NM1 - \_\_\_\_50\_\_\_\_

# GENERAL CORRESPONDENCE

YEAR(S):

2009 - 2011\_\_\_\_

# Jones, Brad A., EMNRD

From:

Jones, Brad A., EMNRD

Sent:

Thursday, June 23, 2011 3:17 PM

To:

'Marcella Marquez'; Powell, Brandon, EMNRD

Cc:

'richard@c-w-e.com'; 'Don Baldwin'

Subject: Attachments: RE: GEOMAT Work Plan for Crowe Blanco
GEOMAT Work Plan\_Rev 7.pdf; 2011 6-23 Blanco Boing Plan Approval.pdf

### Marcella,

Please see the attached... it is the boring plan and approval. Hardcopies of the approval have been placed in the mail. Please notify Brandon Powell (OCD District Office - Aztec) and myself prior to initiating any drilling.

### Brad

# Brad A. Jones

Environmental Engineer
Environmental Bureau
NM Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505
E-mail: brad.a.jones@state.nm.us

Office: (505) 476-3487 Fax: (505) 476-3462

From: Don Baldwin [mailto:don.baldwin@geomatengineering.com]

**Sent:** Thursday, June 23, 2011 1:37 PM

To: Jones, Brad A., EMNRD

Subject: GEOMAT Work Plan for Crowe Blanco

### Brad,

Please find attached GEOMAT's Work Plan for installing three additional monitor wells at the Crowe Blanco site. Please review it and let Richard or myself know if you have any questions or need additional information.

### Thanks.

Don Baldwin Geologist GEOMAT Inc. (505) 327-7928 office (505) 860-9400 cell

# New Mexico Energy, Minerals and Natural Resources Department

### Susana Martinez

Governor

John H. Bemis Cabinet Secretary-Designate

Brett F. Woods, Ph.D. Deputy Cabinet Secretary Jami Bailey
Division Director
Oil Conservation Division



June 23, 2011

Ms. Marcella Marquez Industrial Ecosystems, Inc. 49 CR 3150 Aztec, New Mexico 87410

RE: Boring Plan – Proposed Work Plan

**Commercial Surface Waste Management Facility** 

Crowe Blanco, LLC - Blanco Landfarm

Facility Location: W/2 and SW/4 SE/4 of Section 16, Township 29 North, Range 9 West NMPM

San Juan County, New Mexico

Dear Ms. Marquez:

The Oil Conservation Division (OCD) has received Crowe Blanco, LLC's boring plan proposal, dated June 17, 2011, to further investigate and characterize the uppermost aquifer and subsurface geology for a proposed commercial surface waste facility permit (Blanco Landfarm) located in the W/2 and SW/4, SE/4 of Section 16, Township 29 North, Range 9 West NMPM, San Juan County, New Mexico. The OCD has reviewed the proposal and determined that the proposal is adequate to proceed with the additional site investigation.

The OCD agrees that the proposed three (3) additional boring/monitoring well locations appear adequate. However, if the hydrogeologic conditions cannot be determined, additional borings or monitoring wells may be needed. It should be understood that if a monitoring well is constructed, it shall be bailed until fully developed.

The OCD appreciates your cooperation in providing a boring plan for review, in order to determine if the submitted application and the proposed site are suitable for approval. If there are any questions regarding this matter, please do not hesitate to contact me at (505) 476-3487 or brad.a.jones@state.nm.us.

Sincerely.

Brad A. Jones

Environmental Engineer

BAJ/baj

cc: OCD District III Office, Aztec

Richard Cheney, Cheney-Walters-Echols, Inc., Farmington, NM

Donald Baldwin, GEOMAT, Inc., Farmington, NM

# Jones, Brad A., EMNRD

From:

Don Baldwin [don.baldwin@geomatengineering.com]

Sent:

Thursday, June 23, 2011 1:37 PM

To:

Jones, Brad A., EMNRD

Subject:

GEOMAT Work Plan for Crowe Blanco

Attachments:

GEOMAT Work Plan\_Rev 7.pdf

Brad,

Please find attached GEOMAT's Work Plan for installing three additional monitor wells at the Crowe Blanco site. Please review it and let Richard or myself know if you have any questions or need additional information.

Thanks,

Don Baldwin Geologist GEOMAT Inc. (505) 327-7928 office (505) 860-9400 cell



June 17, 2011

GEOMAT Proposal No. 102-06-17 Rev. 7

Richard P. Cheney, P.E. Cheney-Walters-Echols, Inc. 909 West Apache Street Farmington, New Mexico 87401

RE: Proposed Work Plan

Additional Monitor Wells Installation

Crowe Blanco Properties, LLC - Operated by IEI

Blanco, New Mexico

GEOMAT Inc. (GEOMAT) is pleased to submit this Work Plan for the installation of three additional groundwater monitor wells (MW-8, MW-9 and MW-10) at the proposed Crowe Blanco Properties, LLC facility near Blanco, New Mexico.

The purpose of these additional wells is to further evaluate the depth of groundwater beneath the site. The water level data from the additional wells will be plotted on the potentiometric surface map and will be used to help characterize different portions of the site based on depth to groundwater.

### Our scope of work follows:

- Using subcontracted drilling services, GEOMAT will drill three boreholes at the approximate locations described below and depicted on the attached Site Plan.
  - One boring (MW-8) will be located near the northern boundary of the site approximately 100 feet south of U.S. Highway 64 and 500 feet west of County Road 4445 at a ground surface elevation of approximately 5756 feet. This boring will be advanced to a depth of 15 feet below the depth at which groundwater is encountered during drilling, or, if groundwater is not encountered, to a total depth of 110 feet below ground surface, whichever is shallower.
  - A second boring (MW-9) will be located near the western boundary of the site roughly 1,200 feet south of existing well MW-2 and 800 feet north of MW-6. The ground surface elevation at this location is approximately 5715 feet. This boring will be advanced to a depth of 15 feet below the depth at which groundwater is encountered during drilling, or, if groundwater is not encountered, to a total depth of 55 feet below ground surface, whichever is shallower.
  - A third boring (MW-10) will be located near the eastern boundary of the site roughly 1,200 feet north of County Road 4450 and 1,700 feet southeast of

Richard P. Cheney, P.E.
GEOMAT Work Plan for Installation of Additional Monitor Wells
6/17/2011
Page 2 of 3

existing well MW-4. The ground surface elevation at this location is approximately 5778 feet. This boring will be advanced to a depth of 15 feet below the depth at which groundwater is encountered during drilling, or, if groundwater is not encountered, to a total depth of 110 feet below ground surface, whichever is shallower.

- The borings will be drilled using continuous-flight, hollow-stem auger and/or air-rotary equipment. Continuous core samples of the subsurface materials will be obtained from each boring during drilling. A geologist from our office will monitor the drilling operations and prepare a continuous log of each boring.
- Moisture-bearing zones encountered during drilling will be evaluated to determine
  whether they are viable water-producing zones. Drilling will be halted upon
  encountering a moist zone and the borehole pumped or bailed dry. The boring will
  be allowed to sit overnight to allow time for any infiltration of water to occur.
- Borings in which groundwater is encountered will be completed as permanent monitor wells as described in the attached Work Plan submitted by our drilling subcontractor, Enviro-Drill Inc. (EDI). If a confined aquifer is encountered, the well will be constructed such that the bentonite seal is installed at the depth at which water was initially encountered during drilling.
- The static water level in each well will be measured using an electronic water-level indicator. Water levels will be determined relative to the top of casing (TOC) on the north side of each well casing.
- The natural ground surface elevation will be determined at the location of each well.
   Any manipulation of the natural ground surface elevation by cutting or filling will be documented. The difference between the TOC and natural ground surface elevations will be used to determine the depth to groundwater below natural ground surface at each well.
- The water-level data will be used to determine the potentiometric surface using the Strike and Dip Geologist's Three-Point Method.

It is anticipated that the drilling and monitor well installation will take five to seven days to complete. GEOMAT will notify NMOCD one week prior to commencing the work.

Thank you for the opportunity to work with you on this project. If you have any questions or need additional information, please let us know.

Respectfully submitted,

Dandled R. Baldwin

GEOMAT Inc.

Donald R. Baldwin

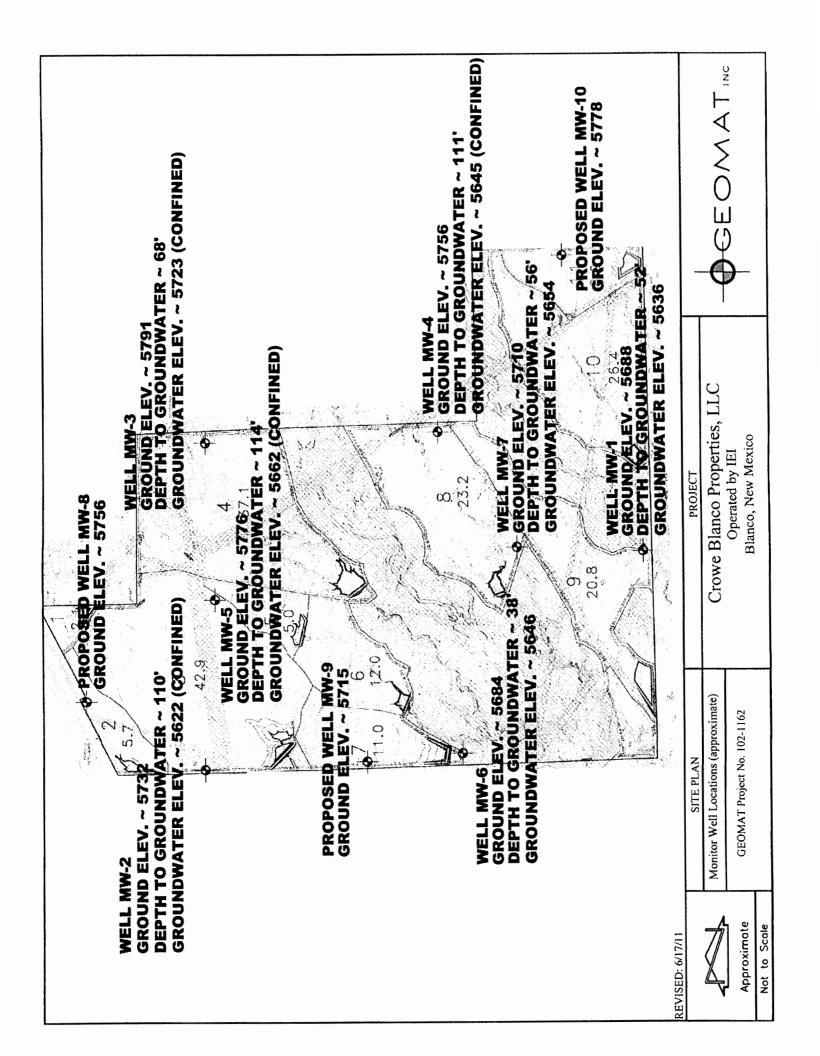
Geologist

Richard P. Cheney, P.E. GEOMAT Work Plan for Installation of Additional Monitor Wells 6/17/2011 Page 3 of 3

Attachments: Site Plan - Proposed Monitor Well Locations

EDI Work Plan

cc: Brad A. Jones, NMOCD



Geomat

EDI Ref. No. 2380PH157 Revision 3

### **WORK PLAN**

EDI will complete the proposed project by continuously coring all boreholes to total depth utilizing an HQ wireline coring system. The diameter of the borehole will be 4-inches, allowing for the placement of a 2-inch monitor system if groundwater is encountered. This will eliminate the need for borehole reaming.

EDI will utilize air-coring methods "with foam injection" on a limited basis for borehole stability or to facilitate removal of cuttings from boreholes, especially at deeper depths. The foam will be an environmentally safe, non-hydrocarbon based product. The cores will be placed in wax-covered HQ cardboard core boxes, with 10 feet of core in each box. The cores will be retained by Geomat field personnel.

If no groundwater is encountered in the borehole, EDI will abandon it by tremming a bentonite/cement mixture from bottom to top to avoid bridging and to keep surface water from migrating down the borehole.

If groundwater is encountered, EDI will set a permanent 2-inch monitor well in the borehole, with 20 feet of pre-packed, 0.010 slotted screen. Fifteen feet of screen will be placed below the water table, and 5-feet above the water table. A 10/20 silica sand pack will be placed around the pre-pack screen to two feet above the screened interval. A bentonite plug seal four feet thick will be placed on top of the sand pack, with the remaining annulus filled with a bentonite/cement grout to surface. The surface completion will consist of a 5-foot by 4-inch steel lockable shroud, set 3-feet below surface and 2-feet above in a 4'x4'x4" concrete pad with three bollards placed in a triangular formation to protect the well. The well will be developed by bailing to remove sediment.

# Susana Martinez

Governor

John H. Bemis Cabinet Secretary-Designate

Brett F. Woods, Ph.D. Deputy Cabinet Secretary Jami Bailey Division Director Oil Conservation Division



November 22, 2011

John J. Kiely Crowe Blanco Properties, LLC 401 S. LaSalle, Suite 606 Chicago, Illinois 60605

RE: Request for Additional Information – Permit Application Review for a Proposed Commercial Surface Waste Management Facility
Crowe Blanco Properties, LLC – Blanco Landfarm
Facility Location: W/2 and SW/4 SE/4 of Section 16, Township 29 North, Range 9
West NMPM
San Juan County, New Mexico

Dear Mr. Kiely:

The Oil Conservation Division (OCD) has reviewed Crowe Blanco Properties, LLC's (Crowe Blanco) response and revision, dated September 19, 2011, of application for a commercial surface waste facility permit for the Blanco Landfarm located in the W/2 and SW/4 SE/4 of Section 16, Township 29 North, Range 9 West NMPM, San Juan County, New Mexico. The review of the submittal is to determine if any additional information or modifications may be required before considering deeming the permit application complete. The application has been determined to be incomplete. Therefore, the OCD requests additional information.

Enclosed is a list of items that must be addressed prior to completing the review. Once this information is submitted, the OCD will determine if additional information is required. The OCD suggests that meetings be conducted with the OCD on a periodic basis to discuss the request for additional information. The OCD recommends that all corrections, additions, and modifications to the application be reviewed and cross-referenced before they are submitted, in order to verify that all responses correlate and coincide with each other throughout the application.

Crowe Blanco Properties, LLC Blanco Landfarm November 22, 2011 Page 2 of 34

If there are any questions regarding this matter, please do not hesitate to contact me at (505) 476-3487 or <a href="mailto:brad.a.jones@state.nm.us">brad.a.jones@state.nm.us</a>.

Sincerely,

Brad A. Jones

Environmental Engineer

BAJ/baj

Attachments: Request for Additional Information

Cc: OCD District III Office, Aztec w/ attach

Marcella Marquez, Industrial Ecosystems, Inc., 49 CR 3150, Aztec, NM 87410 w/ attach

Crowe Blanco Properties, LLC Blanco Landfarm November 22, 2011 Page 3 of 34

# Request for Additional Information Crowe Blanco Properties, LLC – Blanco Landfarm Commercial Surface Waste Management Facility November 22, 2011

# Page 4.1

Pursuant to Paragraph (1) of 19.15.36.13.B NMAC, "No surface waste management facility shall be located within 200 feet of a watercourse, lakebed, sinkhole or playa lake." The first sentence states that "the facility consists of 291 +- acres." The 291 +- acre assessment includes the 3 watercourses and their associated setbacks, as illustrated on page 4.3, and an area in the upper northeast corner which is identified in the cover letter as "it will not be used as part of the SWMF..." Please properly identify the area in which Crowe Blanco, LLC is seeking to permit as a surface waste management facility pursuant to the requirements of 19.15.36 NMAC.

The third sentence states "a perimeter berm will serve as the outer boundary of the cells developed within the facility." The siting criteria identified in 19.15.36.13.B NMAC determines the surface waste management facility boundary. The placement of the contaminated soils is addressed in Paragraph (2) of 19.15.36.15.C NMAC which states the "operator shall not place contaminated soils received after the effective date of 19.15.36 NMAC within 100 feet of the surface waste management facility's boundary." The facility boundary and the outer boundary of the landfarm cells (placement of contaminated soils) are not the same. Please clarify the statement.

### Page 4.1

Pursuant to Paragraph (4) of 19.15.36.8.C NMAC, the application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and *detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas.*" OCD was unable to locate the engineering designs of underlined items above in Section 19.15.36.8.5 of the permit application, as referenced on page 4.1 as the source of this information. The design drawings provided in Section 19.15.36.8.5 of the permit application seem to only focus on the design of the processing area and not the design features associated with the rest of the proposed surface waste management facility. Please provide all of the required information.

# Page 4.4, Sheet 6 of 17

The illustration identifies another area that may or may not be part of the proposed facility. Please clarify if the area in brown will be part of the proposed area to be permitted. Also, please identify what the dashed line represents on the drawing.

# Page 5.0, 19.15.36.8.C.5, Engineering Designs & Technical Data:

Pursuant to Paragraph (5) of 19.15.36.8.C NMAC, the application shall include "engineering designs, certified by a registered professional engineer, <u>including technical data on the design elements of each applicable treatment, remediation</u> and disposal <u>method</u> and <u>detailed designs of surface impoundments</u>." The use of manure throughout the permit application is recognized as part of the bioremediation process. Please provide the details regarding the storage of the manure.

Crowe Blanco Properties, LLC Blanco Landfarm November 22, 2011 Page 4 of 34

### Page 5.1

Sheet C105 was not provided in the section of the permit application. Please provide a copy of Sheet C105 which illustrates the detailed construction/installation diagrams for the processing area such as the containment area design, the containment area berm design, interior tank battery berm design, the interior road and driveway design, and the chain link gate and foundation design. Also, please provide detailed construction/installation diagrams for the following: facility boundary fencing and gating, facility boundary berms, landfarm cell berms, vehicle/equipment wash-down area, manure storage area, and concrete impoundments discussed in the permit application.

# **Page 5.5,** *Sheet C107:*

The cross-section drawings, Section A-A and Section B-B, illustrate that piping to and from the above grade tanks are to be installed 3-4 feet below the surface elevation of the tanks within the containment area. The cross-section drawing Section C-C on Sheet C105 illustrates that only 12 inches of clean sand will be installed on top of the 60-mil HDPE liner. Please clarify or explain how the piping will be installed without compromising the liner.

# Page 6.4, Section 4.1, Flowchart for Waste Acceptance/Disposal:

The purple section of the flow chart, which addresses the handling of drill cuttings, does not address compliance with the waste acceptance protocol of Subsection A of 19.15.36.15 NMAC. As proposed on the chart, the solids generated in the separation process of the drill cuttings are not subjected to the paint filter test prior to being placed into the biopile. Please modify the flow chart to reflect the landfarm waste acceptance requirements of Part 36.

# Page 6.5, Section 4.2, Migratory Bird Protection:

Pursuant to Subsection I of 19.15.36.13 NMAC, "To protect migratory birds, tanks exceeding eight feet in diameter, and exposed pits and ponds shall be screened, netted or covered. Upon the operator's written application, the division may grant an exception to screening, netting or covering upon the operator's showing that an alternative method will protect migratory birds or that the surface waste management facility is not hazardous to migratory birds..." Sheet C108, provided on page 5.6 of the permit application, identifies the dimensions of the equipment within the processing area. The shaker tank dimensions are 45 feet (length) x 8.5 feet (width) x 10 feet (height). The slurry tank dimensions are 45 feet (length) x 8.5 feet (width) x 10 feet (height). The centrifuge will have a diameter of 14 feet and a length of 48 feet. The storage (not fresh water) tanks will have a diameter of 12 feet and a height of 20 feet. The centrate tanks will have a diameter of 20 feet and a height of 16 feet. Please identify which tanks are open top. Also, please demonstrate compliance to the migratory bird provision for any open top tanks that exceed the 8 foot diameter surface area (or 50.24 square feet).

### Page 6.8, Tank Bottoms:

The instructions provided in Step 1 regarding tank bottoms is "offloaded into the above grade tank(s)." Please clarify how the tank bottoms are "offloaded into the above grade tank(s)." Are the above grade tank open top? If so, please assess and demonstrate compliance to the migratory bird protection requirements of Subsection I of 19.15.36.13 NMAC.

# Page 6.9, Section 5.4, Centrate Water (Wastewater):

Please identify the source of the centrate water or describe how the centrate water will be generated. The information provided in the first sentence regarding the use of the centrifuge and

Crowe Blanco Properties, LLC Blanco Landfarm November 22, 2011 Page 5 of 34

the "end waste product being centrate water" is not identified as part of the "Flowchart for Waste Acceptance/Disposal" provided in Section 4.1 or page 6.4 of the application. The centrifuge is only identified to be used for solidification. Please modify the "Flowchart for Waste Acceptance/Disposal" provided in Section 4.1 or page 6.4 of the application if such operations are appropriate. Please see additional comments for this section.

The third paragraph proposes to reuse the centrate water (wastewater) as dust control on the roadways within the facility and to add moisture to the biopiles if certain concentrations are not exceeded. The first issue is the proposal to reuse the centrate water (wastewater) as dust control on the roadways within the facility. Such a proposal requires a discharge permit pursuant to 20.6.2 NMAC. The second issue is the concentrations proposed for the reuse of the centrate water (wastewater). The regulatory references provided in the first bullet do not apply to liquids. Paragraph (3) of 19.15.36.13.A NMAC states "No landfarm that accepts soil or drill cuttings with a chloride concentration that is 500 mg/kg or less shall be located where ground water is less than 50 feet below the lowest elevation at which the operator will place oil field waste." Subsection A of 19.15.36.15 NMAC states "Soils and drill cuttings placed in a landfarm shall be sufficiently free of liquid content to pass the paint filter test, and shall not have a chloride concentration exceeding 500 mg/kg if the landfarm is located where ground water is less than 100 feet but at least 50 feet below the lowest elevation at which the operator will place oil field waste..." As underlined above, the 500 mg/kg concentration specifically applies to soil and drilling cuttings; not liquids as proposed. A separate permit issued under the Water Quality Control Commission Regulations 20.6.2 NMAC is required, if Crowe Blanco wishes to discharge wastewater to the surface, such as for dust control. Also, the OSHA PEL for hydrogen sulfide is 10 ppm (TWA), not greater or "in excess of 10 ppm" as proposed. Please make the appropriate modifications and changes.

### **Page 6.11**, Five Year Monitoring:

Regarding the proposed five year vadose zone monitoring protocol, the current language states "the constituents of Subsections A & B of 20.6.2.3103 NMAC shall be analyzed ..." This would suggest that all of the constituents listed in Subsections A and B of 20.6.2.3103 NMAC will be analyzed. The regulatory language of Paragraph (3) of 19.15.36.15.E NMAC states that the "operator shall collect and analyze a minimum of four randomly selected, independent samples from the vadose zone, using the methods specified below for the constituents listed in Subsections A and B of 20.6.2.3103 NMAC at least every five years..." The "methods specified below for the constituents listed in Subsections A and B of 20.6.2.3103 NMAC" are those identified in Subsection F of 19.15.36.15 NMAC. Paragraph (5) of 19.15.36.15 F NMAC states "The concentration of constituents listed in Subsections A and B of 20.6.2.3103 NMAC shall be determined by EPA SW-846 methods 6010B or 6020 or other methods approved by the division." Please modify appropriately.

# Page 6.12, Section 8.0, Treatment Zone Closure Performance Standards:

The bulleted items in the first paragraph do not fully express the intent of the provision it is addressing. Paragraph (1) of 19.15.36.15.G NMAC states "If the operator achieves the closure performance standards specified in Subsection F of 19.15.36.15 NMAC, then the operator may either leave the treated soils in place, or, with prior division approval, dispose or reuse of the treated soils in an alternative manner." All of the bulleted items require division approval. Please modify appropriately to reflect the requirements of the provision. Also, please provide

Crowe Blanco Properties, LLC Blanco Landfarm November 22, 2011 Page 6 of 34

additional information and details regarding the proposal to "spread on the facility." OCD is unable to determine the extent of what would be involved. Please clarify.

The fifth bullet of the fourth paragraph references method "DPA 300.0" for analyzing chlorides. The correct test method is EPA method 300.0. Please modify appropriately.

The sixth bullet of the fourth paragraph begins by stating "the concentration of constituents listed in Subsections A & B of 20.6.2.3103 NMAC (regulated metals will be tested by U.S. EPA Method 6010B or 6020, and other constituents will be tested by appropriate U.S. EPA Methods) shall not exceed..." Paragraph (5) of 19.15.36.15.F NMAC states "The concentration of constituents listed in Subsections A and B of 20.6.2.3103 NMAC shall be determined by EPA SW-846 methods 6010B or 6020 or other methods approved by the division." It does mention testing for "other" 20.6.2.3103 NMAC constituents. Please modify appropriately.

# Page 6.13, Section 9.0, Final Disposition of Treated Soils:

The bulleted items in the second paragraph do not fully express the intent of the provision they are addressing. Paragraph (1) of 19.15.36.15.G NMAC states "If the operator achieves the closure performance standards specified in Subsection F of 19.15.36.15 NMAC, then the operator may either leave the treated soils in place, or, with prior division approval, dispose or reuse of the treated soils in an alternative manner." All of the bulleted items require division approval. Please modify appropriately to reflect the requirements of the provision. Also, please provide additional information and details regarding the proposal to "spread on the facility." OCD is unable to determine the extent of what would be involved. Please clarify.

The fifth paragraph misquotes the regulatory requirement. Paragraph (4) of 19.15.36.15.G NMAC states that the "operator may request approval of <u>an alternative soil closure standard</u> from the division, provided that the operator shall give division-approved public notice of an application for alternative soil closure standards in the manner provided in 19.15.36.9 NMAC." The provision addresses an "alternative soil closure <u>standard</u>," not an "alternative soil closure <u>method(s)</u>" as proposed in the permit application. Please modify appropriately.

# Page 6.13, Section 10.2, Facility Requirements:

The bulleted items in the second paragraph do not fully express the intent of the provision it is addressing. The requirements of Subsection B of 19.15.36.13 NMAC addresses the siting criteria for any type of surface waste management facility; specifically areas and conditions where such a facility shall not be located. It does not address the placement of contaminated soils, as proposed in the permit application. Subsection B of 19.15.36.13 NMAC allows the operator to determine the extent of the surface waste management facility boundary based upon the siting criteria setbacks. The placement of contaminated soils is addressed in the operational requirements 19.15.36.15 NMAC. Paragraph (2) of 19.15.36.15.C NMAC states "The operator shall not place contaminated soils received after the effective date of 19.15.36 NMAC within 100 feet of the surface waste management facility's boundary." The facility berms cannot be constructed of contaminated soils or "waste" as proposed in the permit application. Please modify appropriately.

Crowe Blanco Properties, LLC Blanco Landfarm November 22, 2011 Page 7 of 34

Please reference the section of the permit application which demonstrates compliance to the siting requirements of 19.15.36.13.B NMAC and the size requirement of 19.15.36.13.C NMAC.

### **Page 6.13**, Section 10.3, *Berms*:

The use of remediated soils for the construction of landfarm cell berms requires compliance with Paragraph (1) of 19.15.36.15.G NMAC. Please provide a clarifying statement that Crowe Blanco must demonstrate that the treated soils proposed for the construction of landfarm cell berms satisfy the closure performance standards of 19.15.36.15.F NMAC and must obtain prior division approval for reuse of treated soils in an alternative manner.

# Page 6.14, Section 10.8, Run On/Off Control:

In the third bullet of the second paragraph, please provide a regulatory citation that supports the proposed stormwater reuse for remediation criteria of 1000 mg/kg for chlorides. Please note that the unit mg/kg is used to represent concentrations in solids, not liquids. Also, a separate permit issued under the Water Quality Control Commission Regulations 20.6.2 NMAC is required, if Crowe Blanco wishes to discharge contaminated stormwater to the surface, such as for dust control.

# **Page 7.1**, *Table 1*:

When addressing the inspection of berms and retention ponds, the proposed frequency of the task states "Bi-weekly and/or within 24 hours of the end of a storm event (0.5" or greater) or a major windstorm." OCD was unable to determine the source of the proposed criteria specifying the volume of "0.5" or greater." The regulatory requirements do not recognize the specified volume in the regulatory language of Part 36. Pursuant to Paragraph (3) of 19.15.36.13.L NMAC, each operator shall have an inspection and maintenance plan that includes "inspections of the berms and the outside walls of pond levees quarterly and after a major rainfall or windstorm, and maintenance of berms in such a manner as to prevent erosion." Please modify the proposed language to correctly reflect the requirements or provide a demonstration that justifies the proposed 0.5 inches as the minimum amount of rainfall to be classified as a "major rainfall" for the San Juan Basin.

### **Page 7.3**, *Inspection and Maintenance Checklist continued:*

At the top of the checklist, one of the protocols proposed to address fugitive dust is to add moisture to the unpaved roads. For this to be considered an option, the source of the moisture must be identified. A separate permit issued under the Water Quality Control Commission Regulations 20.6.2 NMAC may be required, if Crowe Blanco wishes to discharge contaminated water to the surface for dust control. Please clarify.

### Page 8.4, Section IV, Signs and Markers:

The required ANSI standard and language for the sign are specified and recognized in regulatory language of 19.15.11.10 NMAC, but not in the permit application. Please modify the response to recognize the requirements of the provision.

### **Page 8.4**, Section IV, Regulatory Threshold:

The second to the last sentence identifies the Permissible Exposure Limit (PEL) for hydrogen sulfide (H2S) as "in excess of 10 ppm." OSHA and NIOSH identify the PEL or Time Weighted Average (TWA) as 10 ppm; not greater than 10 ppm as proposed in the permit

Crowe Blanco Properties, LLC Blanco Landfarm November 22, 2011 Page 8 of 34

application. Please modify the response to reflect the appropriate regulatory exposure limit as designated by the proper regulated authority and agency.

### Page 8.5, Activation Levels:

The first paragraph misquotes the regulatory language by stating that the plan will be activated at "... 500 ppm at a public road or 3000 feet from the release site." The regulatory language of Subsection C of 19.15.11.9 NMAC states "At a minimum, the person shall activate the plan whenever a release may create a hydrogen sulfide concentration of more than 100 ppm in a public area, 500 ppm at a public road or 100 ppm 3000 feet from the site of release." Please modify the response to properly reflect the regulatory requirement. Also, "public area" and "public road" are defined terms in 19.15.11.7 NMAC. Without providing the definition for each term, the requirements of Subsection C of 19.15.11.9 NMAC cannot be fully understood. Please provide the definition for "public area" as provided in Subsection I of 19.15.11.7 NMAC and for "public road" as provided in Subsection J of 19.15.11.7 NMAC.

The fourth paragraph instructs employees to return to work if the H2S is less than 15 ppm and at greater than 15 ppm instruct employees to wear individual H2S monitors. OSHA and NIOSH identify the PEL or Time Weighted Average (TWA) for H2S as 10 ppm and the Short Term Exposure Limit (STEL) as 15 ppm. The STEL is the maximum concentration permitted for a continuous 15-minute exposure period. There may be a maximum of four such periods per day, with at least 60 minutes between exposure periods, and provided the daily TWA is not exceeded. Please modify the response to reflect the appropriate regulatory exposure limits as designated by the proper regulated authority and agency.

The fifth sentence states that "If the H2S levels reach 100 ppm... the CP will be implemented." This statement contradicts the protocols within the H2S contingency plan. The first sentence of the third paragraph, of this section of the contingency plan, states that the "emergency alarm system will activate at 10 ppm or higher." It goes on to state that "local emergency responders will be notified that the alarms have indicated an H2S level of greater than 10 ppm..." Also, OSHA and NIOSH identify the Immediate Danger to Life and Health limit (IDLH) for H2S as 100 ppm. Please modify the response to reflect the implementation of the proposed H2S contingency plan and the appropriate regulatory exposure limits as designated by the proper regulated authority and agency.

# Page 8.6, Section V, General Evacuation Procedures for Building/Facility Occupants:

The fourth step provided in this section states that the "appropriate authorities will be notified in the event of a release..." Pursuant to Subparagraph (a) of 19.15.11.9.B.(2) NMAC, the contingency plan, at a minimum, shall include "information concerning the responsibilities and duties of personnel during the emergency, an immediate action plan as described in the API document referenced in Paragraph (1) of Subsection B of 19.15.11.9 NMAC, and telephone numbers of emergency responders, public agencies, local government and other appropriate public authorities..." Please identify which employee (by title) is responsible for the notice and to which appropriate authority they are to notify. Please clarify in the response the H2S concentration that would constitute a "release." Also, please reference the location of the contact telephone list within the H2S contingency plan.

The fifth step discusses primary and alternative exits and evacuation routes. Pursuant to Subparagraph (a) of 19.15.11.9.B.(2) NMAC, the contingency plan shall also include "the

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locations of potentially affected public areas and public roads and shall describe proposed evacuation routes, locations of road blocks and procedures for notifying the public, either through direct telephone notification using telephone number lists or by means of mass notification and reaction plans." Please reference the location of the document(s) which identifies the evacuation routes and road blocks within the H2S contingency plan.

# Page 8.6, Section VI, Disabled Occupants:

The first sentence in this section states that in a release of H2S "in excess of 10 ppm" a self contained breathing apparatus (SCBA) would be provide to any disabled occupant(s) that are unable to exit the building without assistance. The use of the phrase "in excess of 10 ppm" is inappropriate in a H2S contingency plan. Use of the phrase could be applied by others to mean 15 ppm (STEL), 100 ppm (IDLH), or 1000 ppm which could result in death in a few minutes. The contingency plan is written so that the alarm system activates at 10 ppm or greater. It instructs employees to evacuate when the alarm sounds (10 ppm or greater). OSHA and NIOSH identify the PEL or Time Weighted Average (TWA) for H2S as 10 ppm. This section provides protocols and instructions on how to assist disabled occupants/employees during an evacuation. Please modify the text to coincide with events occurring at the same time.

# **Page 8.6**, Section VII, Accountability Procedures for Emergency Evacuation:

The first paragraph, titled *Designated Meeting Sites*, recommends that parties should "meet outside the building in the prearranged designated meeting site." It goes on to state that "A list of primary and alternate designated sites will be posted..." Pursuant to Subparagraph (a) of 19.15.11.9.B.(2) NMAC, the contingency plan shall also include "the locations of potentially affected public areas and public roads and shall <u>describe proposed evacuation routes</u>, locations of road blocks and procedures for notifying the public, either through direct telephone notification using telephone number lists or by means of mass notification and reaction plans." Please reference the location of the document(s) which identifies the evacuation routes and designated meeting sites within the H2S contingency plan.

The OCD recommends adding an additional step, between steps 1 and 2, in the fifth paragraph which is to "monitor ambient hydrogen sulfide concentrations at designated meeting site. If H2S is detected at 10 ppm or greater move farther away from the source and re-establish a new designated meeting site and continue to monitor." When evacuating during a H2S release, parties should ensure that the area/location in which they assemble is safe to gather and remain.

### Page 8.7, Section VIII, Public Safety:

This section identifies public roads, proposes evacuation routes for unidentified residents and the public, and identifies some of the proposed roadblocks. The information missing from this section and not provided elsewhere within the H2S contingency plan is the information required by Part 11 that addresses the regulatory requirements regarding public areas and the parties associated with such areas. Pursuant to Subsection I of 19.15.11.7 NMAC, a public area "means a building or structure that is not associated with the well, facility or operation for which the radius of exposure is being calculated and that is used as a dwelling, office, place of business, church, school, hospital or government building, or a portion of a park, city, town, village or designated school bus stop or other similar area where members of the public may reasonably be expected to be present." Pursuant to Subparagraph (a) of 19.15.11.9.B.(2) NMAC, "The plan shall also include the locations of potentially affected public areas and public roads and shall describe proposed evacuation routes, locations of road blocks and procedures for notifying the

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public, either through direct telephone notification using telephone number lists or by means of mass notification and reaction plans." Pursuant to Subparagraph (c) of 19.15.11.9.B.(2) NMAC, "The hydrogen sulfide contingency plan shall include maps and drawings that depict the area of exposure and public areas and public roads within the area of exposure. Please identify the parties within potentially affected public areas and the procedures for notification.

# Page 8.7, Section IX, Rescue/Emergency Response/Medical:

The first sentence of the first paragraph, states "In the event of an emergency, staff will call 911." Pursuant to Subparagraph (a) of 19.15.11.9.B.(2) NMAC, "The hydrogen sulfide contingency plan shall include the activation level and a description of events that could lead to a release of hydrogen sulfide sufficient to create a concentration in excess of the activation level." Please identify the "activation level" or H2S concentration in which staff will contact 911. The last sentence of the paragraph indicates that "once 911 is contacted the emergency dispatch... will implement procedures to notify the public when necessary." OCD has been unable to locate any names, telephone numbers, and/or addresses of nearby parties within the H2S contingency plan. Without any of this information, how will the emergency dispatch notify the public? Please provide. The response also states that the "emergency dispatch... will implement procedures to notify the public when necessary." It does not indicate the method to provide notice nor does it indicate what the conditions will be to know when notification is "necessary." Pursuant to Subparagraph (a) of 19.15.11.9.B.(2) NMAC, "The plan shall also include the locations of potentially affected public areas and public roads and shall describe proposed evacuation routes, locations of road blocks and procedures for notifying the public, either through direct telephone notification using telephone number lists or by means of mass notification and reaction plans." Please provide the notification procedures and the conditions and/or concentration in which notification will be required.

The last sentence of the second paragraph states "Everyone shall remain at the designated assembly point(s) and await instructions from law enforcement and emergency personnel or the on-site Emergency Coordinator." OCD agrees with the procedure, but recommends that prior to committing to an assembly point it should be assessed and continually assessed to determine if it is safe to assemble and remain. The OCD recommends adding an additional step to the protocol, which is to "monitor ambient hydrogen sulfide concentrations at designated meeting site. If H2S is detected at 10 ppm or greater move farther away from the source and re-establish a new designated meeting site and continue to monitor." When evacuating during a H2S release, parties should ensure that the area/location in which they assemble is safe to gather and remain.

The first sentence of the third paragraph indicates that the Emergency Coordinator notify the "appropriate agencies" if there are concerns to parties outside of the facility boundary due to a release. Pursuant to Subparagraph (a) of 19.15.11.9.B.(2) NMAC, the contingency plan shall contain "...telephone numbers of emergency responders, public agencies, local government and other appropriate public authorities." Please identify the "appropriate agencies" and their contact numbers or reference their location within the H2S contingency plan. The next two sentences discuss the responsibilities of those initiating the evacuation process of neighboring properties. Please explain how or at what action level or concentration that the evacuation process of neighboring properties will begin and also either provide or reference the location of the contact information and addresses of the parties that might require evacuation.

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The introductory sentence/paragraph states "The following lists includes the names or employees, managers, staff, or other personnel and their job titles, job positions and relative H2S CP collateral duties." Pursuant to Subparagraph (a) of 19.15.11.9.B.(2) NMAC, the contingency plan shall "contain information on emergency procedures the person will follow in the event of a release and shall include, at a minimum, information concerning the responsibilities and duties of personnel during the emergency..." The information provided in the section did not include any "relative H2S CP collateral duties." Please provide the require information.

# Page 8.9, Section XI, Operations Shutdown:

The third paragraph (beneath the Table) provides the following regulatory reference at the end: 19.15.36.13.N.11. The hydrogen sulfide contingency plan required by Paragraph (8) of 19.15.36.8.C NMAC states that the permit application "shall include a hydrogen sulfide prevention and contingency plan that complies with those provisions of 19.15.11 NMAC that apply to surface waste management facilities." The contingency plan required by Subsection N of 19.15.36.13 NMAC, is not based upon compliance with Part 11, must "designed to minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water." The regulatory reference, Paragraph (11) of 19.15.36.13.N NMAC, requires the operator to "describe how, if the surface waste management facility stops operations in response to fire, explosion or release, the emergency coordinator will monitor for leaks, pressure buildup, gas generation or rupture in valves, pipes or the equipment, wherever this is appropriate." The paragraph only indicates that the "on-site supervisors will be responsible" for such activities, but does not describe how such activities will be accomplished.

# Page 8.9, Section XII, Training and Communications:

The last sentence of the first indicates that only the "San Juan County Office of Emergency Management" will receive a copy of the H2S contingency plan and notifications of any changes or updates. Pursuant to Subsection D of 19.15.11.9 NMAC, the operator "shall submit the hydrogen sulfide contingency plan to the division." Pursuant to Subsection H of 19.15.11.9 NMAC, "On an annual basis, each person required to prepare one or more hydrogen sulfide contingency plans pursuant to 19.15.11 NMAC shall file with the appropriate local emergency planning committee and the state emergency response commission an inventory of the wells, facilities and operations for which plans are on file with the division and the name, address and telephone number of a point of contact." Please properly identify the parties which are required to have a copy (all copies should be current) of the H2S contingency plan.

