

From: Priscilla Burton
To: Brinton, Peter; Lundmark, Kevin; OGMCOAL; Owen, James
CC: Haddock, Daron
Date: 10/4/2010 8:42 AM
Subject: Fwd: White Oak Mine - Construction Documents Package
Attachments: Exhibit C - Contractor Personnel and Staff.pdf; White Oak Mine Rec Safety Plan.pdf; Exhibit A - Application and Certification for Payment.pdf; Exhibit D - Certificate of Insurance and Endorsement.pdf; WHITE OAK SCHEDULE.pdf; Contractor's Notice Address.pdf; Equipment List.pdf

>>> "Kent Fawcett" <kent@innovative-companies.com> Friday, October 01, 2010 2:39 PM >>>
Priscilla,

Attached are the documents as required. Please review and let me know if you have any questions.

I am unclear what your intentions are regarding a drainage control plan, if you would please explain what it is you are looking for, I can get that to you. Also, I was in contact with a man named Darrin who is willing to provide the logs to us, I believe you may know of him.

Thank you,

Kent.

Kent Fawcett

Project Manager

801-702-7993 cell

Kent@Innovative-Companies.com

Innovative Excavation

PO Box 818

5403 W. Wells Park Road

West Jordan, UT 84041

801-260-1300 Office

801-285-8203 Fax



CONTRACTOR'S NOTIFICATION ADDRESS

INNOVATIVE EXCAVATION
PO BOX 818
WEST JORDAN, UT 84088

801-280-1300

ATTN: KENT FAWCETT
EMAIL: KENT@INNOVATIVE-COMPANIES.COM

WHITE OAK MINE RECLAMATION PROJECT
PO # 560 12000000007

EQUIPMENT LIST

CAT MODEL 330 EXCAVATOR – 79,700 lbs

CAT MODEL D6R TRACK DOZER – 44,609 lbs

CAT MODEL 953 TRACK LOADER – 33,389 lbs, 2.3 yd GP Bucket

CAT MODEL 725 ARTICULATED TRUCK – 25 TN Capacity

WHITE OAK MINE RECLAMATION PROJECT

PO # 560 12000000007

EXHIBIT A

PAYMENT APPLICATION

REQUEST FOR PAYMENT

From: Innovative Excavation
 PO Box 818
 West Jordan, UT 84084

To: Utah Dept.of Natural Resources
 Attn: Rose Nolton
 1594 W. North Temple Ste 1210
 Salt Lake City, UT 84114-5801

Invoice: *DRAFT*
 Draw: *DRAFT*
 Invoice date: 9/29/2010
 Period ending date: 9/30/2010

Contract For:

Project: 01-10-10010
 White Oak Mine Reclamation

Request for payment:

| | | | |
|--------------------------------|--------------|----------------|--|
| Original contract amount | \$257,308.75 | Contract date: | |
| Approved changes | \$0.00 | Architect: | |
| Revised contract amount | \$257,308.75 | Scope: | |
| Contract completed to date | \$0.00 | | |
| Add-ons to date | \$0.00 | | |
| Taxes to date | \$0.00 | | |
| Less retainage | \$0.00 | | |
| Total completed less retainage | \$0.00 | | |
| Less previous requests | \$0.00 | | |
| Current request for payment | \$0.00 | | |
| Current billing | \$0.00 | | |
| Current additional charges | \$0.00 | | |
| Current tax | \$0.00 | | |
| Less current retainage | \$0.00 | | |
| Current amount due | \$0.00 | | |
| Remaining contract to bill | \$257,308.75 | | |

| CHANGE ORDER SUMMARY | ADDITIONS | DEDUCTIONS |
|--|-----------|------------|
| Changes approved in previous months by Owner | | |
| Total approved this Month | | |
| TOTALS | | |
| NET CHANGES by Change Order | | |

I hereby certify that the work performed and the materials supplied to date, as shown on the above represent the actual value of the accomplishment under the terms of the Contract (and all authorized changes thereof) between the undersigned and the Utah Dept.of Natural Resources relating to the above referenced project. I also certify that the contractor has paid all amounts previously billed and paid by the owner.

