aromatic Hydrocarbons
PCB ..... Polychlorinated Biphenyl
PID ..... Photoionization Detector
PIN ..... Parcel Identification Number
ppm ..... part(s) per million
PVC ..... Polyvinyl Chloride
PWS ..... Public Water Supply
RA ..... Remedial Applicant
RACR ..... Remedial Action Completion Report
RAP ..... Remedial Action Plan
RCRA ..... Resource Conservation and Recovery Act
REC ..... Recognized Environmental Condition
RO ..... Remediation Objective
ROR ..... Remediation Objectives Report
sec ..... second(s)
SIR ..... Site Investigation Report
SPLP ..... Synthetic Precipitation Leaching Procedure
SRO ..... Soil Remediation Objective
SSL ..... Soil Screening Level
SVOC ..... Semivolatile Organic Compound
SWAP ..... Source Water Assessment Program
TACO ..... Tiered Approach to Corrective Action Objectives
TCL ..... Target Compound List
TCLP ..... Toxicity Characteristic Leaching Procedure
USEPA ..... United States Environmental Protection Agency
USGS ..... United States Geological Survey
UST ..... Underground Storage Tank
VOC ..... Volatile Organic Compound
yr ..... year(s)

GREEN REMEDIATION EVALUATION
0314895231 -- COOK COUNTY
SCHAUMBURG / MURZYN-ANDERSON PROPERTY

Terracon Project No. 11117068B
July 12, 2013

1.0 INTRODUCTION [8.3.1.1]

1.1 Report Author and Organization

This evaluation is being conducted by Terracon Consultants, Inc (Terracon) on behalf of the Village of Schaumburg (the client).

1.2 Identification of Project Team

A summary of the Project Team members is provided in Table 1-1.

Table 1-1 Summary of Project Team

Team Member Designation	Team Member Name (Organization)
Site Owner Representative	Brad Hurban (Village of Schaumburg)
Illinois EPA Brownfields Representative	Steve Colantino (IEPA)
	Michael Charles (IEPA)
Illinois EPA SRP Project Manager	Pratap Mehra (IEPA)
Lead Environmental Professional	Linda Yang, P.G. (Terracon)
User	Richard O'Brien, P.E. (Terracon)

1.3 Report Completion Date

This document was completed on July 12, 2013.

1.4 Property Name

The property name is Murzyn-Anderson Property.

1.5 Site Location

The remediation site addressed in this evaluation consists of two adjoining parcels of land which comprises approximately 54 acres of vacant land covered by vegetation, and shallow ephemeral ponds.

1.6 Site Identification Number(s)

The site is currently enrolled in the IEPA SRP under LPC Number 0314895231 and the site remediation is under the IEPA Revolving Loan Fund (RLF).

1.7 Lead Oversight Agency

The lead oversight agency for the project is the Illinois Environmental Protection Agency.

1.8 Cleanup Program

The site is currently enrolled in the IEPA Site Remediation Program. Mr. Pratap Mehra is the remediation site project manager for the IEPA.

1.9 Site History

A detailed site history was provided in the June 26, 2008 Phase I Environmental Site Assessment conducted by DAI Environmental, Inc. (DAI) previously submitted to the IEPA. This Phase I ESA also summarized findings from prior Phase I and Phase II investigations conducted on the site between 2004 and 2008. The dry areas of the site were used primarily for agricultural purposes. The northern portion of the site contained a residence, an apartment/garage, a farm outbuilding, and a maintenance garage. The site was formerly owned by three parties: a 14-acre plot on the northern portion of the site owned by the Murzyn Family; a 27.5-acre area on the southern portion of the site owned by the Anderson Family; and a 0.5-acre private residence located on the northwest corner of the site. The Village of Schaumburg purchased the three properties between 2003 and 2007, and all structures were demolished. The property is currently vacant with no improvements on site.

1.10 Purpose

The purpose of this document is to provide best management practices for conducting the selected remedial action at the project site in a way that reduces the environmental footprint of the remediation. Specifically, this document provides recommendations to reduce remediation impacts to environmental media and the surrounding community in an economically feasible way.

2.0 SITE STATUS [8.3.1.2]

2.1 Size of the Site

The site is approximately 54 acres and consists of two adjoining parcels of land which is comprised of vacant land covered by vegetation, and shallow ephemeral ponds.