In the second paragraph of this section, the use of the acronym "PEC" is utilized, but not defined. Please define the acronym "PEC." This paragraph focuses on training. The fourth sentence in this paragraph states that the "PEC will hold annual training and practice drills for the public, residents of the area and public official. The regulatory requirements identify what type of training or information must be provided to certain parties. Pursuant to Subparagraph (d) of 19.15.11.9.B.(2) NMAC, states that "hydrogen sulfide contingency plan shall also provide for training of residents as appropriate on the proper protective measures to be taken in the event of a release, and shall provide for briefing of public officials on issues such as evacuation or shelter-in-place plans." Please modify the response to demonstrate that the appropriate parties will receive their required training and/or information.

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The first sentence of the last paragraph states that "In the event of a H2S release requiring the activation of the Hydrogen Sulfide Contingency Plan the division will be notified..." As the plan is currently written and proposed, the activation of the H2S contingency plan occurs at the first detection of H2S at 10 ppm or greater. Please include the activation level in the sentence. Also, the last part of this paragraph states that the Primary Emergency Coordinator "will submit a completed report on form C-141 with the 15 day time frame." Pursuant to Section 16 of 19.15.11 NMAC, the operator "shall submit a full report of the incident to the division on form C-141 no later than 15 days following the release." Please modify the sentence to indicate when the regulatory "time frame" begins.

### Page 8.12, Toxic Effects Of Hydrogen Sulfide:

The second sentence of the introductory paragraph, states that the "acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume." The OSHA Permissible Exposure Limit (PEL) for a ceiling concentration is 20 ppm hydrogen sulfide, a level which may not ever be exceeded. Please modify the response to reflect the most current exposure limits and their associated exposure times. The acceptable maximum peak, for 10 minutes only, once during an 8 hour day if there is no other measurable exposure, is 50 ppm. The ACGIH 2004 recommended threshold limit values (TLVs) are 10 ppm for an eight hour time weighted average (TWA) and 20 ppm for the short term exposure limit above the TLV. In May of 1994 CDC/NIOSH reduced the Immediate Danger to Life and Health (IDLH) concentration from 300 ppm to 100 ppm. Please update the information on this page to reflect the most current exposure and threshold limits for hydrogen sulfide.

When addressing hydrogen sulfide in TABLE #3, there is a Hazardous Limit column that indicates a concentration/rate of 250 ppm/hour. OCD is unfamiliar with such a limit. Please provide a regulatory reference to the 250 ppm/hour Hazardous Limit provided in Table 3.

Pursuant to Subparagraph (b) of 19.15.11.9.B.(2) NMAC, the "hydrogen sulfide contingency plan shall include a discussion of the characteristics of hydrogen sulfide and sulfur dioxide." The only information provided in the H2S contingency plan regarding exposure and threshold limits for sulfur dioxide are provided in the second row of Table 3. The proposed Hazardous Limit of 100 ppm is properly recognized by NIOSH as the IDLH concentration. The ACGIH 2006 recommended threshold limit values (TLVs) are 2 ppm for an eight hour time weighted average (TWA) and 5 ppm for the short term exposure limit above the TLV. Please create a new page that focuses on the toxic effects of sulfur dioxide and provide the most current exposure and threshold limits for sulfur dioxide.

# Page 8.13,

OCD is uncertain if this page is a continuation of the pervious page or an attempt to provide information on the available safety equipment and supplies. Pursuant to Subparagraph (a) of 19.15.11.9.B.(2) NMAC, the H2S contingency "plan shall include <u>information on the availability and location of necessary safety equipment and supplies.</u>" OCD has been unable to locate the required unlined information above. Please either update the information on this page or amend the H2S contingency plan and provide the require information.

# Page 8.14, Toxicity of Hydrogen Sulfide to Humans:

The second row of the table represents H2S at 0.010 % or 100 ppm. In May of 1994 CDC/NIOSH reduced the Immediate Danger to Life and Health (IDLH) concentration from 300

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ppm to 100 ppm. OCD is uncertain if the proposed symptom/ time exposure relationship is based upon the 1994 IDLH assessment or the 1972 IDLH assessment (as proposed on page 8.12). Please clarify and update if necessary.

The proposed percent value for 200 ppm H2S in the third row of the table is not correct. It proposes that 200 ppm is equivalent to 0.20 %. The correct assessment is 200 ppm is equivalent to 0.02 %. Please modify appropriately.

OCD was unable to locate the following information in the H2S contingency plan which is required by 19.15.11.9 NMAC. Please provide the following information:

- An immediate action plan as described in the API document referenced in Paragraph (1) of Subsection B of 19.15.11.9 NMAC;
- Telephone numbers of emergency responders, public agencies, local government and other appropriate public authorities;
- Procedures for notifying the public, either through direct telephone notification using telephone number lists or by means of mass notification and reaction plans;
- Information on the availability and location of necessary safety equipment and supplies; and
- Characteristics of sulfur dioxide.

# Page 9.3, Section 1, Introduction:

The third paragraph states that "IEI will utilize up to four active cells for "treatment" of contaminated soils throughout the life of the facility." This also seems to be the basis of the financial assurance cost analysis. OCD wishes to clarify that if operations increase beyond four active cells, the financial assurance will have to be adjusted accordingly and approved by OCD prior to any placement of contaminated soils within the additional landfarm cells. Please modify the paragraph to recognize Crowe Blanco's responsibility to maintain the appropriate amount of financial assurance during operations.

The fourth paragraph, as written suggests that once the operator has confirmed, by laboratory analysis, that soils satisfy the treatment zone closure performance standards of Subsection F of 19.15.35.15 NMAC, OCD approval is not required to reuse the remediated soils for berm maintenance or for solidifying/stabilizing incoming liquid waste. In accordance with Paragraph (1) of 19.15.35.15.G NMAC "If the operator achieves the closure performance standards specified in Subsection F of 19.15.36.15 NMAC, then the operator may either leave the treated soils in place, or, with prior division approval, dispose or reuse of the treated soils in an alternative manner." Such activities as proposing to reuse remediated soils for berm maintenance or for solidifying/stabilizing incoming liquid waste require "prior division approval." Please modify the second sentence in the paragraph to properly express the regulatory requirement.

The fifth paragraph states that if any of the treatment and/or vadose sampling results indicate an exceedance of any of the applicable regulatory standards, "IEI will notify the Division and begin appropriate and agreed-upon remediation procedures." OCD is unsure what the "appropriate and agreed-upon remediation procedures" are mentioned in the response. The regulatory language of Section 18 of 19.15.36 NMAC provides clear instruction to the operator of their responsibilities during closure and post-closure. Pursuant to Subparagraph (a) of 19.15.36.18.D.(4) NMAC, during closure the operator shall ensure that "disking and addition of bioremediation enhancing materials continues until soils within the cells are remediated to the

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standards provided in Subsection F of 19.15.36.15 NMAC, or as otherwise approved by the division." Pursuant to Subparagraph (c) of 19.15.36.18.D.(4) NMAC, during closure the operator shall ensure that "landfarmed soils that have not been or cannot be remediated to the standards in Subsection F of 19.15.36.15 NMAC are removed to a division-approved surface waste management facility and the landfarm remediation area is filled in with native soil and revegetated in accordance with Paragraph (6) of Subsection A of 19.15.36.18 NMAC." In regards to the vadose zone sampling and post-closure, in accordance with Subsection F of 19.15.36.18 NMAC "If there has been a release to the vadose zone or to ground water, then the operator shall comply with the applicable requirements of 19.15.30 NMAC and 19.15.29 NMAC." Please modify the paragraph to reflect conformance to the closure and post-closure regulatory requirements of Part 36.

# Page 9.4, Section 2, General Surface Waste Management Facility Closure:

The design description of the processing area provided in the first bullet of the first paragraph does not coincide with the design drawings provided on Sheet C105. The written description, on Page 9.4, identifies the height of the berms as two feet. Cross-section A-A on Sheet C105 illustrates the design height of the processing area perimeter berm as 2.5 feet. The written description, on Page 9.4, also states that there will be "four feet of soil on top of the liner. Cross-section C-C on Sheet C105 illustrates a 12 inch "clean sand layer buffer above liner." Please modify the text to reflect the proposed design or modify the design to match the text.

The second bullet of the first paragraph identifies the area of the landfarm as " $\pm$  289 acres." The landfarm area cannot be the same size as the property in which Crowe Blanco owns due to the siting criteria to establish the facility boundary, setback requirements for placement contaminated soil from the facility boundary, and areas that have been clearly identified as not part of the facility or not part of the permit. Please properly assess the area that can be considered the facility and the area that can be utilized for landfarming. Based upon the requirements of Part 36 the area should be different in size. Please modify the text appropriately.

The second sentence of the fourth paragraph identifies "OCD," the Division, as the responsible party to extend the Division's response time and notify the operator of the extension. In accordance to Paragraph (3) of 19.15.36.18.A NMAC, the regulatory language identifies the Director as the responsible party. "if the division does not notify the operator of additional closure requirements within 60 days as provided, the operator may proceed with closure in accordance with the approved closure plan; provided that the director may, for good cause, extend the time for the division's response for an additional period not to exceed 60 days by written notice to the operator." Please modify the text to reflect the regulatory language.

# Page 9.4,

Please address and recognize the requirements of Subsection C of 19.15.36.18 NMAC. A short response similar to Subsection B of 19.15.36.18 NMAC can be utilized.

# **Page 9.5**, Section 4, *Processing Area Closure*:

Cross-section C-C on Sheet C105 illustrates only a 12 inch "clean sand layer buffer above liner" regarding the containment design of the processing area. Cross-sections A-A and B-B on Sheet C107 illustrates that the recirculation and supply lines to and from the receiving tanks will be installed 3-4 below the interior grade of the processing area. Based upon the design drawings, the recirculation and supply lines running horizontally to and from the receiving tanks

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will be installed 2-3 feet beneath the liner. The second sentence in the first paragraph states "All lines above the liner will be removed." Pursuant to Subparagraph (f) of 19.15.35.18.D.(4) NMAC, the operator shall ensure that "buildings, fences, roads and equipment are removed, the site cleaned-up and tests conducted on the soils for contamination." Please clarify if the design drawings properly reflect the complete design of the processing area or if an exception or wavier is being requested. See comments above for the first bullet of the first paragraph on Page 9.4, Section 2, General Surface Waste Management Facility Closure. Also, Crowe Blanco proposes to "leave the building containing the centrifuges in place after closure of the facility." Please clarify if the centrifuges will be removed from the building during closure and if an exception or wavier is being requested.

The second paragraph/sentence states that "soils beneath the processing area will be tested..." It does not continue to identify what steps will be taken if contamination is discovered. Any contaminated soils can be remediated in one of the existing landfarm cells if such soils satisfy the waste acceptance criteria after testing. Please identify all the steps required to complete the closure of the processing area.

Items not addressed in regards to the closure of the Processing Area are the closure activities in which the closure costs estimates are based upon, as provided in the second paragraph of Section 8, Closure Costs, on Page 9.6 of the permit application. Such closure activities include the removal and disposal of liquids and BS&W from the tanks; the removal of the tanks; the disconnecting of piping, disassembling, cleaning, and the disposing of waste from the tanks; the disassembly, removal, and disposal of the piping; the removal of the soils covering the liner; the removal and disposal of the liner; and testing of the soils beneath the liner. Additional items not included in the closure activities mentioned above are as follows: testing of the soils covering the liner to determine if contamination is present and if disposal or remediation might be required; the removal of equipment such as the shaker, the centrifuge, and any pumps and sumps associated with the tanks within the processing area; and the removal berms and fencing. This is the closure plan and this section specifically addresses the closure of only the processing area. The financial assurance cost estimates should be based the closure plan. In this case the cost estimates reflect costs of closure activities not proposed (but should be expressed) in the closure plan, but are expressed in second paragraph of Section 8, Closure Costs, on Page 9.6 of the permit application. Please modify this section to identify all of the closure activities required to complete the closure of the processing area.

### Page 9.5, Section 5, Landfarm Closure:

The first sentence of the second paragraph refers to "standards listed in each section below." OCD was unable to locate any remediation/closure standards specifically identified in any of the "sections" below Section 5, but did locate regulatory references. Remediation/closure standards are provided in Table 1. Please modify the sentence to properly identify the location of the referenced "standards."

The second sentence of the second paragraph proposes to backfill the remediation area with remediated soils if soils have to be removed to a division-approved surface waste management facility. Pursuant to Subparagraph (c) of 19.15.36.18.D.(4) NMAC, the operator shall ensure that "landfarmed soils that have not been or cannot be remediated to the standards in Subsection F of 19.15.36.15 NMAC are removed to a division-approved surface waste management facility and the landfarm remediation area is filled in with native soil and re-

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vegetated in accordance with Paragraph (6) of Subsection A of 19.15.36.18 NMAC." The regulatory language does not recognize or recommend the use of remediated soils as backfill material for the remediation areas. Please modify the sentence to demonstrate compliance to the provision or request an exception/waiver.

The first sentence of the third paragraph states "Upon final site closure and approval from OCD, the active "treatment" cells will be sampled for closure. The sequence of events proposed in the sentence does not coincide with the closure requirements of Part 36. OCD would not consider approval of the final closure until the operator demonstrates compliance with the applicable provisions of Subparagraph (c) of 19.15.36.18.D.(4) NMAC, which would not include the sampling of active "treatment" cells. The sampling of active "treatment" cells and the vadosc zone from each "treatment" cell are closure activities identified in Paragraph (4) of 19.15.36.18.D NMAC that must be completed to achieve closure and proceed to post-closure. Please modify the sentence to reflect the sequence of the activities that must be completed by the operator prior to OCD's consideration of closure.

The fourth sentence of the third paragraph states "Cells that have not been re-vegetated will be seeded with a land owner approved seed mix." Any seed mixture applied for revegetation must satisfy the minimum requirements of "consisting of at least three native plant species, including at least one grass, but not including noxious weeds" and satisfy the coverage and time requirements for maintaining the vegetative cover as specified in Paragraph (6) of 19.15.36.18.A NMAC. Please modify the sentence to demonstrate compliance to the provision or request an exception/waiver.

The fourth paragraph proposes to backfill the cells with remediated soils if treated (remediated) soils have to be removed. Pursuant to Subparagraph (d) of 19.15.36.18.D.(4) NMAC, the operator shall ensure that "if treated soils are removed, the cell is filled in with native soils and re-vegetated in accordance with Paragraph (6) of Subsection A of 19.15.36.18 NMAC." The regulatory language does not recognize or recommend the use of remediated soils as backfill material. Please modify the sentence to demonstrate compliance to the provision or request an exception/waiver.

The first sentence of the fifth paragraph states "Final Closure activities will also include removal of facility berms, buildings, fences, roads, and equipment to the extent required to achieve remediation standards (19.15.36.18.D.4.e and 19.15.36.18.D.4.f)." Based upon the regulatory references, OCD is unable to determine the "remediation standards" referred to in the sentence. The two provisions referenced in the sentence address the removal of the items identified and the testing of soils for contamination. It does not reference, state, or discuss remediation of soils or remediation standards. Any contamination discovered after the removal of the items required by the provision must be addressed pursuant to 19.15.29 and/or 19.15.30 NMAC, as applicable. Regarding the note at the end of the paragraph, Crowe Blanco needs to be clear in their permit application request of what they are currently asking OCD to consider in their permit application. The note states that Crowe Blanco "may choose to leave some structures in place, including fencing." If Crowe Blanco wishes to pursue this, please present all exception and waiver requests together, so that OCD can properly indentify and consider the requests. If Crowe Blanco wishes not to pursue this at this time, please provide a clarifying statement that Crowe Blanco may submit an exception/waiver request at a later date, but is not requesting one now. Please modify appropriately.

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# Page 9.5, Section 6, Facility Post Closure:

The first sentence of the section specifically links "clean closure" to only the "treatment" areas. Clean closure is compliance with the applicable provisions of Subsection D of 9.15.36.18 NMAC, which includes the remediation or removal of contaminated soils, the removal of equipment and infrastructure and sampling for contamination, and re-vegetation of the site. Please properly modify the response.

# **Page 9.6**, Section 7, Re-vegetation:

Pursuant to Subsection G of 9.15.36.18 NMAC, "If the landowner contemplates use of the land where a cell or surface waste management facility is located for purposes inconsistent with re-vegetation, the landowner may, with division approval, implement an alternative surface treatment appropriate for the contemplated use, provided that the alternative treatment will effectively prevent erosion. If the division approves an alternative to re-vegetation, it shall not release the portion of the operator's financial assurance reserved for post-closure until the landowner has obtained necessary regulatory approvals and begun implementation of such alternative use." Please modify the response to clarify if the alternative is being request in this permit application and to recognize the holding of financial assurance while awaiting approvals and implementation of the alternative.

# Page 9.6, Section 8, Closure Costs:

The closure costs should be based upon the closure protocol proposed in the closure plan. The cost estimate assessment demonstrates that the closure plan is incomplete. In this case the closure cost estimates are based upon closure protocols not expressed in the closure plan. Please submit a closure plan that identifies all the steps and protocols to complete closure pursuant to 19.15.36 NMAC. Also, please adjust the closure costs accordingly.

Closure activities identified in the second paragraph of this section are not identified in the proposed closure plan for the Processing Area. Such closure activities include the removal and disposal of liquids and BS&W from the tanks; the removal of the tanks; the disconnecting of piping, disassembling, cleaning, and the disposing of waste from the tanks; the disassembly, removal, and disposal of the piping; the removal of the soils covering the liner; the removal and disposal of the liner; and testing of the soils beneath the liner. Additional items not included in the closure activities mentioned above are as follows: testing of the soils covering the liner to determine if contamination is present and if disposal or remediation might be required; the removal of equipment such as the shaker, the centrifuge, and any pumps and sumps associated with the tanks within the processing area; and the removal berms and fencing. The financial assurance cost estimates should be based the closure plan. In this case the cost estimates reflect costs of closure activities not proposed (but should be expressed) in the closure plan, but are expressed in second paragraph of Section 8, Closure Costs, on this page of the permit application. Please modify this section to propose closure costs for all of the closure activities required to complete the closure of the processing area and based upon the protocols and steps provided in the closure plan.

Once again the details of the closure activities identified in the third paragraph of this section are not identified in the proposed closure plan for the Landfarm. Such closure activities include semi-annual monitoring, turning of the biopiles, and the application of soil enhancers. Please modify this section to propose closure costs for all of the closure activities required to

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complete the closure of the landfarm area and based upon the protocols and steps provided in the closure plan. Also, please make the corresponding changes to the landfarm closure plan.

The fourth paragraph discusses the sampling protocols for the treatment and vadose zone. The second sentence indicates that a technician will "collect two treatment zone composite samples, collected from four discrete locations, per active "treatment" cell, and one discrete vadose zone sample collected from each of the "treatment' zone cells." The proposed method of treatment of contaminated soils is the use of biopiles, instead of landfarm cells. As discussed in the permit application, the development of the biopile is different than a landfarm cell. The operational requirements of Part 36 requires operators to apply lifts of contaminated soil, up to 8 inch or 1000 cubic vards per acre, across landfarm cells up to 10 acres in size and disk the soils bi-weekly. This allows the soils in a landfarm scenario to more likely become homogeneous in nature. The discussion of the construction of the biopiles, pages 6.5 through 6.8 of the permit application, and the associated sampling protocols, pages 6.10 trough 6.12, demonstrate the uniqueness of the biopile. The fourth paragraph of Section 7.1, page 6.10, of the permit application states "It is proposed that the size of each biopile will be approximately 750 cy - 12" base x 4' top x 8' height x 316' length. It is estimated that the total number of biopiles equivalent to the maximum thickness of treated soils allowed in a "landfarm cell" would be 4 biopiles per acre = 40 biopiles per landfarm cell (10 acres)." The second sentence of the third paragraph of this same section, Section 7.1 on page 6.10, states "A minimum of one composite soil sample, consisting of four discrete samples will be collected and analyzed from the treatment/biopile." This sampling protocol is practical since each individual biopile will be more likely to become homogeneous as lifts area applied and it is turned monthly. The same cannot be said about homogeneity of the 40 individual biopiles in a 10 acre "treatment" landfarm cell. In regards to treatment zone closure performance standard testing during closure, please clarify how "two treatment zone composite samples, collected from four discrete locations, per active "treatment" cell" can demonstrate compliance and represent 40 individual biopiles in a 10 acre "treatment" landfarm cell. Also, pursuant to the vadose zone sampling requirements of Paragraph (2) of 19.15.36.15.E NMAC the operator is required to "collect and analyze a minimum of four randomly selected, independent samples from the vadose zone at least semiannually." Pursuant to Paragraph (1) of 19.15.36.15.E NMAC the operator "shall monitor the vadose zone beneath the treatment zone in each landfarm cell' and "shall take the vadose zone samples from soils between three and four feet below the cell's original ground surface." This equates to four vadose zone samples per cell rather than the proposed "one discrete vadose zone sample collected from each of the "treatment' zone cells." Please modify the closure treatment and vadose zone sampling protocols to demonstrate compliance and reflect the requirements of the regulatory provisions of Part 36.

The last sentence of the fourth paragraph states "Finally, the site will be re-vegetated, or another OCD-approved stabilization method will be used." OCD is uncertain of the nature or source of "another OCD-approved stabilization method" in regards to re-vegetation. Subsection G of 19.15.36.18 NMAC allows for alternatives to re-vegetation if the "alternative treatment will effectively prevent erosion." Please clarify the nature of "another OCD-approved stabilization method" in regards to re-vegetation.

The title page, page 9.1, for this section of the permit application is titled: *Closure and Post Closure Estimate*. OCD was unable able to locate a post-closure plan presented in this section. Please reference the location of or provide a section that identifies the post-closure

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activities that Crowe Blanco will complete and that provide the basis of the post-closure cost estimates.

# **Page 9.7**, Table 1, Facility Closure Testing Requirements:

In the second column of the row addressing Vadose Zone Monitoring, the number of samples is identified, but where they are required to be taken is not. Pursuant to the vadose zone sampling requirements of Paragraph (2) of 19.15.36.15.E NMAC the operator is required to "collect and analyze a minimum of four randomly selected, independent samples from the vadose zone at least semi-annually." Pursuant to Paragraph (1) of 19.15.36.15.E NMAC the operator "shall monitor the vadose zone beneath the treatment zone in each landfarm cell" and "shall take the vadose zone samples from soils between three and four feet below the cell's original ground surface." This equates to four vadose zone samples per cell. The same applies to the five year vadose zone sampling program. In the Analyses column regarding the testing of the constituents of 20.6.2.3103 NMAC, only the metals require analyses. The regulatory language of Paragraph (3) of 19.15.36.15.E NMAC states that the "operator shall collect and analyze a minimum of four randomly selected, independent samples from the vadose zone, using the methods specified below for the constituents listed in Subsections A and B of 20.6.2.3103 NMAC at least every five years..." The "methods specified below for the constituents listed in Subsections A and B of 20.6.2.3103 NMAC" are those identified in Subsection F of 19.15.36.15 NMAC. Paragraph (5) of 19.15.36.15.F NMAC states "The concentration of constituents listed in Subsections A and B of 20.6.2.3103 NMAC shall be determined by EPA SW-846 methods 6010B or 6020 or other methods approved by the division." Please modify Table 1 appropriately.

In the second column of the row addressing Treatment Zone Closure, "1 discrete vadose" zone sample is proposed. OCD is unaware of any other sampling frequency for the vadose zone than those identified in Subsection E of 19.15.16.15 NMAC and are presented in the second row which is properly titled: Vadose Zone Monitoring. Please omit the proposed "1 discrete vadose" sample during the treatment zone closure sampling since it does not satisfy the minimum sampling requirements of Subsection E of 19.15.16.15 NMAC. Also, in the Analyses column regarding the testing of the constituents of 20.6.2.3103 NMAC, only the metals require analyses. Paragraph (5) of 19.15.36.15.F NMAC states "The concentration of constituents listed in Subsections A and B of 20.6.2.3103 NMAC shall be determined by *EPA SW-846 methods 6010B or 6020* or other methods approved by the division." It does mention testing for "other" 20.6.2.3103 NMAC constituents. Please modify Table 1 appropriately.

In the row addressing Processing Area Closure, please review the comments provided for Page 9.5, Section 4, *Processing Area Closure* above in this letter and modify Table 1 to include the testing of the soils covering the liner proposed for removal to determine if contamination is present and if disposal or remediation might be required.

# **Page 9.8**, Table 2, *Processing Area Closure:*

Please review the comments above regarding the closure of the processing area and make the appropriate modifications and additions to Table 2.

### Page 9.9, Table 3, Landfarm Closure:

Please review the comments above regarding the closure of the landfarm and make the appropriate modifications and additions to Table 3.

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# Page 9.10, IEI Facility Closure Closure:

Please update and revise the table after the above mentioned modifications and additions have been completed.

Also, pursuant to Subsection B of 19.15.36.11 NMAC, "The commercial facility's estimated closure and <u>post closure cost</u> shall be the amount <u>provided in the closure plan</u> the applicant submitted..." OCD has been unable to locate a post-closure plan and post-closure estimates within the permit application. Please provide the required information and include the estimated cost to the proposed financial assurance total.

# Page 10.1, Section I, Purpose and Objective:

The last sentence in this section states "The plan will demonstrate that facility-specific emergency procedures have been developed and will be implemented whenever an emergency hazardous waste situation occurs at the facility." Pursuant to Subsection N of 19.15.36.13 NMAC, "The contingency plan shall be designed to minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water. The operator shall carry out the plan's provisions immediately whenever there is a fire, explosion or release of contaminants or oil field waste constituents that could threaten fresh water, public health, safety or the environment; provided that the emergency coordinator may deviate from the plan as necessary in an emergency situation." The regulatory language does not mention or limit the contingency plan to only address an "emergency hazardous waste situation." Please modify appropriately to address the requirements of the provision.

### Page 10.4, Section IV, Waste Description:

The second sentence of the second paragraph states that "liquid waste is managed in both tanks and pits at the "tank battery" area." This is the first time during the review that "pits" have been mentioned. If "pits" are to be utilized in the "tank battery" or processing area, the permit application and drawings will need to be updated to address design, construction, operations, maintenance, and closure (including closure and post-closure cost estimates). If "pits" are not to be utilized in the "tank battery" or processing area, please modify the permit application appropriately to reflect what the "pits" truly represent.

The first bullet under the paragraph titled "On-Site Generated Waste" mentions "pits" again. If "pits" are to be utilized in the "tank battery" or processing area, the permit application and drawings will need to be updated to address design, construction, operations, maintenance, and closure (including closure and post-closure cost estimates). If "pits" are not to be utilized in the "tank battery" or processing area, please modify the permit application appropriately to reflect what the "pits" truly represent.

### Page 10.5, Section V, Emergency Coordinators:

The second sentence of the third paragraph states "The list will be updated, as necessary NMOCD will be promptly notified when any changes are made to the Emergency Coordinator(s) and/or their contact information." Pursuant to Subsection N of 19.15.36.13 NMAC, "The operator shall provide the division's environmental bureau with a copy of an amendment to the contingency plan, including amendments required by Paragraph (8) of Subsection N of 19.15.36.13 NMAC; and promptly notify the division's environmental bureau of changes in the emergency coordinator or in the emergency coordinator's contact information." Since

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Subparagraph (d) of 19.15.36.13.N.(8) NMAC is "the list of emergency coordinators or their contact information changes" then a copy of the amendment to the contingency plan is required to be submitted to the division's environmental bureau as well. Please modify the response appropriately.

# Page 10.6, Section VII, Evacuation Plan:

The last sentence of the second paragraph refers to the Emergency Evacuation Route map, provided in Addendum A, as "showing available exits from the area and the direction to the designated assembly point(s)." The map provided in Addendum A illustrated the locations of the poisonous (H2S) gas signs, roadblocks barricades, and emergency evacuation points, but does not illustrate any designated assembly point(s). Please modify the map to illustrate the recommended designated assembly point(s) where personnel and visitors should gather during an emergency.

### Page 10.6, Section VIII, Classification:

The proposed classification system is based upon the notification and reporting limits for releases as specified within 19.15.29 NMAC. Such terms and definitions of terms are based upon those provided in Part 29, but do not satisfy the requirements of Subsection N of 19.15.36.13 NMAC due to their limiting factors. Examples would be the first two bullets which identify and define what would be considered "Minor Emergency Situations" on page 10.6. The first bullet identifies "small spills (more than 5 bbls but less than 25 bbls)" as a minor emergency situation. Based upon this limiting factor and as proposed in the permit application, a contingency plan would not address spills less than 5 barrels or 210 gallons. Another example is the second bullet which identifies "unauthorized releases of gases greater than 50 MCF but less than 500 MCF of gases" as a minor emergency situation. The proposed volumes would also apply to releases of hydrogen sulfide gas in which the concern is based upon concentration and potential exposure rather than volume. A release of less than 50 MCF hydrogen sulfide gas could be fatal to an employee, visitor, or neighbor if the concentration was high enough. The requirements of Part 29 for a surface waste management facility permit are addressed in the permit application when the operator recognizes compliance to Subsection K of 19.15.36.13 NMAC. In this permit application Crowe Blanco provides this on page 6.14 in Section 10.6, Spill Reporting & Corrective Action Provisions.

The purpose of this section is to submit a contingency plan based upon the requirements of Subsection N of 19.15.36.13 NMAC. In accordance with Subsection N of 19.15.36.13 NMAC, "The contingency plan shall be designed to minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water." There is not a specified minimum release volume identified. Please modify this section appropriately to demonstrate compliance with Subsection N of 19.15.36.13 NMAC.

# Page 10.7, Section VIII, Classification:

The section titled *Major Emergency* is also based upon the notification and reporting limits for releases as specified within 19.15.29 NMAC. The purpose of this section is to submit a contingency plan based upon the requirements of Subsection N of 19.15.36.13 NMAC. In accordance with Subsection N of 19.15.36.13 NMAC, "The contingency plan shall be designed to minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to

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air, soil, surface water or ground water." There is not a specified minimum release volume identified. Please modify this section appropriately to demonstrate compliance with Subsection N of 19.15.36.13 NMAC.

# **Page 10.7**, Section IX, *Identification of Waste(s)*:

In the second paragraph, titled *Oilfield Waste*, the second sentence mentions "pits" being located in the tank battery area. If "pits" are to be utilized in the "tank battery" or processing area, the permit application and drawings will need to be updated to address design, construction, operations, maintenance, and closure (including closure and post-closure cost estimates). If "pits" are not to be utilized in the "tank battery" or processing area, please modify the permit application appropriately to reflect what the "pits" truly represent.

# Page 10.10, Section XII, Control & Release Actions:

The introductory paragraph to this section states "Control and response actions to be taken in specific situations are described in this Section." The four titled topics discussed in this section are as follows: Spill; Releases; Fires; and Explosions. Pursuant to Paragraph (1) 19.15.36.13.N NMAC, the contingency plan for emergencies shall "describe the actions surface waste management facility personnel shall take in response to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents that could threaten fresh water, public health, safety or the environment." OCD's review of this section revealed that only fire and explosions are addressed in a manner that complies with the provision above. Please provide the above underlined information.

# Page 10.10, Section XII, Control & Release Actions, Spill (19.15.36.13.K):

As indicated by the regulatory reference provided in the title of this subsection, the response provided demonstrates compliance with the referenced provision rather than with Paragraph (1) 19.15.36.13.N NMAC. The response states "In the event of a spill, the facility will comply with spill reporting and corrective action provisions of 19.15.29 NMAC or 19.15.30 NMAC as outlined in the company Spill Prevention Control & Contingency Plan (Refer to SPCC)." The focus of the EPA SPCC Plan is protection of surface water or "US navigable waters or adjoining shorelines." A SPCC plan is not the contingency plan required by Subsection N of 19.15.36.13 NMAC. Please describe the actions surface waste management facility personnel shall take in response to "releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents that could threaten fresh water, public health, safety or the environment," as required by Paragraph (1) 19.15.36.13.N NMAC.

# Page 10.10, Section XII, Control & Release Actions, Releases (19.15.29 NMAC):

The response provided in this subsection focuses its discussion on a release of hydrogen sulfide gas and reference the H2S contingency plan in the permit application as the source of the required information. OCD agrees with this type of response since a separate contingency plan specifically for hydrogen sulfide gas is required to be part of the permit application pursuant to Paragraph (8) of 19.15.36.8.C NMAC. The response also mentions that there "are no other potential life threatening gases associated with our process..." OCD agrees with the assessment of the "processes" but there are over a dozen natural gas transportation pipelines that cross the facility and proposed landfarm cells. If the integrity of one of these pipelines became compromised, what actions would surface waste management facility personnel take in response to a release? Please provide.

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As for the regulatory reference (19.15.29 NMAC) provided in the title of the subsection, the regulatory language provided in Subsection N of 19.15.36.13 NMAC does not recognize or recommend its use in the development of the contingency plan required by this provision. Please omit the regulatory reference (19.15.29 NMAC) since it is not applicable.

### **Page 10.12**, Section XIV, *Incompatible Waste(s)*:

Pursuant to Paragraph (13) 19.15.36.13.N NMAC, the contingency plan for emergencies shall "describe how the emergency coordinator will ensure that no oil field waste, which may be incompatible with the released material, is <u>treated</u>, <u>stored</u> or <u>disposed of until cleanup procedures are complete</u>." The two sentence response did not provide the required underlined information above. Please modify appropriately and provide the required information.

# Page 10.12, Section XV, Post-Emergency Waste Treatment, Storage, & Disposal:

Pursuant to Paragraph (12) 19.15.36.13.N NMAC, the contingency plan for emergencies shall "describe how the emergency coordinator, immediately after an emergency, will provide for treating, storing or disposing of recovered oil field waste, or other material that results from a release, fire or explosion at a surface waste management facility." The first sentence of the response states that emergency coordinator "will provide for the collection, treatment, and storage of contaminated materials" but does not "describe how" as required by the provision. The last two sentences address the disposal options. Please describe how the material will be treated and stored.

# Page 10.14, Table A-3, Emergency Equipment:

Near the bottom of the table there is a row that addresses respiratory protection equipment. In the "Capabilities/Description" column for the respiratory protection equipment, it states "Respirators are selected and used on the basis of hazards to which are potentially exposed." Pursuant to Paragraph (4) 19.15.36.13.N NMAC, the contingency plan for emergencies shall "include a list, which shall be kept current, of emergency equipment at the surface waste management facility, such as fire extinguishing systems, spill control equipment, communications and alarm systems and decontamination equipment, containing a physical description of each item on the list and a brief outline of its capabilities." Based upon the information provided in the permit application, Crowe Blanco acknowledges that the potential exposure to hydrogen sulfide gas is real due to the proposed operations and waste. The response provided does not indicate or suggest that the respiratory protection equipment available is capable of providing the proper level of protection. Please make the appropriate modifications to demonstrate compliance.

### Page 10.16, Section XX, Pollution Incident History:

The response for this section states "There are no records of a major pollution incident having occurred at this facility." OCD is unsure of which of the requirements of Subsection N of 19.15.36.13 NMAC is being addressed in this section of the facility contingency plan. The OCD thinks this may be an attempt to demonstrate compliance with Paragraph (6) 19.15.36.13.N NMAC, since it was not addressed elsewhere within the contingency plan. If this is provided to address another provision, please provide a regulatory reference and base the assessment on the incident history of the area in which the surface waste management facility is proposed. There will be no records available on a facility that currently does not exist, but there are several wells scattered across the proposed facility and several gas pipelines that could have been the source of a release or incident.

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Pursuant to Paragraph (6) 19.15.36.13.N NMAC, the contingency plan for emergencies shall "include an evaluation of expected contaminants, expected media contaminated and procedures for investigation, containment and correction or remediation." This provision is not addressed in the contingency plan, please provide the required information.

# Page 10.17, Addendum A:

Please indicate the locations of the "designated assembly point(s)" of the map as stated in the last sentence of the second paragraph of Section VII, *Evacuation Plan*, on page 10.6 of the permit application.

### **Page 14.2**, Section 2.4, *Obligations of the truck driver(s):*

The second sentence of the third paragraph states "All spillages outside the construction site must be thoroughly cleaned up immediately." This is the first time a "construction site" has been mentioned in the permit application. Please clarify where the "construction site" is located within the surface waste management facility boundary. Crowe Blanco personnel should respond to any unauthorized spills or releases that occur within the surface waste management facility boundary by the prescribed actions for such an event as specified in the facility contingency plan pursuant to Subsection N of 19.15.36.13 NMAC. Crowe Blanco personnel/staff shall also comply with the spill reporting and corrective action provisions of 19.15.29 NMAC and/or 19.15.30 NMAC, as applicable. Please modify the paragraph appropriately.

### **Page 14.3**, Section 2.5, *Obligations of General Personnel:*

The third paragraph mentions the generation of "wash-down water produced during clean-up of equipment..." This is the first time the generation of the equipment wash-down water is mentioned in the permit application. It has not been recognized as waste generated at the proposed facility in the application, therefore there are no methods of collection. containment, storage, or disposal discussed. If allowed to drain directly onto the 1-5 foot layer of soil covering the lined containment for the processing area, Crowe Blanco will need to update the closure plan and cost estimates for the processing area for the removal and disposal of liquids that accumulate on top of the liner and testing, remediation, and/or disposal of the contaminated soils. If the wash-down water is generated from cleaning the inside of tanks and equipment that contained exempt waste, then the rinsate would be considered by EPA to be RCRA exempt E&P waste. If the wash-down water is generated from cleaning the outside of equipment, such as for servicing and maintenance, the rinsate would be considered by EPA to be RCRA non-exempt waste. Both waste streams (exempt and non-exempt) may be generated, but Crowe Blanco should attempt to manage each waste stream separately. The secondary containment design for the processing area does not include a sump feature to collect and remove any liquids that accumulate on top of the liner. As the liquids accumulate the 1-5 feet layer of soil covering the liner will become saturated and contaminated by the liquids. The lined processing area will become the primary containment feature for the wash-down waste water and can no longer be consider secondary containment for the above-grade tanks. Please address the management of the wash-down waste water throughout the applicable sections of the permit application.

# Page 14.4, Section 3.2, Equipment Maintenance:

The sixth bullet, under the titled section *Best Management Practices*, states "Where possible, ensure the servicing of vehicles/equipment occurs at a location where spillage will not

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contaminate the stormwater system." Based upon the proposed language, it is OCD's understanding that vehicle and equipment repairs and maintenance will be performed outside with potential releases to the ground surface (soils). As presented, any soil contaminated from such a release (lubricating oils, glycol, waste oil, etc...) will not be addressed and left in-place. Any waste and contaminated soils generated from the servicing of vehicle/equipment are not "intrinsically derived from the primary field operations" and are considered by EPA to be RCRA non-exempt waste.

The seventh bullet, under the titled section *Best Management Practices*, states "Vehicles/equipment must be washed in the site wash-down area..." OCD has been unable to locate any other discussion of the wash-down area or any drawings of the facility that indicate its design and location within the facility boundary. Please address the management of the wash-down waste water throughout the applicable drawings and sections of the permit application. A separate permit issued under the Water Quality Control Commission Regulations 20.6.2 NMAC is required, if Crowe Blanco wishes to discharge wastewater to the ground surface.

The ninth bullet, under the titled section *Best Management Practices*, states "It is the responsibility of all personnel to properly manage the disposal of wash-down water generated during the cleaning process. Options for collection, treatment, and disposal of the wash-down water should be discussed with the site manager." The details of the "collection, treatment, and disposal of the wash-down water" should be addressed directly in the permit application. Please address the management of the wash-down waste water throughout the applicable drawings and sections of the permit application.

# Page 14.5, Section 4, Fugitive Dust & Odor Emissions:

The first bullet, under the titled section *Road and Yard Dust*, states that "...unpaved roadways will be sprayed recycled (centrate water which does not have a chloride concentration exceeding 500 mg/kg and does not contain Hydrogen Sulfide levels in excess of 10 ppm)..." A separate permit issued under the Water Quality Control Commission Regulations 20.6.2 NMAC is required, if Crowe Blanco wishes to discharge wastewater to the surface, such as for dust control. Please make the appropriate modifications and changes.

### Page 14.5, Section 4, Fugitive Dust & Odor Emissions:

The first bullet, under the titled section *Odor Control*, states that nuisance odors will be minimized by "When feasible, manure, used as part of the bioremediation process, will be stored on areas of the facility furthest from nearby residence(s)." Please provide the details regarding the storage of the manure. As recognized in the response, the manure is "part of the bioremediation process." Pursuant to Paragraph (5) of 19.15.36.8.C NMAC, the application shall include "engineering designs, certified by a registered professional engineer, including technical data on the design elements of each applicable treatment, remediation and disposal method and detailed designs of surface impoundments."