CONTRACTOR: Innovative Excavation

State Of

County Of

By: _____

Subscribed and sworn to before me this _____ day of _____

Date: _____

Notary Public
 My commission expires: _____

REQUEST FOR PAYMENT DETAIL

Project: 01-10-10010 / White Oak Mine Reclamation Invoice: *DRAFT* Draw: *DRAFT* Period Ending Date: 9/30/2010 Detail Page 2 of 2 Pages

| Item ID | Description | Total Contract Amount | Previously Completed Work | Work Completed This Period | Presently Stored Materials | Completed And Stored To Date | % Comp | Balance To Finish | Retainage Balance |
|---------|-------------|-----------------------|---------------------------|----------------------------|----------------------------|------------------------------|--------|-------------------|-------------------|
|---------|-------------|-----------------------|---------------------------|----------------------------|----------------------------|------------------------------|--------|-------------------|-------------------|

00-01001 Mine Site Stabilization, Reveg 257,308.75

257,308.75

| | | | | | | | | | |
|--------|--|------------|--|--|--|--|------|------------|--|
| Totals | | 257,308.75 | | | | | 0.00 | 257,308.75 | |
|--------|--|------------|--|--|--|--|------|------------|--|

WHITE OAK MINE RECLAMATION PROJECT

PO # 560 12000000007

EXHIBIT C

GENERAL CONTRACTOR - PERSONNEL

EXHIBIT C. CONTRACTOR PERSONNEL AND STAFF

| TITLE | NAME | PHONE | EMAIL |
|------------------------|-------------------|--------------|--|
| PROJECT EXECUTIVE | BRANDON BLANCHARD | 801-330-3305 | BRANDON@INNOVATIVE-COMPANIES.COM |
| PROJECT MANAGER | KENT FAWCETT | 801-702-7993 | KENT@INNOVATIVE-COMPANIES.COM |
| PROJECT SUPERINTENDENT | TIM CURL | 801-330-6705 | TIM@INNOVATIVE-COMPANIES.COM |
| PROJECT ENGINEER | KARA SQUIRES | 801-260-1300 | KARA@INNOVATIVE-COMPANIES.COM |

WHITE OAK MINE RECLAMATION PROJECT

PO # 560 12000000007

EXHIBIT D

INSURANCE CERTIFICATES AND ENDORSEMENTS



CERTIFICATE OF LIABILITY INSURANCE

OP ID HC
INNOV-2DATE (MM/DD/YYYY)
08/27/10

| | | |
|--|---|---------------|
| PRODUCER Universal Business Insurance P O Box 709210 Sandy UT 84070 Phone: 801-984-6100 Fax: 801-984-6060 | THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. | |
| | INSURERS AFFORDING COVERAGE | NAIC # |
| INSURED Innovative Excavation, Inc. PO Box 818 West Jordan UT 84084 | INSURER A: E M C Insurance Co. | |
| | INSURER B: Workers Comp Fund of Utah | |
| | INSURER C: Great American Insurance Co. | 10033 |
| | INSURER D: | |
| | INSURER E: | |

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

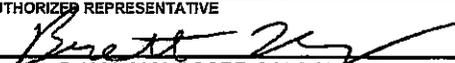
| INSR ADD'L LTR | INSRD | TYPE OF INSURANCE | POLICY NUMBER | POLICY EFFECTIVE DATE (MM/DD/YYYY) | POLICY EXPIRATION DATE (MM/DD/YYYY) | LIMITS |
|----------------|-------|--|---------------|------------------------------------|-------------------------------------|--|
| A | X | GENERAL LIABILITY | 4X29536 | 04/01/10 | 04/01/11 | EACH OCCURRENCE \$ 1,000,000 |
| | | <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY | | | | DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 |
| | | <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR | | | | MED EXP (Any one person) \$ 5,000 |
| | | GEN'L AGGREGATE LIMIT APPLIES PER: | | | | PERSONAL & ADV INJURY \$ 1,000,000 |
| | | <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC | | | | GENERAL AGGREGATE \$ 2,000,000 |
| | | | | | | PRODUCTS - COMP/OP AGG \$ 2,000,000 |
| A | | AUTOMOBILE LIABILITY | 4X29536 | 04/01/10 | 04/01/11 | COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 |
| | | <input checked="" type="checkbox"/> ANY AUTO | | | | BODILY INJURY (Per person) \$ |
| | | <input type="checkbox"/> ALL OWNED AUTOS | | | | BODILY INJURY (Per accident) \$ |
| | | <input type="checkbox"/> SCHEDULED AUTOS | | | | PROPERTY DAMAGE (Per accident) \$ |
| | | <input type="checkbox"/> HIRED AUTOS | | | | |
| | | <input type="checkbox"/> NON-OWNED AUTOS | | | | |
| | | GARAGE LIABILITY | | | | AUTO ONLY - EA ACCIDENT \$ |
| | | <input type="checkbox"/> ANY AUTO | | | | OTHER THAN EA ACC \$ |
| | | | | | | AUTO ONLY: AGG \$ |
| C | | EXCESS / UMBRELLA LIABILITY | TUU018931600 | 04/01/10 | 04/01/11 | EACH OCCURRENCE \$ 3,000,000 |
| | | <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE | | | | AGGREGATE \$ 3,000,000 |
| | | <input type="checkbox"/> DEDUCTIBLE | | | | \$ |
| | | <input type="checkbox"/> RETENTION \$ | | | | \$ |
| B | | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY | 2357155 | 03/01/10 | 03/01/11 | <input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER |
| | | ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory In NH) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N | | | | E.L. EACH ACCIDENT \$ 500000 |
| | | If yes, describe under SPECIAL PROVISIONS below | | | | E.L. DISEASE - EA EMPLOYEE \$ 500000 |
| | | OTHER | | | | E.L. DISEASE - POLICY LIMIT \$ 500000 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