2.2 Current Phase of Cleanup

The site is currently in the remedy design/implementation phase of clean up. A Remedial Objectives Report and Remedial Action Plan Addendum (ROR/RAP) was submitted to the IEPA SRP on September 21, 2012 outlining the remedy design and plans for implementation. A ROR/RAP Addendum was submitted to the IEPA SRP on March 11, 2013 and Supplemental Information for ROR/RAP Addendum was submitted on April 12, 2013. The remedy for the site includes soil excavation and disposal, collection of confirmation samples within remedial excavations, and backfill with clean soil.

2.3 Potential/Actual Environmental Media Impacts and Contaminants

The actual environmental media identified as impacted at the site includes soil and groundwater. As the client is seeking a Comprehensive NFR letter from the IEPA, the contaminants of concern for the site include those outlined in 35 IAC 740 Appendix A. Specifically, site sampling has indicated that exceedances of the Tier 1 ROs at the site include polynuclear aromatic hydrocarbons (PNAs), mercury, and lead in soil and aluminum, iron, manganese, and lead in groundwater.

2.4 Site Use

2.4.1 Historical

As outlined in Section 1.9, the ESAs indicate that the site was used for multiple purposes with different owners. The dry areas of the site were used primarily for agricultural purposes. The northern portion of the site contained a residence, an apartment/garage, a farm outbuilding, and a maintenance garage. The site was formerly owned by three parties: a 14-acre plot on the northern portion of the site owned by the Murzyn Family; a 27.5-acre area on the southern portion of the site owned by the Anderson Family; and a 0.5-acre private residence located on the northwest corner of the site.

2.4.2 Current

The Village of Schaumburg purchased the three properties between 2003 and 2007, and all structures were demolished. The property is currently vacant with no improvements on site.

2.4.3 Anticipated Future

Future site use has not been defined, but the property will be limited to industrial/commercial land use. The eventual NFR letters for the site will incorporate any institutional controls and maintain engineered barriers.

2.5 Human or Ecological Receptors of Contamination

Potential receptors of contamination have been evaluated at the site using the Tiered Approach to Corrective Action Objectives (TACO) outlined in 35 IAC 742. Potential receptors at the site include occupants and construction workers through the soil ingestion, soil inhalation, soil component of the groundwater ingestion (soil component) and groundwater ingestion exposure routes.

Evaluation of ecological receptors is not conducted in the IEPA TACO regulations. Potential receptors may include local migratory/local birds, small mammals and subsurface invertebrates/micro-organisms through ingestion or inhalation.

2.6 Adjacent Property Use

Adjacent property use consists of mixed residential and commercial properties. Current property use includes a right-of-way for the Elgin-O'Hare Expressway and a personal storage facility to the north of the site, the St. John Lutheran Church and Preschool and the Schaumburg Regional Airport to the east, and residential properties to the south and west of the site.

2.7 Stakeholder Involvement

The site information was publicized on the local newspapers and public meetings were held to provide opportunities for the community members to comment. No public comments were received.

2.8 Cleanup Activities to Date

Cleanup activities conducted to date include site assessment and remedy selection. Site assessment has consisted of the site investigation necessary to satisfy the requirements of the CSIR. Upon identification of contamination above Tier 1 ROs remedy selection was documented in a ROR/RAP and ROR/RAP Addendum. The RAP proposed that excavation and disposal be conducted to remediate the site. The IEPA approved the ROR/RAP and ROR/RAP Addendum in correspondence in May 2013.

2.9 Technologies/Engineering Controls Implemented

The IEPA Approved ROR/RAP includes a combined remedy approach including the use of remedial excavation and backfill, engineered barriers, and institutional controls at the site. At the central area of the site (impacts associated with boring EB-8/EB-8RE, EB-10, EB-23, and EB-25), the top three feet of soil will be excavated and disposed of at a permitted landfill. Confirmation samples will be collected around the location of EB-8/EB-8RE for lead to determine that the extent of lead above the Tier 1 soil component to groundwater remediation objective is addressed. The excavation will be backfilled with clean soil that will serve as an engineered barrier for the soil ingestion exposure route.