The first bullet, under the titled section *Odor Control*, states that nuisance odors will be minimized by "reducing the holding time waste disposed of in the concrete impoundment." This is the first time that it has been mentioned in the permit application that a "concrete impoundment" will be utilized at the proposed surface waste management facility. OCD has been unable to locate any other discussion of its use or any drawings of the facility that indicate

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its design and location within the facility boundary. Please address the "concrete impoundment" throughout the applicable drawings and sections of the permit application.

# Page 14.5, Section 5, Stormwater:

The third bullet in this section proposes the reuse of stormwater for dust control "when it meets acceptable reuse criteria (\*does not contain chloride concentrations exceeding 500 mg/kg)." A scparate permit issued under the Water Quality Control Commission Regulations 20.6.2 NMAC is required, if Crowe Blanco wishes to discharge stormwater run-off which has come in contact with contaminates to the ground surface. Please modify appropriately.

The second sentence of the introductory paragraph to this section lists potential wastewater and stormwater pollutants, which include "oilfield waste, aggregate, bioremediation additive mixtures, fuels, and lubricants." The status (RCRA exempt or RCRC non-exempt) of the stormwater will depend on the nature and source of the pollutant. This will be important when determining the type of injection well/facility can be utilized for disposal. Class II injection wells are only allowed to accept RCRA exempt material. Class I injection wells are allowed to accept both RCRA exempt and RCRA non-exempt material. RCRA non-exempt material may require hazardous characteristic testing to demonstrate that the waste is non-hazardous prior to be accepted at a Class I injection well/facility if its permit limits the waste acceptance to non-hazardous material. Please clarify this issue in the third bullet in this section regarding the off-site disposal of contaminated stormwater.

# Page 14.7, Section 8, Storage:

For this type of facility, OCD requires the owner/operator to ensure that all aboveground containers have impermeable secondary containment, which will contain a volume of at least one-third greater than the total volume of the largest container or all interconnected containers, unless such aboveground containers hold fresh water. Please modify the third bullet of this section to properly address aboveground tanks.

### **Page 14.8**, Section 12, Centrate Water (Waste Water):

This section proposes to reuse the centrate water (wastewater) as dust control on the roadways within the facility. A separate permit issued under the Water Quality Control Commission Regulations 20.6.2 NMAC is required, if Crowe Blanco wishes to discharge wastewater to the surface, such as for dust control. Please modify appropriately.

### Page 16.1, Form C-137:

The Form C-137 needs to be revised to properly identify the owner/applicant and to have the correct responsible party's signature. Pursuant to Paragraph (1) of 19.15.36.8.C NMAC, the permit application shall include "the names and addresses of the applicant and principal officers and owners of 25 percent or more of the applicant." The "principal officers and owners of 25 percent or more of the applicant" identified on Page 1.1 of the permit application are for only persons associated with Crowe Blanco Properties, LLC. Only Crowe Blanco Properties, LLC, their corporate address, contact person and telephone number should be provided in Section 4 of the Form C-137. Also, someone from Crowe Blanco Properties, LLC must sign the certification statement in Section 25 of the Form C-137. Please resubmit an updated revised Form C-137.

### **SPCC Spill Prevention Control & Countermeasures:**

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# **Page 7**, Section 2.1, Facility Description:

The last half of the first complete paragraph on this page describes the design of the processing area. In the discussion of the lined area, it states that the liner will be "covered with a 6-inch layer of sand protecting the liner, followed by approximately 24-inches of topsoil..." It goes on to reference the permit application "with engineering drawings for specifications." This description of the placement of soils over the liner is presented and described differently at least three times throughout the permit application. The engineer design drawing, Section C-C on Sheet C105, illustrates a 12-inch clean sand layer buffer above the liner and does not indicate or illustrate the placement of any additional soils. A written description provided the first bullet at the top of Page 9.4 states that there will be "four feet of soil on top of the liner. Please clarify the final design thickness of the soils covering the liner and modify all of the appropriate drawings and sections of the permit applications accordingly.

# Page 8, Section 2.1, Facility Description:

Pursuant to Paragraph (4) of 19.15.36.8.C NMAC, the application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and <u>detailed construction/installation diagrams</u> of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, <u>buildings</u> and <u>chemical storage areas</u>." OCD was unable to locate the engineering designs of underlined items above. On this page two separate chemical storage areas are mentioned. The first is the chemical storage area with secondary containment in the warehouse and the second is an acid storage area outside of the warehouse. Also, OCD has been unable to locate any construction/installation diagrams of the warehouse within the processing area. Only a foot print of the area in which is proposed has been provided. Please provide all of the required construction/installation diagrams.

### Page 12, Section 3.1, Containment and Diversionary Structures:

The first bullet, titled *Secondary Containment*, discusses some of the design features of the processing area. The third sentence mentions a "0.5 % bottom slope, which will drain accumulated fluids to a basin in the central portion of the containment area." It also goes on to discuss two penetration points through the liner and installation of seals at those points. None of these design details are illustrated on any of the drawings provided in the permit application. Pursuant to Paragraph (5) of 19.15.36.8.C NMAC, the application shall include "engineering designs, certified by a registered professional engineer, including technical data on the design elements of each applicable treatment, remediation and disposal method and detailed designs of surface impoundments." Also, please explain how the "accumulated fluids" will be removed on a regular basis. If the lined containment area is not designed with a feature that removes the "accumulated fluids" on a regular basis and is designed to hold the accumulate fluids and have constant hydraulic head, then the containment feature become primary containment for the accumulated fluids and cannot be considered secondary containment for any of the above-grade tanks.

The fifth sentence of the first bullet states "piping penetrates the liner and berms in two locations, to allow centrate to be transported and septic waste from the warehouse restrooms to discharge into the septic system." As written, it is not clear to OCD if the centrate will be discharged into the septic system drain field or not. Please clarify where the centrate will be "transported." Also, please clarify that if the septic system is proposed for the acceptance of the

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domestic liquid waste only that Crowe Blanco will obtained the proper permit from the appropriate regulatory agency – the New Mexico Environment Department.

The last two sentences of the first bullet mentions a "separate secondary containment" feature for the diesel tank by the office. OCD was unable to locate any design drawings for this secondary containment feature. Please identify the location of such drawings or provide.

The second bullet, titled *No-Discharge Facility*, discusses how the facility will be "enclosed by a 6-foot high earthen berm and silt fencing to prevent run-on from entering the site..." Pursuant to Paragraph (4) of 19.15.36.8.C NMAC, the application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and *detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas." OCD was unable to locate the engineering designs of berms and fencing discussed in this section. Please provide the required engineering designs.* 

# Page 13, Section 3.2, Inspections, Tests, and Records:

The last sentence/paragraph to this section states "Inspection, training, and other records are retained for at least five years in Appendix 7 of this plan." This statement is not completely correct. Pursuant to Subsection P of 19.15.36.13 NMAC, "Each operator shall conduct an annual training program for key personnel that includes general operations, permit conditions, emergencies proper sampling methods and identification of exempt and non-exempt waste and hazardous waste. The operator shall maintain records of such training, subject to division inspection, for five years." Pursuant to Subsection G of 19.15.36.13 NMAC, "The operator of a commercial facility shall maintain records reflecting the generator, the location of origin, the location of disposal within the commercial facility, the volume and type of oil field waste, the date of disposal and the hauling company for each load or category of oil field waste accepted at the commercial facility. The operator shall maintain such records for a period of not less than five years after the commercial facility's closure, subject to division inspection. Pursuant to Paragraph (9) of 19.15.36.15.C NMAC, "The operator shall maintain records of the landfarm's remediation activities in a form readily accessible for division inspection." This would be equivalent to the life of the facility. Please modify the response to properly reflect the regulatory requirements for record keeping.

#### Page 15, Section 3.7, State Rules:

Based upon Crowe Blanco's proposal to discharge contaminated oilfield (centrate) wastewater onto the ground surface for dust control and allow wash-down wastewater from the cleaning of vehicles and equipment onto ground surface, Crowe Blanco did not identified 20.6.2 NMAC, the New Mexico Water Quality Control Commission Regulations, as one of the State rules which they must demonstrate compliance. Please update this section.

#### Page 15, Section 3.8.1,

This section discusses how stormwater will be handled in the processing area. It states "if significant accumulation occurs, the stormwater will be removed by vacuum truck." OCD is unsure how the vacuum truck will be used to extract the stormwater. The only design drawing of the processing area containment is a cross-section, Section C-C, of the design profile which does not coincide with written descriptions provided throughout the permit application. The written

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description, on Page 9.4 of the permit application, states that there will be "four feet of soil on top of the liner. How will the vacuum truck be able to access the water on the liner for removal? How much accumulation would be considered "significant"? If the lined containment area is not designed with a feature that removes the "accumulated fluids" on a regular basis and is designed to hold the accumulate fluids and have constant hydraulic head, then the containment feature become primary containment for the accumulated fluids and cannot be considered secondary containment for any of the above-grade tanks. Please provide design drawings of all of the construction/installation features of the processing area containment area.

Please consider that the primary purpose of the processing area containment area is to provide secondary containment to the above ground primary containment features. One of those features is for (hydrofluoric) acid storage. Hydrofluoric acid is a listed hazardous waste – U134. EPA mixing rules state that if a listed hazardous waste is mixed with any other type of waste then all of the mixed waste takes on the listed hazardous waste status. Other contaminates captured in the containment area may include non-exempt characteristic hazardous waste such as vehicle/equipment wash-down water. The last sentence in this section states "all removed water will be pumped into the tanks and entered into the facility's liquid hydrocarbon processes." Depending on the nature and characteristics of the accumulated water on the liner of the containment area, the acceptance of allowing it to be processed at the facility may be prohibited. Please present a protocol to access the wastewater to determine if off-site disposal is required or if it can be processed as a waste stream at the surface water management facility.

# **Page 15**, Section 3.8.2, *Inspection of field drainage systems*:

The last sentence in this section states that any accumulation in the ditches and retention ponds "will be promptly reported to the IEI Facility Manager and removed." Please clarify what will happen to the "removed" water. Will it be hauled off-site disposal or reused? Please clarify.

#### Page 16, Section 3.9.2, Secondary Containment:

The last sentence of this paragraph describes the design of the processing area. In the discussion of the lined area, it states that the liner will be "covered with a 6-inch layer of sand protecting the liner, followed by approximately 24-inches of topsoil..." It goes on to reference the permit application "with engineering drawings for specifications." This description of the placement of soils over the liner is presented and described differently at least three times throughout the permit application. The engineer design drawing, Section C-C on Sheet C105, illustrates a 12-inch clean sand layer buffer above the liner and does not indicate or illustrate the placement of any additional soils. A written description provided the first bullet at the top of Page 9.4 states that there will be "four feet of soil on top of the liner. Please clarify the final design thickness of the soils covering the liner and modify all of the appropriate drawings and sections of the permit applications accordingly.

# **Appendix 1**, Secondary Containment Calculations, *Processing Area:*

In the first calculations at the top of the page, not titled like the rest of the calculations, seems to be demonstrating the storage capacity of the processing area. If so, please include the two shaker tanks and the two slurry tanks since they will be holding petroleum contaminated waste material. Also, please explain the column titled "Volume Within Containment" of what is represents and how it is calculated.

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In the *Displacement Volumes* calculations, please include the calculated displacement volumes for the fresh water tanks. Much like the warehouse and Hydrofluoric acid storage area, the presence of the fresh water tanks within the processing area, they will also take up space considered for containment. Please adjust the other calculations accordingly.

# **Appendix 1**, Secondary Containment Calculations, *Diesel:*

The berm dimensions and calculated volume does not coincide with the written description provided in the SPCC plan. The last two sentences in the first bullet, *Secondary Containment*, of Section 3.1 on page 12 of the SPCC plan, state that the 1000 gallon diesel tank is "stored within a 1,278 gallon tray, a 4,000 gallon earthen secondary containment is also inplace." Since drawings were not provided of the office building and the associated containment feature and the dimensions of the diesel tank are not provided, OCD is unable to determine which design is correct and if the calculations are appropriate. Please clarify.

#### **Appendix 3**, Monthly Facility Visual Inspection Form (Page 1 of 2)

The first item listed under Facility Drainage is "No operations within 200' of drainage." Most of the drainage (stormwater collection) ponds are near or at the facility boundary. OCD wishes to clarify that the siting criteria identified in 19.15.36.13.B NMAC determines the surface waste management facility boundary. The placement of the contaminated soils is addressed in Paragraph (2) of 19.15.36.15.C NMAC which states the "operator shall not place contaminated soils received after the effective date of 19.15.36 NMAC within 100 feet of the surface waste management facility's boundary." The facility boundary and the outer boundary of the landfarm cells (placement of contaminated soils) are not the same. Please modify if required.

# **Appendix 6**, Emergency Spill Procedures, Page 2:

The bold font introductory sentence/paragraph states the condition in which the following steps must be taken in case of a release. As stated on page 1, this Appendix is provided to demonstrate compliance with 40 CFR 112.7(a)(5), 19.15.29 NMAC, 19.15.30 NMAC, and 19.15.36 NMAC. The condition is as follows: "For any release (greater than five (5) barrels) that occurs on site, that enters a drainage within CBP Facility boundary." The drainages "within CBP Facility boundary" as presented on the drawings are defined as a watercourse in 19.15.2.7 NMAC. Pursuant to Subparagraph (b) of 19.15.29.7.A.(2) NMAC a major release can be "an unauthorized release of a volume that will reach a watercourse." Also, pursuant to Paragraph (4) of 19.15.29.7.A NMAC a major release can be "a release of a volume that may with reasonable probability be detrimental to water or exceed the standards in Subsections A and B or C of 19.15.30.9 NMAC." There is no specific volume associated with these types of releases compared to the written description. Please properly identify the conditions as specified in the regulations.

In Step 7.a on this page, there is a regulatory mis-quote or spelling error in this sentence. Please replace the word "excel" with "excess" for the correct language.

# **Appendix 6**, Emergency Spill Procedures, Page 3:

The bold font introductory sentence/paragraph states the condition in which the following steps must be taken in case of a release. As stated on page 1, this Appendix is provided to demonstrate compliance with 40 CFR 112.7(a)(5), 19.15.29 NMAC, 19.15.30 NMAC, and 19.15.36 NMAC. The condition is as follows: "For any release (greater than five (5) barrels) that occurs on site, that enters a drainage outside of the CBP Facility boundary." The drainages

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that extend through the facility boundary as presented on the drawings are defined as a watercourse in 19.15.2.7 NMAC. Pursuant to Subparagraph (b) of 19.15.29.7.A.(2) NMAC a major release can be "an unauthorized release of a volume that will reach a watercourse." Also, pursuant to Paragraph (4) of 19.15.29.7.A NMAC a major release can be "a release of a volume that may with reasonable probability be detrimental to water or exceed the standards in Subsections A and B or C of 19.15.30.9 NMAC." There is no specific volume associated with these types of releases compared to the written description. Please properly identify the conditions as specified in the regulations.

In Step 8.a on this page, there is a regulatory mis-quote or spelling error in this sentence. Please replace the word "excel" with "excess" for the correct language.

**Appendix 6**, Emergency Spill Procedures, *Release Reporting Important Phone Numbers and Compliance Documentation Log*:

As stated on page 1, this Appendix is provided to demonstrate compliance with 40 CFR 112.7(a)(5), 19.15.29 NMAC, 19.15.30 NMAC, and 19.15.36 NMAC. The conditions regarding OCD notification in the "When to Notify" column does not represent all of the conditions identified in 19.15.29 NMAC. Pursuant to Paragraph (2) of 19.15.29.7.A NMAC a major release can be an unauthorized release of a volume that: "(b) will reach a watercourse; (c) may with reasonable probability endanger public health; or (d) results in substantial damage to property or the environment." Also, pursuant to Paragraph (4) of 19.15.29.7.A NMAC a major release can be "a release of a volume that may with reasonable probability be detrimental to water or exceed the standards in Subsections A and B or C of 19.15.30.9 NMAC." Please include the conditions above that would also require OCD notification.

# Drawings: Sheet C102,

### Piping Notes:

Note 1 states that "all piping shall be placed 3' below finish grade." OCD is uncertain which finish grade is applicable. In the case of the containment feature for the processing area, does this mean the finish grade above the liner? If so, then based upon the cross-section, Section C-C, on Sheet C105 the piping would penetrate the liner. Please provide design drawings that illustrate the feature that will be installed to prevent the lost of liquids at the piping/liner interface.

Note 7 indicates that the piping of the pumps will be contained within a box enclosure that will be buried three feet below grade. OCD was unable to locate the design drawing for this feature. Please provide.

#### Legend:

The indicates that the symbol, \_\_\_\_x\_\_\_, represents a eight foot game fence. OCD was unable to locate the design drawing for this feature. Please provide.

Pursuant to Paragraph (4) of 19.15.36.8.C NMAC, the permit application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and <u>detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas." Please provide the information requested above.</u>

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# Drawings: Sheet C105,

#### Section A-A:

The drawing of the processing area containment berm indicates that slopes to the berms will be 3:1 (run to rise). Based upon the dimensions provided with the illustration, the run will be 2.5 feet and the rise will be 2.5 feet making a 1:1 slope. Please modify the design to illustrate the correct slope.

#### Section B-B:

The drawing of the tank battery berm indicates that slopes to the berms will be 5:1 (run to rise). Based upon the dimensions provided with the illustration, the run will be 1 foot and the rise will be 1 foot making a 1:1 slope. Please modify the design to illustrate the correct slope.

#### Section C-C:

The drawing of the processing area containment feature design illustrates that a "12" clean sand layer buffer" will be installed above the liner. Other sections of the permit application described the different profiles and thickness of soil above the liner. OCD is uncertain of the design. Please present one design throughout the permit application and modify the drawing accordingly. Also, the cross-section of the processing area containment feature is incomplete. In the SPCC plan, a written description is provided that suggests that the containment feature will slope toward the center and that some type of sump feature will be incorporated for the removal of fluids off the liner by a vacuum truck. There is also a written description that indicates piping will penetrate the liner in two locations and seals/boots will be installed. Please provide additional drawings that illustrate the design of these features.

#### Chain Link Gate:

In the written text within the permit application, it is discussed that the processing area will be fenced and gated. Please clarify if the proposed gate design is only associated with the processing area. Also, please provide a design height.

#### Chain Link Fence Foundation:

In the written text within the permit application, it is discussed that the processing area will be fenced and gated. Please clarify if the proposed fence design is only associated with the processing area. Also, please provide a design height.

Within the written text of the permit application, there is mention of two separate chemical storage areas within the processing area. The first is a concrete bermed chemical storage area within the warehouse and the second is the acid storage area outside the warehouse. Pursuant to Paragraph (4) of 19.15.36.8.C NMAC, the permit application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas." Please provide drawings for the underlined above.

# **Drawings:** Sheet C108,

The piping flow diagram indicates that liquids (centrate) from the centrifuge will be transported to the centrate tanks for storage, but the overview of the processing area illustrates a

Crowe Blanco Properties, LLC Blanco Landfarm November 22, 2011 Page 33 of 34

pipeline that continues to or beyond the containment berm. Please clarify within the written text where this pipeline goes and what purpose it serves or please modify the drawings appropriately.

# **Drawings:** Sheet 3 of 17,

The drawing utilizes the symbol, -x-x-x-, for the proposed new fence for the surface waste management facility. The symbol, ----, represents the "100' property line setback." The issue is that the facility fence and setback extend into a northeast portion that is has been clearly defined and illustrated in blue on Sheet 6 of 17 as not part of the permit. Please modify the drawings to illustrate compliance to the surface waste management facility siting criteria of Subsection B of 19.15.36.13 NMAC and the operational setback requirements of Paragraphs (2) and (3) of 19.15.36.15.C NMAC.

# **Drawings:** Sheet 6 of 17,

The illustration and location of the berms on the drawing do not coincide with the placement of landfarm cell berms and contaminated soil by regulation. The siting criteria identified in 19.15.36.13.B NMAC determines the surface waste management facility boundary. The placement of the contaminated soils is addressed in Paragraph (2) of 19.15.36.15.C NMAC which states the "operator shall not place contaminated soils received after the effective date of 19.15.36 NMAC within 100 feet of the surface waste management facility's boundary." The facility boundary and the outer boundary of the landfarm cells (placement of contaminated soils) are not the same. The berms along the watercourses can be considered facility berms, but based upon the siting criteria of 19.15.36.13.B NMAC the watercourses cannot be considered part of the permitted facility as proposed. Please clarify and modify the drawings accordingly.

#### **Drawings:** Sheet 6 of 17, *Notes* (Not Keyed Notes):

Note 2 states that "each 10 acre land cell shall be used as a process transfer and storage area." This concept is not expressed within the written portion of the permit application. Please clarify this proposed use of the landfarm cells and provide design drawings for the storage containment features, if applicable.

#### **General Comments Regarding Drawings:**

Please provide drawings that clearly indicate and illustrate the areas and total area that can be considered for the permitting of a surface water management facility. Pursuant to Paragraph (1) of 19.15.36.13.B NMAC states that "no surface waste management facility shall be located within 200 feet of a watercourse, lakebed, sinkhole, or playa lake." All of the drawings and within the written text of the permit application, the designated watercourses and their setback are included in the proposed acreage of the proposed boundary of the surface waste management facility. This area cannot be considered part of the permitted area for the facility. Please modify the drawings and written text appropriately.

Pursuant to Paragraph (4) of 19.15.36.8.C NMAC, the permit application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and <u>detailed construction/installation diagrams of pits</u>, liners, dikes, <u>piping</u>, sprayers, <u>tanks</u>, roads, <u>fences</u>, <u>gates</u>, <u>berms</u>, pipelines crossing the surface waste management facility, <u>buildings</u> and <u>chemical storage areas</u>." Please provide the required "detailed construction/installation diagrams" for the proposed shaker and slurry tanks. Several fence and gate designs have been mentioned in the written text, but not illustrated as a drawing or diagram. Please provide the required "detailed construction/installation diagrams" for the

Crowe Blanco Properties, LLC Blanco Landfarm November 22, 2011 Page 34 of 34

facility fencing and various access gates. Several berm designs have been mentioned in the written text, including a six foot high facility berm. Please provide the required "detailed construction/installation diagrams" for the facility berm and the landfarm cell berm. Only the foot print of processing area warehouse is illustrated. Please provide the required "detailed construction/installation diagrams" of the warehouse, specifically how it will be constructed and installed within the containment feature of the processing area. The two chemical storage areas are discussed in the SPCC plan. Please provide the required "detailed construction/installation diagrams" for each chemical storage area (the one within the warehouse and the acid storage area outside the warehouse).

Pursuant to Paragraph (5) of 19.15.36.8.C NMAC, the permit application shall include "engineering designs, certified by a registered professional engineer, including technical data on the design elements of each applicable treatment, remediation and disposal method and detailed designs of surface impoundments." Within the written text of the permit application, manurc has been recognized as "part of the bioremediation process." Please illustrate and provide the details regarding the storage of the manure. On page 14.5, the first bullet, under the titled section *Odor Control*, states that nuisance odors will be minimized by "reducing the holding time waste disposed of in the concrete impoundment." This is the first time that it has been mentioned in the permit application that a "concrete impoundment" will be utilized at the proposed surface waste management facility. OCD has been unable to locate any other discussion of its use or any drawings of the facility that indicate its design and location within the facility boundary. Please address the "concrete impoundment" throughout the applicable drawings and sections of the permit application.

# New Mexico Energy, Minerals and Natural Resources Department

# **Bill Richardson**

Governor

Jon Goldstein Cabinet Secretary

Jim Noel
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division



April 27, 2010

John J. Kiely President Crowe Blanco, LLC 401 S. LaSalle, Suite 606 Chicago, Illinois 60605

RE: Request for Additional Information – Permit Application Review for a Proposed Commercial Surface Waste Management Facility

Crowe Blanco, LLC - Blanco Landfarm

Facility Location: W/2 and SW/4 SE/4 of Section 16, Township 29 North, Range 9

West NMPM

San Juan County, New Mexico

Dear Mr. Kiely:

The Oil Conservation Division (OCD) has reviewed Crowe Blanco, LLC's application for a commercial surface waste facility permit for the Blanco Landfarm located in the W/2 and SW/4, SE/4 of Section 16, Township 29 North, Range 9 West NMPM, San Juan County, New Mexico. The review of the submittal is to determine if any additional information or modifications may be required before considering deeming the permit application complete. The application has been determined to be incomplete. Therefore, the OCD requests additional information.

Enclosed is a list of items that must be addressed prior to completing the review. Once this information is submitted, the OCD will determine if additional information is required. The OCD suggests that meetings be conducted with the OCD on a periodic basis to discuss the request for information. The OCD recommends that a meeting be scheduled with the Division's Santa Fe office Environmental Bureau prior to making revisions to the application in order to determine if the proposed location is capable of satisfying the siting requirements of Subsections A and B of 19.15.36.13 NMAC for consideration of an application submittal.

The OCD recommends that all corrections, additions, and modifications to the application be reviewed and cross-referenced before they are submitted, in order to verify that all responses correlate and coincide with each other throughout the application.



Crowe Blanco, LLC Blanco Landfarm April 27, 2010, Page 2 of 32

If there are any questions regarding this matter, please do not hesitate to contact me at (505) 476-3487 or <a href="mailto:brad.a.jones@state.nm.us">brad.a.jones@state.nm.us</a>.

Sincerely,

Brad A. Jones

**Environmental Engineer** 

BAJ/baj

Attachments: 1) Request for Additional Information

2) Copy of 19.15.36 NMAC Surface Waste Management Facilities Regulations

Cc: OCD District III Office, Aztec w/ attachment 1
Terry Lattin, Industrial Ecosystems, Inc., 49 CR 3150, Aztec, NM 87410 w/ attachments

Crowe Blanco, LLC Blanco Landfarm April 27, 2010 Page 3 of 32

# Request for Additional Information Crowe Blanco, LLC – Blanco Landfarm Commercial Surface Waste Management Facility April 27, 2010

#### Page 1.1

Pursuant to Paragraph (1) of 19.15.36.8.C NMAC, the application shall include "the *names and addresses of the applicant* and principal officers and owners of 25 percent or more of the applicant." Please provide the name and address of the applicant (Crowe Blanco, LLC).

## Page 2.2

The map is titled "On-site Off-site Topography." The map illustrates the contours across the proposed facility, but fails to provide elevations and a scale. The map also only illustrates the topography northeast and east of the proposed facility. It fails to illustrate the topography to the west, southwest, and south of the proposed facility, the areas in which all surface water runoff flow and discharge. Please provide the information identified above and/or addition maps that illustrate all of the surrounding areas.

## **Page 2:3**

Pursuant to Paragraph (2) of 19.15.36.8.C NMAC, the application shall include "a plat and topographic map showing the surface waste management facility's location in relation to governmental surveys (quarter-quarter section, township and range); highways or roads giving access to the surface waste management facility site; watercourses; fresh water sources, including wells and springs; and inhabited buildings within one mile of the site's perimeter." The map is titled "Water Well Locations within 1 Mile." Please provide a map or maps that satisfy this requirement.

#### Page 4.1

Pursuant to Paragraph (4) of 19.15.36.8.C NMAC, the application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas." A brief written description was provided. Please provide "a diagram indicating the location of fences and cattle guards, and detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas" as required.

#### Page 5.0, Section 5

Pursuant to Paragraph (5) of 19.15.36.8.C NMAC, the application shall include "engineering designs, certified by a registered professional engineer, including technical data on the design elements of each applicable treatment, remediation and disposal method and detailed designs of surface impoundments." Please provide the engineering designs, as required.

# Page 5.2

Please provide the engineering designs for the shaker pits, the slurry holding pit, the centrifuge, storage tanks, and centrate tank. The engineering designs should include the

Crowe Blanco, LLC Blanco Landfarm April 27, 2010 Page 4 of 32

secondary containment features associated with the above-mentioned items. Also, include "technical data on the design elements of each applicable treatment, remediation and disposal method" as required by Paragraph (5) of 19.15.36.8.C NMAC.

The biopiles are described as having such dimensions as "approximately 12-15' wide and no more than 12' tall." Please demonstrate how the proposed dimensions comply with the regulatory maximum amount of soils of "3000 cubic yards per acre" of Subsections D and F of 19.15.36.15 NMAC. Please provide the proposed length of the biopile and the maximum number of biopiles allowed per acre. Also, please identify the source of the manure that will be utilized to enhance the bioremediation process and provide an engineering design for the manure containment and storage feature.

# Page 6.1

Introduction:

The last sentence of the first paragraph states that "these procedures comply with the applicable requirements contained pursuant to 19.15.36.13, 19.15.36.15, and 19.15.36.17 NMAC." There is no information provided in the Operational Plan that addresses any of the requirements of 19.15.36.17 NMAC. Please explain or demonstrate compliance with the applicable provisions of 19.15.36.17 NMAC, Specific Requirements Applicable to Evaporation, Storage, Treatment, and Skimmer Ponds.

#### Section 1, Waste:

The last sentence or paragraph provided in this section states "exempt waste is prohibited from being mixed with non-exempt waste." Based upon the flow chart provided on page 5.1, please explain how this requirement will be implemented with the development of the biopile.

#### Section 1.1, Exempt Oilfield Waste:

In the first sentence of the first paragraph of the section, please identify the "applicable test and analytical methods required by NMOCD" mentioned in the text and provide the appropriate regulatory references.

Pursuant to Paragraph (3) of 19.15.36.7.A NMAC "Landfarm" means a discrete area of land designated and used for the remediation of petroleum hydrocarbon-contaminated soils and drill cuttings." Pursuant to Subsection A of 19.15.36.15 NMAC, "Only soils and drill cuttings predominantly contaminated by petroleum hydrocarbons shall be placed in a landfarm. The division may approve placement of tank bottoms in a landfarm if the operator demonstrates that the tank bottoms do not contain economically recoverable petroleum hydrocarbons." The information provided in this section identifies four "major types of operations that generate exempt waste." The second type of operation identified is the "production of tank bottom sludge" which includes "the pigging of transmission lines, and the maintenance and reclamation of settling ponds." Please compare this interpretation to the definition of "tank bottoms" provided in Paragraph (1) of 19.15.2.7.T NMAC. Also, waste generated from "the pigging of transmission lines" may be classified as RCRA non-exempt depending on the status of the transmission line. The third type of operation identified is the "production of drilling fluids." The definition of "landfarm" provided in Paragraph (3) of 19.15.36.7.A NMAC and the landfarm waste acceptance criteria of Subsection A of 19.15.36.15 NMAC clearly identifies the acceptance of drill cuttings, not "drilling fluids." The fourth type of operation identified is the "production of high TDS fluids." Please reference a provision within 19.15.36 NMAC that

Crowe Blanco, LLC Blanco Landfarm April 27, 2010 Page 5 of 32

clearly states that such fluids satisfy the waste acceptance criteria for landfarms. Please confirm and verify the proposed exempt waste streams in order to determine if they comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms.

#### Section 1.2, Non-Exempt, Non-Hazardous Oilfield Waste:

Please provide examples of potential types of RCRA non-exempt, non-hazardous waste that is anticipated to be received at the proposed landfarm.

The first sentence of the first paragraph states that RCRA non-exempt, non-hazardous waste will be identified by "all applicable test and analytical methods required by NMOCD." The determination of the status (hazardous or non-hazardous) of RCRA non-exempt waste is dictated the USEPA and the requirements of RCRA. The applicable tests, analytical methods, and standards are identified in subpart C of 40 CFR part 261. Please modify the response to address appropriate testing requirements. Also, please identify any additional waste acceptance criteria applicable to the requirements of 19.15.36 NMAC in regards to non-exempt waste.

Also as a clarifying point regarding a statement provided in the second paragraph, RCRA exempt waste loses its' exemption if mixed with RCRA non-exempt waste. Therefore, it becomes RCRA non-exempt.

# Page 6.2

#### Section 1.4, Waste Characterization:

Pursuant to Subsection A of 19.15.36.15 NMAC, "Only soils and drill cuttings predominantly contaminated by petroleum hydrocarbons shall be placed in a landfarm. The division may approve placement of tank bottoms in a landfarm if the operator demonstrates that the tank bottoms do not contain economically recoverable petroleum hydrocarbons." Please view the comments provided for Section 1.1 regarding "drilling fluids." Also, "debris waste" is not a term used or defined within the OCD rules. Please provide an explanation of what "debris waste" may represent. Please confirm and verify the proposed waste streams in order to determine if they comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms.

# Section 1.5, Prohibited Waste

Pursuant to Subsection E of 19.15.36.13 NMAC, "The operator shall not place oil field waste containing *free liquids* in a landfill or landfarm cell." Please identify "free liquids" as a waste prohibited from being disposed of at the facility.

#### Section 2, Waste Acceptance:

The second bullet of the waste acceptance protocol discusses the monitoring of hydrogen sulfide of liquid waste. Please clearly identify or define the "liquid" waste. Also, please identify the concentration regarding the "unacceptable levels of hydrogen sulfide."

The fifth bullet of the waste acceptance protocol discusses the chloride concentration limit (1000 mg/kg) in regards to the depth to ground water. The fifth bullet also notes that the "facility is located where ground water is 100" or more below the lowest elevation." The proposed facility location has not been properly investigated or assessed in regards to the siting criteria. Based upon the information provided within the application, there is some concern in respect to the determination of the separation to ground water. Water well SJ 02883, as properly

Crowe Blanco, LLC Blanco Landfarm April 27, 2010 Page 6 of 32

located and illustrated on the water well map of Page 2.3, is noted on the Office of the State Engineer well log information sheet to have a depth to water of 87 feet (page 46 of Section 15). Water well SJ 02883 is abutting the proposed facility to the east within Section 16. Please make arrangements to schedule a meeting with myself to discuss the submittal of a boring plan in order to properly assess the proposed location in regards to the siting criteria of 19.15.36 NMAC.

# Page 6.3

Section 3.1, Form C-138:

The information provided in Section 1.3, on page 6.2, indicates that the facility may accept emergency non-oilfield waste. Pursuant to Paragraph (3) of 19.15.36.13.F NMAC, if such waste is received "the operator shall complete a form C-138, oil field waste document, describing the waste, and maintain the same, accompanied by the department of public safety order, subject to division inspection." The information provided in this section, 3.1, does not recognize that a C-138 is required for emergency non-oilfield waste, or that the C-138 must be accompanied by the department of public safety order, and it does not include the regulatory reference in the subject title. Please modify the response appropriately.

#### Page 6.4

Section 4.1, Flowchart for Waste Acceptance/Disposal:

The pink boxes, the third box on the left side and the fourth box on the right side of the flow chart, indicate that the waste must pass the paint filter test upon arrival at the landfarm. Then the flow chart continues on each side with the acceptance of liquids. If the waste material is determined to contain free liquids, it fails the paint filter test. Please explain. Also, please explain why chloride testing is not performed on any of the solidified tank bottoms prior to placement into a biopile.

#### Page 6.5

Section 4.2, Migratory Bird Protection:

Pursuant to Paragraph (4) of 19.15.36.8.C NMAC, the application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and <u>detailed construction/installation diagrams of pits, liners</u>, dikes, piping, sprayers, <u>tanks</u>, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas." Please provide "detailed construction/installation diagrams" of any pits, liners, and tanks and illustrate the proposed screen or netting that will be utilized for the protection of migratory birds.

#### Section 5.0, Treatment/Bioremediation:

Pursuant to Paragraph (4) of 19.15.36.15.C NMAC, within "72 hours after receipt, the operator shall spread and disk contaminated soils in eight-inch or less lifts or approximately 1000 cubic yards per acre per eight-inch lift or biopile." The language provided in the first paragraph of the response is not the equivalent to the regulatory requirement. The written response would allow for the waste to be placed into a biopile without any limits in regards to lift thickness or volume. Please modify the response to comply with the requirement.

Also, there is no language in the response that provides the details and regulatory requirements that must satisfied if such a lift is placed on existing soils. Please address the requirements of Subsection D of 19.15.36.15 NMAC regarding adding an additional lift.

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# Section 5.1, Solid Waste:

Please make a distinction in the title to identify if this section is referring to exempt or non-exempt solid waste. Also, please either identify the waste acceptance criteria or reference a section that directly addresses it in detail.

The title or heading for everything addressed under Section 5.0 is identified as treatment and bioremediation. The OCD anticipates that the treatment and bioremediation details will be provided when each waste stream is addressed. Such as in Step 3, please provide the mixing ratio of manure to petroleum hydrocarbon-contaminated soils and drill cuttings. Also, please identify what types of "organic waste" may be added to get the remediation process started. Please provide MSDS's for the proposed chemical enhancers.

In Step 4, please explain what is meant that a "biopile/lift is completed"? Please explain the process in which this is determined.

In Step 5, please identify the temperatures, initial and maintenance, that must be obtained in order to promote and facilitate the remediation process. Also, please identify what types of "additional remediation materials" may be added to maintain and control the remediation process.

Step 6 states that "soils will be disked bi-weekly." Based upon the description of biopiles (page 5.2) of being "approximately 12-15" wide and no more than 12' tall," how will disking occur as the height of the biopile increases? Please explain.

In Step 8, please identify the test frequency, test protocols and test methods required by Subsection D of 19.15.36.15 NMAC.

# Section 5.2, Liquid Waste:

Please make a distinction in the title to identify if this section is referring to exempt or non-exempt liquid waste. Also, please either identify the waste acceptance criteria or reference a section that directly addresses it in detail.

Step 1 indicates that liquid waste will be "offloaded in the concrete impoundment or tank." In the review of the application there has not been any mention of concrete impoundments. Pursuant to Subsection C of 19.15.36.9 NMAC, please provide engineering designs and detailed construction/installation diagrams of any concrete impoundment and/or tanks and also provide a facility map that illustrates their locations within the facility boundary.

In Step 3, please define and explain what would constitute "reclaimed" soils. Also, please explain how the "Biopile Records" form, as discussed in Step 2 of Section 5.1, will be maintained when mixing non-separated generator liquids with generator load specific "reclaimed" soils.

In Step 4, please provide the mixing ratio of manure to petroleum hydrocarbon-contaminated soils and drill cuttings. Also, please identify what types of "organic waste" may be added to get the remediation process started. Please provide MSDS's for the proposed chemical enhancers.

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In Step 5, please explain why chloride testing is not required for biopiles in which liquid waste is stabilized with potentially "reclaimed" soils prior to placement within the landfarm cell.

# Page 6.6

Section 5.3, Non-Exempt Waste:

Based upon the information in this section, the only assumption that can be made is that only solid non-exempt waste will be accepted. The steps for treatment/bioremediation do not include or address stabilization of fluids or liquids. If this is not correct, please provide treatment/ bioremediation process procedures regarding liquid non-exempt waste. Pursuant to Subsection C of 19.15.36.9 NMAC, please provide a facility map that illustrates the separate section of the facility that is "strictly designated for the storage and bioremediation of non-exempt waste." The map should also illustrate the location of the storage and treatment impoundments and the area which is dedicated for non-exempt waste biopiles within the facility boundary.

Please either identify the waste acceptance criteria or reference a section within the permit application that directly addresses it in detail. There are only five process steps provided regarding the handling of RCRA non-exempt waste. Please explain why the eight process steps provided in Section 5.1 for solid waste would not be appropriate for RCRA non-exempt waste.

Pursuant to Paragraph (5) of 19.15.16.15 NMAC, the "operator shall ensure that soils are disked biweekly and biopiles are turned at least monthly." Please explain why compliance with this provision does not apply to biopiles of RCRA non-exempt waste.

In Step 3, please provide the mixing ratio of manure to RCRA non-exempt waste. Also, please identify what types of "organic waste" may be added to get the remediation process started. Please provide MSDS's for the proposed chemical enhancers.

In Step 4, please identify the temperatures, initial and maintenance, that must be obtained in order to promote and facilitate the remediation process. Also, please identify what types of "additional remediation materials" may be added to maintain and control the remediation process.

In Step 5, please identify the test frequency, test protocols and test methods required by Subsection D of 19.15.36.15 NMAC.

#### Section 5.4, Produced Water:

Please identify the "acceptable criteria" and the associated concentrations for produced water that may be suitable for dust control within the facility. Also, please provide a regulatory reference in regards to the "acceptable criteria." Please describe how the produced water will be utilized for dust control within the facility boundary, such as where and how it will be applied.

The last sentence of the paragraph states that a "form C-133 showing State approval must accompany produced water sent off-site." Pursuant to Subsection A of 19.15.34.8 NMAC, a "person shall not transport produced water, drilling fluids or other liquid oil field waste, including drilling fluids and residual liquids in oil field equipment, except for small samples removed for analysis, by motor vehicle from a lease, central tank battery or other facility without an approved form C-133, authorization to move liquid waste. The transporter shall maintain a

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photocopy of the approved form C-133 in the transporting vehicle." The approved C-133 is linked the transporter only, not the produced water. Please modify the response to properly reflect the regulatory requirements of 19.15.34.8 NMAC.