White Oak Mine Site Stabilization Project - #AR11035
 The State of Utah is listed as Additional Insured when required by written contract with respect to General Liability only. Coverage is Primary & NonContributory
 NOTE: 30 Days Notice of Cancellation EXCEPT 10 Days for NonPayment

CERTIFICATE HOLDER

CANCELLATION

| | |
|--|---|
| Utah Dept of Natural Resources Div of Oil, Gas, and Mining 1594 W North Temple Ste 1210 Salt Lake City UT 84114 | SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30* DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES. AUTHORIZED REPRESENTATIVE  |
|--|---|

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**BLANKET ADDITIONAL INSURED – CONSTRUCTION CONTRACTS –
VICARIOUS LIABILITY**

This endorsement modifies the insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

A. SECTION II – WHO IS AN INSURED is amended to include as an additional insured any person or organization for whom you are performing operations when you have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy. Such person or organization is an additional insured only with respect to liability for "bodily injury," "property damage" or "personal and advertising injury" caused, in whole, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured.

A person's or organization's status as an additional insured under this endorsement ends when your operations for that additional insured are completed.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

1. "Bodily injury," "property damage" or "personal and advertising injury" resulting from any act or omission by, or willful misconduct of the additional insured, whether the sole or a contributing cause of the loss. The coverage afforded to the additional insured is limited solely to the additional insured's "vicarious liability" that is a specific and direct result of your conduct.

"Vicarious liability" as used in this endorsement means liability that is imposed on the additional insured solely by virtue of its relationship with you, and not due to any act or omission of the additional insured.

2. "Bodily injury" or "property damage" occurring after:
 - a. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or

- b. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

3. "Bodily injury," "property damage" or "personal and advertising injury" arising out of the rendering of, or failure to render, any professional, architectural, engineering or surveying services including:
 - a. The preparing, approving, or failing to prepare or approve maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or
 - b. Supervisory, inspection, architectural or engineering activities.

- C. The limits of insurance applicable to the additional insured are those specified in the Declarations of this policy or in the written contract or written agreement, whichever is lower.

- D. Any coverage provided hereunder shall be excess over any other valid and collectible insurance available to the additional insured whether that insurance is primary, excess, contingent or on any other basis, unless you and the additional insured have specifically agreed in a written contract or written agreement that this insurance be primary.

When coverage is provided on a primary basis we will not seek contribution from any other insurance available to the additional insured if a written contract or written agreement requires that this insurance be noncontributory.

- E. All other terms and conditions of this policy remain unchanged.