At the northwestern portion of the site (impacts associated with boring MW-9), the top three feet of soil will be excavated and disposed of at a permitted landfill. The extents of the contamination were delineated with confirmation samples collected on a 25 foot radius in each cardinal direction from the impacted boring. The excavation will be backfilled with clean soil that will serve as an engineered barrier for the soil ingestion exposure route.

2.10 Cleanup Goals

Cleanup goals for the site are documented in the ROR/RAP and ROR/RAP addendum prepared by Terracon dated September 21, 2012 and April 12, 2013. As outlined in the ROR/RAP addendum, cleanup goals have been established to support exclusion of the soil ingestion and soil inhalation exposure routes consistent with the requirements of 35 IAC

742.305. For soil contamination not listed in 35 IAC 742.305, site cleanup goals for soil are the TACO Tier 1 ROs for industrial/commercial land use.

Cleanup goals for the soil component and groundwater ingestion exposure routes will be established by removing the soil near the impacted area. Groundwater cleanup goals were calculated in the ROR/RAP utilizing a Tier 2 evaluation outlined in 35 IAC 742.600.

2.11 Site Use Restrictions

Based on the selected remedy institutional controls will be placed on the site. The institutional controls will include maintaining the surface engineered barriers, establishment of a construction worker caution area, industrial/commercial land use, and restriction on the installation of potable water supply wells at the property.

3.0 CLEANUP PHASE EVALUATION [8.3.1.3]

3.1 Applicable Cleanup Phase

The cleanup phase being evaluated in this document is the remedy implementation phase. This phase constitutes the final cleanup phase of the project as the selected remedy does not include long term operations or monitoring.

3.2 Evaluation Process

The process utilized for evaluating best management practices (BMPs) for the remedy implementation phase of the project consists of the BMP Process outlined in the draft ASTM Guidance. A quantitative evaluation was not conducted for the project based on correspondence with the IEPA Office of Brownfields Assistance.

3.3 Best Management Practices for Cleanup Phase

3.3.1 BMP Opportunity Assessment

The BMP Opportunity Assessment was conducted to identify BMPs that may be applicable to the current cleanup phase. Terracon consulted Appendix X2 of the Guidance for Potential BMPs applicable to the site. Potential BMPs were considered based solely on the cleanup phase and without regards to cost, logistics or relative benefits to other BMPs. A list of potential BMPs and the core element(s) they address is provided in Table 3-1

Table 3-1 Summary of Potential BMPs

Category	BMP	Core Element(s) Addressed
Materials	Steam clean or use phosphate-free detergents to decontaminate equipment	W[1]; MW[2]; LE[3]
Materials	Use dedicated materials when performing multiple rounds of sampling of all matrices.	MW
Power and Fuel	Use biodiesel produced from waste or cellulose based products, preferring local sources to reduce transportation impacts	MW
Project Planning and Team Management	Use local staff, including subcontractors, when possible to minimize resource consumption	E[4]; A[5]; W; MW
Project Planning and Team Management	Establish green requirements as evaluation criteria in the selection of contractors and include language in RFPs, RFQs, subcontracts, contracts, etc.	E; A; W; MW; LE
Project Planning and Team Management	Target Treatment Zone (TTZ) and select appropriate performance standards to minimize volume requiring treatment relative to remedial goals	E; A; W; MW; LE
Sampling and Analysis	Use local laboratory to minimize impacts from transportation	E; A
Site Preparation/Land Restoration	Use onsite or nearby sources of backfill material for excavated areas, if shown to be free of contaminants	E; A; MW
Site Preparation/Land Restoration	Revegetate excavated areas and/or areas disrupted by equipment or vehicles as quickly as possible using native vegetation, if possible, and restore as close as possible to original conditions.	W; LE
Site Preparation/Land Restoration	Minimize clearing of trees throughout investigation and cleanup	E; W; MW; LE
Site Preparation/Land Restoration	Minimize soil compaction and land disturbance during site activities by restricting traffic to confined corridors and protecting ground surfaces with biodegradable covers, where possible.	W; LE
Vehicle and Equipment Management	Use biodegradable hydraulic fluids on hydraulic equipment such as excavators	MW

[1] *W - Water*
[2] *MW – Materials and Waste*
[3] *LE – Land and Ecosystems*
[4] *E - Energy*
[5] *A - Air*