# Page 6.7

Section 7.1, Treatment Zone Monitoring:

Please describe how the implementation of the semi-annual treatment zone monitoring will occur. Based upon the information provided in Section 5 of the application, biopiles will be constructed in a generator specific manner. Since each biopile will be in a different stage of remediation, will each biopile be sampled? Please describe the protocol.

Pursuant to Paragraph (4) of 19.15.36.15.C NMAC, within "72 hours after receipt, the operator shall spread and disk contaminated soils in eight-inch or less lifts or approximately 1000 cubic yards per acre per eight-inch lift or biopile." The language provided in the second paragraph of the response is not the equivalent to the regulatory requirement. The written response would allow for the waste to be placed into a biopile without any limits in regards to lift thickness or volume. Please modify the response to comply with the requirement. Also, please describe the protocols that will be implemented and the conditions that must be satisfied in order the soils to be utilized for the stabilization of liquid waste.

The second bullet of the treatment zone additional lift protocol discusses the chloride concentration limit (1000 mg/kg) in regards to the depth to ground water. The second bullet also notes that "ground water is 100" or more below the lowest elevation." The proposed facility location has not been properly investigated or assessed in regards to the siting criteria. Based upon the information provided within the application, there is some concern in respect to the determination of the separation to ground water. Water well SJ 02883, as properly located and illustrated on the water well map of Page 2.3, is noted on the Office of the State Engineer well log information sheet to have a depth to water of 87 feet (page 46 of Section 15). Water well SJ 02883 is abutting the proposed facility to the east within Section 16. Please make arrangements to schedule a meeting with myself to discuss the submittal of a boring plan in order to properly assess the proposed location in regards to the siting criteria of 19.15.36 NMAC.

In the third paragraph, please provide the estimated number of biopiles that would be equivalent to maximum thickness of treated soils in a landfarm cell of "two feet or approximately 3000 cubic yards per acre." Please provide the standard dimensions (height, width, and length) of the biopile utilized for this assessment.

# Section 7.2, Vadose Zone Monitoring:

Pursuant to Paragraph (1) of 19.15.36.E NMAC, the "operator shall monitor the vadose zone beneath the treatment zone in each landfarm cell." The first sentence/paragraph of the response states that "sampling will be obtained from the ground below landfarm cell treatment areas." Please modify the language in order to clarify that sampling will occur beneath the treatment zone in each landfarm cell.

#### Semi-annual Monitoring::

Please modify the language in the first sentence of the first paragraph to clarify that sampling will occur beneath the treatment zone in each landfarm cell. Also, please identify additional sampling protocols, such as obtaining samples beneath active landfarm cells/biopiles

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and measures that will be implemented to backfill sampling locations, within the sampling criteria bullets.

Five Year Monitoring:

Please describe the sampling protocol for the five year monitoring event of Paragraph (3) of 19.15.36.15.E NMAC or refer to the semi-annual monitoring sampling protocol.

#### Page 6.8

Section 8.0, Treatment Zone Closure Standards:

Please describe how the implementation of the treatment zone closure performance standard sampling will occur. Based upon the information provided in Section 5 of the application, biopiles will be constructed in a generator specific manner. Since each biopile will be in a different stage of remediation, will each biopile be sampled? Please describe the protocol.

Please modify the fourth bullet regarding the analytical test method and closure standard for TPH to comply with the requirements of Paragraph (3) of 19.15.36.15.F NMAC.

The fifth bullet discusses the chloride concentration limit (1000 mg/kg) in regards to the depth to ground water. The fifth bullet also notes that "ground water is 100' or more below the lowest elevation." The proposed facility location has not been properly investigated or assessed in regards to the siting criteria. Based upon the information provided within the application, there is some concern in respect to the determination of the separation to ground water. Please make arrangements to schedule a meeting with myself to discuss the submittal of a boring plan in order to properly assess the proposed location in regards to the siting criteria of 19.15.36 NMAC.

Please provide a clarifying statement at the end of the sixth bullet that recognizes the responsibility of the operator to comply with the requirements of Paragraph (4) of 19.15.36.15.G NMAC, if the result of the site specific risk assessment is a request of an alternative closure standard.

Section 9.0, Final Disposition of Treated Soils:

Please correct the regulatory reference at the end of the first sentence of the second paragraph. The current regulatory reference, 19.15.36.15.H, refers to the bioremediation endpoint approach. This approach/method is not proposed or discussed within the application and would not be applicable based upon the methods of biopile construction and development proposed within Section 5 of the application. Please provide the correct regulatory reference, Paragraph (2) of 19.15.36.15.G NMAC, that coincides with the language provided in the sentence.

In the last sentence of the second paragraph, please identify the responsibility of the operator to "give division-approved public notice of an application for alternative soil closure standards in the manner provided in 19.15.36.9 NMAC" pursuant to Paragraph (4) of 19.15.36.15.G NMAC.

Please provide language that recognizes the potential impact on the operator's financial assurance, pursuant to Paragraph (3) of 19.15.36.15.G NMAC, if the closure standards cannot be achieved.

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Section 10.1, Facility Identification:

Pursuant to Subsection J of 19.15.36.13 NMAC, the sign is required to have the <u>operator's name</u> on it. Please modify the response appropriately.

Section 10.2, Facility Requirements:

On the application form, the C-137, Line 21 requires the applicant to attach demonstrations of compliance in regards to the siting requirements of Subsection A and B of 19.15.36.13 NMAC. The OCD was unable to locate any documents within the application that illustrate or demonstrate that the proposed facility area satisfies or complies with siting requirements. Please provide documents that demonstrate compliance to each of the siting criterion and reference its location within the application. Also, on the top of the front page of the C-137 application, there is a note that instructs the applicant of the following: A meeting should be scheduled with the Division's Santa Fe office Environmental Bureau prior to pursuing an application for a surface waste management facility in order to determine if the proposed location is capable of satisfying the siting requirements of Subsections A and B of 19.15.36.13 NMAC for consideration of an application submittal. The OCD recommends that such a meeting be scheduled prior to making revisions to the application.

Section 10.3, Berms: /

Please provide the correct regulatory reference in the title of this section. Please modify and reference Paragraph (1) of 19.15.36.15. NMAC.

Pursuant to Paragraph (4) of 19.15.36.8.C NMAC, the application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas." Please provide detailed construction/installation diagrams of the berms within the surface waste management facility and reference their location within the application.

#### Page 6.9

Section 10.5, Placement of Contaminated Waste:

Please provide the correct regulatory references in the title of this section. Please modify and reference Paragraphs (2) and (3) of 19.15.36.15.C NMAC.

Please provide a facility map that illustrates the areas in which contaminated soils may be placed within the facility in regards to compliance with the appropriate siting and operational setbacks requirements of 19.15.36 NMAC. The facility map should also illustrate the proposed locations of buildings, roads, utilities, processing areas, remediation areas (exempt and non-exempt), and other site improvements.

Section 10.6, Spill Reporting:

Pursuant to Subsection K of 19.15.36.13 NMAC, the operator "shall comply with the spill reporting and corrective action provisions of 19.15.30 NMAC or 19.15.29 NMAC." The response indicates that compliance is "outlined in the company Spill Prevention Control & Contingency Plan." The OCD was unable to find a document in the application by that title, please reference a page number or section in which the plan can be located within the permit

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application. A Storm Water Pollution Prevention (SWPP) Plan was submitted separately but with the permit application. The information provided Section 4.4, Spill Prevention and Response, of the SWPP plan *does not demonstrate compliance* with spill reporting and corrective action required by state regulation. Such documents should not be referenced.

Also, please properly rename the title of this section. The regulations identified within this provision address both spill reporting and corrective action, not just spill reporting.

Section 10.7, Monthly Inspections & Maintenance Activities:

The response indicates that only Paragraph (3) of 19.15.36.13.L NMAC is addressed in the company Routine Inspection & Maintenance Activities plan. Based upon information provided in the permit application regarding the use of surface impoundments, the plan must address compliance with Paragraph (1) of 19.15.36.13.L NMAC. Also, please reference a page number or section in which the "company Routine Inspection & Maintenance" plan can be located within the permit application.

Section 10.8, Run On/Off Water Control:

A Storm Water Pollution Prevention (SWPP) Plan was submitted separately but with the permit application. The information provided within the SWPP plan does not address the provisions of Subsection M of 19.15.36.13 NMAC. Please provide the information required of Subsection M of 19.15.36.13 NMAC or reference the location within the permit application where the required information is provided.

# Section 10.9, Contingency Plans:

Please provide the correct regulatory references in the title of this section. Please modify and reference 19.15.11 NMAC regarding compliance with hydrogen sulfide.

The response indicates that "contingency plan(s)" are only required to "comply with provision 19.15.36.13.N NMAC." This is not correct. The contingency plan required by Subsection N of 19.15.36.13 NMAC and Paragraph (10) of 19.15.36.8.C NMAC is required to "be designed to minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water." Pursuant to Paragraph (8) of 19.15.36.8.C NMAC, the application shall include "a hydrogen sulfide prevention and contingency plan that complies with those provisions of 19.15.11 NMAC that apply to surface waste management facilities." These are two separate plans based upon the requirements of two separate regulations. Please reference a page number or section in which each plan can be located within the permit application.

#### Section 11.0, Records Management:

Please include and recognize the recordkeeping responsibilities of the operator in accordance with Section 15 of 19.15.35 NMAC, such as waste acceptance, background sampling, operations, treatment and vadose zone monitoring, and closure.

#### Page 6.10

Section 11.2, Material Entry Record:

Pursuant to Subsection G of 19.15.36.13 NMAC, the "operator of a commercial facility shall maintain records reflecting the generator, the location of origin, the location of disposal

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within the commercial facility, the volume and type of oil field waste, the date of disposal and the hauling company for each load or category of oil field waste accepted at the commercial facility." Please include the two unlined items above in the list of information that will be compiled for compliance with Subsection G of 19.15.36.13 NMAC.

#### Page 6.13

Exhibit (C)

Please identify the provisions with 19.15.36 NMAC that allows the acceptance of the following waste material: tank cleaning residue, charcoal filter material, and washout liquids. If no such provisions can recognized to allow the acceptance of such waste or provisions prohibit the acceptance of such waste, please remove the waste streams from the form.

# Page 6.17

Sheet 6 of 11, 10 Acre Cells Map:

The map illustrates that several of the landfarm cells extend beyond the proposed facility boundary. Please modify the map to represent the area that has requested to be permitted. The current map confuses this matter. Please provide a facility map that illustrates the areas in which contaminated soils may be placed within the facility in regards to compliance with the appropriate siting and operational setbacks requirements of 19.15.36 NMAC. The facility map should also illustrate the proposed locations of buildings, roads, utilities, processing areas, remediation areas (exempt and non-exempt), and other site improvements.

#### Page 6.18

Sheet 7 of 11, Site Plan:

The site plan only illustrates a small portion of the proposed facility. Please explain the purpose and function of the designated area "set aside for water."

#### Page 7.1

Table 1, Routine Maintenance Activities:

The control and collection of fugitive trash and debris should be a daily task rather than weekly. Please modify the frequency in order to prevent violations of other state rules and regulations.

Compliance with Paragraph (1) of 19.15.36.13.L NMAC, regarding the inspection, sampling, maintenance and recordkeeping requirements of leak detection systems is not addressed in this section. Information provided within the application suggests and discusses the use of surface impoundments, but the application does not include the detailed engineering designs and construction/installation diagrams required of Paragraphs (4) and (5) of 19.15.36.8.C NMAC. Please include the required diagrams and designs and if such impoundments requirement leak detection and please modify and address the requirements of Paragraph (1) of 19.15.36.13.L NMAC.

#### Page 7.3

Moisture/Dust Control:

The last sentence of the response provided in the "results expected" column states that "biopiles will be trenched with water." Please explain this process.

*Unloading/Mixing Area(s):* 

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The instructions provided in the "results expected" column, regarding leaking metal pits and spills, does not include compliance with the requirements of Subsection K of 19.15.36.13 NMAC. Please modify.

#### Page 7.4.

Tank Battery:

In the row that addresses liner, please explain why a liner would require maintenance and be fully covered if visible. Also, please clarify in the liner "results expected" column by adding the following language "replacement of liner material requires OCD approval prior to replacement and installation."

The instructions provided in the "results expected" column, regarding spills does not include compliance with the requirements of Subsection K of 19.15.36.13 NMAC. Please modify.

#### Page 8.0

Hydrogen Sulfide Contingency Plan:

Pursuant to Paragraph (8) of 19.15.36.8.C NMAC, the application shall include "a hydrogen sulfide prevention and contingency plan that complies with those provisions of 19.15.11 NMAC that apply to surface waste management facilities." The H2S contingency plan provided in this section of the permit application does not address all of the requirements nor does it provide all of the information required of 19.15.11 NMAC. The plan incorporates provisions of Subsection N of 19.15.36.13 NMAC and refers to documents (the SPCC plan) which are not provided in the permit application packet, both which are not appropriate or applicable when addressing a H2S release.

#### Page 8.1

H2S / Contingency Plan:

As stated above, pursuant to Paragraph (8) of 19.15.36.8.C NMAC, the application shall include "a hydrogen sulfide prevention and contingency plan that complies with those provisions of 19.15.11 NMAC that apply to surface waste management facilities." The regulatory references, "19.15.3.11 & 19.15.36.13.N", provided beneath the title at the top of the page are not correct. The general contingency plan required of Paragraph (8) of 19.15.36.8.C NMAC and Subsection N of 19.15.36.13 NMAC is a separate plan or submittal from the hydrogen sulfide prevention and contingency plan required of Paragraph (8) of 19.15.36.8.C NMAC. The requirements of Subsection N of 19.15.36.13 NMAC should not be incorporated and addressed in the H2S contingency plan. Please provide the correct references, such as Paragraph (8) of 19.15.36.8.C NMAC and 19.15.11 NMAC. The building address provided on this page is for IEI/JFJ's current landfarm, Permit NM1-010 B. The H2S contingency plan should address the facility proposed in the application. Please modify.

Pursuant to Paragraph (2) of 19.15.11.9.B NMAC, the hydrogen sulfide contingency plan shall contain "telephone numbers of emergency responders, public agencies, local government and other appropriate public authorities." The only telephone number provided is 9-911. Please provide properly identify the appropriate parties and their associated numbers as required by the regulations.

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# Section I: Purpose and Objectives

In accordance with the provisions of 19.15.11 NMAC, the owner/operator is responsible for providing training to emergency responders regarding the H2S contingency plan, briefings and training to residents and public officials, coordination with the state emergency plan, and filing an annual inventory of contingency plans with the appropriate local emergency planning committee and the state emergency response commission. These requirements are not identified or addressed in the contingency plan. The last sentence of the second paragraph references compliance to "19.15.36.13.N.2 & 19.15.36.13.N.7" which apply the general facility contingency plan, but are not applicable to the requirements of 19.15.11 NMAC. Please focus the development of the H2S contingency plan on the applicable and required requirements of 19.15.11 NMAC.

#### Page 8.4

Section III: Responsibilities of Primary Emergency Coordinator and/or Alternative Emergency Coordinator(s)

Items 13 through 16 on this page provide reference of compliance for provisions in regards to a general contingency plan required by 19.15.36.13 NMAC. There are also references to the implementation of the SPCC Plan in an event of a hydrogen sulfide gas release. The OCD has been unable to locate a SPCC Plan within the permit application in order to determine if it addresses the response and actions that must be implemented during a hydrogen sulfide gas release. Spill Prevention, Control and Countermeasure (SPCC) Plans usually identify preventive measures to assure that a spill from an Aboveground Storage Tank (AST) is contained and countermeasures are established to prevent oil spills that could reach navigable waters. The procedures and protocols in a SPCC Plan usually are not applicable when addressing a hydrogen sulfide gas release. Please focus the development of the H2S contingency plan on the applicable and required requirements of 19.15.11 NMAC.

# Page 8.5

Signs and Markers:

Pursuant to Section 10 of 19.15.11 NMAC, the "sign or marker shall be readily readable, and shall contain the words "poison gas" and other information sufficient to warn the public that a potential danger exists. The person shall prominently post signs or markers at locations, including entrance points and road crossings, sufficient to alert the public that a potential danger exists." Please modify this section in order to demonstrate compliance to the above-referenced provision.

#### Regulatory Threshold:

The first sentence of the first paragraph states "It has been determined that H2S concentrations on the facility are below 100 ppm." The OCD finds this statement difficult to accept since the facility has not been permitted, constructed, or that any waste material has been delivered to the proposed facility location in order to make a determination. The second sentence of the first paragraph states that "all trucks.... will be screened for H2S upon arrival." Please identify the H2S screening level that will insure any further development of H2S in the liquid waste storage tanks that would exceed any regulatory limit.

The first sentence of the second paragraph states "As per 19.15.11 NMAC no further actions are required for concentrations below 100 ppm." This statement is not accurate. Pursuant to Section 2 of 19.15.11 NMAC, "19.15.11 NMAC does not exempt or otherwise

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excuse surface waste management facilities the division permits pursuant to 19.15.36 NMAC from more stringent conditions on the handling of hydrogen sulfide required of such facilities by 19.15.36 NMAC or more stringent conditions in permits issued pursuant to 19.15.36 NMAC, nor shall the facilities be exempt or otherwise excused from the requirements set forth in 19.15.11 NMAC by virtue of permitting under 19.15.36 NMAC." Furthermore, Subparagraph (f) of Paragraph (2) of 19.15.11.9.B NMAC states that the "hydrogen sulfide contingency plan shall include the activation level and a description of events that could lead to a release of hydrogen sulfide sufficient to create a concentration in excess of the activation level." Also, pursuant to Subsection C of 19.15.11.9 NMAC the "person shall activate the hydrogen sulfide contingency plan when a release creates a hydrogen sulfide concentration greater than the activation level set forth in the hydrogen sulfide contingency plan. At a minimum, the person shall activate the plan whenever a release may create a hydrogen sulfide concentration of more than 100 ppm in a public area, 500 ppm at a public road or 100 ppm 3000 feet from the site of release." Please review the definitions for "public area" and "public road." Also, please establish "activation levels" that will prevent the exposure to workers and other parties within the proposed facility to H2S that exceeds other regulatory thresholds.

# Activation Levels:

Subparagraph (f) of Paragraph (2) of 19.15.11.9.B NMAC states that the "hydrogen sulfide contingency plan shall include the activation level and a description of events that could lead to a release of hydrogen sulfide sufficient to create a concentration in excess of the activation level." Please see the comments above provided in the "Regulatory Threshold" section. The Immediately Dangerous to Life or Health (IDLH) concentration for hydrogen sulfide is 100 ppm. The emergency activation level proposed in the permit application is "100 ppm or higher." The US National Institute of Occupational Safety and Health (NIOSH) define IDLH as exposure to airborne contaminants that is "likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment." Please establish "activation levels" that will prevent the exposure to workers and other parties within the proposed facility to H2S that exceeds other regulatory thresholds.

#### *In the Event of a H2S Release:*

In the first step, please identify the concentration limit in which the alarm system will be activated. Please describe how or what the alarm systems sound like and how the alarm that identifies a hydrogen sulfide release will be or can be distinguished from other alarms. Also, please provide information regarding the H2S monitors/sensors and their capabilities that will be used to determine if a release has occurred. The second sentence of the first step mentions "monitor boxes" and "evacuation maps." Please discuss the function of the "monitor boxes" and provide the "evacuation maps" in this section or reference the location of the maps within the permit application. The OCD was unable to locate any "evacuation maps."

In the second step, please explain how a person would discover a hydrogen sulfide release and at what concentration a person would initiate the notice process. Please provide.

General Public Protection from H2S at Tank Battery:

Please include the posting of a sign or marker that complies with the requirements of Section 10 of 19.15.11 NMAC.

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The regulatory reference provided with the subject title of this section is not appropriate for this subject. Pursuant to Subparagraph (a) of Paragraph (2) of 19.15.11.9.B NMAC, the hydrogen sulfide contingency plan shall contain "an immediate action plan as described in the API document referenced in Paragraph (1) of Subsection B of 19.15.11.9 NMAC" and shall "include the locations of potentially affected public areas and public roads and shall describe proposed evacuation routes, locations of road blocks and procedures for notifying the public..." Based upon the information provided in this section, the hydrogen sulfide contingency plan was not developed "with due consideration of paragraph 7.6 of the guidelines in the API publication Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide, RP-55, most recent edition," as required by Paragraph (1) of 19.15.11.9.B NMAC. Please modify this section to reflect the provisions of the document identified above.

# Page 8.6

Section VI: Disabled Occupants

The actions and protocols proposed in this section to address to removal of any "disabled occupants" does not consider the risk and concerns associated with a hydrogen sulfide release. If a hydrogen sulfide plume were to develop and evacuation is required, any personnel or emergency responders would need to don the appropriate PPE prior to entering the area in order to prevent become victims themselves. Also, waiting for assistant may not be an option unless the "disabled occupant" is provided some type of supplied air/oxygen breathing device. Please modify this section and provide response procedures that address the concerns of a hydrogen sulfide release.

# Section VII: Accountability Procedures for Emergency Evacuation

An evacuation in response to a hydrogen sulfide release should be based upon the assessment of the status of the plume. Designated meeting sites may be downwind of hydrogen sulfide plume and gathering at such designated locations may pose a greater risk of exposure. Procedures and protocols should be established to readily identify the potential source of the hydrogen sulfide release, such as having H2S sensors that have flashing beacons on top that activate when a certain concentration is detected. If such a monitoring system is installed then the evacuation procedures and responses could include the assessment of the wind direction in order to ensure the personnel, visitors, and delivery personnel evacuate the area in a manner away from the downwind direction of hydrogen sulfide plume. The accountability procedures should expand beyond just on-site personnel and include all visitors and any delivery personnel or contractors. Also, if the Emergency Coordinator responsibility include searching for any remaining personnel prior to leaving the area, then it would be advisable to ensure that the Emergency Coordinator don the appropriate PPE prior to beginning the task so not to become a victim.

### Section VIII: Rescue and Medical

Release notification should be established in order to ensure that relevant information is provided to all first responders. If emergency responders are not informed that they are responding to a hydrogen sulfide release, then they may be placed in great risk of exposure and become victims themselves. Please modify this section appropriately. Injured personnel should be removed from the hydrogen sulfide release exposure area prior to receiving any medical attention.

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## Page 8.7

Section IX: Resources and Responsibility List

As stated above, pursuant to Paragraph (8) of 19.15.36.8.C NMAC, the application shall include "a hydrogen sulfide prevention and contingency plan that complies with those provisions of 19.15.11 NMAC that apply to surface waste management facilities." The regulatory reference, "19.15.36.13.N", provided beside "Emergency Contact Names and Numbers" heading is not correct. The general contingency plan required of Paragraph (8) of 19.15.36.8.C NMAC and Subsection N of 19.15.36.13 NMAC is a separate plan or submittal from the hydrogen sulfide prevention and contingency plan required of Paragraph (8) of 19.15.36.8.C NMAC. The requirements of Subsection N of 19.15.36.13 NMAC should not be incorporated and addressed in the H2S contingency plan. Please provide the correct references. The building address and contact information provided on this page is for IEI/JFJ's current landfarm, Permit NM1-010 B. The H2S contingency plan should address the facility proposed in the application. Please modify.

# Page 8.8

Section X: Operations Shutdown

In the event of a hydrogen sulfide release, the shutting down of equipment should not take precedence over the safety of personnel. If shutting down certain equipment will result in the containment or prevent the further release of hydrogen sulfide, the protocols and procedure should initially address the protection of the response personnel, such as donning appropriate PPE. Please modify this section to insure that response personnel do not become victims of a hydrogen sulfide release.

#### Section XI: Training and Communications

Pursuant to Subparagraph (d) of Paragraph (2) of 19.15.11.9.B NMAC, the "hydrogen sulfide contingency plan shall provide for training and drills, including training in the responsibilities and duties of essential personnel and periodic on-site or classroom drills or exercises that simulate a release, and shall describe how the person will document the training, drills and attendance. The hydrogen sulfide contingency plan shall also provide for training of residents as appropriate on the proper protective measures to be taken in the event of a release, and shall provide for briefing of public officials on issues such as evacuation or shelter-in-place plans." The information provided in this section does not address all of the requirements of the provision. Please modify and provide the required information. Also, the topic of "Communications" is not addressed in this section. Please provide information regarding "Communications."

#### Page 8.9

Section XII: Plan Amendments

Please modify the information in this section to demonstrate compliance with the applicable provisions of 19.15.11 NMAC, instead of 19.15.36.13.N NMAC. Please address the submission provisions of Subsection D of 19.15.11.9 NMAC and the review and amendment provisions of Subsection F of 19.15.11.9 NMAC.

1

# Page 8.10

Hydrogen Sulfide Characteristics and Effects

Please correct the spelling of "sulfide" and provide the appropriate regulatory reference in the title of this page. Pursuant to Subparagraph (b) of Paragraph (2) of 1.15.11.9.B NMAC,

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the "hydrogen sulfide contingency plan shall include a discussion of the characteristics of <u>hydrogen sulfide</u> and <u>sulfur dioxide</u>." Please provide the required information in regards to the characteristics of sulfur dioxide.

# Page 8.11

Table #3

Please limit the information in the table to the information required by the regulation. Pursuant to Subparagraph (b) of Paragraph (2) of 1.15.11.9.B NMAC, the "hydrogen sulfide contingency plan shall include a discussion of the characteristics of <u>hydrogen sulfide</u> and <u>sulfur dioxide</u>." It is recommended to keep the characterization of each compound separate for accessibility and applicability instead of combining the information.

STEL (short term exposure limits)

The last sentence provided in this section states "IEI has procedures to evacuate the area at 10 PPM and to mask at 15 PPM." The OCD is unable to locate the procedures identified in the statement above within the hydrogen sulfide contingency plan. Please provide this information in the appropriate sections of the hydrogen sulfide contingency plan, such as when addressing the "activation levels" and in the required "immediate action plan."

The following underlined provisions were not addressed in the submitted hydrogen sulfide contingency plan:

- 19.15.11.9.B(1) NMAC The person shall <u>develop the hydrogen sulfide contingency</u> plan with due consideration of paragraph 7.6 of the guidelines in the API publication Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide, RP-55, most recent edition, or with due consideration to another division-approved standard.
- 19.15.11.9.B(2)(a) NMAC The hydrogen sulfide contingency plan shall contain information on emergency procedures the person will follow in the event of a release and shall include, at a minimum, information concerning the responsibilities and duties of personnel during the emergency, an immediate action plan as described in the API document referenced in Paragraph (1) of Subsection B of 19.15.11.9 NMAC, and telephone numbers of emergency responders, public agencies, local government and other appropriate public authorities. The plan shall also include the locations of potentially affected public areas and public roads and shall describe proposed evacuation routes, locations of road blocks and procedures for notifying the public, either through direct telephone notification using telephone number lists or by means of mass notification and reaction plans.
- 19.15.11.9.B(2)(b) NMAC The hydrogen sulfide contingency plan shall include <u>a</u> <u>discussion of the characteristics of hydrogen sulfide and sulfur dioxide</u>.
- 19.15.11.9.B(2)(c) NMAC The hydrogen sulfide contingency plan shall include <u>maps</u> and <u>drawings that depict the area of exposure and public areas and public roads within the area of exposure</u>.
- 19.15.11.9.B(2)(d) NMAC Training and drills. The hydrogen sulfide contingency plan shall provide for training and drills, including training in the responsibilities and duties of essential personnel and periodic on-site or classroom drills or exercises that simulate a release, and shall describe how the person will document the training, drills and attendance. The hydrogen sulfide contingency plan shall also provide for training of residents as appropriate on the proper protective measures to be taken in the event of a release, and shall provide for briefing of public officials on issues such as evacuation or shelter-in-place plans.

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- 19.15.11.9.B(2)(e) NMAC Coordination with state emergency plans. The hydrogen sulfide contingency plan shall describe how the person will coordinate emergency response actions under the plan with the division and the New Mexico state police consistent with the New Mexico hazardous materials emergency response plan.
- 19.15,11.9.B(2)(f) NMAC Activation levels. The hydrogen sulfide contingency plan shall include the activation level and a description of events that could lead to a release of hydrogen sulfide sufficient to create a concentration in excess of the activation level.
- 19.15.11.13 NMAC PERSONNEL PROTECTION AND TRAINING: The person shall provide persons responsible for implementing a hydrogen sulfide contingency plan training in hydrogen sulfide hazards, detection, personal protection and contingency procedures.
- 19.15 11.13 NMAC NOTIFICATION OF THE DIVISION: The person shall notify the division upon a release of hydrogen sulfide requiring activation of the hydrogen sulfide contingency plan as soon as possible, but no more than four hours after plan activation, recognizing that a prompt response should supersede notification. The person shall submit a full report of the incident to the division on form C-141 no later than 15 days following the release.

# Page 9.1

Closure and Post Closure Plan:

The plan only addresses the closure and post closure requirements in regards to the landfarm soils and cells. The plan fails to address the closure of the processing of waste material in pits, tanks, and other site improvements. Please modify the closure and post closure plan to address all operations associated with the proposed facility within the facility boundary. Also, please explain the February 14, 2007 date that follows all of the regulatory references. The February 14, 2007 date is the effective date of 19.15.36 NMAC. Since the effective date, the regulation has been amended and can be subject to future changes and amendments. If the purpose is to attempt to revert back to the February 14, 2007 regulations, then the OCD cannot consider the application for approval. The OCD does not recommend dating regulatory reference since regulations are subject to change.

Pursuant to Paragraph (2) of 19.15.36.18.A NMAC, the "division shall notify the operator within 60 days after the date of cessation of operations specified in the operator's closure notice of modifications of the closure plan and proposed schedule or additional requirements..." The current language in the second paragraph suggests that the division has 60 days from the operator's notice to respond. This is incorrect. Please modify the last sentence of the second paragraph to coincide with the regulatory language and requirements.

Pursuant to Paragraph (5) of 19.15.36.18.A NMAC, "Closure shall proceed in accordance with the approved closure plan and schedule and modifications or additional requirements the division imposes." The first sentence of the provision identifies that OCD approval is required in order to proceed with the closure. Please modify the third paragraph to identify the condition in which closure can proceed.

The fourth paragraph seems to out of sequence. It seems to be the lead in to the sixth paragraph and the other identified provisions associated with Paragraph (4) of 19.15.36.18.D NMAC. Please relocate the proposed language to its appropriate place within the closure plan.

The fifth paragraph, which addresses re-vegetation, seems to out of sequence. Please relocate the proposed language to its appropriate place within the closure plan and to the

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sequence in which activities will be completed. The fifth paragraph also fails to identify the minimum regulatory seed mixture requirements regarding re-vegetation and the duration in which the operator is responsible for maintaining the vegetative cover, as specified within Paragraph (6) of 19:15.36.18.A NMAC. Please modify the fifth paragraph to identify all of the regulatory requirements of the operator in regards to re-vegetation.

The third bullet in the sixth paragraph fails to identify the operator's responsibility to fill in the cell, after the treated soils are removed, with native soils pursuant to Subparagraph (d) of Paragraph (4) of 19.15.36.18.D NMAC. Please modify in order to satisfy the regulatory language and requirements.

The fourth bullet in the sixth paragraph fails to identify the operators' responsibility to fill in the landfarm remediation area, after contaminated soils are removed, with native soils pursuant to Subparagraph (c) of Paragraph (4) of 19.15.36.18.D NMAC. Please modify in order to satisfy the regulatory language and requirements.

The eighth (last) bullet addresses the protocol an operator must satisfy if the operator utilizes the bioremediation endpoint approach. This approach/method is not proposed or discussed within the application and would not be applicable based upon the methods of biopile construction and development proposed within the application. Please omit the eighth bullet.

The closure portion of the plan fails to address the closure of the pits and tanks associated with the processing of liquids and soils prior to placement within a landfarm cell and biopile. The OCD requires that such closures be addressed in the closure plan by utilizing the applicable provisions of Paragraph (1) of 19.15.36.18.D NMAC for tanks and Subsection E of 19.15.36.18 NMAC for pits. Please provide.

The last paragraph on the page discusses the option for IEI to pursue an alternative to revegetation. Pursuant to Subsection G of 19.15.36.18 NMAC only the "landowner" can pursue such a request. Since IEI is not identified as the landowner within the permit application, the language in the paragraph must be modified in order to satisfy the regulatory language and requirements. Please modify. Also, please include language that identifies the impact on the release of the operator's financial assurance.

#### Page 9.2

Closure / Post Closure Estimate:

Pursuant to Paragraph (9) of 19.15.36.8.C NMAC, the application shall include "a closure and post closure plan, including a responsible third party contractor's cost estimate, sufficient to close the surface waste management facility in a manner that will protect fresh water, public health, safety and the environment." The cost estimates should reflect those costs the OCD would incur to hire a third party to complete the closure and post closure activities if the operator is no longer involved. Based upon information provided in the application, the size of the facility is 291 acres with 30 proposed landfarm cells that are approximately 10 acres each. The application also identifies that soils remediation will be accomplished by the use of biopiles rather than landfarm cells. Please provide a detailed breakdown of the proposed closure and post closure cost estimates.

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The first cost estimate is based upon "testing for two years." It identifies that 20 of the proposed 30 landfarm cells will be tested at a cost of \$1200.00 per test. Please justify the testing of 20 landfarms cells, rather than individual biopiles (especially when each biopile will be in a different phase of remediation). Also, please provide a breakdown of the \$1200 test cost estimate. How much will be dedicated for hiring a field tech to mobilize to facility, obtain the sample, demobilize, deliver the sample to the laboratory, and submit a report of the results to the OCD per sampling event? How much will it cost per sampling event for equipment rental and delivery, especially for vadose zone monitoring? How much will each of the semi-annual treatment zone monitoring events cost? How much will each semi-annual vadose monitoring event costs and will the costs include equipment and equipment operators to obtain the sample? How much will each treatment zone closure sampling event cost? Please provide a breakdown for each cost and identify the number of sampling events.

If testing is estimated for two years, then the bi-weekly disking of soils and monthly turning of biopiles must continue "until soils within the cells are remediated to the standards provided in Subsection F of 19.15.36.15 NMAC, or as otherwise approved by the division," pursuant to Subparagraph (a) of Paragraph (4) of 19.15.36.18.D NMAC. Please provide a cost estimate for the OCD to hire a third party to complete this task and include the cost estimates for equipment rental and/or mobilization and demobilization to and from the proposed facility.

Pursuant to Subparagraph (f) of Paragraph (4) of 19.15.36.18.D NMAC, please include the cost estimates associated with the removal of buildings, fences, roads and equipment, site cleaned-up and tests conducted on the soils for contamination.

In regards to the proposed cost estimates associated with grading and shaping, please justify why only 200 acres of the 291 acre facility requires this work. Please provide a breakdown of the equipment hourly rate. Does it include mobilization and demobilization to and from the facility and does it include the cost of the equipment operator? Please clarify by providing a breakdown of costs. The same should be done in regards to seeding. Why will only 200 acres of the 291 acres be seeded? How many pounds of seed is required per acre to obtain the re-vegetation requirements of Paragraph (6) of 19.15.36.18.A NMAC? What method will be utilized to complete the task? Please provide a breakdown of the seeding costs.

The removal of tanks and pits will also include the removal and disposal of any remaining liquids and contaminated waste material, the disposal of the tank and/or pit material, and the testing beneath each tank and pit to determine if the operation of the tank or pit resulted in the contamination of soils beneath it. Please provide a breakdown for costs associated with each of the tasks identified above.

During the post closure period, the operator "shall regularly inspect and maintain required re-vegetation." Pursuant to Paragraph (6) of 19.15.36.18.A NMAC, the operator is required to provide maintenance of the vegetative cover "through two successive growing seasons." Please provide a cost breakdown of the proposed \$300.00 quarterly cost and a description of what it represents.

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The first paragraph identifies the function of the facility as "specializing in remediating RCRA exempt oilfield waste." This statement conflicts with the non-exempt waste identified on page 10.4 of the contingency plan. Please modify the statement to coincide with information provided in the application.

In the first sentence of both the second and third paragraphs, the proposed language suggests that the contingency plan should only address actions to be taken "in the event of a major spill, fire, or other response to incident" and "whenever there is a major emergency." The regulation does not make a distinction between major or minor emergencies, spills, and fires. Pursuant to Subsection N of 19.15.36.13 NMAC, the "operator shall carry out the plan's provisions immediately whenever there is a fire, explosion or release of contaminants or oil field waste constituents that could threaten fresh water, public health, safety or the environment." The regulation also requires the plan to "be designed to minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water."

In the last paragraph, please clarify that copies of the plan will be maintained at the SWMF and "provided to", not maintained by, the local law enforcement and emergency response departments for use during an emergency. Also, pursuant to Section N of 19.15.36.13 NMAC the "operator shall provide the division's environmental bureau with a copy of an amendment to the contingency plan, including amendments required by Paragraph (8) of Subsection N of 19.15.36.13 NMAC; and promptly notify the division's environmental bureau of changes in the emergency coordinator or in the emergency coordinator's contact information." Please provide language that expresses the responsibility of the operator to OCD.

# Page 10.3

Section II: 'General Facility Information

Items a through h in this section each identify the subject matter of the information that is provided after it. Please identify the subject matter for item a.

#### Section III: Description of Business

The second sentence in this section states that the facility accepts non-hazardous RCRA exempt waste(s). This statement conflicts with the first sentence in the first paragraph of Section IV and the non-exempt waste identified on page 10.4 of the contingency plan. Please modify the statement to coincide with information provided in the application.

#### Page 10.4

Waste Characterization:

Pursuant to Paragraph (3) of 19.15.36.7.A NMAC "Landfarm" means a discrete area of land designated and used for the remediation of petroleum hydrocarbon-contaminated soils and drill cuttings." Pursuant to Subsection A of 19.15.36.15 NMAC, "Only soils and drill cuttings predominantly contaminated by petroleum hydrocarbons shall be placed in a landfarm. The division may approve placement of tank bottoms in a landfarm if the operator demonstrates that the tank bottoms do not contain economically recoverable petroleum hydrocarbons." The information provided in this section identifies four "category groups that are related to the physical form of" exempt waste. The second "category group" includes "tank cleaning residue." Please compare this interpretation to the definition of "tank bottoms" provided in Paragraph (1) of 19.15.2.7.T NMAC. Also, "tank sludge and tank bottom" waste may be classified as RCRA

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non-exempt depending on product or material stored within the tank. The third "category group" is "drilling fluids." The definition of "landfarm" provided in Paragraph (3) of 19.15.36.7.A NMAC and the landfarm waste acceptance criteria of Subsection A of 19.15.36.15 NMAC clearly identifies the acceptance of *drill cuttings*, not "drilling fluids." The fourth "category group" is the "debris waste." The OCD is unfamiliar of this category of waste. Please provide examples and reference a provision within 19.15.36 NMAC that clearly states that such waste satisfy the waste acceptance criteria for landfarms. Please verify the proposed exempt waste streams in order to determine if they comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms.

### Exempt Waste(s):

Please defer to the comments provided for the *Waste Characterization* section for page 10.4. Please verify the proposed exempt waste streams to determine if they comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms.

The following wastes: "drilling fluids; well completion, treatment, and stimulation fluids; gas plant dehydration wastes; cooling tower blowdown; gas plant sweetening waste, produced water; and spent filters, filter media, and backwash" do not comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms. Such wastes as, "accumulated materials such as hydrocarbons, solids, sands, and emulsion; and workover wastes" are not clearly defined enough to determine if the wastes comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms. Please list examples of proposed "workover wastes" and reference a provision within 19.15.36 NMAC that clearly states that such waste satisfy the waste acceptance criteria for landfarms. As for "accumulated materials such as hydrocarbons, solids, sands, and emulsion," such waste may be classified as RCRA non-exempt depending on how it is generated. Also, such waste materials as "solids" and "sands" may not be appropriate for acceptance at a landfarm if such waste is not "predominantly contaminated by petroleum hydrocarbons," pursuant to Subsection A of 19.15.36.15 NMAC and the waste are not conducive to remediation pursuant to Paragraph (3) of 19.15.36.7.A NMAC. Please clarify.

# Non-Exempt:

The four proposed RCRA non-exempt waste do not satisfy or comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms. Please defer to the comments provided for the *Waste Characterization* section and the *Exempt Waste(s) section* of page 10.4 for suggestions regarding potential RCRA non-exempt waste. Please modify.