WHITE OAK MINE RECLAMATION SAFETY PLAN

prepared by
Innovative Excavation



| | | | |
|--|--|----------------|--|
| Project Name | White Oak Mine Reclamation | | |
| Project Owner | Utah Division of Oil Gas and Mines (DOGGM) | | |
| Project Manager (DOGGM) | Priscilla Burton | 435-613-3733 | PriscillaBurton@utah.gov |
| Project Location | White Oak Mine Reclamation SR264 Whiskey Creek Road | Scofield, Utah | |
| Project Description | Existing coal mine rehabilitation, re-grade erosion control measures, furnish and install organic materials and products to introduce plant growth | | |
| Project Start / End Dates | Start - 10-6-2010 | End - | |
| Project Contacts | | | |
| Project Manager Innovative Excavation | Kent Fawcett | 801-702-7993 | kent@innovative-companies.com |
| Project Superintendent Innovative Excavation | Tim Curl | 801-330-6705 | tim@innovative-companies.com |
| Number of Employees on Site | 3 to 6 | | |
| | | | |
| Sub Contractors | | | |
| Skyline Reclamation, Inc. | John Lee | 435-427-3905 | johnlee@skylinereclamation.com |
| | | | |
| | | | |
| Project Tasks and Hazards / Safety Analysis | | | |
| Scope of Work | Excavate and grade erosion control terraces Fill existing mine depressions Excavate creek channel and install rock and log erosion control measures Furnish & install biosolid materials Furnish & install straw and wood fiber mulch Install owner provided plants in terrace and riparian areas | | |

**Innovative Excavation
Site Specific Safety Plan**



| Task | Hazard | Equipment | Mitigation |
|-------------------------|--|-----------------------------------|---|
| Earthwork, site grading | Steep slope work. | Trackhoe Dozer Track Loader | Operator training regarding steep slopes and the hazards associated with working on such terrain. |
| Earthwork, site grading | Falling or rolling rocks | Trackhoe Dozer Track Loader | Operator training to understand hazards associated with rocks rolling during the excavation process. Prevent access to potential hazard area. |
| Bio Solids | Workers exposed to disease causing organisms while handling bio solids materials | | see attached NIOSH Hazard ID report |
| Hand Broadcast Seed | Rough terrain, steep slopes. | | Workers need to wear sturdy shoes and be prepared for walking and working on steep rough terrain. Tripping and twisted ankle hazards exist. |
| | | | |
| | | | |
| | | | |
| | | | |
| Project Controls | | | |
| Traffic Control | n/a | | |
| Demolition | n/a | | |

| | | | |
|--|--|--------------------|---|
| Environmental Protection/ Storm Water | SWPPP BMP's will be observed | | |
| Dust Control | typical BMP's will be observed | | |
| Barricades / Signage | n/a | | |
| Materials / Equipment Staging | see attached map | | |
| Waste Disposal | onsite dumpsters | | |
| Emergency Response | | | |
| Accident / Injury Response | Price City Fire Department | Contact - Dial 911 | Fire Chief - Paul Bedont 435-636-3187 |
| Fire | Price City Fire Department | Contact - Dial 911 | Fire Chief - Paul Bedont 435-636-3187 |
| Police | Price City Police Department | Contact - Dial 911 | Police Chief - Alec Shialos 435-636-3190 |
| Hazmat | Carbon County Emergency Response Team | Contact - Dial 911 | Commander - Jason Llewelyn 435-636-3740 |
| Evacuation | see attached map | | |
| | | | |
| | | | |
| Special Permits | | | |
| Hot Work | n/a | | |
| Confined Space | n/a | | |
| Hoisting and Rigging Plan | n/a | | |



| | | | |
|-----------------------|-----|--|--|
| Elevated Surface Plan | n/a | | |
| Excavation Permit | n/a | | |
| | | | |
| | | | |
| | | | |

NIOSH Hazard ID

Workers Exposed to Class B Biosolids During and After Field Application

Key Points

- ▶ Workers may be exposed to disease-causing organisms while handling, applying or disturbing Class B biosolids on agricultural lands or mine reclamation sites.
- ▶ Class B biosolids are sewage sludge that has undergone treatment by processes that significantly reduce pathogen concentrations. These processes include aerobic and anaerobic digestion, air drying, composting, and lime stabilization. According to the U. S. Environmental Protection Agency (EPA), Class B biosolids may contain pathogens in sufficient quantity to warrant restricted public access and special precautions for exposed workers.
- ▶ Class A biosolids are sewage sludge that has undergone treatment by processes that further reduce pathogen concentrations resulting in an end product that is virtually pathogen-free. These processes include irradiation, composting, heat drying, heat treatment, pasteurization, thermophilic aerobic digestion, and alkaline stabilization. Class A biosolids do not contain pathogens in sufficient quantity to warrant restricted access or special precautions and may be applied the same way as commercial fertilizer.
- ▶ NIOSH collected air samples for bacteria and endotoxin (a component of some bacteria), and bulk sewage sludge samples for fecal coliform bacteria at a Class B biosolids land application processing facility. Potentially pathogenic bacteria were found in bulk samples and in some air samples. Employee gastrointestinal illnesses at that facility may have been caused by ingestion or inhalation of Class B biosolids.
- ▶ Whereas EPA rules restrict public access to treated lands in order to protect public health, these rules do not apply to workers involved with applying biosolids to land. The recommendations in this document are intended to provide guidance to employers and workers to minimize occupational risks from Class B biosolids through the use of engineering controls, personal protective equipment, and worker training. These recommendations are not intended to address non-occupational exposure.