Category	BMP	Core Element(s) Addressed
Vehicle and Equipment Management	Implement an idle reduction plan	E; A; LE
Vehicle and Equipment Management	Minimize diesel emissions through the use of retrofitted engines, use of low sulfur diesel or alternative fuels, or filter/treatment devices (BACT)	A

3.3.2 BMP Prioritization

BMPs identified during the Opportunity Assessment were evaluated based on the ability of each BMP to reduce the environmental footprint of the cleanup activity. BMPs that were determined to have the greatest ability to reduce the environmental footprint were assigned a "high" priority, those with a modest ability to reduce the environmental footprint were assigned a "moderate" priority and those with the least likelihood to reduce the environmental footprint were assigned a "low" priority. A summary of the prioritized BMPs is provided in Table 3-2. A brief description of the prioritization rationale is presented below.

Table 3-2 Summary of Prioritized BMPs

Priority	BMP	Core Element(s) Addressed
High	Target Treatment Zone (TTZ) and select appropriate performance standards to minimize volume requiring treatment relative to remedial goals	E; A; W; MW; LE
High	Use onsite or nearby sources of backfill material for excavated areas, if shown to be free of contaminants	E; A; MW
High	Use local staff, including subcontractors, when possible to minimize resource consumption	E; A; W; MW
High	Use biodiesel produced from waste or cellulose based products, preferring local sources to reduce transportation impacts	MW
Moderate	Implement an idle reduction plan	E; A; LE
Moderate	Minimize diesel emissions through the use of retrofitted engines, use of low sulfur diesel or alternative fuels, or filter/treatment devices (BACT)	A
Moderate	Steam clean or use phosphate-free detergents to decontaminate equipment	W; MW; LE
Moderate	Establish green requirements as evaluation criteria in the selection of contractors and include language in RFPs, RFQs, subcontracts, contracts, etc.	E; A; W; MW; LE
Moderate	Minimize clearing of trees throughout investigation and cleanup	E; W; MW; LE

Priority	BMP	Core Element(s) Addressed
Moderate	Minimize soil compaction and land disturbance during site activities by restricting traffic to confined corridors and protecting ground surfaces with biodegradable covers, where possible.	W; LE
Low	Use local laboratory to minimize impacts from transportation	E; A
Low	Use dedicated materials when performing multiple rounds of sampling of all matrices.	MW
Low	Revegetate excavated areas and/or areas disrupted by equipment or vehicles as quickly as possible using native vegetation, if possible, and restore as close as possible to original conditions.	W; LE
Low	Use biodegradable hydraulic fluids on hydraulic equipment such as excavators	MW

BMPs were assigned a high priority based on their ability to have the greatest positive influence on multiple core elements. Specifically, linking the cleanup to the redevelopment of the site and using local contractors, as available, could potentially result in dramatically lower impacts to at least four of the five core elements. The benefits of these BMPs will likely expand beyond the core elements into the local community with respect to local job opportunities and development of an underserved area of the City.

BMPs were assigned a moderate priority based on their potential for positive influence on one or more core elements limited to within the technical scope of the project. The moderate priority BMPs typically include the use of materials or consumption of energy during implementation of the cleanup phase. BMPs were assigned a low priority based on the likelihood that implementation would not result in positive influences on core elements during the cleanup. BMPs assigned a low priority were not considered during steps in the BMP Process.

3.3.3 BMP Selection

The prioritized BMPs were further evaluated based on project specific factors. The high and moderate priority BMPs were evaluated for implementability, effectiveness, reliability, risks, cost and community concerns. A brief summary of this evaluation is provided below.

- **Target Treatment Zone (TTZ)** - This BMP of targeting areas above Tier 1 Remediation Objectives (ROs) and further evaluating impacts by calculating Tier 2 ROs resulted in limiting site excavation. This will result in minimizing truck trips to and from the site, and thereby minimize air emissions, offsite landfill use, stormwater runoff, material use, and community/traffic disruption.

- **Use nearby sources of clean backfill material** – The proximity of a clean fill source near the remediation site allows this BMP to reduce resource use by limiting truck trips to and from the site.

- **Use local staff, including subcontractors, when possible to minimize resource consumption** – This BMP of utilizing local hires will minimize passenger car travel to and from site, and thereby minimize air emissions, help relieve traffic congestion, material use, and help facilitate good community relations.