#### Page 10.6

Section VII: Response Procedures

Pursuant to Subsection N of 19.15.36.13 NMAC, the "contingency plan shall be <u>designed</u> to <u>minimize hazards</u> to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water." Pursuant to Paragraph (1) of 19.15.36.13.N NMAC, the contingency plan shall "<u>describe the actions surface waste management facility personnel shall</u> take in response to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents <u>that could threaten</u> fresh water, public health, safety or the environment." The intent of the development of the contingency plan is to establish standard operating procedures and protocols to expeditiously respond to fires,

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explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste in order to minimize hazards to air, soil, surface water or ground water.

# Response Classification:

The second paragraph of this section attempts to classify events and responses into two categories: incidental situations and major emergencies. The distinction is rather the response requires outside assistance or not. The regulation does not make a distinction between incidental or major emergencies, spills, and fires. Please "describe the actions surface waste management facility personnel shall take in response to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents that could threaten fresh water, public health, safety or the environment" in order to "minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water," as required by Subsection N of 19.15.36.13 NMAC.

# Page 10.7

Incidental Event:

Please defer to the comments provided for the *Response Classification* section for page 10.6 regarding incidental situations and major emergencies. Please "describe the actions surface waste management facility personnel shall take in response to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents that could threaten fresh water, public health, safety or the environment" in order to "minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water," as required by Subsection N of 19.15.36.13 NMAC.

### Major Emergency:

Please defer to the comments provided for the *Response Classification* section for page 10.6 regarding incidental situations and major emergencies.

The title of Section VII, in which the heading "Major Emergency" is listed under is *Response Procedures*. The section fails to provide or identify any response procedures. Please "describe the actions surface waste management facility personnel shall take in response to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents that could threaten fresh water, public health, safety or the environment" in order to "minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water," as required by Subsection N of 19.15.36.13 NMAC.

#### Spill Reporting:

The proposed language restrict spill reporting to only releases "from a tank system" and only to releases of "petroleum or any other hazardous substances." This proposal contradicts the requirements Subsection K of 19.15.36.13 NMAC. Pursuant to Subsection K of 19.15.36.13 NMAC, the operator "shall comply with the <u>spill reporting and corrective action</u> provisions of 19.15.30 NMAC or 19.15.29 NMAC." Releases can occur from vehicles delivering waste, onsite fixed equipment, and on-site mobile equipment such as frontend loaders, trucks, track

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loaders, backhoe loaders, and tractors. Please review the requirements of 19.15.29 NMAC or 19.15.30 NMAC and provide an appropriate response.

#### Section VIII: Identification of Waste(s)

Pursuant to Paragraph (6) of 19.15.36.13.N NMAC, the contingency plan shall "include an evaluation of expected contaminants, expected media contaminated and <u>procedures for investigation</u>, <u>containment and correction or remediation</u>." The information provided in this section of the contingency plan addresses how known sources are identified but does not include "<u>procedures for investigation</u>, <u>containment and correction or remediation</u>." Please provide all of the required information.

# Section IX: Assessment

Pursuant to Paragraph (10) of 19.15.36.13.N NMAC, the contingency plan shall "describe how the emergency coordinator, whenever there is a release, fire or explosion, will immediately identify the character, exact source, amount and extent of released materials." The information provided in Section VIII, *Identification of Waste(s)*, of the contingency plan addresses how known sources are identified. Please explain how the emergency coordinator will "identify the character, exact source, amount and extent" of released materials from unknown sources whenever there is a release, fire or explosion. Each scenario is different and may require different procedures.

# Page 10.8

# Section X: Notification

The first sentence at the top of the page states "if the event is classified as incidental, then it is handled by facility personnel," thus suggesting that no notice is required. This assumption is incorrect. Please defer to the comments provided for the *Response Classification* section for page 10.6 regarding incidental situations and major emergencies. Please modify this section appropriately.

#### Page 10.9

#### Section XI: Control Procedures

Pursuant to Paragraph (1) of 19.15.36.13.N NMAC, the contingency plan shall "describe the actions surface waste management facility personnel shall take in response to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents that could threaten fresh water, public health, safety or the environment." Please ensure that each of the underlined scenarios is addressed, as required by regulation. Also, the contingency plan should standardize operating procedures and protocols in order to expeditiously respond to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste in order to minimize hazards to air, soil, surface water or ground water regardless if the event occurs within or spreads outside of the facility boundary.

#### Incidental Spills:

Please defer to the comments provided for the *Response Classification* section for page 10.6 regarding incidental situations and major emergencies. These comments also apply to incidental and major spills. In the first paragraph of this section, an attempt is made to define an "incidental spill." This is not a term that is recognized or defined in 19.15.36 NMAC. The regulation does distinguish between incidental and major spills. The information provided in this section indicates that only soils have the potential for contamination during incidental spills.

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There are no procedures or protocols provided to address releases to air, surface water, and ground water as required by Subsection N of 19.15.36.13 NMAC. If soils are contaminated, then compliance with the corrective action provision Section 11 of 19.15.29 NMAC may be required. Please modify the contingency plan to address all of the types of releases identified in Paragraph (1) of 19.15.36.13.N NMAC and include protocols that identify the responsibilities of the operator/owner to comply with the applicable provisions of 19.15.29 NMAC and 19.15.30 NMAC regarding the submittal and approval of remediation plans and/or abatement plans.

#### Major Spills:

Please defer to the comments provided for the *Incidental Spills* section for page 10.9 regarding incidental spills. Please modify the contingency plan to provide and identify standardize operating procedures and protocols in order to expeditiously respond to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste in order to minimize hazards to air, soil, surface water or ground water regardless if the event occurs within or spreads outside of the facility boundary. Pursuant to Paragraph (1) of 19.15.36.13.N NMAC, the contingency plan "shall describe the actions surface waste management facility personnel shall take..." Please described or recommend methods that may be utilized and implemented "to retain, contain, isolate, or slow the flow" of a release within the contingency plan. Please modify the contingency plan to address all of the types of releases identified in Paragraph (1) of 19.15.36.13.N NMAC and include protocols that identify the responsibilities of the operator/owner to comply with the applicable provisions of 19.15.29 NMAC and 19.15.30 NMAC regarding the submittal and approval of remediation plans and/or abatement plans.

# Page 10.10

*Fires and Explosions:* 

Pursuant to Paragraph (1) of 19.15.36.13.N NMAC, the contingency plan "shall describe the actions surface waste management facility personnel shall take..." Please described or recommend methods that may be utilized and implemented to contain and isolate a fire within the contingency plan. Is there heavy equipment that can be utilized to isolate a fire from the biopiles and/or to cover the fire with soils? If the use of water is required to extinguish a fire, what will be the source of the water, where will it be obtained, and how will it be contained during use?

Pursuant to Subparagraph (a) of Paragraph (2) of 19.15.29.2.A NMAC, the definition of a major release includes "an unauthorized release of a volume that results in a fire." Please modify the information provided in the sixth paragraph to reflect the operator's responsibility regarding proper notice. Also in the seventh paragraph, please identify the responsibilities of the operator/owner to comply with the applicable provisions of 19.15.29 NMAC and 19.15.30 NMAC regarding the submittal and approval of remediation plans and/or abatement plans.

Please address the emergency coordinator's responsibility in regards to a fire or explosion in accordance with the requirements of Paragraph (11) of 19.15.36.13.N NMAC.

#### Page 10.11

Section XII: Prevention of Recurrence or Spread

For this type of facility, the OCD requires the owner/operator to ensure that all aboveground tanks have impermeable secondary containment (e.g., liners and berms), which will

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contain a volume of at least one-third greater than the total volume of the largest tank or all interconnected tanks, unless such aboveground tanks contain fresh water. Please modify the last paragraph of this section to properly address aboveground tanks.

Section XIV: Container Spills and Leakage

Please explain how "solid wastes" will be utilized to capture spilled residue liquids, as identified in the last sentence of the second paragraph.

# Page 10.14

Section XVIII: Coordination Arrangements

Pursuant to Paragraph (2) of 19.15.36.13.N NMAC, the contingency plan shall "describe arrangements with local police departments, fire departments, hospitals, contractors and state and local emergency response teams to coordinate emergency services." Please describe and address the arrangements with "contractors and state and local emergency response teams to coordinate emergency services," as required by the regulations.

Section XIX: Evacuation Plan

Please provide a facility map that illustrates the proposed evacuation routes. The facility map should illustrate the proposed development of the facility and the proposed location of permitted activities.

Section XX: Reporting Requirements

Please defer to the comments provided for the *Response Classification* section for page 10.6 regarding incidental situations and major emergencies and the *Incidental Spills* section for page 10.9 regarding incidental spills. Please modify this section to reflect compliance with the reporting requirements of 19.15.29 NMAC. Also, please include and provide a copy of the appropriate form to report and file a written notification.

# Page 10.15

Section XXII: Availability and Revision of the Contingency Plan

If revisions and modifications are made to the contingency plan, a copy should be provided to the OCD for regulatory compliance review. Please modify this section to ensure that OCD receives a copy of the contingency plan.

#### Page 11.1

Drainage Plan:

The second sentence of the second paragraph states "the drawings indicate the location of the berms, v-ditches, and dykes designed to protect the major waterways." Pursuant to Paragraph (4) of Subsection C of 19.15.36.8 NMAC, the application shall include "detailed construction/installation diagrams of pits, liners, <u>dikes</u>, piping, sprayers, tanks, roads, fences, gates, <u>berms</u>, pipelines crossing the surface waste management facility, buildings and chemical storage areas." Please provide "detailed construction/installation diagrams" of the storm water control features, as required by 19.15.36 NMAC.

The last paragraph states that "the Construction Storm Water Protection Plan" has been submitted "as part of this report and drawings. The OCD was unable to locate the "Construction Storm Water Protection Plan" in this section of the application. Please provide the document or reference the location or the correct title of the document.

Crowe Blanco, LLC Blanco Landfarm April 27, 2010 Page 29 of 32

#### Page 11.15

Waterways Map, Sheet 3 of 11:

Pursuant to Paragraph (2) of Subsection B of 19.15.36.13 NMAC, "no surface waste management <u>facility</u> shall be located within 200 feet of a watercourse." The Waterways Map illustrates three waterways within the facility boundary. Two of the three watercourses intersect the facility, splitting the proposed location into three separate sections or three separate surface waste management facilities. These three areas are better illustrated on the Drainage Map provided on page 11.16. Please address this issue.

#### Section 12

No information or pages were provided for Section 12 of the permit application.

#### **Section 13**

No information or pages were provided for Section 13 of the permit application.

# Page 14.1

Best Management Practice Guideline:

Please provide the correct regulatory references in the title of this section. Please modify and reference 19.15.36.8.C(14) NMAC.

## Page 14.5

Section 4, Roads and Yard Dust:

Please identify the source and quality of the "recycled water" that is proposed for spraying on unpaved roadways in the third bullet under this subject heading.

### Section 4, Odor Control:

Please identify the "gases" in which incoming liquid waste will be screened, as proposed in the fourth bullet under this subject heading. Also, please identify the "unacceptable levels" in which waste will be rejected.

# Section 5, Wastewater and Stormwater:

Please provide a best management practice for this section.

Section 6, Handling and Disposal of RCRA Exempt and Non-exempt, Non-Hazardous Wastes:

The first bullet states that "only RCRA exempt, Non-hazardous waste is accepted for disposal." This statement conflicts with the title of this section and other proposals throughout the permit application which state that RCRA non-exempt, non-hazardous waste streams will also be accepted for remediation. Please clarify or modify the response.

### Page 14.7

Section 12, Wastewater:

Please identify the source of the "re-use wastewater" that is proposed for dust control and suppression, as proposed in the first bullet under this subject heading. Also, please identify the "acceptable reuse criteria."

The third bullet under this heading proposes the use or "reuse" of collected stormwater for "remediation and/or dust control." This is a new proposal that is not discussed in the rest of

Crowe Blanco, LLC Blanco Landfarm April 27, 2010 Page 30 of 32

the application, especially Section 6 of the permit application, the *Management Plan*. Please ensure that such proposals coincide with other proposals in the *Management Plan* when addressing the appropriate operational requirements. Also, please identify the "acceptable reuse criteria."

### Page 14.9

Stormwater Pollution Prevention Plan Map, Sheet 10 of 11:

Pursuant to Paragraph (4) of Subsection C of 19.15.36.8 NMAC, the application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas." Pursuant to Paragraph (4) of Subsection C of 19.15.36.8 NMAC, the application shall include "engineering designs, certified by a registered professional engineer, including technical data on the design elements of each applicable treatment, remediation and disposal method and detailed designs of surface impoundments." There are items identified and discussed within the "Keyed Notes" of the *Stormwater Pollution Prevention Plan Map* in which "detailed construction/installation diagrams" and/or "engineering designs" are not provided in the permit application. Please provide all of the required "detailed construction/installation diagrams" and/or "engineering designs."

Pursuant to Paragraph (1) of Subsection C of 19.15.36.15 NMAC, the operator "shall berm each landfarm cell to prevent rainwater run-on and run-off." The proposed locations of the berms of the *Stormwater Pollution Prevention Plan Map* do not demonstrate compliance to the above referenced provision. Please provide a map that demonstrates compliance regarding the placement and installation of berms.

### Section 15, Pages 1-48, Geological Data

Pursuant to Subparagraph (a) of Paragraph (15) of Subsection C of 19.15.36.8 NMAC, the application shall include "geological/hydrological data" including "a map showing names and location of streams, springs or other watercourses, and water wells within one mile of the site." The OCD was unable to find such a map within this section and the permit application. Please provide the required map.

Pursuant to Subparagraph (b) of Paragraph (15) of Subsection C of 19.15.36.8 NMAC, the application shall include "geological/hydrological data" including "laboratory analyses, performed by an independent commercial laboratory, for major cations and anions; BTEX; RCRA metals; and TDS of ground water samples of the shallowest fresh water aquifer beneath the proposed site." The first sentence of the first paragraph on page 35, titled Water Quality, of this section, indicates that a water sample was obtained and analyzed from a water well (SJ 03185) located within the southeast portion of the proposed facility boundary. The OCD was unable to find the required laboratory analyses within this section and the permit application. Please provide the required laboratory analyses. The chain of custody document should be included when submitting laboratory results.

Pursuant to Subparagraph (c) of Paragraph (15) of Subsection C of 19.15.36.8 NMAC, the application shall include "geological/hydrological data" including "depth to, formation name, type and thickness of the shallowest fresh water aquifer." Based upon the information provided

Crowe Blanco, LLC Blanco Landfarm . April 27, 2010 Page 31 of 32

throughout the permit application and in this section, water well SJ-02883 has been improperly located within Section 16, Township 29 North, Range 9 West, NMPM. The first sentence of the third paragraph on page 32 states "another water well, SJ-02883; north of U.S. Highway 64 and the project area, probably at the site of a roadside business, now removed, was drilled in 1998." Figure 13, page 34 of this section, illustrates water well SJ-02883 in the NW/4 of the NW/4 of the NW/4 of Section 16, Township 29 North, Range 9 West, NMPM. The record search results of the Office of the State Engineer database, on page 46 of this section, places water well SJ-02883 in the SW/4 of the SW/4 of the NE/4 of Section 16, Township 29 North, Range 9 West, NMPM, which is near the center of Section 16 and abutting the eastern side of the proposed facility. On the top of the front page of the C-137 application form, there is a note that instructs the applicant of the following: A meeting should be scheduled with the Division's Santa Fe office Environmental Bureau prior to pursuing an application for a surface waste management facility in order to determine if the proposed location is capable of satisfying the siting requirements of Subsections A and B of 19.15.36.13 NMAC for consideration of an application submittal. Since depth to ground water is the siting criterion identified in Subsection A of 19.15.36.13 NMAC, the OCD recommends that such a meeting be scheduled prior to making revisions to the application to ensure that a proper site assessment is performed for the proposed facility. During the meeting, we will discuss the submittal of a boring plan to the OCD for consideration of approval. Information obtained from the implementation of the approved boring plan will allow for this provision to be properly addressed.

Pursuant to Subparagraph (d) of Paragraph (15) of Subsection C of 19.15.36.8 NMAC, the application shall include "geological/hydrological data" including "soil types beneath the proposed surface waste management facility, including a lithologic description of soil and rock members from ground surface down to the top of the shallowest fresh water aquifer." The OCD was unable to locate the site specific information require above within this section and the permit application. The information provided in the application is based on regional assessments of the San Juan Basin area. The OCD recommends that a meeting be scheduled prior to making revisions to the application to ensure that a proper site assessment is performed for the proposed facility. During the meeting, we will discuss the submittal of a boring plan to the OCD for consideration of approval. Information obtained from the implementation of the approved boring plan will allow for this provision to be properly addressed.

Pursuant to Subparagraph (e) of Paragraph (15) of Subsection C of 19.15.36.8 NMAC, the application shall include "geological/hydrological data" including "geologic cross-sections." The OCD was unable to locate the site specific information require above within this section and the permit application. The information provided in the application is based on regional assessments of the San Juan Basin area. The OCD recommends that a meeting be scheduled prior to making revisions to the application to ensure that a proper site assessment is performed for the proposed facility. During the meeting, we will discuss the submittal of a boring plan to the OCD for consideration of approval. Information obtained from the implementation of the approved boring plan will allow for this provision to be properly addressed.

Pursuant to Subparagraph (f) of Paragraph (15) of Subsection C of 19.15.36.8 NMAC, the application shall include "geological/hydrological data" including "potentiometric maps for the shallowest fresh water aquifer." The OCD was unable to locate the site specific information require above within this section and the permit application. The information provided in the application is based on regional assessments of the San Juan Basin area. The OCD recommends

Crowe Blanco, LLC Blanco Landfarm April 27, 2010 Page 32 of 32;

that a meeting be scheduled prior to making revisions to the application to ensure that a proper site assessment is performed for the proposed facility. During the meeting, we will discuss the submittal of a boring plan to the OCD for consideration of approval. Information obtained from the implementation of the approved boring plan will allow for this provision to be properly addressed.

### Section 15, Pages 49-92

Background Sampling:

There is no discussion provided in the permit application regarding background sampling. The map provided on page 49 illustrates twelve sampling points, but no information is provided on the sampling protocol which was implemented. Please provide a copy of the sampling plan that was utilized during the background sampling event. The laboratory analytical results, pages 51-92, did not include any quality control/ quality assurance results nor did it include the chain of custody. Please provide the missing documents. In regards to background sampling, pursuant to Subsection B of 19.15.36.15 NMAC the operator "shall analyze the background soil samples for TPH, as determined by EPA method 418.1 or other EPA method approved by the division; BTEX, as determined by EPA SW-846 method 8021B or 8260B; chlorides; and other constituents listed in Subsections A and B of 20.6.2.3103 NMAC, using approved EPA methods." OCD's review of the laboratory analytical resulted in the discovery that TPH was not determined by EPA method 418.1, as required by the regulation, but instead by EPA method 8015M. Also, the samples were not tested for vinyl chloride, a constituents listed in Subsection A of 20.6.2.3103 NMAC. The sampling results remain incomplete. Please resolve and provide the laboratory analytical results required by the regulations.

### Jones, Brad A., EMNRD

From: Don Baldwin [don.baldwin@geomatengineering.com]

Sent: Thursday, January 27, 2011 4:07:PM

To: Jones, Brad A., EMNRD richard@c-w-e.com

Subject: Work Plan Attached with Change

Attachments: Work Plan\_Rev 5.pdf

Brad,

Sorry, I clicked Send instead of Attach on that last email!

Here is the Work Plan with the discussion about anticipating possible moist zones at shallower depths in the proposed borings.

Don Baldwin Geologist GEOMAT Inc. (505) 327-7928 office (505) 860-9400 cell January 27, 2011 GEOMAT Proposal No. 102-06-17 Rev. 5

Richard P. Cheney, P.E. Cheney-Walters-Echols, Inc. 909 West Apache Street Farmington, New Mexico 87401

RE: Proposed Work Plan

Additional Monitor Wells Installation

Crowe Blanco LLC Landfarm - Operated by IEI

Blanco, New Mexico

GEOMAT Inc. (GEOMAT) is pleased to submit this amended Work Plan for the installation of two additional groundwater monitor wells at the proposed Crowe Blanco LLC Landfarm facility operated by Industrial Ecosystems to be located near Blanco, New Mexico.

The purpose of the two additional wells is to further evaluate the direction of groundwater flow beneath the site. The additional data will be used to evaluate whether the three existing wells intercept the same aquifer. The data will then be used to develop a groundwater potentiometric surface (water table) map indicating the elevation and direction of groundwater flow at the facility site.

### Our scope of work follows:

- Using subcontracted drilling services, GEOMAT will drill two boreholes at the approximate locations described below and depicted on the attached Exhibit 1 – Proposed Monitor Well Locations.
  - One boring will be located near the eastern boundary of the site roughly midway between existing wells MW-1 and MW-3 at a ground surface elevation of approximately 5756 feet. This boring will be advanced to a total depth of 130 feet below ground surface. In the event that the water table encountered in MW-3 is a different aquifer than that in MW-1 and MW-2, elevated moisture contents and/or groundwater could be expected to occur at depths on the order of 25 to 35 feet at this location. Moisture conditions at these depths will be carefully evaluated during drilling to help evaluate whether a separate aquifer exists.

- A second boring will be located on the northern portion of the site approximately midway between existing wells MW-2 and MW-3 at a ground surface elevation of approximately 5775 feet. This boring will be advanced to a total depth of approximately 150 feet below ground surface. In the event that the water table encountered in MW-3 is a different aquifer than that in MW-1 and MW-2, elevated moisture contents and/or groundwater could be expected to occur at depths on the order of 45 to 55 feet at this location. Moisture conditions at these depths will be carefully evaluated during drilling to help evaluate whether a separate aquifer exists.
- The borings will be drilled using air-rotary equipment. Continuous core samples of the subsurface materials will be obtained from each boring during drilling. A geologist from our office will monitor the drilling operations and prepare a continuous log of each boring.
- Moisture-bearing zones encountered during drilling will be evaluated to determine whether they are viable water-producing zones. Drilling will be halted upon encountering a moist zone and the borehole pumped or bailed dry. The boring will be allowed to sit overnight to allow time for any infiltration of water to occur.
- Borings in which groundwater is encountered will be completed as permanent
  monitor wells as described in the attached Work Plan submitted by our drilling
  subcontractor, Enviro-Drill Inc. (EDI). If a confined aquifer is encountered,
  the well will be constructed such that the bentonite seal is installed at the
  depth at which water was initially encountered during drilling.
- The static water level in each well will be measured using an electronic water-level indicator. Water levels will be determined relative to the top of casing (TOC) on the north side of each well casing.
- The natural ground surface elevation will be determined at the location of each well. Any manipulation of the natural ground surface elevation by cutting or filling will be documented. The natural ground surface elevation at the three existing wells will be verified. The difference between the TOC and natural ground surface elevations will be used to determine the depth to groundwater below natural ground surface at each of the five wells.
- The water-level data will be used to determine the potentiometric surface using the Strike and Dip Geologist's Three-Point Method.

It is anticipated that the drilling and monitor well installation will take five to six days to complete. GEOMAT will notify NMOCD one week prior to commencing the work.

Thank you for the opportunity to work with you on this project. If you have any questions or need additional information, please let us know.

Respectfully submitted, GEOMAT Inc.

Penald R. Baldwin

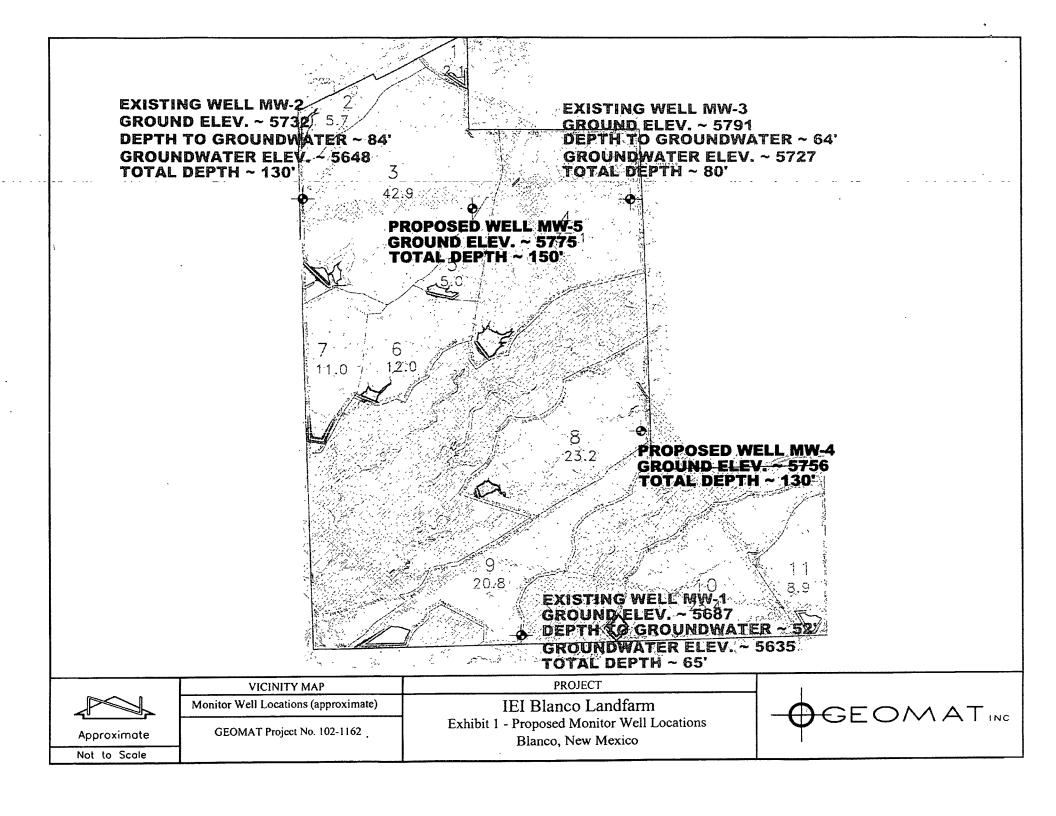
Donald R. Baldwin

Geologist

Attachments: Exhibit 1 - Proposed Monitor Well Locations

EDI Work Plan

cc: Brad A. Jones, NMOCD



Geomat

EDI Rof. No. 2380P11157 Revision 3

#### WORK PLAN

(D) will complete the proposed project by continuously coring all bereholds to total depth utilizing an HO wirefine coring system. Fire diameter of the berehold will be 4 inches, allowing for the placement of a 2 inch monitor system if groundwater is encountered. This will aliminate the need for berehold regarding.

EDI will utilize air-coring methods "with foam injection" on a limited basis for borehole stability or to facilitate removal of cuttings from boreholes, especially at deeper depths. The foam will be an environmentally safe, non-hydrocarbon based product. The cores will be placed in wax-covered HO cardboard core boxes, with 10 feet of core in each box. The cores will be retained by Geomat field-personnel.

If no groundwater is encountered in the borehole, EDI will abandon it by tramming a bentonite/coment mixture from bottom to top to avoid bridging and to keep surface water from migrating down the borehole.

If groundwater is ancountered, EDI will set a permanent 2-inch monitor well in the borehole, with 20 feet of pre-packed, 0.010 slotted screen. Fifteen feet of screen will be placed below the water table, and 5-fent above the water table. A 10/20 silica sand pack will be placed around the pre-pack screen to two feet above the screened interval. A bentonite plug seal four feet thick will be placed on top of the sand pack, with the remaining annulus filled with a bentonite/cement grout to surface. The surface completion will consist of a 5-foot by 4-inch steel lockable shroud, set 3-foot below surface and 2-feet above in a 4'x4'x4" concrete pad with three bollards placed in a triangular formation to protect the well. The well will be developed by beiling to remove sediment.

### Jones, Brad A., EMNRD

From: Jones, Brad A., EMNRD

Sent: Thursday, January 27, 2011 5:16 PM

To: 'Marcella Marquez'; Powell, Brandon, EMNRD

Cc: richard@c-w-e.com; 'Don Baldwin'
Subject: RE: Work Plan Attached with Change

Attachments: 2011 1-27 Blanco Boing Plan Approval.pdf; Work Plan\_Rev 5.pdf

Marcella,

Please see the attached... it is the revised boring plan and approval. Hardcopies of the approval have been placed in the mail.

**Brad** 

### Brad A. Jones

Environmental Engineer
Environmental Bureau
NM Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505
E-mail: brad.a.jones@state.nm.us

Office: (505) 476-3487 Fax: (505) 476-3462

**From:** Don Baldwin [mailto:don.baldwin@geomatengineering.com]

Sent: Thursday, January 27, 2011 4:07 PM

**To:** Jones, Brad A., EMNRD **Cc:** <u>richard@c-w-e.com</u>

**Subject:** Work Plan Attached with Change

Brad,

Sorry, I clicked Send instead of Attach on that last email!

Here is the Work Plan with the discussion about anticipating possible moist zones at shallower depths in the proposed borings.

Don Baldwin, Geologist GEOMAT Inc. (505) 327-7928 office (505) 860-9400 cell



#### **Susana Martinez**

Governor

Harrison H. Schmitt Cabinet Secretary-Designate

Daniel Sanchez Acting Division Director Oil Conservation Division



January 27, 2011

Ms. Marcella Marquez Industrial Ecosystems, Inc. 49 CR 3150 Aztec, New Mexico 87410

RE: Boring Plan – Proposed Work Plan

**Commercial Surface Waste Management Facility** 

Crowe Blanco, LLC - Blanco Landfarm

Facility Location: W/2 and SW/4 SE/4 of Section 16, Township 29 North, Range 9 West NMPM

San Juan County, New Mexico

Dear Ms. Marquez:

The Oil Conservation Division (OCD) has received Crowe Blanco, LLC's revised boring plan proposal, dated January 27, 2011, to further investigate and characterize the uppermost aquifer and subsurface geology for a proposed commercial surface waste facility permit (Blanco Landfarm) located in the W/2 and SW/4, SE/4 of Section 16, Township 29 North, Range 9 West NMPM, San Juan County, New Mexico. The OCD has reviewed the proposal and determined that the proposal is adequate to proceed with the additional site investigation.

The OCD agrees that the proposed the two (2) additional boring/monitoring well locations appear adequate. However, if the hydrogeologic conditions cannot be determined, additional borings or monitoring wells may be needed. It should be understood that if a monitoring well is constructed, it shall be bailed until fully developed.

The OCD appreciates your cooperation in providing a boring plan for review, in order to determine if the submitted application and the proposed site are suitable for approval. If there are any questions regarding this matter, please do not hesitate to contact me at (505) 476-3487 or <a href="mailto:brad.a.jones@state.nm.us">brad.a.jones@state.nm.us</a>.

Sincerely,

Brad A. Jones

Environmental Engineer

BAJ/baj

cc: OCD District III Office, Aztec

Richard Cheney, Cheney-Walters-Echols, Inc., Farmington, NM

Donald Baldwin, GEOMAT, Inc., Farmington, NM





#### Bill Richardson

Governor

Jim Noel Cabinet Secretary

Karen W. Garcia Deputy Cabinet Secretary Mark Fesmire
Division Director
Oil Conservation Division



November 3, 2010

Ms. Marcella Marquez Industrial Ecosystems, Inc. 49 CR 3150 Aztec, New Mexico 87410

RE: Boring Plan - Proposed Work Plan

**Commercial Surface Waste Management Facility** 

Crowe Blanco, LLC - Blanco Landfarm

Facility Location: W/2 and SW/4 SE/4 of Section 16, Township 29 North, Range 9 West NMPM

San Juan County, New Mexico

Dear Ms. Marquez:

The Oil Conservation Division (OCD) has received Crowe Blanco, LLC's revised boring plan proposal, dated November 1, 2010, to investigate and characterize the uppermost aquifer and subsurface geology for a proposed commercial surface waste facility permit (Blanco Landfarm) located in the W/2 and SW/4, SE/4 of Section 16, Township 29 North, Range 9 West NMPM, San Juan County, New Mexico. The OCD has reviewed the proposal and determined that the proposal is adequate to proceed with the site investigation.

The OCD agrees that the proposed the boring/monitoring well locations appear adequate for the proposed landfarm. However, if the hydrogeologic conditions cannot be determined, additional borings or monitoring wells may be needed. It should be understood that if a monitoring well is constructed, it shall be bailed until fully developed. Also, please provide OCD with directions and maps to the proposed site and a confirmed start time and date for the drilling activities.

The OCD appreciates your cooperation in providing a boring plan for review, in order to determine if the submitted application and the proposed site are suitable for approval. If there are any questions regarding this matter, please do not hesitate to contact me at (505) 476-3487 or <u>brad.a.jones@state.nm.us</u>.

Sir Josef

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on the District HI Off . Aztec

P.O. Box 2043 Farmington, NM 87499 Phone: (505) 632-1782 Fax: (505) 632-1876

#49 CR 3150 Aztec, NM 87410

November 1, 2010

Brad Jones, Environmental Engineer NM Oil Conservation Division 1220 S. St. Francis Drive Santa Fe, NM 87505

Re: Boring Plan

Brad:

As per the email sent to you on 10/28/10, I am sending this "hard copy" for your records.

Please find the attached revised boring plan which includes the changes/modifications you requested:

- The plan depths for MW-2 and MW-3 were changed from 144' and 208' to 154' and 218', respectively. This was so that all three wells would be drilled to the same elevation of 5580.
- It was made clearer in the plan that each moist zone encountered would be evaluated to determine if it could be a water-producing zone.
- It was made clearer in the plan that continuous core samples of the subsurface materials will be obtained.
- The driller's plan was changed to say that foam injection would be used on a limited basis and that the wells would be developed by bailing to remove sediment.

Upon approval of the plan, we would like to schedule the drilling to begin as soon as possible.

Respectfully,

Marcella Marquez

**HSE Administrator** 

{Attachments}

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Company for the first service where the process of the first service and the first servi



October 27, 2010

GEOMAT Proposal No. 102-06-17 Rev 1

Richard P. Cheney, P.E. Cheney-Walters-Echols, Inc. 909 West Apache Street Farmington, New Mexico 87401

RE: Proposed Work Plan

Monitor Well Installation and Potentiometric Surface Mapping

IEI Blanco Landfarm Blanco, New Mexico

GEOMAT Inc. (GEOMAT) is pleased to submit this amended Work Plan for the installation of three groundwater monitor wells and subsequent mapping of the potentiometric surface at the proposed Industrial Ecosystems Landfarm facility to be located near Blanco, New Mexico. This Work Plan incorporates comments received via telephone from Brad Jones of NMOCD on October 26, 2010 after his review of the previously submitted Work Plan dated September 14, 2010.

The objective of our services is to obtain water level data from the three proposed monitor wells and use this data to develop a groundwater potentiometric surface (water table) map indicating the elevation and direction of groundwater flow at the facility site.

#### Our scope of work follows:

- Using subcontracted drilling services, GEOMAT will drill three boreholes at the approximate locations described below and depicted on the attached Exhibit 1 – Proposed Monitor Well Locations.
  - o One boring will be located near the southern boundary of the site at a ground surface elevation of approximately 5690 feet. This boring will be advanced to a total depth of 110 feet below ground surface.
  - A second boring will be located near the northwest corner of the site at a ground surface elevation of approximately 5734 feet. This boring will be advanced to a total depth of approximately 154 feet below ground surface.
  - A third boring will be located near the northeast corner of the site at a ground surface elevation of approximately 5798 feet. This boring will be advanced to a total depth of approximately 218 feet below ground surface.
- The borings will be drilled using air-rotary equipment. Continuous core samples of the subsurface materials will be obtained from each boring during drilling. A geologist from our office will monitor the drilling operations and prepare a continuous log of each boring.

- Moisture-bearing zones encountered during drilling will be evaluated to determine whether they are viable water-producing zones. Drilling will be halted upon encountering a moist zone and the borehole pumped or bailed dry. The boring will be allowed to sit overnight to allow time for any infiltration of water to occur.
- Borings in which groundwater is encountered will be completed as a permanent monitor wells as described in the attached Work Plan submitted by our drilling subcontractor, Enviro-Drill Inc. (EDI).
- The static water level in each well will be measured using an electronic water-The water-level data will be used to determine the level indicator. potentiometric surface using the Strike and Dip Geologist's Three-Point Method.

It is anticipated that the drilling and monitor well installation will take ten (10) days to complete.

Thank you for the opportunity to work with you on this project. If you have any questions or need additional information, please let us know.

Respectfully submitted. GEOMAT Inc.

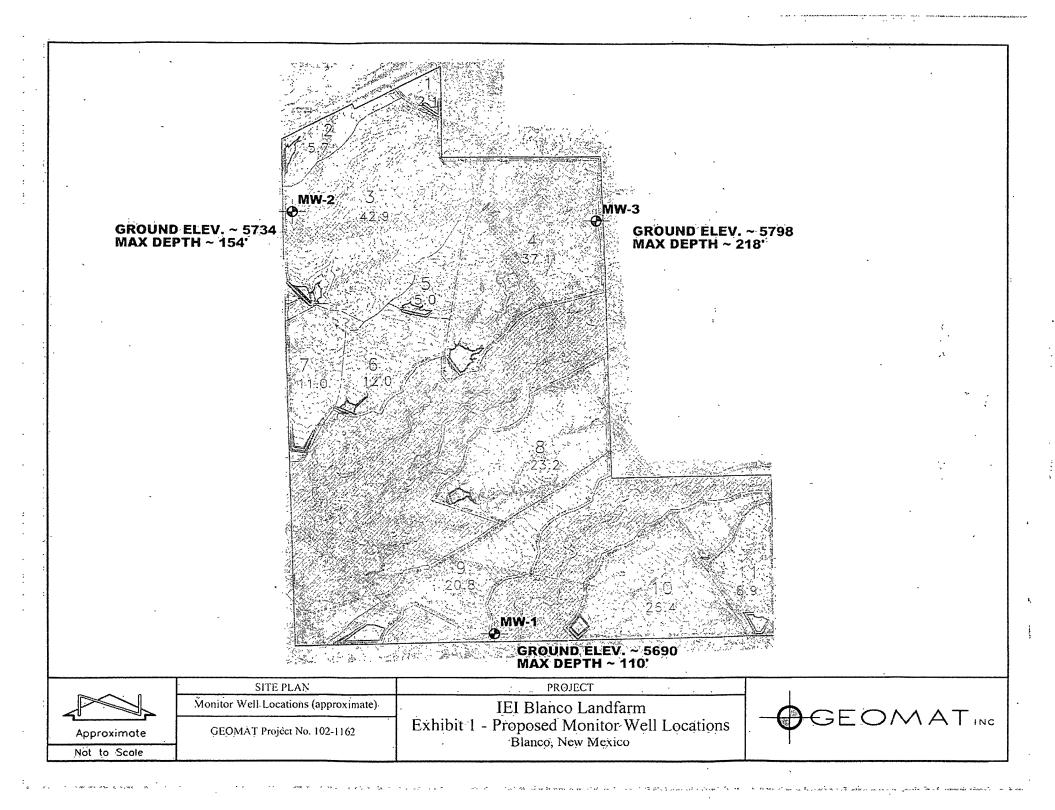
George A. Madrid, P.E.

President, Principal Engineer

In a made

Attachments: Exhibit 1 - Proposed Monitor Well Locations

EDI Work Plan



Geomat EDI Ref. No. 2380PH157 Revision 3

### **WORK PLAN**

EDI will complete the proposed project by continuously coring all boreholes to total depth utilizing an HQ wireline coring system. The diameter of the borehole will be 4-inches, allowing for the placement of a 2-inch monitor system if groundwater is encountered. This will eliminate the need for borehole rearning.

EDI will utilize air-coring methods "with foam injection" on a limited basis for borehole stability or to facilitate removal of cuttings from boreholes, especially at deeper depths. The foam will be an environmentally safe, non-hydrocarbon based product. The cores will be placed in wax-covered HQ cardboard core boxes, with 10 feet of core in each box. The cores will be retained by Geomat field personnel.

If no groundwater is encountered in the borehole, EDI will abandon it by tremming a bentonite/cement mixture from bottom to top to avoid bridging and to keep surface water from migrating down the borehole.

If groundwater is encountered, EDI will set a permanent 2-inch monitor well in the borehole, with 20 feet of pre-packed, 0.010 slotted screen. Fifteen feet of screen will be placed below the water table, and 5-feet above the water table. A 10/20 silica sand pack will be placed around the pre-pack screen to two feet above the screened interval. A bentonite plug seal four feet thick will be placed on top of the sand pack, with the remaining annulus filled with a bentonite/cement grout to surface. The surface completion will consist of a 5-foot by 4-inch steel lockable shroud, set 3-feet below surface and 2-feet above in a 4'x4'x4" concrete pad with three bollards placed in a triangular formation to protect the well. The well will be developed by bailing to remove sediment.