About Biosolids

Sewage sludge is typically treated to Class B requirements at the sewage treatment plant. Class B biosolids, in a liquid or semi-liquid state, can be transported by truck to a land application site where they are directly applied to the land using tractors, tank wagons, irrigation systems, or special application vehicles. Biosolids may undergo dewatering using polymers. Dewatered biosolids are often temporarily stored at the treatment plant or application site before being transported and applied to land using front end loaders, trucks, tractors, or sludge-spreading equipment. Workers may come into either direct or indirect contact with biosolids during any phase of the treatment, transport, or application process. The biosolids are applied as fertilizer to improve and maintain productive soils and stimulate plant growth. Biosolids have been applied on agricultural lands and surface mine reclamation sites.

There are four major types of human pathogenic organisms found in biosolids: (1) bacteria, (2) viruses, (3) protozoa, and (4) helminths (parasitic worms). The concentration of organisms in biosolids depends on the type and concentration of pathogens present in the source sewage and the degree to which those organisms are removed or killed by the pre-treatment process. The hazard that is associated with Class B biosolids is a function of the number and type of pathogens in the treated sludge relative to the minimum infective dose and the exposure level. Under the EPA biosolids rule (40 CFR 503), Class B biosolids must contain less than two million colony forming units (CFU) of fecal coliform per gram of total solids (dry weight). To protect public health, the EPA rule prescribes a restricted period of up to one year to limit public access to lands where Class B biosolids have been applied. These EPA restrictions do not apply to occupational access. The risk of worker exposure to infectious agents is likely greatest during and immediately after land application of the biosolids. Because the concentration of pathogens decays through natural processes, the potential for pathogen exposure decreases over time.

In other settings, the association between poor hygiene, raw sewage, and infectious disease is well established. Most of the pathogenic bacteria and viruses in Class B biosolids are enteric, which means they are present in the intestinal tracts of human and animals. **Enteric organisms that may be found in Class B biosolids include, but are not limited to, Escherichia coli, Salmonella, Shigella, Campylobacter, Cryptosporidium, Giardia, and enteroviruses. Exposure may potentially result in disease (e. g., gastroenteritis), or in a carrier state (e. g., typhoid), where an infection does not clinically manifest itself in the individual but can be spread to others. These enteric organisms are usually associated with self-limited gastrointestinal illness but can develop into more serious diseases in sensitive populations such as immunocompromised individuals, infants, young children, and the elderly. Because data are sparse on what constitutes an infective dose, it is prudent public health practice to minimize workers' contact with soil or dusts containing Class B biosolids during the restricted periods.**

During investigations at a Class B biosolids land application and at a Class B biosolids storage site:

► NIOSH interviewed five employees at a Class B biosolids land application operation. All five employees reported at least one episode of gastrointestinal illness after working with the biosolids, either at the treatment plant or during land application. The environmental sampling results indicated that the gastrointestinal illnesses were possibly of occupational origin.

► NIOSH collected bulk samples from different locations within the biosolids storage site. The mean fecal coliform concentration of the bulk samples was 220,000 CFU per gram of sample (wet weight). Fecal coliforms are used as an indicator for the presence of other enteric microorganisms. There remains a significant exposure risk. This example illustrates the importance of minimizing exposure to Class B biosolids during the restricted period.

► NIOSH collected air samples at the Class B biosolids land application and storage site. Enteric bacteria were detected in the air. The presence of enteric bacteria in air samples is sufficient justification to implement engineering controls and work practices that minimize employee exposure to biosolid aerosols.

The detection of enteric bacteria in a limited number of air and bulk samples confirms the potential for workers to be exposed to organisms which have been associated with gastrointestinal symptoms and illness. Operations where employees are potentially exposed to Class B biosolids include transport, loading, unloading, and application activities. Other

potentially exposed workers include compost workers, surface miners working around reclamation sites, and farmers.