- **Use local biodiesel produced from waste or cellulose based products** – This BMP will minimize the production of petroleum based air emissions.

- **Implement an idle reduction plan** – This BMP will reduce energy use and noise emissions, help air quality in the urban area, and help community relations.

- **Minimize diesel emissions through the use of retrofitted engines, use of low sulfur diesel or alternative fuels, or filter/treatment devices –** This BMP will reduce the impact of emissions produced during the remediation of the site.

- **Steam clean or use phosphate-free detergents to decontaminate equipment** – Utilizing more environmentally benign chemicals will limit the impact that produced wastes create.

- **Establish green requirements as evaluation criteria in the selection of contractors and as part of project language** – This BMP will cause contractors to evaluate their own activities and promote the culture of environmentally beneficial practices.

- **Minimize clearing of trees and vegetation** – This BMP will reduce the impact to the condition of the site and help restore the area at the conclusion of the project.

- **Minimize soil compaction and land disturbance during site activities by restricting traffic to confined corridors** – This BMP will reduce the impact to the condition of the site and help restore the area at the conclusion of the project.

3.3.4 BMP Implementation

The selected BMPs will be implemented during the cleanup activities. At this time, cleanup activities are anticipated to be conducted during the May to June 2013 period. If individual BMPs are identified during the cleanup as impractical, cost-prohibitive or unacceptable to the public then an addendum to this document will be submitted documenting those conditions.

3.3.5 BMP Documentation

The Guidance requires that the BMP evaluation described in this document be summarized in a standalone table. This summary is provided in Appendix A.

3.4 Status of BMP Implementation

The BMPs discussed in this document will be implemented in the near future at the site.

4.0 ANTICIPATED ENVIRONMENTAL FOOTPRINT REDUCTIONS [8.3.1.4]

Based on discussions with IEPA, qualitative evaluations will be conducted on the following.

4.1 Total Energy Use

Total energy use for the project will be reduced by remediation of a TTZ, limiting the extent of required excavation, using local sources of backfill, using an idle reduction plan, and using local staff and subcontractors. The greatest energy savings would be from minimizing energy required for excavation of soil off site with use of a TTZ, and minimizing travel distances by utilizing local sources of backfill.

4.2 Air Pollutants and Greenhouse Gas Emissions

Air emissions will be reduced by remediation of a TTZ, using an idle reduction plan to reduce truck diesel emissions, utilizing biodiesel, and minimizing emissions from travel through use of local staff and a local backfill source. Air and carbon dioxide greenhouse emissions may be reduced the most from reducing total diesel engine truck / excavator run time by minimizing excavation of soil off site with TTZ, reducing travel distances, and use of an idle reduction program.

4.3 Water Resource Impacts

Water resource impacts would be reduced to a moderate degree by reducing excavation size from the remediation of a TTZ, by reducing impact to permeable soils by confining traffic to corridors, and by minimizing days of site construction and potential runoff to surrounding storm sewers, and eventually waterways.

4.4 Waste/Materials Management

Waste will be reduced by remediation of a TTZ, using local sources of backfill, using local staff, minimizing removal of vegetation. The waste reduction would be from minimizing excavation of soil off site with TTZ, utilizing soil removed from a local project, and minimizing future need to replace vegetation.

4.5 Land/Ecosystem Management

Land/Ecosystem preservation will be achieved by reducing excavation size from the remediation of a TTZ, confining traffic to corridors, implementing an idle reduction plan, and reducing the clearing of trees. These measures will reduce the footprint of the overall project on the land and will protect the existing state of the environment.

5.0 DECLARATION [8.3.2]

A greener cleanup evaluation was conducted in general conformance with the draft ASTM WK35161 Standard Guide for Greener Cleanups for the Murzyn-Anderson Property located at 1001 West Irving Park Road, Schaumburg, Cook County, Illinois by Terracon Consultants, Inc. of Naperville, Illinois.

6.0 PUBLIC AVAILABILITY [8.4]

This document is available for public inspection at the Village of Schaumburg offices located at 714 South Plum Grove Road Schaumburg, Illinois 60193.