P.O. Box 2043 Farmington, NM 87499

# Industrial Ecosystems Inc. Soil Reclamation Center OCD

Phone: (505) 632-1782 Fax: (505) 632-1876

ONIN OCT 15 P 1: 2799 CK 3130
Aztec, NM 87410

October 14, 2010

Brad Jones, Environmental Engineer NM Oil Conservation Division 1220 St. Francis Drive Santa Fe, NM 87505

Re:

Crowe Blanco SWMF Permit Application

**Boring Plan** 

Dear Brad:

Attached please find a "hard copy" of the boring plan submitted for approval.

Once approval is received, we can coordinate the date(s) to begin the job which will work for all applicable parties.

Please let me know if you have any questions or if any additional information is needed.

Sincerely,

Marcella Marquez HSE Administrator



915 Malta Avenue 🔷 Farmington, NM 87401 🚸 Tel (505)-327-7928 🚸 Fax (505) 326-5721

September 14, 2010 GEOMAT Proposal No. 102-06-17

Richard P. Cheney, P.E. Cheney-Walters-Echols, Inc. 909 West Apache Street Farmington, New Mexico 87401

RE: Proposed Work Plan

Monitor Well Installation and Potentiometric Surface Mapping

IEI Blanco Landfarm Blanco, New Mexico

GEOMAT Inc. (GEOMAT) is pleased to submit this Work Plan for the installation of three groundwater monitor wells and subsequent mapping of the potentiometric surface at the proposed Industrial Ecosystems Landfarm facility to be located near Blanco, New Mexico.

The objective of our services is to obtain water level data from the three proposed monitor wells and use this data to develop a groundwater potentiometric surface (water table) map indicating the elevation and direction of groundwater flow at the facility site.

Our scope of work follows:

- Using subcontracted drilling services, GEOMAT will drill three boreholes at the approximate locations described below and depicted on the attached Exhibit 1 – Proposed Monitor Well Locations.
  - One boring will be located near the southern boundary of the site at a ground surface elevation of approximately 5690 feet. This boring will be advanced to a total depth of 110 feet below ground surface.
  - A second boring will be located near the northwest corner of the site at a ground surface elevation of approximately 5734 feet. This boring will be advanced to a total depth of approximately 144 feet below ground surface.
  - A third boring will be located near the northeast corner of the site at a ground surface elevation of approximately 5798 feet. This boring will be advanced to a total depth of approximately 208 feet below ground surface.
- The borings will be drilled using air-rotary equipment. Continuous samples of the subsurface materials will be obtained from each boring during drilling. A geologist from our office will monitor the drilling operations and prepare a continuous log of each boring.

- Any moisture-bearing zones encountered during drilling will be evaluated to determine whether they are viable water-producing zones. Drilling will be halted upon encountering moist zones and the borehole pumped or bailed dry. The boring will be allowed to sit overnight to allow time for any infiltration of water to occur.
- Borings in which groundwater is encountered will be completed as a permanent monitor wells as described in the attached Work Plan submitted by our drilling subcontractor; Enviro-Drill Inc. (EDI).
- The static water level in each well will be measured using an electronic water-level indicator. The water-level data will be used to determine the potentiometric surface using the Strike and Dip Geologist's Three-Point Method.

It is anticipated that the drilling and monitor well installation will take ten (10) days to complete.

Thank you for the opportunity to work with you on this project. If you have any questions or need additional information, please let us know.

Respectfully submitted,

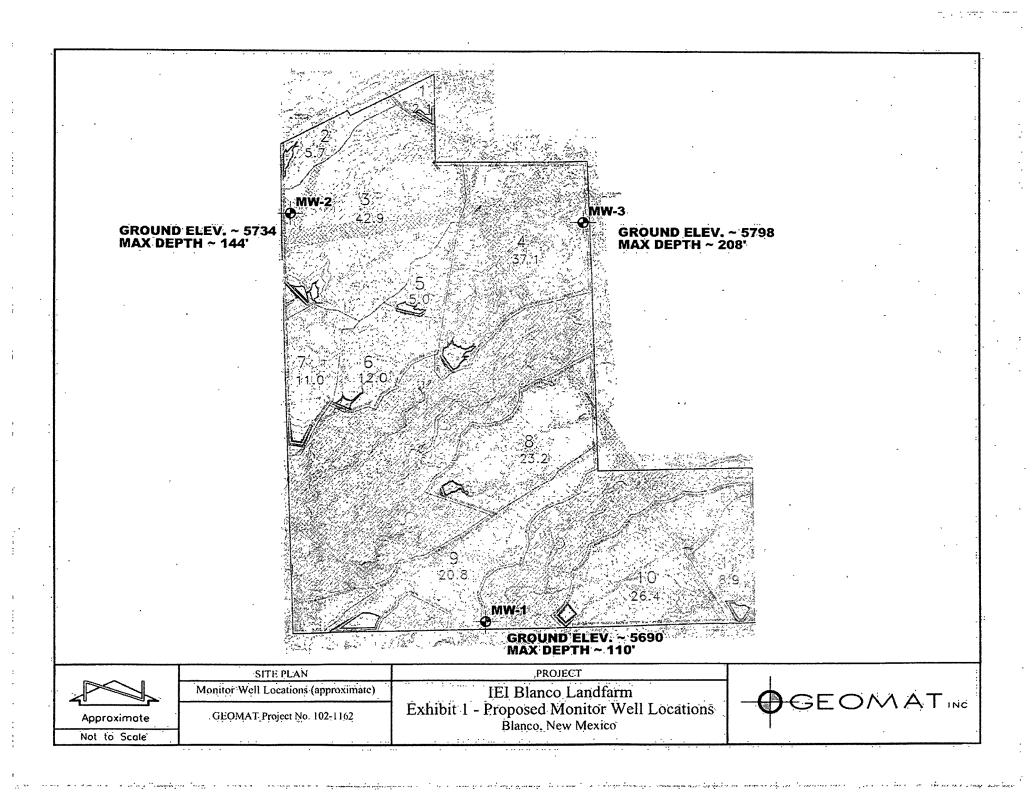
**GEOMAT Inc.** 

George A. Madrid, P.E.

President, Principal Engineer

Attachments: Exhibit 1 - Proposed Monitor Well Locations

EDI Work Plan



Geomat EDI Ref. No. 2380PH157 Revision 2

#### WORK PLAN:

EDI will complete the proposed project by continuously coring all boreholes to total depth utilizing an HQ wireline coring system. The diameter of the borehole will be 4-inches, allowing for the placement of a 2-inch monitor system if groundwater is encountered. This will eliminate the need for borehole reaming:

EDI will utilize air-coring methods "with foam injection" if needed for borehole stability or to facilitate removal of cuttings from boreholes, especially at deeper depths. The foam will be an environmentally safe, non-hydrocarbon based product. The cores will be placed in wax-covered HQ cardboard core boxes, with 10 feet of core in each box. The cores will be retained by Geomat field personnel.

If no groundwater is encountered in the borehole, EDI will abandon it by tremming a bentonite/cement mixture from bottom to top to avoid bridging and to keep surface water from migrating down the borehole.

If groundwater is encountered, EDI will set a permanent 2-inch monitor well in the borehole, with 20 feet of pre-packed, 0.010 slotted screen. Fifteen feet of screen will be placed below the water table, and 5-feet above the water table. A 10/20 silica sand pack will be placed around the pre-pack screen to two feet above the screened interval. A bentonite plug seal four feet thick will be placed on top of the sand pack, with the remaining annulus filled with a bentonite/cement grout to surface. The surface completion will consist of a 5-foot by 4-inch steel lockable shroud, set 3-feet below surface and 2-feet above in a 4'x4'x4" concrete pad with three bollards placed in a triangular formation to protect the well. The well will be developed by air lifting and bailing to remove sediment.



915 Malta Avenue 🐞 Farmington, NM 87401 💠 Tel (505) 327-7928 💠 Fax (505) 326-5721

September 14, 2010 GEOMAT Proposal No. 102-06-17

Richard P. Cheney, P.E. Cheney-Walters-Echols, Inc. 909 West Apache Street Farmington, New Mexico 87401

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510 - 110 z 5550X

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5734-144 25590

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548-208 = 55A0

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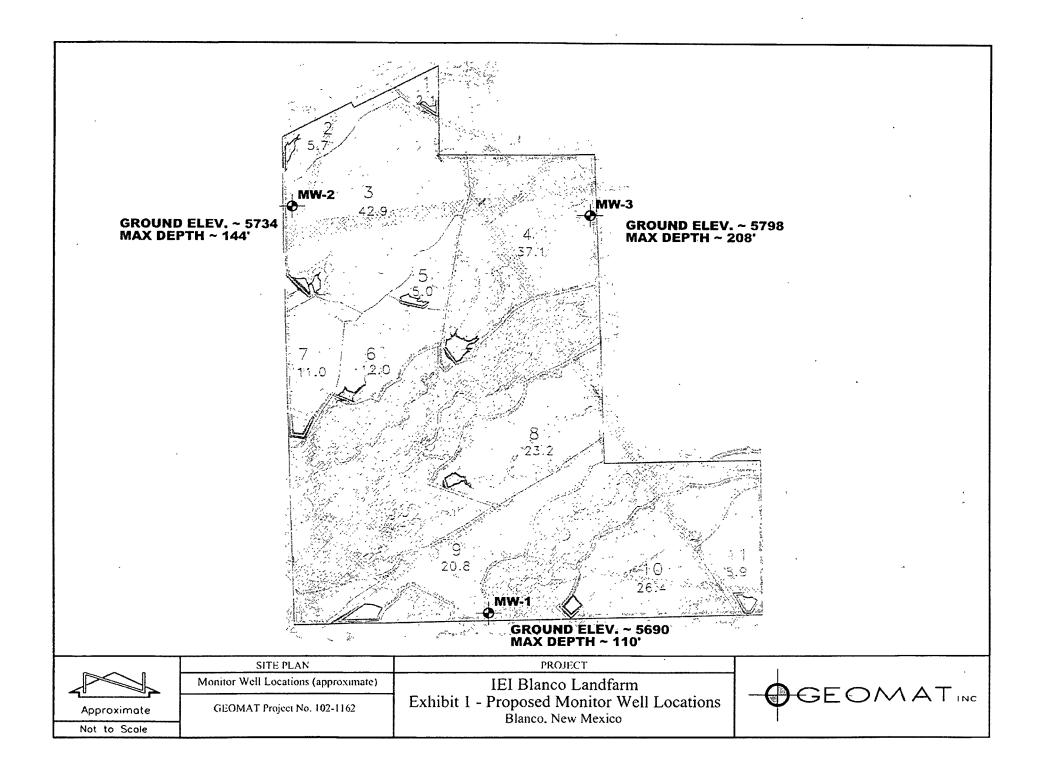
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Nota-

## INDUSTRIAL ECOSYSTEMS LAND FARM

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

# National Pollutant Discharge Elimination System General Permit for Discharges from Large and Small Construction Activities

SAN JUAN COUNTY NEW MEXICO

OCTOBER 2009

PREPARED BY:
CHENEY ▲ WALTERS ▲ ECHOLS, INC.
909 WEST APACHE
FARMINGTON, NM 87401

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### 1.0 PROJECT INFORMATION

Nature of Project: Proposed Land Farm

Operators: Industrial Ecosystems Inc., Terry Lattin Subcontractors: See site map(s) for list of subcontractors

Areas of control: The Operator(s) shall be responsible for implementation and

maintenance of erosion and sediment control measures shown on the site map. The subcontractors shall be responsible for not interfering with these measures, and repairing any facilities that are rendered

ineffective due to their activities.

### 2.0 INTRODUCTION

This Stormwater Pollution Prevention Plan (SWPPP) is prepared for improvements pertaining to the construction of the Industrial Ecosystems Blanco Land Farm. The property site is 289± acres in Blanco, San Juan County, New Mexico. The improvements will include disturbing approximately 208 acres in phases.

This SWPPP has been developed to meet the requirements of the Clean Water Act (CWA) as outlined in the Environmental Protection Agencies' (EPA) National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Construction Activities, effective June 30, 2008. The SWPPP is prepared in accordance with good engineering and environmental practices.

### 3.0 SITE DESCRIPTION

The project site for the Land Farm is located on the south side of U.S. Highway 64, near mile marker 75.8. The proposed Land Farm will be used as a soil remediation site for contaminated oilfield waste. The facility is planned to have two full accesses. The site is described as Lot 4 of the Blanco Land Subdivision No. 1 and Lots 1A thru 7A of the Blanco Land Subdivision No. 2, lying in the W½ and the SW¼ SW¼ of Section 16, T29N, R09W, N.M.P.M. Blanco, San Juan County, New Mexico (see Appendix A).

The average annual rainfall is approximately 8" per year. The area is considered to be arid. The selection of the needed erosion and sediment control measures will utilize all of the above factors in deciding which treatments are most appropriate for each location.

### 3.1 Description of Construction Activity

The onsite construction activities will consist of the following:

- A. Installation of erosion and sediment control practices, measures or structures (BMP's) including stabilized construction entrance, and perimeter controls (see Attachment A, SWPPP Plan).
- B. Installation of perimeter fence.
- C. Clearing and grubbing of existing vegetation within project limits.
- D. Installation of remaining stormwater and erosion control measures.

### 3.2 Potential Sources of Pollutants

It is anticipated that the following potential sources of pollutants may reasonably be expected to affect the quality of stormwater discharges from the construction site:

- A. Sediment runoff due to grading activities
- B. Sanitary waste
- C. Solid waste
- D. Fluids from construction equipment

### 3.3 Sequence of Major Soil Disturbing Activities

The major soil disturbing activities related to this project are listed below. The sequence of construction activities will be recorded in the inspection reports.

- 1. Install pollution controls within the development, including construction of a stabilized entrance for access into the property during construction (see Attachment A, SWPPP Plan).
- 2. Clearing and grubbing of existing vegetation within the construction limits.
- 3. Fine grading of areas that have been cleared for new construction.
- 4. Stabilize any disturbed areas beyond the limits of construction

### 3.4 Area of Disturbed Soil

The estimated area to be disturbed by construction is 8.0± acres.

### 3.5 Existing Soil Data

The soils within the project area are classified by the San Juan County Soil Survey as Doak Avalon association, gently sloping (DN) and Fruitland-Persayo-Sheppard complex, hilly (FX).

Doak-Avalon association, gently sloping soils are found on mesas, plateaus, and terraces. The native vegetation is mainly grass and the slopes range between 0% and 5%. The Doak Loam soils make up about 50% of the unit and the Avalon Loam soils make up about 35%. The hydrologic soil group for the Doak-Avalon soil is B.

The Doak soil is deep and well drained, formed in alluvium derived dominantly from sandstone and shale. The surface layer is typically brown loam about 5 inches thick. The underlying layer is brown and light brown silty clay loam and clay loam, approximately 38 inches thick. The substratum is light yellowish brown clay loam to a depth of 69 inches or more. The permeability of the Doak soil is 0.6 -2.0 inches per hour to a depth of 5 inches, below this depth to a depth of 69 inches the permeability is 0.2 - 0.6 inches per hour. The permeability of the Doak soil is classified as moderately slow. The available water capacity is very high, runoff is slow, and the hazard of water erosion is slight. The vegetation supported by the Doak soil is mainly blue grama, western wheatgrass, Indian ricegrass, and needleandthread. The soil loss tolerance is 5 and the soil erodability factor is 0.37.

The Avalon soil is a deep well drained soil, formed in alluvial and eolian material derived from sandstone and shale. The surface layer is typically brown loam about 4 inches thick. The underlying layer to a depth of 14 inches is also brown loam. The upper 22 inches of the substratum is pinkish white loam. The lower part to a depth of 60 inches or more is light yellowish brown loam. The permeability of the Avalon soil is 0.6 - 2.0 inches per hour to a depth of 60 inches. The permeability of the Avalon soil is classified as moderate. The available water capacity is high, runoff is medium, and the hazard of water erosion is moderate. The soil is slightly saline, used for grazing and wildlife habitat. The vegetation of the Avalon soil consists of Indian ricegrass, winterfat, galleta, and blue grama. The soil loss tolerance is 3 and the soil erodability factor is 0.43.

Fruitland-Persayo-Sheppard complex hilly soils are found on mesas, plateaus, fans and breaks. The slopes range between 5% and 30%. The native vegetation is mainly grass and scattered pinyon and juniper. The unit is 40% Fruitland sandy loam, 30% Persayo clay loam, and 25% Sheppard loamy fine sand. It was not practical to map these soils separately at the scale used.

The Fruitland soil is deep and well drained, formed in alluvium derived dominantly from sandstone and shale. The surface layer is typically brown sandy loam about 4 inches thick. The underlying material is brown fine sandy loam, to a depth of 60 inches or more. The permeability of the Fruitland soil is 2.0 - 6.0 inches per hour, classified as moderately rapid, and the available water capacity is moderate. Runoff is medium and the hazard of water erosion is moderate. The hydrologic soil group for the Fruitland soil is B. The soil loss tolerance is 5 and the soil erodability factor is 0.24 to a depth of 4 inches.

The Persayo soil is shallow and well drained, formed in residuum derived from shale. The surface layer is typically light brownish gray clay loam, about 2 inches thick. The underlying layer is light yellowish brown clay loam to a depth of 18 inches. Shale is at a depth of 18 inches. Permeability of the Persayo soil is 0.2 - 0.6 inches per hour, classified as moderately slow, and the available water capacity is very low. Runoff is rapid and the hazard of water erosion is high. The soil is slightly saline. The hydrologic soil group for the Persayo soil is D. The soil loss tolerance is 1 and the soil erodability factor is 0.37.

The Sheppard soil is deep and somewhat excessively drained, formed in eolian material derived from mixed sources. Typically the surface layer is light yellowish brown loamy fine sand about 4 inches thick. The underlying material to a depth of 60 inches or more is light yellowish brown loamy fine sand and fine sand. The permeability of the Sheppard soil is 6.0 - 20.0 inches per hour, classified as rapid, and the available water capacity is low. Runoff is slow and the hazard of water erosion is slight. The hydrologic soil group for the Sheppard soil is A. The soil loss tolerance is 5 and the soil erodability factor is 0.15.

### 3.6 Site Maps/Plans

The vicinity map shows the project location relative to surrounding landmarks (see Appendix B).

### 3.7 Name of Receiving Waters

The project area discharges non-contaminated stormwater into Largo Canyon (see Appendix C).

### **4.0 CONTROLS**

Pollutant control and good housekeeping measures will be utilized during construction. The controls will be implemented to prevent and minimize the discharge of sediment and pollutants from the construction area due to stormwater discharge. All controls will be implemented and maintained by the Operator listed on the SWPPP map.

### 4.1 Materials Management

Potentially hazardous or toxic materials, such as chemicals solvents, fuels, etc., shall be properly transported, handled and stored according to manufacturers suggestions and regulations pertaining to such materials. The original product label should never be removed from the container, as it provides important safety information.

Fuels, lubricants and other fluids for operating and maintaining heavy equipment and vehicles shall be stored offsite. Equipment shall be serviced regularly at an offsite location, any leaks will be fixed immediately.

### 4.2 Waste Disposal

Any raw hazardous materials, excess construction materials and solid wastes shall be disposed of in the appropriate onsite receptacles. Receptacles shall be provided to receive these materials as appropriate to the waste being generated. All construction site wastes shall be disposed of at authorized disposal areas. The Operator shall schedule waste collection to prevent the containers from overfilling. In addition, certain types of excess construction materials (lumber, concrete, pipes) can be temporarily stored and stockpiled in a designated location, out of the stormwater flow to avoid debris in the runoff water.

### 4.3 Offsite Tracking

A stabilized construction entrance shall be constructed at the proposed full access, which will be stabilized and provide treatments to keep sediments and pollutants onsite (see Section 4.6.3).

### 4.4 Spill Prevention and Response

The discharge of or spills of hazardous substances is not expected to occur during construction activities. The contractor shall not mishandle or misuse any substance onsite.

In the event that an accident may occur within the facility during construction activities, the following measures shall be followed immediately:

- A. The operator/contractor will a) stop the source of the spill, b) contain the spill using an absorbent material such as sawdust or kitty litter, c) clean up the spill, and d) dispose of material contaminated by the spill in an environmentally approved disposal site, following the manufacturer's cleanup instructions listed on the product label;
- B. Notify both the National Response Center (1-800–424-8802) and the New Mexico Environment's Hazardous and Radioactive Materials Bureau (1-505-827-4300) within 24 hours of a release of hazardous materials in excess of reportable quantities;
- C. The operator will submit, within 14 calendar days of the notification, a description of the event to the appropriate authorities;
- D. The operator will modify the SWPPP as appropriate within 14 calendar days of the notification and identify measures to prevent a recurrence.

### 4.5 Sanitation

The Operator shall provide temporary facilities such as portable restrooms and trash containers to ensure that site sanitation requirements comply with state and local regulations.

### 4.6 Description of Erosion and Sediment Controls

Erosion and sediment control measures will be utilized in areas that have been disturbed by construction activities to prevent and reduce the movement of soils and discharge of pollutants to the waters of the United States. Erosion control measures may be used to keep disturbed soils from eroding, and sediment control measures may be implemented to remove sediment and pollutants from runoff before discharging from the site.

### 4.6.1 Land Grading

Land grading shall be minimized as much as possible within the construction area.

### 4.6.2 Preserving Natural Vegetation

The natural vegetation will be preserved as much as possible within the project limits.

### 4.6.3 Stabilized Entrance

A stabilized entrance shall be established for the construction site. This will minimize the amount of sediment leaving the area attached to motorized vehicles. The entrance will consist of a gravel pad over filter cloth, placed at a convenient location for vehicles exiting the site. As a vehicle passes over the gravel, sediment is removed from the vehicle's wheels and transport of soil offsite is reduced. The stabilized area also reduces erosion and rutting of the soil beneath. The filter fabric serves to maintain separation of the gravel from the soil below, preventing the gravel from being ground into the soil, as well as distributing the weight of the vehicle over an area greater than the tire width.

Alternate methods for entrance stabilization may be used. A description of the method shall be added to the SWPPP.

### 4.6.4 Earth Berm and V-Shaped Ditch

An earth berm and small V-shaped drainage ditch may be used as temporary perimeter controls for the project. It is anticipated that the earth berm and drainage ditch will pond surface runoff. The ponding will help settle out sediments that accumulate.

These measures will remain in place until all areas up-slope have been permanently stabilized by vegetation or other means allowed by the Construction General Permit.

### 4.6.5 Silt Fence

Silt fences may be used as temporary perimeter controls around the site. They consist of a length of filter fabric stretched between anchoring posts spaced at regular intervals along the site perimeter.

If a standard strength fabric is used, it can be reinforced with wire mesh behind the filter fabric to increase the effective life of the fence. The maximum life expectancy for synthetic fabric silt fences is approximately six months.

The stakes used to anchor the filter fabric shall be either wooden or metal. Wooden stakes should be at least 5' long and have a minimum diameter of 2" if á hardwood (i.e., oak) is used, or 4" if a softer wood (i.e., pine) is used. Metal posts should have a minimum weight of 1.00 to 1.33 pounds per linear foot, and attachment points are needed for fastening the fabric with wire ties.

The silt fence should be erected in a continuous fashion from a single roll of fabric to eliminate gaps in the fence. If a continuous roll is not available, the filter should overlap from both directions only at stakes or posts, with a minimum overlap of 6". The filter fabric should be entrenched in the ground between the support posts at least 6" below the ground surface. Gaps near the ground surface will render the fence useless as a sediment barrier.

The fence posts shall be between 16" and 34" above the original ground surface. If standard strength fabric is used in combination with wire mesh, the posts should be spaced no more than 10' apart. If extra-strength fabric is used without wire mesh, the posts should be spaced no more than 6' apart.

The fence should remain in place until all areas up-slope has been permanently stabilized by vegetation or other means.

### 4.6.6 Vegetated Buffer

A vegetated buffer is an area of either natural or established vegetation that is maintained to protect the water quality of neighboring areas. The buffer zone will reduce the velocity of stormwater runoff, provide a region where the stormwater can permeate into the soil, add to the recharge of groundwater and act as a filter for catching sediment.

### 4.6.7 Hay or Straw Bales

Hay or straw bales should be embedded into the soil to a depth of about 4". Each bale should be bound horizontally by twine or wire. They are most effective when installed so that they are tightly together. Additional hay can be used to fill any gaps between bales that may occur. Wooden stakes or rebar is then driven into the top of the bales (2/bale) to secure them. Use the excavated soil to prevent undercutting by compacting it along the uphill side of the base of the barriers after the bales have been secured with stakes.

### To properly install hay or straw bale barriers:

Set the bales in a shallow trench to prevent water from flowing under the barrier. If digging is impractical due to frost, pack snow against the uphill side of the bales. Overlap the bales to avoid leaving gaps between them. Drive stakes or lath through the bales so that the stakes are buried 6" to 10" into the soil to firmly anchor them in place.

### 4.6.8 Slash Buffer

A slash buffer shall consist of trees and brush (cut during clearing operations) placed to effectively slow runoff and retain silt. Slash buffers may be placed adjacent to construction areas perpendicular to the anticipated direction of stormwater flow. Slash buffers provide a region where the stormwater can permeate into the soil, add to the recharge of groundwater and act as a filter for catching sediment.

### 4.6.9 Soil Swales

Soil swales may be used as controls in and around the site. Soil swales should be placed in a manner that directs stormwater runoff to areas of reduced velocity and sediment removal.

### 4.6.10 Earthen Perimeter Controls

Earthen perimeter controls usually consist of a dike or a combination dike and channel constructed along the perimeter of a disturbed site. Simply defined, an earthen perimeter control is a ridge of compacted soil, often accompanied by a ditch or swale with a vegetated lining, located at the top or base of a sloping disturbed area. The dikes can be erected at the top of a sloping area or in the middle of a slope to divert stormwater runoff around a disturbed construction site. In this way, earth dikes can be used to reduce the length of the slope across which runoff will travel, thereby reducing the erosion potential of the flow. If placed at the bottom of a sloping disturbed area, diversion dikes can divert

flow to a sediment trapping device. Temporary diversion dikes are usually appropriate for drainage basins smaller than 5 acres, but with modifications they can be capable of servicing areas as large as 10 acres. With regular maintenance, earthen diversion dikes have a useful life span of approximately 18 months.

To prevent stormwater runoff from entering a site, earthen perimeter controls can be used to divert runoff from areas upslope around the disturbed construction site. This is accomplished by constructing a continuous, compacted earthen mound along the upslope perimeter of the site. As an additional control measure, a shallow ditch can accompany the earthen mound.

Diversion dikes should be constructed and stabilized prior to commencement of major land disturbance. This will maximize the effectiveness of the diversion measure as an erosion and sediment control device.

The top of earthen perimeter controls designed as temporary flow diversion measures should be at least 2' wide. Bottom width at ground level is typically 6'. The minimum height for earthen dikes should be 18", with side slopes no steeper than 2:1. For points where vehicles will cross the dike, the slope should be no steeper than 3:1 and the mound should be constructed of gravel rather than soil. This will prolong the life of the dike and increase effectiveness at the point of vehicle crossing.

Most earthen perimeter structures are designed for short-term, temporary use. If the expected life span of the diversion structure is greater than 15 days, it is strongly recommended that both the earthen dike and the accompanying ditch be seeded with vegetation immediately after construction. This will increase the stability of the perimeter control and can decrease the need for frequent repairs and maintenance.

# 4.6.11 Mulching

Mulching is a temporary erosion control practice in which materials such as grass, hay, wood chips, wood fibers, straw, or gravel are placed on exposed or recently planted soil surfaces. When possible, organic mulches should be used for erosion control and plant material establishment. All materials should be free of seed, and loose hay or straw should be anchored by applying tackifier, stapling netting over the top, or crimping with a mulch crimping tool. Materials that are heavy enough to stay in place (for example, gravel or bark or wood chips on flat slopes) do not need anchoring. Other examples include hydraulic mulch products with 100-% post-consumer paper content, yard trimming composts, and wood mulch from recycled stumps and tree parts. Inorganic mulches such as pea gravel or crushed granite can be used in unvegetated areas.

Mulches may or may not require a binder, netting, or tacking. Effective use of netting and matting material requires firm, continuous contact between the materials and the soil. If there is no contact, the material will not hold the soil and erosion will occur underneath the material. Grading is not necessary before mulching.

There must be adequate coverage to prevent erosion, washout, and poor plant establishment. If an appropriate tacking agent is not applied, or is applied in insufficient amounts, mulch is lost to wind and runoff. The channel grade and liner must be appropriate for the amount of runoff, or there will be resulting erosion of the channel bottom. Also, hydro-mulch should be applied in spring, summer, or fall to prevent deterioration of mulch before plants can become established.

## 4.6.12 Check Dams

Check dams are small, temporary dams constructed across a swale or channel. Check dams can be constructed using gravel, rock, sandbags, logs, or straw bales and are used to slow the velocity of concentrated flow in a channel. By reducing the velocity of the water flowing through a swale or channel, check dams reduce the erosion in the swale or channel. Check dams can also be used to catch sediment from the channel itself or from the contributing drainage area as stormwater runoff flows through the structure.

# 4.6.13 Compost Filter Socks

A compost filter sock is a type of contained compost filter berm. It is a mesh tube filled with composted material that is placed perpendicular to sheet-flow runoff to control erosion and retain sediment in disturbed areas. The compost filter sock is oval to round in cross section. The sock provides a three-dimensional filter that retains sediment and other pollutants (e.g., suspended solids, nutrients, and motor oil) while allowing the cleaned water to flow through. The filter sock can be used in place of silt fence or straw bale barrier. Composts used in filter socks are made from a variety of feedstocks, including municipal yard trimmings, food residuals, separated municipal solid waste, biosolids, and manure.

Once the filter sock is filled and put in place, it should be anchored to the slope. The preferred anchoring method is to drive stakes through the center of the sock at regular intervals; alternatively, stakes can be placed on the downstream side of the sock. The ends of the filter sock should be directed upslope, to prevent stormwater from running around the end of the sock. The filter sock may be vegetated by incorporating seed into the compost prior to placement in the filter sock. Since compost filter socks do not have to be trenched into the ground, they can be installed on frozen ground or even cement.

#### 4.7 Implementation of Control Measures

Grading shall be minimized as much as possible within the development. The Operator shall install erosion and sediment control measures in order to provide a barrier between the construction site and offsite properties.

Drawings showing erosion and sediment control measures within the development shall be prepared. These drawings shall include the locations of the stabilized entrance, the measures to be installed for control of stormwater, the spill kit, construction waste, construction materials, sanitary facilities, and any other pollution prevention measures to be placed onsite.

# 4.8 Stormwater Management

Temporary and permanent practices to be utilized for stormwater management control after the completion of construction activities could include but not limited to, revegetation, xeriscape, drainage swales, and culverts.

# 4.9 Site Management

The Operator will limit exposure and contact between potential pollutants and stormwater. The contractor and subcontractors will implement good housekeeping practices by maintaining a clean and orderly construction site.

# 4.10 Non-Stormwater Discharges

Non-Stormwater Discharges are not allowed under this permit, except for flows from fire fighting, water system and fire hydrant flushing, irrigation, building wash-down, washing of vehicles (without detergents), dust control, foundation and footing drains, and air conditioning condensate. Non-stormwater discharges are not planned or expected to take place during the construction activities for the facility, other than those allowed by this permit. If it becomes necessary to discharge a non-stormwater not covered by this permit, a separate permit will be obtained.

# 4.11 Approved State Or Local Plans

N/A

## 5.0 INSPECTIONS AND MAINTENANCE

The control measures implemented during construction can become ineffective if they are damaged or not properly maintained. The operator shall continuously monitor the implemented erosion and sediment control measures to ensure the effectiveness and appropriate functioning condition of the measures. If changes or repairs are needed to improve the effectiveness and operation of a control measure, changes or repairs will be implemented as soon as practicable and in no case greater than 7 days after the discovery, weather, supplies/materials and site conditions permitting. After the completion of construction activities, final stabilized areas and sites will be inspected once a month until the NOT is submitted to make sure control measures are maintained in good operating condition.

#### 5.1 Inspections

The operator/contractor will ensure that inspections are conducted at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5" or greater. The inspections may be reduced to at least once every month if one of the following conditions is met: the entire site is temporarily stabilized; runoff is unlikely due to winter conditions; or construction is occurring during seasonal arid periods in arid areas and semi-arid areas.

Inspections must be conducted by qualified personnel. "Qualified personnel" means a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and to assess the effectiveness of the measures put in place to control the quality of the stormwater discharge from the site.

Inspections shall include all disturbed areas of the site, and all material storage areas that are not covered. Inspectors should look for signs of pollutants entering the stormwater conveyances, or the potential for such occurrences.

# 5.2 Inspection Results (as related to SWPPP)

The operator/contractor will modify the SWPPP as necessary following an inspection if certain measures are deemed ineffective. The modifications shall include a record of the date the change was made, and a description and justification for the adjustment(s) to the SWPPP. See Appendix D for the "Amendments to SWPPP" form.

# 5.3 Inspection Reports

Following each inspection, an inspection report must be completed (see Appendix E for a sample inspection report form). This report should include the following information:

- A. The inspection date
- B. Names, titles and qualifications of personnel making the inspection
- C. Weather information since the last inspection, including an estimation of the beginning of each storm event, duration of each storm event, approximate amount of rainfall (in inches) and whether any discharges occurred
- D. Weather information at the time of the inspection, as well as a description of any discharges
- E. Location of discharges of sediment or other pollutants from the site
- F. Location of BMPs that need to maintained
- G. Location of BMPs that failed to operate as designed or proved inadequate for a particular location
- H. Location where additional BMPs are needed that did not exist at the time of inspection; and
- I. Corrective action required including any modifications to the SWPPP and when these changes are implemented

All records associated with this facility will be kept for 3 years after the date on the Notice of Termination (see section 12.0). The reports must document any incidents of non-compliance with the permit. If there are no incidents of non-compliance identified, the report must contain a certification that the construction project is in compliance with the SWPPP and the construction general permit.

#### 6.0 NOTICE OF INTENT

The Owner will submit a Notice of Intent (NOI) to the EPA prior to commencing construction. The Operator, if different than the Owner, shall also submit an NOI. The NOI may be submitted electronically, or by mail. An electronic NOI can be accessed and submitted on-line at: <a href="http://cfpub.epa.gov/npdes/stormwater/enoi.cfm">http://cfpub.epa.gov/npdes/stormwater/enoi.cfm</a>. A printed version of the NOI application is included in Appendix G. The printed version may be submitted to one of the following addresses:

For Regular U.S. Mail Delivery:
EPA Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery: EPA Stormwater Notice Processing Center Room 7420 U.S. EPA 1201 Constitution Avenue, NW Washington, DC 20004

## 7.0 AVAILABILITY OF SWPPP

A copy of the SWPPP (which shall include the permit), NOI, and acknowledgment letter from the EPA must be available to EPA, state or local agencies approving sediment and erosion plans and representatives of the U.S. Fish and Wildlife Service, from the date construction activities begin to the date of final stabilization. An Operator having day-to-day operational control over a site must have a copy of the SWPPP available at a central location on-site for the use of all those identified as having responsibilities under the SWPPP whenever they are on the construction site. If an on-site location is unavailable for storing the SWPPP when no personnel are present, notice of the SWPPP's location must be posted near the main entrance to the construction site.

#### 8.0 POSTED NOTICES

A sign must be posted conspicuously near the main entrance to the site containing the following information:

- A. A copy of the completed NOI as submitted to the EPA; and
- B. The current location of the SWPPP, name and telephone number of a contact person for scheduling viewing times *if* this information is different than that submitted to the EPA in the NOI.

# 9.0 SIGNATORY REQUIREMENTS

# 9.1 Qualifying Signatories for Applications

All applications, including NOIs, must be signed as follows:

- A. 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.
- B. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or
- C. 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).

## 9.2 Qualifying Signatories for Reports

All reports required by the permit, including SWPPPs, must be signed by a person described in Section 9.1, or a duly authorized representative of that person. A person is a duly authorized representative only if:

- A. The authorization is made in writing by a person described in Section 9.1;
- B. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, or an individual or position having overall responsibility of environmental matters for the company; and
- C. The signed and dated written authorization is included in the SWPPP. A copy must be submitted to the EPA; if requested.

# 10.0 PERMANENT STABILIZATION MEASURES

The risk of pollutants entering stormwater runoff from the site will be minimized upon completion of construction. Permanent conditions of the site which will reduce potential pollutants are listed below:

A. The pollutant control measures, including dikes, retention areas, berms, silt fences, v-ditches, and straw bales will be installed and maintained throughout the duration of the Land Farm.

## 11.0 FINAL STABILIZATION

The operator/contractor will ensure that the appropriate erosion and sediment control measures and inspection and maintenance procedures continue (after construction has been completed) until final stabilization has been achieved.

#### 11.1 Conditions for Final Stabilization

Final stabilization occurs when all soil-disturbing activities have been completed and either of the two following conditions are met:

- A. A uniform vegetative cover with a density of 70% of the native background vegetation cover for the area has been established on all disturbed and exposed areas not covered by permanent structures. Over an area with no natural vegetation, no stabilization is required, or
- B. Equivalent permanent stabilization measures have been employed.

After the determination that final stabilization has been achieved, the final inspection report will be prepared and a Notice of Termination will be submitted.

## 12.0 NOTICE OF TERMINATION

Upon final stabilization of the construction site, the operator will prepare and submit a Notice of Termination (NOT). Authorization to discharge terminates at midnight of the day the NOT is signed.

# 12.1 Conditions for Submitting an NOT

The NOT must be submitted within 30 days of one of the following:

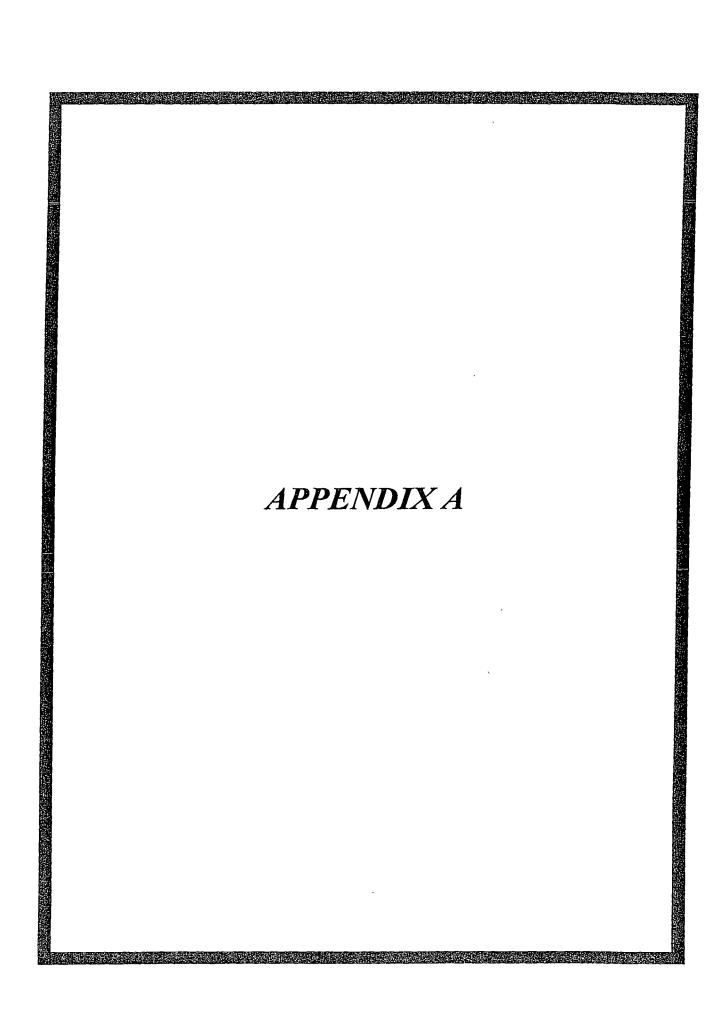
- A. Final stabilization has been achieved on all portions of the site for which you are responsible;
- B. Another operator has assumed control over all areas of the site that have not been finally stabilized;
- C. Coverage under an individual or alternative general NPDES permit has been obtained; or
- D. For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

# 12.2 Methods for Submitting an NOT

Owners and operators will submit an NOT to the EPA upon final stabilization. The NOT may be submitted electronically, or by mail. An electronic NOT can be accessed and submitted on-line at: <a href="http://cfpub.epa.gov/npdes/stormwater/enoi.cfm">http://cfpub.epa.gov/npdes/stormwater/enoi.cfm</a>. A printed version of the NOT application is included in Appendix H. The printed version may be submitted to one of the following addresses:

For Regular U.S. Mail Delivery: EPA Stormwater Notice Processing Center Mail Code 4203M U.S. EPA 1200 Pennsylvania Avenue, NW Washington, DC 20460

For Overnight/Express Mail Delivery: EPA Stormwater Notice Processing Center Room 7420 U.S. EPA 1201 Constitution Avenue, NW Washington, DC 20004



# NPDES General Permit for Stormwater Discharges From Construction Activities

As modified effective January 8, 2009

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# National Pollutant Discharge Elimination System General Permit for Discharges from Large and Small 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 large and small construction activities that are described in Part 1.3 of this National Pollutant Discharge Elimination System (NPDES) general permit, except for those activities excluded from authorization of discharge in Part 1.3.C of this permit are authorized to discharge pollutants to waters of the United States in accordance with the conditions and requirements set forth herein. Permit coverage is required from the "commencement of construction activities" until "final stabilization" as defined in Appendix A.