Recommendations For Prevention

The recommendations contained in this document apply to workers at Class B biosolids land application sites. These recommendations are different from those required for the general public which are regulated by Title 40, Code of Federal Regulations, Part 503 (40 CFR 503).

- ▶ Class B biosolids should be incorporated (thoroughly mixed) into the soil to prevent suspension into the air during periods of dryness. After application, mechanical disturbance and contact with Class B biosolids should be avoided for the restricted period.
- ▶ Hand-washing stations with clean water, mild soap, and paper (disposable) towels should be readily available whenever contact with Class B biosolids may occur. In the case of workers in the field, portable equipment, including clean water and soap, should be provided.
- ▶ Since employees are at risk of soil-contaminated injuries, management should ensure that all employees are up-to-date on tetanus-diphtheria immunizations.
- ▶ Current CDC recommendations do not support hepatitis A vaccination for sewage workers. Data are sparse; thus, this recommendation may be modified as more data are developed.
- ▶ Periodic training regarding standard hygiene practices and the use of personal protective equipment should be conducted.

Actions That Should Be Taken

As a rule, the most effective control for occupational safety and health hazards is to eliminate the hazard through substitution. In this case the use of Class A pathogen-free biosolids would eliminate the hazard; however, this report addresses reducing worker risk where Class B biosolids are used. When using Class B biosolids, engineering controls and work practices should be used to prevent exposures. Personal protective equipment, including respiratory protection, should be used when engineering controls are not feasible; before engineering controls are installed; or when installed engineering controls are being repaired or maintained.

Engineering Controls:

- ▶ The storage time for dewatered (filter cake) Class B biosolids should be minimized at both the water treatment facility and in the field to prevent the growth of pathogens.
- ▶ The Class B biosolids should be incorporated (thoroughly mixed) into the soil, where feasible. Where incorporation is not feasible, workers exposed to the land-applied biosolids should use personal protective equipment during the restricted period.
- ▶ Mechanical disturbance of applied Class B biosolids should be avoided during the restricted period.
- ▶ Heavy equipment used at storage and application facilities for Class B biosolids should be equipped with sealed positive pressure, air-conditioned cabs that contain filtered air recirculation units to reduce the potential for exposure to air borne microorganisms and

endotoxin.

Personal Protective Equipment:

Appropriate personal protective equipment should be required for all job duties likely to result in exposure to Class B biosolids. The choices of personal protective equipment include goggles, splash-proof face shields, respirators, liquid-repellant coveralls, and gloves. Face shields (that fit over the employee's hard hat) should be made available for all jobs where there is a potential for exposure to spray, high-pressure sewage leaks, or aerosolized biosolids during land application. Gloves should be used when touching biosolids or surfaces exposed to biosolids. Management and employee representatives should work together to determine which job duties are likely to result in this type of exposure and which type of equipment is needed. A qualified health and safety professional should provide training or retraining in the appropriate use of personal protective equipment.

Hygiene and Sanitation:

Hand-washing stations with clean water and mild soap should be readily available whenever contact with Class B biosolids may occur. In the case of workers in the field, portable sanitation equipment including clean water and soap should be provided. Biosolids should be removed from shoes prior to entering enclosed vehicles, and cabs should be wiped down and cleaned of residual mud (or settled dust), after each use, to reduce potential exposure to contaminated material.

Hazard Communication and Training:

Periodic training regarding standard hygiene practices for working with Class B biosolids should be conducted which covers issues such as:

- ▶ the frequent and routine hand washing (the most valuable safeguard in preventing infection by agents present in Class B biosolids), especially before eating or smoking, and after contact with Class B biosolids or surfaces exposed to biosolids;
- ▶ the use of personal protective equipment, such as coveralls, boots, gloves, goggles, respirators, and face shields;
- ▶ the removal of contaminated personal protective equipment and the use of available on-site showers, lockers, and laundry services;
- ▶ the proper storage, cleaning, or disposal of contaminated personal protective equipment;
- ▶ the use of clean, dry bandages to cover cuts and wounds;
- ▶ the instructions that work clothes and boots should not be worn home or outside the immediate work environment; and
- ▶ the prohibition of eating, drinking, or smoking while working in or around biosolids.

Source:

U. S. DEPARTMENT OF HEALTH AND HUMAN SERVICES Public Health Service
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health



Staging Area

5198

Image State of Utah
© 2010 Google

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Staging Area

Evacuation Route

519 ft

Image State of Utah
© 2010 Google

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