APPENDIX A

Tabular Summary of BMP Process

Table 1-1
Documentation of BMP Process

Step 1	Step 2 – BMP Prioritization		Step 3 – BMP Selection		Step 4 – BMP Implementation	
Potential BMPs	Rationale	Prioritized BMPs	Rationale	Selected BMPs	Rationale	Implemented BMPs
Target Treatment Zone and select standards to minimize treatment volume	BMP likely to have greatest positive influence on multiple core elements and community	Target Treatment Zone and select standards to minimize treatment volume	Target Treatment Zone and select standards to minimize treatment volume	Target Treatment Zone and select standards to minimize treatment volume	Target Treatment Zone and select standards to minimize treatment volume	Remedial Action Plan minimizes soil excavation and disposal using engineered barrier, institutional control and modeling
Use local backfill sources	BMP likely to have greatest positive influence on multiple core elements and community	Use local backfill sources	Use local backfill sources	Use local backfill sources	Use local backfill sources	Used local backfill
Use local staff/subcontractors when possible	BMP likely to have greatest positive influence on multiple core elements and community	Use local staff/subcontractors when possible	Use local staff/subcontractors when possible	Use local staff/subcontractors when possible	Use local staff/subcontractors when possible	Used local staff/subcontractors when possible
Establish green remediation evaluation criteria in selecting contractors	BMP likely to have positive impact on core elements within project scope	Use local biodiesel to reduce transportation impacts	Establish green remediation evaluation criteria in selecting contractors	Use local analytical laboratory	Use local analytical laboratory	Used local minority laboratory
Use local biodiesel to reduce transportation impacts	BMP likely to have greatest positive influence on multiple core elements and community	Steam clean or phosphate free equipment decontamination	Minimize land disturbance by limiting traffic to confined corridors	Establish green remediation evaluation criteria in selecting contractors	Establish green remediation evaluation criteria in selecting	Communicated with the subcontractors regarding green remediation
Steam clean or phosphate free equipment decontamination	BMP likely to have greatest positive influence on multiple core elements and community	Establish green remediation evaluation criteria in selecting contractors	Use local biodiesel to reduce transportation impacts	Minimize land disturbance by limiting traffic to confined corridors	Minimize land disturbance by limiting traffic to confined corridors	Implemented Traffic Control Plan
Implement idle reduction plan	BMP likely to have positive impact on core elements within project scope	Implement idle reduction plan	Implement idle reduction plan	Implement idle reduction plan	Implement idle reduction plan	Reduced idling by scheduling
Minimize diesel emissions with low sulfur diesel	BMP likely to have positive impact on core elements within project scope	Minimize diesel emissions with low sulfur diesel	Minimize diesel emissions with low sulfur diesel	Minimize clearing of trees	Minimize clearing of trees	Tree clearance only when necessary
Minimize clearing of trees	BMP likely to have positive impact on core elements within project scope	Minimize clearing of trees	Minimize clearing of trees	Use biodegradable hydraulic fluids where applicable	Use biodegradable hydraulic fluids where applicable	Used biodegradable hydraulic fluids where applicable
Minimize land disturbance by limiting traffic to confined corridors	BMP likely to have positive impact on core elements within project scope	Minimize land disturbance by limiting traffic to confined corridors	Steam clean or phosphate free equipment decontamination	Use local biodiesel to reduce transportation impacts	Use local biodiesel to reduce transportation	Used local biodiesel to reduce transportation
Use local analytical laboratory	BMP Not likely to result in positive influences on core elements	Use local analytical laboratory	Use local analytical laboratory	Use dedicated materials when sampling	Use dedicated materials when sampling	Used dedicated materials when sampling (gloves, bags, etc.)
Use dedicated materials when sampling	BMP Not likely to result in positive influences on core elements	Use dedicated materials when sampling	Use dedicated materials when sampling	Steam clean or phosphate free equipment decontamination	Steam clean or phosphate free equipment decontamination	Steam cleaned or phosphate free equipment decontamination
Restore excavation with native vegetation	BMP Not likely to result in positive influences on core elements	Restore excavation with native vegetation	Restore excavation with native vegetation	Restore excavation with native vegetation	Restore excavation with native vegetation	Will restore excavation with native vegetation
Use biodegradable hydraulic fluids where applicable	BMP Not likely to result in positive influences on core elements	Use biodegradable hydraulic fluids where applicable	Use biodegradable hydraulic fluids where applicable			