This permit shall become effective on June 30, 2008.

This permit and the authorization to discharge shall expire at midnight, June 30, 2010.

#### Signed:

Stephen S. Perkins, Director, Office of Ecosystem Protection EPA Region 1

Barbara Finazzo, Director, Division of Environmental Planning and Protection EPA Region 2

Carl-Axel P. Soderberg, Division Director, Caribbean Environmental Protection Division EPA Region 2

Jon M. Capacasa, Director, Water Protection Division EPA Region 3

Tinka Hyde, Director, Water Division EPA Region 5

Miguel I. Flores, Director, Water Quality Protection Division EPA Region 6

William A. Spratlin, Director, Water, Wetlands and Pesticides Division EPA Region 7

Stephen S. Tuber, Assistant Regional Administrator, Office of Partnerships & Regulatory Assistance EPA Region 8

Alexis Strauss, Director, Water Division EPA Region 9

Michael Gearheard, Director, Office of Water and Watersheds EPA Region 10

The signatures are for the permit conditions in Parts 1 through 10 and Appendices A through G, and for any additional conditions which apply to facilities located in the corresponding state, Indian country, or other area.

#### PART 1: COVERAGE UNDER THIS PERMIT

#### 1.1 Introduction

This Construction General Permit (CGP) authorizes stormwater discharges from large and small construction activities that result in a total land disturbance of equal to or greater than one acre, where those discharges enter surface waters of the United States or a municipal separate storm sewer system (MS4) leading to surface waters of the United States subject to the conditions set forth in this permit. This permit also authorizes stormwater discharges from any other construction activity designated by EPA where EPA makes that designation based on the potential for contribution to an excursion of a water quality standard or for significant contribution of pollutants to waters of the United States. This permit replaces the permit issued in 2003 (68 FR 39087, July 1, 2003), including the modification made to that permit in 2004 (69 FR 76743, December 22, 2004).

This permit is presented in a reader-friendly, plain language format. This permit uses the terms "you" and "your" to identify the person(s) who owns or operates a "facility" or "activity" as defined in Appendix A and who must comply with the conditions of this permit. This format should allow you, the permittee and operator of a large or small construction activity, to easily locate and understand applicable requirements.

The goal of this permit is to minimize the discharge of stormwater pollutants from construction activity.

#### 1.2 Permit Area

If your large or small construction activity is located within the areas listed in Appendix B, you may be eligible to obtain coverage under this permit. Permit coverage is actually provided by legally separate and distinctly numbered permits covering each of the areas listed in Appendix B.

#### 1.3 Eligibility

Permit eligibility is limited to discharges from "large" and "small" construction activity, and to "new projects" and "unpermitted ongoing projects," as defined in Appendix A or as otherwise designated by EPA. This general permit contains eligibility restrictions, as well as permit conditions and requirements. You may have to take certain actions to be eligible for coverage under this permit. In such cases, you must continue to satisfy those eligibility provisions to maintain permit authorization. If you do not meet the requirements that are a pre-condition to eligibility, then resulting discharges constitute unpermitted discharges. By contrast, if you eligible for coverage under this permit and do not comply with the requirements of the general permit, you may be in violation of the general permit for your otherwise eligible discharges.

#### A. Allowable Stormwater Discharges

Subject to compliance with the terms and conditions of this permit, you are authorized to discharge pollutants in:

- 1. Stormwater discharges associated with large and small construction activity from "new projects" and "unpermitted ongoing projects" as defined in Appendix A;
- 2. Stormwater discharges designated by EPA as needing a stormwater permit under 40 CFR §122.26(a)(1)(v) or §122.26(b)(15)(ii);
- 3. Discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:
  - a. The support activity is directly related to the construction site required to have NPDES permit coverage for discharges of stormwater associated with construction activity;
  - b. The support activity is not a commercial operation serving multiple unrelated construction projects by different operators, and does not operate beyond the completion of the construction activity at the last construction project it supports; and
  - c. Pollutant discharges from support activity areas are minimized in compliance with Part 3.1.G; and
- 4. Discharges composed of allowable discharges listed in 1.3.A and 1.3.B commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

# B. Allowable Non-Stormwater Discharges

You are authorized for the following non-stormwater discharges, provided the non-stormwater component of the discharge is in compliance with Part 5.4 (Non-Stormwater Discharges):

- 1. Discharges from fire-fighting activities;
- 2. Fire hydrant flushings;
- 3. Waters used to wash vehicles where detergents are not used;
- 4. Water used to control dust in accordance with Part 3.1.B;
- 5. Potable water including uncontaminated water line flushings;
- 6. Routine external building wash down that does not use detergents;
- 7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used;
- 8. Uncontaminated air conditioning or compressor condensate;
- 9. Uncontaminated ground water or spring water;
- 10. Foundation or footing drains where flows are not contaminated with process materials such as solvents;
- 11. Uncontaminated excavation dewatering;
- 12. Landscape irrigation.

#### C. Limitations on Coverage

1. This permit does not authorize post-construction discharges that originate from the site after construction activities have been completed and the site has achieved final stabilization, including any temporary support activity. Post-construction

- stormwater discharges from industrial sites may need to be covered by a separate NPDES permit.
- 2. This permit does not authorize discharges mixed with non-stormwater. This exclusion does not apply to discharges identified in Part 1.3.B, provided the discharges are in compliance with Part 5.4 (Non-Stormwater Discharges).
- 3. This permit does not authorize stormwater discharges associated with construction activity that have been covered under an individual permit or required to obtain coverage under an alternative general permit in accordance with Part 2.6.
- 4. This permit does not authorize 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 2.6. However, EPA may authorize your coverage under this permit after you have included appropriate controls and implementation procedures in your permit designed to bring your discharge into compliance with water quality standards.
- 5. Discharging into Receiving Waters With an Approved or Established Total Maximum Daily Load Analysis
  - a. You are not eligible for coverage under this permit for discharges of pollutants of concern to waters for which there is a total maximum daily load (TMDL) established or approved by EPA unless implement measures or controls that are consistent with the assumptions and requirements of such TMDL. To be eligible for coverage under this general permit, you must implement conditions applicable to your discharges necessary for consistency with the assumptions and requirements of such TMDL. If a specific wasteload allocation has been established that would apply to your discharge, you must implement necessary steps to meet that allocation.
  - b. In a situation where an EPA-approved or established TMDL has specified a general wasteload allocation applicable to construction stormwater discharges, but no specific requirements for construction sites have been identified in the TMDL, you should consult with the State or Federal TMDL authority to confirm that meeting the effluent limits in Part 3 of this permit will be consistent with the approved TMDL. Where an EPA-approved or established TMDL has not specified a wasteload allocation applicable to construction stormwater discharges, but has not specifically excluded these discharges, compliance with the effluent limits in Part 3 of this permit will generally be assumed to be consistent with the approved TMDL. If the EPA-approved or established TMDL specifically precludes such discharges, the operator is not eligible for coverage under the CGP.
- 6. Endangered and Threatened Species and Critical Habitat Protection
  - a. Coverage under this permit is available only if your stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities, as defined in Appendix A, are not likely to jeopardize the continued existence of any species that are federally-listed as endangered or threatened ("listed") under the Endangered Species Act (ESA) or result in the adverse

- modification or destruction of habitat that is federally-designated as critical under the ESA ("critical habitat").
- b. You are not eligible to discharge if the stormwater discharges, allowable nonstormwater discharges, or stormwater discharge-related activities would cause a prohibited "take" of federally-listed endangered or threatened species (as defined under section 3 of the ESA and 50 CFR 17.3), unless such takes are authorized under sections 7 or 10 of the ESA.
- c. Determining Eligibility: You must use the process in Appendix C (ESA Review Procedures) to determine eligibility PRIOR to submittal of the Notice of Intent (NOI). You must meet one or more of the following six criteria (A-F) for the entire term of coverage under the permit:
- Criterion A. No federally-listed threatened or endangered species or their designated critical habitat are in the project area as defined in Appendix C; or
- Criterion B. Formal consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded and that consultation:
  - i. Addressed the effects of the project's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and
  - ii. The consultation resulted in either:
    - a. Biological opinion finding no jeopardy to federally-listed species or destruction/adverse modification of federallydesignated critical habitat, or
    - b. Written concurrence from the Service(s) with a finding that the stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are not likely to adversely affect federally-listed species or federally-designated critical habitat; or
- Criterion C. Informal consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded and that consultation:
  - Addressed the effects of the project's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and
  - ii. The consultation resulted in either:
    - a. Biological opinion finding no jeopardy to federally-listed species or destruction/adverse modification of federallydesignated critical habitat, or
    - b. Written concurrence from the Service(s) with a finding that the stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are

not likely to adversely affect federally-listed species or federally-designated critical habitat; or

- Criterion D. The construction activities are authorized through the issuance of a permit under section 10 of the ESA, and that authorization addresses the effects of the stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities on federally-listed species and federally-designated critical habitat; or
- Criterion E. Stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are not likely to adversely affect any federally-listed threatened or endangered species or result in the destruction or adverse modification of federally-designated critical habitat; or
- Criterion F. The project's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities were already addressed in another operator's valid certification of eligibility under Criteria A-E which included your construction activities 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 project area. By certifying eligibility under this criterion, you agree to comply with any measures or controls upon which the other operator's certification was based.

You must comply with any applicable terms, conditions, or other requirements developed in the process of meeting the eligibility requirements of the criteria in this section to remain eligible for coverage under this permit.

7. Historic Properties [Reserved]

You are reminded that you must comply with applicable state, tribal and local laws concerning the protection of historic properties and places.

#### 1.4 Waivers for Certain Small Construction Activities

Three scenarios exist under which small construction activities (see definition in Appendix A) may be waived from the NPDES permitting requirements detailed in this general permit. These exemptions are predicated on certain criteria being met and proper notification procedures being followed. Details of the waiver options and procedures for requesting a waiver are provided in Appendix D.

# PART 2: AUTHORIZATION FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITY

#### 2.1 How to Obtain Authorization

To obtain coverage under this general permit, you, the operator, must prepare and submit a complete and accurate Notice of Intent (NOI), as described in this Part. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage.

#### 2.2 How to Submit Your NOI

You must either use EPA's electronic NOI system (accessible at <a href="https://www.epa.gov/npdes/eNOI">www.epa.gov/npdes/eNOI</a> or use a paper form (included in Appendix E) and then submit that paper form to:

For Regular U.S. Mail Delivery: EPA Stormwater Notice Processing Center Mail Code 4203M U.S. EPA 1200 Pennsylvania Avenue, NW Washington, DC 20460 For Overnight/Express Mail Delivery: EPA Stormwater Notice Processing Center Room 7420 U.S. EPA 1201 Constitution Avenue, NW Washington, DC 20004

# 2.3 Authorization to Discharge Date

You are authorized to discharge stormwater from construction activities under the terms and conditions of this permit seven (7) calendar days after acknowledgment of receipt of your complete NOI is posted on EPA's NPDES website

http://www.epa.gov/npdes/stormwater/cgp. The exception to this 7-day timeframe is if EPA delays your authorization based on eligibility considerations of Part 1.3 (e.g., ESA concerns). Under this circumstance, you are not authorized for coverage under this permit until you receive notice from EPA of your eligibility.

#### 2.4 Submission Deadlines

- A. New Projects: To obtain coverage under this permit, you must submit a complete and accurate NOI and be authorized consistent with Part 2.3 prior to your commencement of construction activities.
- B. Permitted Ongoing Projects: Permitted ongoing projects are not eligible for coverage under this permit. If you previously received authorization to discharge for your project under the 2003 CGP, your authorization will be automatically continued under that permit until the expiration of this permit and the issuance of a new CGP, or the termination of coverage by you under the 2003 CGP, whichever is earlier. Note: If you are an operator of a permitted ongoing project and you transfer ownership of the project, or a portion thereof, to a different operator, that operator will be required to submit a complete and accurate NOI for a new project in accordance with Part 2.2.
- C. Unpermitted Ongoing Projects: If you previously did not receive authorization to discharge for your project under the 2003 CGP and you wish to obtain coverage under this permit, you must submit an NOI within 90 days of the issuance date of this permit.

D. Late Notifications: Operators are not prohibited from submitting NOIs after initiating clearing, grading, excavation activities, or other construction activities. When a late NOI is submitted, authorization for discharges occurs consistent with Part 2.3. The Agency reserves the right to take enforcement action for any unpermitted discharges that occur between the commencement of construction and discharge authorization.

# 2.5 Continuation of the Expired General Permit

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 remain in force and effect. If you were granted permit coverage prior to the expiration date, you will automatically remain covered by the continued permit until the earliest of:

- A. Reissuance or replacement of this permit, at which time you must comply with the conditions of the new permit to maintain authorization to discharge; or
- B. Your submittal of a Notice of Termination; or
- C. Issuance of an individual permit for the project's discharges; or
- D. A formal permit decision by EPA to not reissue this general permit, at which time you must seek coverage under an alternative general permit or an individual permit.

# 2.6 Requiring Coverage Under an Individual Permit or an Alternative General Permit

- A. EPA may require you to apply for and/or obtain either an individual NPDES permit or coverage under an alternative NPDES general permit. Any interested person may petition EPA to take action under this paragraph. If EPA requires you to apply for an individual NPDES permit, EPA will notify you in writing that a permit application is required. This notification will include a brief statement of the reasons for this decision and an application form. In addition, if you are an existing permittee covered under this permit, the notice will set a deadline to file the application, and will include a statement that on the effective date of issuance or denial of the individual NPDES permit or the coverage or denial of coverage under the alternative general permit as it applies to you, coverage under this general permit will automatically terminate. Applications must be submitted to EPA at the applicable EPA Regional offices listed in Appendix B of this permit. EPA may grant additional time to submit the application upon your request. If you are covered under this permit and you fail to submit in a timely manner an individual NPDES permit application as required by EPA, then the applicability of this permit to you is automatically terminated at the end of the day specified by EPA as the deadline for application submittal.
- B. You may request to be excluded from coverage under this general permit by applying for an individual permit. In such a case, you must submit an individual application in accordance with the requirements of 40 CFR §122.26(c)(1)(ii), with reasons supporting the request, to EPA at the applicable EPA Regional office listed in

Appendix B of this permit. The request may be granted by issuance of an individual permit or coverage under an alternative general permit if your reasons are adequate to support the request.

C. When an individual NPDES permit is issued to you (as an entity that is otherwise subject to this permit), or you are authorized to discharge under an alternative NPDES general permit, the applicability of this permit to you is automatically terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit, whichever the case may be. If you (as an entity that is otherwise subject to this permit) are denied an individual NPDES permit or an alternative NPDES general permit, the applicability of this permit to you is automatically terminated on the date of such denial, unless otherwise specified by EPA.

#### **PART 3: EFFLUENT LIMITS**

This section includes technology-based and water quality-based effluent limits that apply to all dischargers, unless otherwise specified. You must select, install, and maintain control measures (e.g., Best Management Practices ("BMPs"), controls, practices, etc.) for each major construction activity, identified in your Part 5 project description, to meet these effluent limits. All control measures must be properly selected, installed, and maintained in accordance with any relevant manufacturer specifications and good engineering practices. You must implement the control measures from commencement of construction activity until final stabilization is complete.

The term "minimize" as used in Part 3 means reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

- 3.1 Effluent Limits to Reduce Pollutants in Stormwater Discharges
  You must implement control measures to minimize pollutants in stormwater discharges.
- A. Sediment Controls: You must implement the following, where applicable:
  - 1. Sediment Basins: For common drainage locations that serve an area with 10 or more acres disturbed at one time, a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from the drainage area from a 2-year, 24-hour storm, or equivalent control measures, must be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, must be provided where attainable until final stabilization of the site. When computing the number of acres draining into a common location, it is not necessary to include flows from offsite areas and flows from on-site areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. In determining whether installing a sediment basin is attainable, the operator may consider factors such as site soils,

- slope, available area on-site, etc. In any event, the operator must consider public safety, especially as it relates to children, as a design factor for the sediment basin, and alternative sediment controls must be used where site limitations would preclude a safe design.
- 2. For drainage locations which serve 10 or more disturbed acres at one time and where a temporary sediment basin or equivalent controls is not attainable, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions).
- 3. For drainage locations serving less than 10 acres, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of the construction area unless a sediment basin providing storage for a calculated volume of runoff from a 2-year, 24-hour storm or 3,600 cubic feet of storage per acre drained is provided.
- B. Off-Site Sediment Tracking and Dust Control: You must minimize off-site vehicle tracking of sediments onto paved surfaces and the generation of dust. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impacts.
- C. Runoff Management: You must divert flows from exposed soils, retain/detain flows or otherwise minimize runoff and the discharge of pollutants from exposed areas of the site. You must avoid placement of structural practices in floodplains to the degree technologically and economically practicable and achievable.
- D. Erosive Velocity Control: You must place velocity dissipation devices at discharge locations and along the length of any outfall channel to provide a non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., no significant changes in the hydrological regime of the receiving water).
- E. Post-Construction Stormwater Management: You must comply with any applicable federal, local, state, or tribal requirements regarding the design and installation of post-construction stormwater controls. Structural measures should be placed on upland soils to the degree practicable and achievable.
- F. Construction and Waste Materials: You must:
  - 1. Prevent the discharge of solid materials, including building materials, to waters of the United States, except as authorized by a permit issued under section 404 of the CWA;

- 2. Minimize exposure of construction and waste materials to stormwater, and the occurrence of spills, through the use of storage practices, prevention and response practices, and other controls;
- 3. Prevent litter, construction debris, and construction chemicals (e.g., diesel fuel, hydraulic fluids, and other petroleum products) that could be exposed to stormwater from becoming a pollutant source in stormwater discharges.
- G. *Non-Construction Wastes:* You must minimize pollutant discharges from areas other than construction (including stormwater discharges from dedicated asphalt plants and dedicated concrete plants).

#### H. Erosion Control and Stabilization:

- 1. General Requirements: You must stabilize the site. You must ensure that existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. You should avoid using impervious surfaces for stabilization.
- 2. Initiation Deadlines: You must initiate stabilization measures, except as provided below, as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.
  - i. Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practicable.
  - ii. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the site.
  - iii. In arid, semiarid, and drought-stricken areas where initiating perennial vegetative stabilization measures is not possible within 14 days after construction activity has temporarily or permanently ceased, final vegetative stabilization measures must be initiated as soon as practicable.
- I. Spills / Releases in Excess of Reportable Quantities: You are not authorized to discharge hazardous substances or oil resulting from an on-site spill. This permit does not relieve you of the federal reporting requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 relating to spills or other releases of oils or hazardous substances.

Where a 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 provide notice to the National Response Center (NRC) (800-424-8802; 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 site staff have knowledge of the discharge; and

- you must, 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. You must also implement measures to prevent the reoccurrence of such releases and to respond to such releases.
- 3.2 Effluent Limits to Reduce Pollutants in Non-Stormwater Discharges You must minimize any non-stormwater discharges authorized by this permit.

# 3.3 Effluent Limits Related to Endangered Species

You must protect federally-listed endangered or threatened species, or federally-designated critical habitat to maintain eligibility under Part 1.3.C.6.

# 3.4 Attainment of Water Quality Standards

- A. You must select, install, implement and maintain control measures at your construction site that minimize pollutants in the discharge as necessary to meet applicable water quality standards. In general, except in situations explained in Part 3.4.B below, your stormwater controls developed, implemented, and updated consistent with the other provisions of Part 3 are considered as stringent as necessary to ensure that your discharges do not cause or contribute to an excursion above any applicable water quality standard.
- B. At any time after authorization, EPA may determine that your stormwater discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. If such a determination is made, EPA will require you to:
  - i. Modify your stormwater controls in accordance with Part 3.6 to address adequately the identified water quality concerns;
  - ii. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or
  - iii. Cease discharges of pollutants from construction activity and submit an individual permit application according to Part 2.6.

All written responses required under this part must include a signed certification consistent with Appendix G, Section 11.

# 3.5 Consistency with Total Maximum Daily Loads

If you are discharging into a water with an EPA established or approved TMDL, you must implement measures to ensure that your discharge of pollutants from the site is consistent with the assumptions and requirements of the EPA-established or approved TMDL, including any specific wasteload allocation that has been established that would apply to your discharge. See Part 1.3.C.5 for further information on determining permit eligibility related to TMDLs.

#### 3.6 Maintenance of Control Measures

- A. You must maintain all control measures and other protective measures in effective operating condition. If site inspections required by Part 4 identify BMPs that are not operating effectively, you must perform maintenance as soon as possible and before the next storm event whenever practicable to maintain the continued effectiveness of stormwater controls.
- B. If existing BMPs need to be modified or if additional BMPs are necessary for any reason, you must complete implementation before the next storm event whenever practicable. If implementation before the next storm event is impracticable, you must implement alternative BMPs as soon as possible.
- C. You must remove sediment from sediment traps or sedimentation ponds when design capacity has been reduced by 50 percent.
- D. You must remove trapped sediment from a silt fence before the deposit reaches 50 percent of the above-ground fence height (or before it reaches a lower height based on manufacturer's specifications).

#### 3.7 Training of Employees

You must train employees and subcontractors as necessary to make them aware of the applicable control measures implemented at the site so that they follow applicable procedures.

#### 3.8 Applicable State, Tribal, or Local Programs

You must ensure that the stormwater controls implemented at your site are consistent with all applicable federal, state, tribal, or local requirements for soil and erosion control and stormwater management.

#### **PART 4: INSPECTIONS**

- A. Inspection Frequency: You must conduct inspections in accordance with one of the two schedules listed below. You must specify in your SWPPP which schedule you will be following.
  - 1. At least once every 7 calendar days, OR
  - 2. At least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.
- B. Case-by-Case Reductions in Inspection Frequency: You may reduce your inspection frequency to at least once every month if:
  - 1. The entire site is temporarily stabilized,
  - 2. Runoff is unlikely due to winter conditions (e.g., site is covered with snow, ice, or the ground is frozen), or
  - 3. Construction is occurring during seasonal arid periods in arid areas and semi-arid areas.

- C. Inspection Waiver for Frozen Conditions: A waiver of the inspection requirements is available until one month before thawing conditions are expected to result in a discharge if all of the following requirements are met:
  - 1. The project is located in an area where frozen conditions are anticipated to continue for extended periods of time (i.e., more than one month);
  - 2. Land disturbance activities have been suspended; and
  - 3. The beginning and ending dates of the waiver period are documented in the SWPPP.
- D. Qualified Personnel: Inspections must be conducted by qualified personnel (provided by the operator or cooperatively by multiple operators). "Qualified personnel" means a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges from the construction activity.
- E. Scope of Inspections: Inspections must include all areas of the site disturbed by construction activity and areas used for storage of materials that are exposed to precipitation. Inspectors must look for evidence of, or the potential for, pollutants entering the stormwater conveyance system. Sedimentation and erosion control measures must be observed to ensure proper operation. Discharge locations must be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to waters of the United States, where accessible. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.
- F. Reductions in Scope of Inspections for Stabilized Areas: Once a definable area has been finally stabilized, no further inspection requirements apply to that portion of the site (e.g., earth-disturbing activities around one of three buildings in a complex are done and the area is finally stabilized, one mile of a roadway or pipeline project is done and finally stabilized, etc).
- G. Utility Line Inspections: Utility line installation, pipeline construction, and other examples of long, narrow, linear construction activities may limit the access of inspection personnel to the areas described in Part 4.E above. Inspection of these areas could require that vehicles compromise temporarily or even permanently stabilized areas, cause additional disturbance of soils, and increase the potential for erosion. In these circumstances, controls must be inspected on the same frequencies as other construction projects, but representative inspections may be performed. For representative inspections, personnel must inspect controls along the construction site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction site and allows access to the areas described above. The conditions of the controls along each inspected 0.25 mile segment may be considered as representative of the condition of controls along

that reach extending from the end of the 0.25 mile segment to either the end of the next 0.25 mile inspected segment, or to the end of the project, whichever occurs first.

- H. *Inspection Report:* For each inspection required above, you must complete an inspection report. At a minimum, the inspection report must include:
  - 1. The inspection date;
  - 2. Names, titles, and qualifications of personnel making the inspection;
  - 3. Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
  - 4. Weather information and a description of any discharges occurring at the time of the inspection;
  - 5. Location(s) of discharges of sediment or other pollutants from the site;
  - 6. Location(s) of BMPs that need to be maintained;
  - 7. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
  - 8. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
  - 9. Corrective action required including implementation dates.

The inspection report must be signed in accordance with Appendix G, Section 11 of this permit.

#### PART 5: STORMWATER POLLUTION PREVETNION PLANS (SWPPPs)

#### 5.1 Stormwater Pollution Prevention Plan Framework

You must prepare a SWPPP <u>before</u> submitting your Notice of Intent (NOI) for permit coverage. At least one SWPPP must be developed for each construction project covered by this permit and the stormwater controls implemented at your site must be documented in the SWPPP. If you prepared a SWPPP for coverage under a previous NPDES permit, you must review and update the SWPPP prior to submitting your NOI.

The SWPPP does not contain effluent limitations; the technology and water quality-based effluent limitations are contained in Part 3 of this permit. The SWPPP is intended to document the selection, design, installation, and implementation of control measures that are being used to comply with the effluent limitations set forth in Part 3.

#### The SWPPP must:

- 1. Identify all potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges from the construction site; and
- 2. Describe control measures to be used to meet the effluent limits set forth in Part 3.

# 5.2 SWPPP Contents: Site and Activity Description

- A. Construction Site Operators: The SWPPP must identify all operators for the project site, and the areas of the site over which each operator has control.
- B. Nature of Construction Activity: The SWPPP briefly must describe the nature of the construction activity, including:
  - 1. The function of the project (e.g., low density residential, shopping mall, highway, etc.);
  - 2. The intended sequence and timing of activities that disturb soils at the site;
  - 3. Estimates of the total area expected to be disturbed by excavation, grading, or other construction activities, including dedicated off-site borrow and fill areas; and
  - 4. A general location map (e.g., USGS quadrangle map, a portion of a city or county map, or other map) with enough detail to identify the location of the construction site and waters of the United States within one mile of the site.
- C. Site Map: The SWPPP must contain a legible site map, showing the entire site, identifying:
  - 1. Direction(s) of stormwater flow and approximate slopes anticipated after grading activities;
  - 2. Areas of soil disturbance and areas that will not be disturbed (or a statement that all areas of the site will be disturbed unless otherwise noted);
  - 3. Locations of major structural and nonstructural BMPs identified in the SWPPP;
  - 4. Locations where stabilization practices are expected to occur;
  - 5. Locations of off-site material, waste, borrow or equipment storage areas;
  - 6. Locations of all waters of the United States (including wetlands);
  - 7. Locations where stormwater discharges to a surface water; and
  - 8. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.
- D. Construction and Waste Materials: The SWPPP must include a description of construction and waste materials expected to be stored on-site with updates as appropriate.
- E. Locations of Other Industrial Stormwater Discharges: The SWPPP must describe and identify the location and description of any stormwater discharge associated with industrial activity other than construction at the site. This includes stormwater discharges from dedicated asphalt plants and dedicated concrete plants that are covered by this permit.

# 5.3 Description of Control Measures to Reduce Pollutant Discharges

A. Control Measures: The SWPPP must include a description of all control measures that will be implemented to meet the effluent limits in Part 3. For each major activity identified in the project description the SWPPP must clearly document appropriate control measures, the general sequence during the construction process in which the

- measures will be implemented, and which operator is responsible for the control measure's implementation.
- B. **Stabilization:** The SWPPP must include a description of interim and permanent stabilization practices for the site, including a schedule of when the practices will be implemented.
- C. **Post-Authorization Records:** The following records must be maintained with the SWPPP following authorization under this permit:
  - 1. Dates when grading activities occur;
  - 2. Dates when construction activities temporarily or permanently cease on a portion of the site; and
  - 3. Dates when stabilization measures are initiated.

#### 5.4 Non-Stormwater Discharges

The SWPPP must identify all allowable sources of non-stormwater discharges listed in Part 1.3.B of this permit, except for flows from fire fighting activities that are combined with stormwater discharges associated with construction activity at the site. The SWPPP must also describe the pollution prevention measures used to eliminate or reduce non-stormwater discharges consistent with Part 3.2.

- 5.5 Documentation of Permit Eligibility Related to Endangered Species
  The SWPPP must include documentation supporting a determination of permit eligibility with regard to Endangered Species, including:
- A. Information on whether federally-listed endangered or threatened species, or federally-designated critical habitat may be in the project area;
- B. Whether such species or critical habitat may be adversely affected by stormwater discharges or stormwater discharge-related activities from the project;
- C. Results of the Appendix C listed species and critical habitat screening determinations;
- D. Confirmation of delivery of NOI to EPA or to EPA's electronic NOI system. This may include an overnight, express or registered mail receipt acknowledgment; or electronic acknowledgment from EPA's electronic NOI system;
- E. Any correspondence for any stage of project planning between the U.S. Fish and Wildlife Service (FWS), EPA, the U.S. National Marine Fisheries Service (NMFS), or others and you regarding listed species and critical habitat, including any notification that delays your authorization to discharge under this permit; and
- F. A description of measures necessary to protect federally-listed endangered or threatened species, or federally-designated critical habitat.

- 5.6 Documentation of Permit Eligibility Related to Total Maximum Daily Loads
  The SWPPP must include documentation supporting a determination of permit eligibility
  with regard to waters that have an EPA-established or approved TMDL, including:
- A. Identification of whether your discharge is identified, either specifically or generally, in an EPA-established or approved TMDL and any associated allocations, requirements, and assumptions identified for your discharge;
- B. Summaries of consultation with State or Federal TMDL authorities on consistency of SWPPP conditions with the approved TMDL, and
- C. Measures taken by you to ensure that your discharge of pollutants from the site is consistent with the assumptions and requirements of the EPA-established or approved TMDL, including any specific wasteload allocation that has been established that would apply to your discharge.

See Part 1.3.C.5 for further information on determining permit eligibility related to TMDLs.

# 5.7 Copy of Permit Requirements

Copies of this permit and of the signed and certified NOI form that was submitted to EPA must be included in the SWPPP. Also, upon receipt, a copy of the letter from the EPA Stormwater Notice Processing Center notifying you of their receipt of your administratively complete NOI must also be included as a component of the SWPPP.

## 5.8 Applicable State, Tribal, or Local Programs

The SWPPP must be updated as necessary to reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater controls you implement at your site.

#### 5.9 Inspections

A record of each inspection and of any actions taken in accordance with Part 4 must be retained with the SWPPP for at least three years from the date that permit coverage expires or is terminated. The inspection reports must identify any incidents of non-compliance with the permit conditions. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the construction project or site is in compliance with this permit.

## 5.10 Maintaining an Updated Plan

The SWPPP must be modified:

A. To reflect modifications to stormwater control measures made in response to a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants to the waters of the United States that has not been previously addressed in the SWPPP.

- B. If during inspections or investigations by site staff, or by local, state, tribal or federal officials, it is determined that the existing stormwater controls are ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the construction site.
- C. Based on the results of an inspection, as necessary to properly document additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP must be completed within seven (7) calendar days following the inspection.

#### 5.11 Signature, Plan Review and Making Plans Available

- A. Retention of SWPPP: A copy of the SWPPP (including a copy of the permit), NOI, and acknowledgement letter from EPA must be retained at the construction site (or other location easily accessible during normal business hours to EPA, a state, tribal or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service) from the date of commencement of construction activities to the date of final stabilization. If you have day-to-day operational control over SWPPP implementation, you must have a copy of the SWPPP available at a central location on-site for the use of all those identified as having responsibilities under the SWPPP whenever they are on the construction site. If an on-site location is unavailable to store the SWPPP when no personnel are present, notice of the plan's location must be posted near the main entrance at the construction site.
- B. Main Entrance Signage: A sign or other notice must be posted conspicuously near the main entrance of the construction site. If displaying near the main entrance is infeasible, the notice can be posted in a local public building such as the town hall or public library. The sign or other notice must contain the following information:
  - 1. A copy of the completed Notice of Intent as submitted to the EPA Stormwater Notice Processing Center; and
  - 2. If the location of the SWPPP or the name and telephone number of the contact person for scheduling SWPPP viewing times has changed (i.e., is different than that submitted to EPA in the NOI), the current location of the SWPPP and name and telephone number of a contact person for scheduling viewing times.

For linear projects, the sign or other notice must be posted at a publicly accessible location near the active part of the construction project (e.g., where a pipeline project crosses a public road).

C. Availability of SWPPP: SWPPPs must be made available upon request by EPA; a state, tribal or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service to the requestor. The copy of the SWPPP that is required to be kept on-site or

locally available must be made available, in its entirety, to the EPA staff for review and copying at the time of an on-site inspection.

D. Signature and Certification: All SWPPPs must be signed and certified in accordance with Appendix G, Section 11.

# 5.12 Requirements for Different Types of Operators

You may meet one or both of the operational control components in the definition of operator found in Appendix A. Part 5.12.C applies to all permittees having control over only a portion of a construction site.

- A. If you have operational control over construction plans and specifications, you must ensure that:
  - 1. The project specifications meet the minimum requirements of this Part and all other applicable permit conditions;
  - 2. The SWPPP indicates the areas of the project where the operator has operational control over project specifications, including the ability to make modifications in specifications;
  - 3. All other permittees implementing portions of the SWPPP (or their own SWPPP) who may be impacted by a change to the construction plan are notified of such changes in a timely manner; and
  - 4. The SWPPP indicates the name of the party(ies) with day-to-day operational control of those activities necessary to ensure compliance with the SWPPP or other permit conditions.
- B. If you have operational control over day-to-day activities, you must ensure that:
  - 1. The SWPPP meets the minimum requirements of this Part and identifies the parties responsible for implementation of control measures identified in the plan;
  - 2. The SWPPP indicates areas of the project where you have operational control over day-to-day activities;
  - 3. The SWPPP indicates the name of the party(ies) with operational control over project specifications (including the ability to make modifications in specifications).
- C. If you have operational control over only a portion of a larger project (e.g., one of four homebuilders in a subdivision), you are responsible for compliance with all applicable effluent limits, terms, and conditions of this permit as it relates to your activities on your portion of the construction site, including protection of endangered species, critical habitat, and historic properties, and implementation of control measures described in the SWPPP. You must ensure either directly or through coordination with other permittees, that your activities do not render another party's pollutant discharge controls ineffective. You must either implement your portion of a common SWPPP or develop and implement your own SWPPP.

  For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site to prepare and participate in a comprehensive SWPPP is encouraged. Individual operators at a site may, but are not

required to, develop separate SWPPPs that cover only their portion of the project provided reference is made to other operators at the site. In instances where there is more than one SWPPP for a site, cooperation between the permittees is encouraged to ensure the stormwater discharge control measures are consistent with one another (e.g., provisions to protect listed species and critical habitat).

#### PART 6: TERMINATION OF COVERAGE

## 6.1 Submitting a Notice of Termination

Submit a complete and accurate Notice of Termination (NOT) either electronically (strongly encouraged) at <a href="www.epa.gov/npdes/eNOI">www.epa.gov/npdes/eNOI</a> or by completing the paper Notice of Termination form included in Appendix F of this permit and submitting that form to the address listed in Part 2.2.

#### 6.2 When to Submit a Notice of Termination

You may only submit a Notice of Termination (NOT) after one or more of the following conditions have been met:

- A. Final stabilization has been achieved on all portions of the site for which you are responsible;
- B. Another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized;
- C. Coverage under an individual or alternative general NPDES permit has been obtained; or
- D. For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

The NOT must be submitted within 30 days of one of the above conditions being met. Authorization to discharge terminates at midnight of the day the NOT is signed.

#### **PART 7: 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.

#### PART 8: REOPENER CLAUSE

#### 8.1 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.

## 8.2 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 2.6 of this permit, or the permit may be modified to include different limitations and/or requirements.

# 8.3 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.

#### **PART 9: STANDARD PERMIT CONDITIONS**

The federal regulations require that the Standard Conditions provisioned at 40 CFR §122.41 be applied to all NPDES permits. You are required to comply with those Standard Conditions, details of which are provided in Appendix G.

# PART 10: PERMIT CONDITIONS APPLICABLE TO SPECIFIC STATES, INDIAN COUNTRY, OR TERRITORIES

The provisions of 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 federal facilities. States, Indian country, and federal facilities not included in this Part do not have any modifications or additions to the applicable conditions of this permit.

# A. Region 1

- 1. MAR100000: Commonwealth of Massachusetts, except Indian country
  - a. State Water Quality Statutes, Regulations, and Policies:
    - i. You must comply with the Massachusetts Clean Waters Act (Ch. 21, ss. 26-53).
    - ii. You must comply with the conditions in 314 CMR 4.00 Surface Water Ouality Standards.
    - iii. You must comply with the conditions in 314 CMR 3.00 Surface Water Discharge Permit Program.
    - iv. 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.

- b. Department of Environmental Protection Storm Water Management Policy:
  - You must comply with the Massachusetts Storm Water Management Policy, and applicable 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.
- c. Other State Environmental Laws, Regulations, Policies:
  - i. 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 storm water permit, shall not result in non-compliance with the MESA.
  - ii. You must not conduct activities under this permit that will interfere with 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 Systems.

# d. Other Department Directives:

- i. The Department may require you 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.
- ii. The Department may require you to provide measurable verification of the effectiveness of BMPs and other control measures in your management program, including water quality monitoring.
- iii. The Department has determined that compliance with this permit does not protect you from enforcement actions deemed necessary by the Department under its associated regulations to address an imminent threat to the public health or a significant adverse environmental impact which results in a violation of the Massachusetts Clean Waters Act, Ch. 21, ss. 26-53.
- iv. The Department reserves the right to modify the 401 Water Quality Certification if any changes, modifications or deletions are made to the general permit. In addition, the Department reserves the right to add and/or alter the terms and conditions of its 401 Water Quality Certification to carry out its responsibilities during the term of this permit with respect to water quality, including any revisions to 314 CMR 4.00, Surface Water Quality Standards.

#### e. Permit Compliance

i. Should any violation of the Massachusetts Surface Water Quality Standards (314 CMR 4.00) or the conditions of this certification occur, the Department will direct you to correct the violations(s). The Department has the right to take any action as authorized by the General Laws of the Commonwealth to address the violation of this permit or the MA Clean Waters Act and the regulations promulgated thereunder. Substantial civil and criminal penalties are authorized under MGL Ch. 21, s. 42 for discharging into Massachusetts' waters in violation of an order or permit issued by this Department. This

certification does not relieve you of the duty to comply with other applicable Massachusetts statutes and regulations.

- 2. NHR100000: State of New Hampshire
  - a. If you disturb 100,000 square feet or more of contiguous area, you must also apply for a "Significant Alteration of the Terrain Permit from DES pursuant to RSA 485-A:17 and Env-Ws 415. This requirement applies to the disturbances of only 50,000 square feet when construction occurs within the protected shoreline (see RSA 483-B and Env-Ws 1400).
  - b. You must determine that any excavation dewatering discharges are not contaminated before they will be authorized as an allowable non-storm water discharge under this permit (see Subpart 1.3.B). The water is considered uncontaminated if there is no groundwater contamination within 1,000 feet of the discharge. Information on groundwater contamination can be generated over the Internet via the NHDES web site <a href="http://www.des.state.nh.us">http://www.des.state.nh.us</a> (One Stop Data Retrieval, Onestop Master Site Table). The web site also provides E-mail access to an NHDES Site Remediation Contact to answer questions about using the Web site.
  - c. 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 storm water at least once per week during weeks when discharges occur. The samples must be analyzed for total suspended solids (TSS) and must meet monthly average and maximum daily TSS limitations of 50 milligrams per liter (mg/L) and 100 mg/L, respectively. TSS (a.k.a. Residue, Nonfilterable) analysis and sampling must be performed in accordance with Tables IB (parameter, units and method) and II (required containers, preservation techniques and holding times) in 40 CFR 136.3 (see: <a href="http://www.access.gpo.gov/nara/cfr/waisidx\_02/40cfr136\_02.html">http://www.access.gpo.gov/nara/cfr/waisidx\_02/40cfr136\_02.html</a>). Records of any sampling and analysis must be maintained and kept with the SWPPP for at least three years after final site stabilization.
  - d. During site design and preparation of the storm water pollution prevention plan (SWPPP), you must consider opportunities for groundwater recharge using on-site infiltration. The SWPPP must include a description of any on-site infiltration that will be installed as a post construction storm water management measure (see Subpart 3.4.E) or reasons for not employing such measures. For design considerations for infiltration measures see the September 2001 DES publication titled "Managing Storm Water as a Valuable Resource" which is available online at: <a href="http://www.des.state.nh.us/StormWater/construction.htm">http://www.des.state.nh.us/StormWater/construction.htm</a>. Loss of annual recharge to groundwater should be minimized through the use of infiltration measures wherever feasible.
- B. Region 2 No additional requirements.
- C. Region 5
- 1. MNR100000: Indian Country within the State of Minnesota

- a. Fond du Lac Band of Lake Superior Chippewa
  - i. 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.

- ii. Copies of the 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.
- iii. 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.
- iv. 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.
- v. 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.
- vi. This certification does not authorize impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for such listing.
- b. Grand Portage Band of Lake Superior Chippewa [Coverage not yet available]
- 2. WIR100000: Indian Country within the State of Wisconsin, except the Sokaogon Chippewa Community.
  - a. No additional requirements

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.

## D.: Region 6

- 1. NMR100000: The State of New Mexico, except Indian country
  - a. In addition to all other provisions of this permit, operators who intend to obtain authorization under this permit for all new stormwater discharges must satisfy the conditions in Part 10.C.1.b., unless a TMDL has been established for the receiving stream which specifies a waste load allocation (WLA) for construction stormwater discharges or the receiving stream is a Tier 3 water, in which case Part 10.C.1.c. applies.
    - 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 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, as well as expected performance and longevity of these BMPs. BMP selection must be made based on the use of appropriate soil loss prediction models (such as 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 preconstruction, 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). The operator(s) must design, implement, and maintain BMPs in the manner specified in the SWPPP.
  - c. Operators are not eligible to obtain authorization under this permit for all new stormwater discharges to outstanding national resource waters (ONRWs) (also referred to as "Tier 3: waters). According to the Antidegradation Policy at Paragraph 3 of Subsection A of 20.6.4.8 NMAC, in part, "ONRWs may include, but are not limited to, surface waters of the state within national and state monuments, parks, wildlife refuges, waters of exceptional recreational or

- ecological significance, and waters identified under the Wild and Scenic Rivers Act." No ONRWs exist at the time this permit is being finalized; however, during the term of the permit, if a receiving water is designated as an ONRW, the operator must obtain an individual permit for stormwater discharges from large and small construction activities.
- d. Stormwater discharges associated with construction activity that the State has determined to be or may reasonably be expected to be contributing to a violation of an applicable standard, including the antidegradation policy, are not authorized by this permit. Note: Upon receipt of this determination, NMED anticipates that, within a reasonable period of time, EPA will notify the general permittee to apply for and obtain an individual NPDES permit for these discharges per 40 CFR Part 122.28(b)(3).
- e. Inspections required under Part 4 must be conducted at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater. The option for inspections at least once per 7 calendar days is not available. The Inspection Waivers provided in Part 4.B and C still apply.
- f. Permittees can use temporary erosion controls as described in item 3 of the Appendix A definition of "Final Stabilization" as a method for final stabilization under the permit only under the following conditions:

If this option is selected, you must notify SWQB at the address listed in item g. below 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 qualified (see CGP Part 4.10.D) party responsible for implementing the final stabilization measures; and
- The date that the temporary erosion control practice was implemented (this is always prior to, and sometimes significantly prior to, submission of an NOT) 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 percent 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)

SWQB also requires that you periodically (minimum once/year) inspect and properly maintain the area until the criteria for final stabilization, as defined in Appendix A, item 3 of the CGP, have been met. You must prepare an inspection report documenting the findings of these inspections and signed in accordance with Appendix G, Section 11 of the CGP. 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 SWQB at the address listed in item g. below. The inspections must at a minimum include the following:

• Observations of all areas of the site disturbed by construction activity:

- Best Management Practices (BMPs)/post-construction storm water 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 storm water runoff from the site, including implementation dates.

Signed copies of discharge monitoring reports, individual permit applications, and all other reports required by the permit to be submitted, shall also be sent to:

Program Manager

Point Source Regulation Section

Surface Water Quality Bureau

New Mexico Environment Department

P.O. Box 26110

Santa Fe, NM 87502

- NMR10000I: 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
  - a. Pueblo of Acoma. The following conditions apply only to facilities on or bordering the Pueblo of Acoma with discharges into or flowing into waters of the Pueblo.
    - i. A copy of the Notice of Intent and Notice of Termination must be submitted to the Haaku Water Office at the address below at the same time they are submitted to EPA. A copy of the storm water pollution prevention plan must be provided to the Haaku Water Office upon request.
    - ii. HAAKU WATER OFFICE

PO Box 309

Pueblo of Acoma, NM 87034

- b. Pueblo of Isleta. The following conditions apply only to discharges on the Pueblo of Isleta.
  - i. Subpart 1.3.C.4, (Eligibility, Limitations on Coverage) first sentence, is revised to read: "This permit does not authorize discharges that EPA or the Pueblo of Isleta, 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 or impairment of a designated use of receiving waters."
  - ii. Subpart 2.2. (How to Submit) is amended to require: Copies of all Notices of Intent submitted to EPA must also be sent concurrently to the Pueblo of Isleta at the following address. Discharges are not authorized by this permit unless an accurate and complete Notice of Intent has been submitted to the Pueblo of Isleta.

Regular U.S. Mail Delivery
Natural Resources Department
Pueblo of Isleta

P.O. Box 1270 Isleta, NM 87022

Overnight/Express Mail Delivery Natural Resources Department Building L 11000 Broadway, SE Albuquerque, NM 87105

- iii. Part 2 (Authorizations for Discharges of Storm Water from Construction Activity), second sentence, is amended to read: "Discharges are not authorized if your NOI is incomplete or inaccurate, if you failed to submit a copy of the NOI to the Pueblo of Isleta, or if you were never eligible for permit coverage.
- iv. Subpart 5.3 (Description of Control Measures to Reduce Pollutant Discharges), section A, last sentence, is amended to read: "For each major activity identified in the project description the SWPPP must clearly describe appropriate control measures, the general sequence during the construction process in which the measures will be implemented, and which operator is responsible for the control measure's implementation and maintenance."
- v. Subpart 5.7 (Copy of Permit Requirements), first sentence, is revised to read "Copies of this permit and of the signed and certified NOI form that was submitted to the Pueblo of Isleta and EPA must be included in the SWPPP."
- vi. Subpart 4. (Inspections), section A is revised to read "Inspections must be conducted at least once every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater."
- vii. Subpart 4. (Inspections), section H, last paragraph, is amended to add: "Copies of inspection reports that identify incidents of noncompliance shall be sent to Pueblo of Isleta at the address listed in Subpart 2.2." (See above)
- viii. Subpart 5.11. (Signature, Plan Review and Making Plans Available), section A, first sentence is amended to read:
  - "A copy of the SWPPP (including a copy of the permit), NOI, and acknowledgement letter from EPA must be retained at the construction site (or other location easily accessible during normal business hours to the Pueblo of Isleta's Natural Resources Department, EPA, a state, tribal or local agency approving sediment and erosion plans, grading plans, or storm water management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service) from the date of commencement of construction activities to the date of final stabilization."
- ix. Subpart 5.11. (Signature, Plan Review and Making Plans Available), section C. is amended to read: "SWPPPs must be made available upon request by EPA; representatives of the Pueblo of Isleta Natural Resources Department, a state, tribal or local agency approving sediment and erosion plans, grading

- plans, or storm water management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service to the requestor. The copy of the SWPPP that is required to be kept on-site or locally available must be made available, in its entirety, to the EPA staff and the Pueblo of Isleta's Natural Resources Department staff for review and copying at the time of an on-site inspection.
- x. Subpart 3.1.A (Sediment Controls), is amended to add: "Erosion and sediment controls shall be designed to retain sediment on-site."
- xi. Subpart 3.1.I (Spills/Releases in Excess of Reportable Quantities), first bullet is amended to read: "you must provide notice to the Pueblo of Isleta Natural Resources Department (505-869-5748) and the National Response Center (NRC) (800-424-8802; in the Washington, DC, metropolitan area call 202-426-2675) in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 as soon as site staff have knowledge of the discharge; and"
- xii. Subpart 3.4.B (Attainment of Water Quality Standards After Authorization), is amended to add: "You must provide the Pueblo of Isleta, at the address listed in Subpart 2.2, with a copy of the EPA notification, modifications to your storm water controls, data and certification required by EPA."
- xiii. Subpart 6.1. (Submitting a Notice of Termination) is amended to add: Copies of all Notices of Termination submitted to EPA must also be sent concurrently to the Pueblo of Isleta at the following address in Subpart 2.2.
- xiv. Any correspondence, other than NOIs and NOTs, with the Pueblo of Isleta concerning storm water discharges authorized by this permit shall sent one of the addresses in Subpart 2.2.
- xv. Appendix G, Section 9, first sentence is amended to read: "You must allow the Pueblo of Isleta's Natural Resources Department, EPA, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:..."
- xvi. Appendix G, Section 12, subsections A- H are amended to require that when you must notify EPA of an event (e.g., planned changes, anticipated noncompliance, transfers, required reporting due to potential adverse effects or environmental impacts or other noncompliance matters), the Pueblo of Isleta must also be notified.
- xvii. Parties wishing to apply for an Equivalent Analysis Waiver (see Appendix D, Section C) must provide a copy of the waiver analysis to the Pueblo of Isleta at the address specified in Subpart 2.2 at the time it is submitted to EPA.
- c. Ohkay Owingeh (San Juan Pueblo). The following conditions apply only to discharges on Ohkay Owinegeh.

 Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pueblo at the time it is provided to the Environmental Protection Agency, at the following address. A copy of the Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.

Office of Environmental Affairs P.O. Box 717 Ohkay Owingeh, NM 87566

- ii. Appendix G, Section 10 (Monitoring and records), item D is amended to add: "All monitoring must be conducted in accordance with the Pueblo of San Juan's Quality Assurance Project Plan."
- d. *Pueblo of Nambé*. The following conditions apply only to discharges on the Pueblo of Nambé.
  - i. Copies of the Notice of Intent (NOI), Notice of Termination (NOT), and any analytical data must be provided to the Nambé Pueblo Department of Environment and Natural Resources (DENR) at the time it is provided to the Environmental Protection Agency, at the following address. A copy of the Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.
  - ii. All correspondence chall be sent to:

Pueblo of Nambé
Department of Environment and Natural Resources
Rt. 1 Box 117-BB
Santa Fe, NM 87506
505-455-2036 ext. 120 fax: 505-455-8873

- e. Pueblo of Picuris. The following conditions apply only to discharges on the Pueblo of Picuris.
  - i. Copies of the Notice of Intent (NOI), Notice of Termination (NOT), and any analytical data (e.g. Discharge Monitoring Reports, etc.) or any other reports must be provided to the Pueblo at the time it is provided to the Environmental Protection Agency. A copy of the Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.
  - ii. All correspondence shall be sent to:

Cordell Arellano
Director, Environment Department
Pueblo of Picuris
PO Box 158
Penasco, NM 87553

- f. Pueblo of Pojoaque. The following conditions apply only to discharges on the Pueblo of Pojoaque.
  - i. Copies of the Notice of Intent (NOI), Notice of Termination (NOT), and any analytical data (e.g. Discharge Monitoring Reports, etc.) or any other reports must be provided to the Pueblo at the time it is provided to the Environmental Protection Agency. A copy of documents related to the

Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.

ii. All correspondence shall be sent to:

Luke Mario Duran
Director, Environment Department
Pueblo of Pojoaque
5 West Gutierrez, Suite 2b
Santa Fe, NM 87506

- g. Pueblo of Taos. The following conditions apply only to discharges on the Pueblo of Taos.
  - i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Taos Pueblo Governor's Office and the Taos Pueblo Environmental Office at the same time as or prior to submission to the Environmental Protection Agency. A copy of the Storm Water Pollution Prevention Plan must be provided to Pueblo environmental personnel upon request.
  - ii. All correspondence for both the Taos Pueblo Governor's Office and the Taos Pueblo Environmental Office (same address) shall be sent to:

Governor/ Taos Pueblo Environmental Office (as applicable) Taos Pueblo PO Box 1846 Taos, NM 87571

- h. Pueblo of Sandia. The following conditions apply only to discharges on the Pueblo of Sandia.
  - i. A copy of the Notice of Intent (NOI) must be provided to the Pueblo at the same, (or prior to) the time it is submitted to the Environmental Protection Agency.
  - ii. The Pueblo of Sandia objects to use of Low Rainfall Erosivity Waivers (see Appendix D, Part A) for any small construction activities on the Pueblo, so this waiver will not be available for construction projects on the Pueblo. Permittees wishing to apply for all other waivers (see Appendix D) must provide a copy of the waiver certification or analysis to the Pueblo of Sandia Environment Department.
  - iii. The Storm Water Pollution Prevention Plan (SWPPP) must be available to the Pueblo of Sandia 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.
  - iv. Discharges are not authorized by this permit unless and until:
    - An accurate and complete NOI has been submitted to the Pueblo;
       AND

- b. An "Authorization to Proceed Letter" with any site specific mitigation requirements has been received from the Pueblo of Sandia following their review of the NOI and SWPPP and the permittee complies with all applicable requirements therein.
- v. 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 (or operational control is being passed to another operator). A short letter concurring that conditions for submittal of an NOT have met will be sent to the permittee by the Pueblo. Upon receipt of this letter, and provided the all other applicable requirements of the permit are met, the permittee will be eligible to submit and NOT.
- vi. You must telephone the Pueblo of Sandia Environment Department at (505) 867-4533 of any noncompliance that may endanger human health or the environment within ten (10) hours of becoming aware of the circumstance.
- vii. All corresondance shall be sent to:

Scott Bulgrin, Water Quality Manager Pueblo of Sandia 481 Sandia Loop Bernalillo, NM 87004

- i. Santa Clara Pueblo. The following conditions apply only to discharges on the Santa Clara Pueblo.
  - i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pueblo of Santa Clara Office of Environmental Affairs when they are submitted to the Environmental Protection Agency.
  - ii. A copy of the storm water pollution prevention plan must be made available to the Pueblo of Santa Clara Office of Environmental Affairs upon request.
  - iii. Construction site operators must notify the Pueblo of Santa Clara Office of Environmental Affairs by telephone at (505) 753-7326 of any non-compliance discharges that may endanger human health or the environment within twenty-fout (24) hours of becoming aware of the discharge.
  - iv. All correspondence shall be sent to:

Santa Clara Office of Environmental Affairs Taos Pueblo One Kee Street PO Box 580 Espanola, NM 87532 505-753-7326 Tel 505-747-2728 Fax

- j. *Pueblo of Tesuque*. The following conditions apply only to discharges on the Pueblo of Tesuque.
  - i. Copies of the Notice of Intent (NOI), Notice of Termination (NOT), and any analytical data (e.g. Discharge Monitoring Reports, etc.) or any other

- reports must be provided to the Pueblo at the time it is provided to the Environmental Protection Agency.
- ii. A copy of documents related to the Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.
- iii. All correspondence shall be sent to:

Ryan Swazo-Hinds Sr. Envirionmental Technician Pueblo of Tesuque Environment Department Rt. 42, Box 360-T Santa Fe. NM 87506

- 3. OKR10000F: 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).
  - a. In accordance with Oklahoma's Water Quality Standards (OAC 785:45-5-25), Subpart 1.3.C. (Limitations on Coverage) is modified to add paragraphs 8 and 9 as follows:
    - "8. 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. Discharges from any on-going activities such as sand and gravel mining or any other mineral mining are not authorized.
    - 9. 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 not be used to authorize discharges from support activities, including concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, or borrow areas."
- 4. OKR10000I: Indian country within the State of Oklahoma.
  - a. In order to protect downstream waters subject to the state of Oklahoma's Water Quality Standards (OAC 785:45-5-25) where receiving waters flow from Indian Country to State waters, Subpart 1.3.C. (Limitations on Coverage) is modified to add paragraphs 8 and 9 as follows:
    - "8. 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. Discharges from any on-going activities such as sand and gravel mining or any other mineral mining are not authorized.

- 9. 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 not be used to authorize discharges from support activities, including concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, or borrow areas."
- b. Pawnee Nation of Oklahoma. The following conditions apply only to discharges on the Pawnee Nation of Oklahoma.
  - i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pawnee Nation at the same time they are submitted to the Environmental Protection Agency.
  - ii. A copy of the storm water pollution prevention plan must be made available to Pawnee Nation Department of Environmental Conservation and Safety upon request.
  - iii. Construction site operators must notify the Pawnee Nation Department of Environmental Conservation and Safety by telephone at (918) 762-3655 immediately of any non-compliance with any provision of the permit conditions.
  - iv. All correspondence shall be sent to:

Pawnee Nation
Department of Environmental Conservation and Safety
PO Box 470
Pawnee, OK 74058

5. TXR10000F: Discharges in the State of Texas that are not under the authority of the Texas Commission on Environmental Quality, 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.

NOTE: This permit does not create an obligation to obtain a permit where such obligation does not already exist under federal statute or regulation. For more information on the Clean Water Act §§ 402(1)(2) permitting exemption for uncontaminated discharges of storm water from oil and gas exploration, production, processing, or treatment operations or transmission facilities, visit: <a href="http://cfpub.epa.gov/npdes/stormwater/oilgas.cfm">http://cfpub.epa.gov/npdes/stormwater/oilgas.cfm</a>

## D. Region 8

### 1. MTR10000I:

a. Confederated Salish and Kootenai Tribes. The following conditions only apply for projects on the Flathead Indian Reservation:

- i. Permittees must send a Stormwater Pollution Prevention Plan (SWPPP) to the Tribe at least 30 days before construction starts;
- ii. Before submitting a 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;
- iii. Permittees submitting electronic Notices of Intents (eNOI's) to USEPA must cc a copy to NRD-EPD@cskt.org; and
- iv. Written NOIs, SWPPPs, and NOTs shall be mailed to:

Confederated Salish and Kootenai Tribes National Resources Department Department Head P.O. Box 278 Pablo, MT 59855

Permittees may also submit their SWPPP and NOT to NRD-EPD@cskt.org

- b. Fort Peck Tribes. The following conditions only apply for projects on the Fort Peck Indian Reservation:
  - i. The permittee must send a copy of the Notice of Intent (NOI) and the Notice of Termination (NOT) to the Tribes at the same time that the NOI and NOT is submitted to EPA. Copies of the NOI and NOT shall be accepted either electronically or hard copy format and should be sent to:

Deb Madison Environmental Programs Manager Fort Peck Assiniboine & Sioux Tribes P.O. Box 1027 Poplar, MT 59255 Tel: 406.768.2389 Fax: 406.768.5606

E-mail: 2horses@nemont.net

- ii. A copy of the proposed SWPPP at the time of NOI/NOT submissions must be sent to the Tribes to ensure that upon closure of the site and/or activities all environmental commitments have been met.
- c. Northern Cheyenne Reservation. The following conditions only apply for projects on the Northern Cheyenne Indian Reservation:
  - i. Permittees must contact the Northern Cheyenne Environmental Protection Department at (406) 477-6506 prior to authorization to discharge under the general permit;
  - ii. The Tribe shall review and approve SWPPPs prior to approval; and
  - iii. The Tribe shall review and improve BMPs on site to ensure that Tribal water quality standards are protected.

### E. Region 9

- 1. ASR100000: The Island of American Samoa
  - a. Discharges authorized by the general permit shall meet all applicable American Samoa water quality standards.
  - b. Permittees discharging under the general permit shall comply with all conditions of the permit.
- 3. AZR10000I: Indian country lands within the State of Arizona, including Navajo Reservation lands in New Mexico and Utah
  - a. White Mountain Apache Tribe. The following condition applies only for projects on the White Mountain Apache Reservation: All NOIs for proposed stormwater discharge coverage shall be provided to the following address:

Tribal Environmental Planning Office P.O. Box 2109
Whiteriver, AZ 85941

- b. Hoopa Valley Tribe. The following conditions apply only for projects on the Hoopa Valley Reservation:
  - i. All notices of intent submitted for stormwater discharges under the general permit in Hoopa Valley Indian Reservation (HVIR) shall be submitted to the Tribal Environmental Protection Agency (TEPA); and
  - ii. All pollution prevention plans for stormwater discharge in HVIR shall be submitted to TEPA for review and approval.
- c. 29 Palms Band of Mission Indians. The following conditions apply only for projects on the 29 Palms Band of Mission Indians Reservation:
  - i. The 29 Palms Tribal EPA is informed of any future changes made to the proposed CGP;
  - ii. For each permitted activity, the U.S. EPA will ensure that all terms and conditions of the proposed CGP are complied with;
  - iii Notices of intent must be submitted to the 29 Palms Tribal EPA for review, comment and tracking:
  - iv. Copies of stormwater pollution prevention plans (SWPPPs) and supporting Best Management Practices (BMPs) must be submitted to the 29 Palms Tribal EPA for review and compliance;
  - v. Copies of all monitoring reports must be provided to the 29 Palms Tribal EPA;
  - vi. Depending on the permitted activity, the 29 Palms Tribal EPA reserves the right to stipulate additional monitoring requirements; and
  - vii. In order to meet the requirements of Tribal law, including water quality standards, each of the conditions cited in the proposed CGP and the Twenty-Nine Palms Band of Mission Indians certification shall not be made any less stringent.

- d. Hualapai Tribe. The following conditions apply only for projects 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 the Water Resource Program through the Tribal Chairman for review and approval, P.O. Box 179, Peach Springs, AZ 86434.
- e. Pyramid Lake Paiute Tribe. The following conditions apply only for projects on the Pyramid Lake Paiute Reservation:
  - i. All notices of intent (NOIs) must be submitted to the Tribe for review, comments and tracking;
  - ii. copies of all Stormwater Pollution Prevention Plan (SWPPPs) and supporting Best Management Practices (BMPs) must be submitted to the Pyramid Lake Paiute Tribe for review and concurrence;
  - iii. copies of the criteria for Effluent Limitations Guidelines (ELGs) and the criteria for proposed Qualifying Local Programs (QLPs) to be used for sediment and erosion control pursuant to 40 CFR 122.44(s) be provided to the Pyramid Lake Paiute Tribe; and
  - iv. copies of all monitoring reports must be provided to the Pyramid Lake Paiute Tribe.
- 4. MPR100000: Commonwealth of the Northern Mariana Islands (CNMI)
  - a. An Earthmoving and Erosion Control Permit shall be obtained from the CNMI DEO prior to any construction activity covered under the NPDES general permit.
  - b. All conditions and requirements set forth in the USEPA NPDES general permit for discharges from large and small construction must be complied with.
  - c. A SWPPP for storm water discharges from construction activity must be approved by the Director of the CNMI DEQ prior to the submission of the NOI to USEPA. The CNMI address for the submittal of the SWPPP for approval is:

Commonwealth of the Northern Mariana Islands Office of the Governor Director, Division of Environmental Quality (DEQ) P.O. Box 501304 C.K. Saipan, MP 96950-1304

- d. An NOI to be covered by the general permit for discharges from large and small construction sites must be submitted to CNMI DEQ (use above address) and USEPA, Region 9, in the form prescribed by USEPA, accompanied by a SWPPP approval letter from CNMI DEQ.
- e. The NOI must be postmarked seven (7) calendar days prior to any storm water discharges and a copy must be submitted to the Director of CNMI DEQ (use above address) no later than seven (7) calendar days prior to any stormwater discharges.

- f. Copies of all monitoring reports required by the NPDES general permit must be submitted to CNMI DEQ (use above address).
- g. In accordance with section 10.3(h) and (i) of the CNMI water quality standards, CNMI DEQ reserves the right to deny coverage under the general permit and to require submittal of an application for an individual NPDES permit based on a review of the NOI or other information made available to the Director.

### F. Region 10

- 1. AKR100000: The State of Alaska, except Indian country
  - a. For Storm Water Pollution Prevention Plans
    - i. Operators of construction projects disturbing at least one acre of land but less than five acres of land shall submit a copy of the Notice of Intent (NOI) to the Alaska Department of Environmental Conservation (ADEC) at the same time it is submitted to the EPA. Submittals to ADEC shall be made to the following address

Alaska Department of Environmental Conservation Wastewater Discharge/Storm Water 555 Cordova St.

Anchorage, AK 99501.

- ii. Operators of construction projects that disturb five or more acres of land and that are located outside the areas of the local governments described in numbers iii, iv, v, or vi below, shall submit a copy of the Storm Water Pollution Prevention Plan (SWPPP) and a copy of the NOI to ADEC for review. The SWPPP shall be accompanied by the state-required plan review fee (see 18 AAC 72.955).
- iii. Within the Municipality of Anchorage
  - (1) Operators of construction projects disturbing one or more acres of land shall submit a copy of the SWPPP to either ADEC or the Municipality based on the project type and operator as shown in the following table

Project Type	Submit SWPPP to
Government (federal, state, municipal) road projects and other	
government transportation projects such as ports, railroads or airports	ADEC
Utility projects for which the utility is initiating the work	Municipality
Work that requires a Building Permit	Municipality
Non-publicly funded transportation projects	Municipality

(2) Submittal of the SWPPP to the Municipality should be made before or at the same time the NOI is submitted to the EPA and ADEC and shall be accompanied by any Municipality-required fee. Copies of the SWPPP shall be submitted to the Municipality at the following address

Municipality of Anchorage
Office of Planning Development and Public Works
4700 South Elmore Rd.
PO Box 196650
Anchorage, AK 99519-6650

- (3) Submittals to ADEC shall include a copy of the SWPPP and a copy of the NOI for review and shall be accompanied by the state-required plan review fee (see 18 AAC 72.995).
- iv. Within the urbanized area boundary of the Fairbanks North Star Borough check with the Borough for the latest requirements.

Fairbanks North Star Borough

Department of Public Works

PO Box 71267

Fairbanks, AK 99707

- v. Within the urbanized area boundary of the City of Fairbanks
  - (1) Operators of privately-funded construction projects disturbing one or more acres of land shall submit a copy of the SWPPP to the City of Fairbanks.
  - (2) Submittal of the SWPPP to the City of Fairbanks should be made before or at the same time the NOI is submitted to the EPA and ADEC and shall be accompanied by any City-required fee. Copies of the SWPPP shall be submitted to the City of Fairbanks at the following address

City of Fairbanks

**Engineering Division** 

800 Cushman St

Fairbanks, AK 99701

- (3) Operators of publicly-funded projects disturbing one or more acres of land shall submit a copy of the SWPPP and a copy of the NOI to ADEC for review, and shall be accompanied by the state-required plan review fee (see 18 AAC 72.995).
- vi. Within the urbanized area boundary of the City of North Pole
  - (1) Operators of privately-funded construction projects disturbing one or more acres of land shall submit a copy of the SWPPP to the City of North Pole.
  - (2) Submittal of the SWPPP to the City of North Pole should be made before or at the same time the NOI is submitted to the EPA and ADEC and shall be accompanied by any City-required fee. Copies of the SWPPP shall be submitted to the City of North Pole at the following address

City of North Pole

Department of Public Works

125 Snowman Lane

North Pole, AK 99705

- (3) Operators of publicly-funded projects disturbing one or more acres of land shall submit a copy of the SWPPP and a copy of the NOI to ADEC for review, and shall be accompanied by the state-required plan review fee (see 18 AAC 72.995).
- vii. For hardrock mines that are designed to process 500 or more tons per day and intend to file a Notice of Intent to begin construction under this permit

- (1) The operator shall submit their SWPPP to ADEC for review at least 90 days before the start of construction,
- (2) Representatives of the operator and the prime site construction contractor shall meet with ADEC representatives in a preconstruction conference at least 20 days before the start of construction to discuss the details of the SWPPP and stormwater management during construction,
- (3) The operator shall submit to ADEC addendums to the SWPPP that address any planned physical alterations, additions to the permitted facility, or unanticipated conditions that arise during planned construction that could significantly change the nature, or increase the quantity, of pollutants discharged from the facility, and
- (4) The operator shall have at least one person on-site during construction who is qualified and trained in the principles and practices of erosion and sediment control and has the authority to direct the maintenance of storm water best management practices.
- b. For Post-Construction (Permanent) Storm Water Control Measures (Section 3.1.E [Post-Construction Stormwater Management] of the CGP)
  - i. Operators of construction projects who construct, alter, install, modify, or operate any part of a storm water treatment system and are located outside the Municipality of Anchorage, shall submit a copy of the engineering plans to ADEC for review at the address given above (see 18 AAC 72.600).
  - ii. Operators of construction projects who construct, alter, install, modify, or operate any part of a storm water treatment system and are located inside the Municipality of Anchorage, shall submit a copy of the engineering plans to the respective government agency based on project type, as indicated in the table in a.iii. (1) above, for review at the addresses given in a.i. or a.iii. (2) above.
- 2. IDR100000: The State of Idaho, except Indian country
  - a. 303(d)-listed Water Bodies with Approved TMDLs.

    Discharges of storm water will be consistent with load allocations established by the applicable TMDL.
  - b. 303(d)-listed Water Bodies without Approved TMDLs (High Priority)
    If a TMDL has not been established for a high priority 303(d)-listed water body,
    then discharges of storm water may not cause an increase in the total load of listed
    pollutant(s) in the receiving water body.
  - c. 303(d)-listed Water Bodies without Approved TMDLs (Medium or Low Priority) If a TMDL has not been established for a medium or low priority 303(d)-listed water body, then best management practices shall be employed as necessary to prohibit further impairment of the designated or existing beneficial uses in the receiving water body.
  - d. Best Management Practices (BMPs)

    BMPs must be designed, implemented, and maintained by the permittee to fully protect and maintain the beneficial uses of the receiving water body. The permittee should select appropriate BMPs that are either authorized by the

- appropriate designated agency as defined in Idaho Water Quality Standards . (IDAPA 58.01.02), recommended in IDEQ's *Catalog of Stormwater BMPs for Idaho Cities and Counties*, or recommended by other local government entities or guidance documents.
- e. Equivalent Analysis Waiver Use of the "Equivalent Analysis Waiver" in Appendix D of the permit is not authorized.
- f. Operators may contact the Idaho Department of Environmental Quality regional office nearest the construction activity for more information about impaired waterways:

# Boise Regional Office:

1445 N. Orchard

Boise ID 83706-2239

Tel: (208)373-0550

Fax: (208)373-0287

# Grangeville Satellite Office:

300 W. Main

Grangeville ID 83530

Tel: (208)983-0808

Fax: (208)983-2873

### Pocatello Regional Office:

444 Hospital Way #300

Pocatello ID 83201

Tel: (208)236-6160

Fax: (208)236-6168

### McCall Satellite Office:

502 N. 3<sup>rd</sup> Street #9A

P.O. Box 4654

McCall, ID 83638

Tel: (208)634-4900

Fax: (208)634-9405

### Idaho Falls Regional Office:

900 N. Skyline, Suite B

Idaho Falls, ID 83402

Tel: (208)528-2650

Fax: (208)528-2695

## Twin Falls Regional Office:

1363 Fillmore

Twin Falls, ID 83301

Tel: (208)736-2190

Fax: (208)736-2194

Coeur d'Alene Regional Office:

2110 Ironwood Parkway Coeur d'Alene ID 83814

Tel: (208)769-1422 Fax: (208)769-1404

Lewiston Regional Office:

1118 "F" Street Lewiston, ID 83501 Tel: (208)799-4370

Toll Free: 1-877-541-3304

Fax: (208)799-3451

3. ORR10000I: Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9):

a. Confederated Tribes of the Umatilla Indian Reservation.

The following conditions apply only for projects within the exterior boundaries of the Umatilla Indian Reservation:

- i. The operator shall be responsible for achieving compliance with the Confederated Tribes of the Umatilla Indian Reservation's (CTUIR) Water Quality Standards.
- ii. The operator must submit all Storm Water Pollution Prevention Plans required under this general 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.
- iii. The operator must submit a copy of the Notice of Intent (NOI) to be covered by this general permit to the CTUIR Water Resources Program at the address below, at the same time it is submitted to EPA.
- iv. The operator shall be responsible for reporting an exceedance of 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

P.O. Box.638

Pendleton, OR 97801

(541) 966-2420

v. At least 45 days prior to beginning any discharge activities, the operator must submit a copy of the Notice of Intent to be covered under this general permit and an assessment of whether the undertaking has the potential to affect historic properties to CTUIR Tribal Historic Preservation Office (THPO) at the address below. If the project has potential to affect historic properties, the operator must define the area of potential effect (APE). The operator must provide the THPO at least 30 days to comment on the APE as defined.

vi. If the project is an undertaking, the operator must conduct a cultural resource investigation. All fieldwork must be conducted by qualified personnel (as outlined by the Secretary of the Interior's Standards and Guidelines found at <a href="http://www.nps.gov/history/local-law/arch\_stnds\_0.htm">http://www.nps.gov/history/local-law/arch\_stnds\_0.htm</a>). All fieldwork must be documented using Oregon Reporting Standards (as outlined at <a href="http://egov.oregon.gov/OPRD/HCD/ARCH/arch\_pubsandlinks.shtml">http://egov.oregon.gov/OPRD/HCD/ARCH/arch\_pubsandlinks.shtml</a>). The resulting report must be submitted to the THPO for concurrence before any ground disturbing work can occur. The operator must provide the THPO at least 30 days to review and respond to all reports.

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.

Confederated Tribes of the Umatilla Indian Reservation Cultural Resources Protection Program Tribal Historic Preservation Office P.O. Box 638 Pendleton, OR 97801 (541) 966-2340

b. Confederated Tribes of Warm Springs.

The following conditions apply only for projects on the Warm Springs Indian Reservation:

- i. 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.
- ii. All activities covered by this NPDES general permit must follow all applicable land management and resource conservation requirements specified in the IRMP.
- iii. 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

- 4. WAR10000F: Federal Facilities in the State of Washington, except those located on Indian Country
  - a. 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.

- b. 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.
- c. Sampling & Numeric Effluent Limitations For Sites Discharging to Certain Waterbodies on the 303(d) List or with an Applicable TMDL
  - i. 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 section.
    - (1) 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 Department of Ecology upon request.
    - (2) The operator must notify EPA when the discharge turbidity or discharge pH exceeds the water quality standards as defined in Parts 10.F.4.d.ii and e.ii below, in accordance with the reporting requirements of Part G.12.F of this permit. All reports must be submitted to EPA at the following address:

U.S EPA Region 10

NPDES Compliance Unit - Attn: Federal Facilities Compliance Officer 1200 6th Avenue, Suite 900

OCE-133

Seattle, WA 98101

(206) 553-1846

ii. All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current listing by Ecology of impaired waters that exists on November 16, 2005, or the date when the operator's complete NOI is received by EPA, whichever is later.

Parameter identified		Analytical		Water Quality
in 303(d) listing				Standard
Turbidity	Turbidity/NTU	SM2130 or	Weekly, if	If background is 50
Fine Sediment	,	EPA180.1	discharging	NTU or less: 5 NTU
Phosphorus		,		over background; or
				If background is
				more than 50 NTU:
			•	10% over
	•			background
High pH	pH/Standard	pH meter	Weekly, if	In the range of
	Units	•	discharging	6.5 – 8.5

- d. 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; and
- (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 Alternatively, discharge turbidity may be measured at the point where the discharge leaves the construction site, rather than in the receiving waterbody.
- ii. 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 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 7 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 10 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.
- e. 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 at 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).
- f. Sampling & Limitations For Sites Discharging to TMDLs
  - i. Discharges to 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.
    - (1) 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.
      - a. Discharges shall be sampled weekly, or as otherwise specified by the TMDL, to evaluate compliance with the specific waste load allocations or requirements.
      - b. 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.
    - (2) 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.
    - (3) 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.
    - (4) Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.
  - ii. Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which has been completed and approved by EPA prior to November 16, 2005, or prior to the date the operator's complete NOI is received by EPA, whichever is later.
    - Information on impaired waterways is available from the Department of Ecology website at:
    - http://www.ecy.wa.gov/programs/wq/stormwater/construction/impaired.html or by phone: 360-407-6460.
- 5. WAR10000I: Indian country within the State of Washington
  - a. Kalispel Tribe.

The following conditions apply only for projects on the Kalispel Reservation:

- i. The permittee shall be responsible for achieving compliance with the Kalispel Tribe's Water Quality Standards.
- ii. The permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the Kalispel Tribe Natural Resources Department at the same time as it submitted to the U.S. EPA
- iii. The permittee shall submit all Storm Water Prevention Plans (SWPP) to the Kalispel Tribe Natural Resources Department thirty (30) days prior to beginning any discharge activities for review.
- iv. Prior to any land disturbing activities on the Kalispel Indian Reservation and its dependent communities, the permittee shall obtain a cultural resource clearance letter from the Kalispel Natural Resource Department.
- v. All tribal correspondence pertaining to the general permit for discharges of construction stormwater shall be sent to:

Kalispel Tribe Natural Resources Department PO Box 39 Usk, WA 99180

#### b. Lummi Nation

The following conditions apply only for projects on the Lummi Reservation:

- i. Pursuant to Lummi Code of Laws (LCL) 17.05.020(a), the operator must 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.
- ii. Pursuant to LCL 17.05.020(a), each operator shall develop and submit a Storm Water Pollution Prevention Plan to the Lummi Water Resources Division for review and approval by the Water Resources Manager prior to beginning any discharge activities.
- iii. 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 through 17 LAR 07.210).
- iv. Each operator shall submit a copy of the Notice of Intent to the Lummi Water Resources Division at the same time it is submitted to the Environmental Protection Agency (EPA).
- v. Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Lummi Natural Resources Department ATTN: Water Resources Manager 2616 Kwina Road Bellingham, WA 98226

vi. Refer to the Lummi Nation website at <a href="http://www.lummi-nsn.gov">http://www.lummi-nsn.gov</a> to review a copy of Title 17 of the Lummi Code of Laws and the references upon which the conditions identified above are based.

# c. Makah Tribe

The following conditions apply only for projects on the Makah Reservation:

- i. The operator shall be responsible for achieving compliance with the Makah Tribe's Water Quality Standards.
- ii. 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.
- iii. 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.
- iv. Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Makah Fisheries Water Quality and Habitat Division PO Box 115 Neah Bay, WA 98357

d. Puyallup Tribe of Indians.

The following conditions apply only to stormwater discharges from large and small construction activities that result in a total land disturbance of equal to or greater than one acre, where those discharges enter surface waters of the Puyallup Tribe:

- i. 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 affect water quality. The antidegradation review will be consistent with the Tribe's Antidegradation Implementation Procedures.
- ii. 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.
- iii. 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

- iv. All supporting documentation and certifications in the NOI related to coverage under the general permit for Endangered Species Act purposes shall be submitted to the Puyallup Tribal Natural Resources Department for review.
- v. If EPA requires coverage under an individual or alternative permit, the permittee shall submit a copy of the permit to the Puyallup Tribal Natural Resources Department at the address listed above.
- vi. The permittee shall submit all stormwater pollution prevention plans to the Puyallup Tribal Natural Resources Department for review and approval prior to beginning any activities resulting in a discharge to tribal waters.

# Appendix A - Definitions and Acronyms Definitions

"Arid Areas" means areas with an average annual rainfall of 0 to 10 inches.

"Best Management Practices" (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practice to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

"Commencement of Construction Activities" means the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction-related activities (e.g., stockpiling of fill material).

"Control Measure" as used in this permit, refers to any BMP or other method used to prevent or reduce the discharge of pollutants to waters of the United States.

"CWA" means the Clean Water Act or the Federal Water Pollution Control Act, 33 U.S.C. section 1251 et seq.

"Discharge" when used without qualification means the "discharge of a pollutant."

"Discharge of Stormwater Associated with Construction Activity" as used in this permit, refers to a discharge of pollutants in stormwater from areas where soil disturbing activities (e.g., clearing, grading, or excavation), 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.

"Eligible" means qualified for authorization to discharge stormwater under this general permit.

"Facility" or "Activity" means any "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

"Federal Facility" means any buildings, installations, structures, land, public works, equipment, aircraft, vessels, and other vehicles and property, owned by, or constructed or manufactured for the purpose of leasing to, the Federal government.

"Final Stabilization" means that:

- 1. All soil disturbing activities at the site have been completed and either of the two following criteria are met:
  - a. a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background

- vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or
- b. equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.
- 2. When background native vegetation will cover less than 100 percent of the ground (e.g., arid areas, beaches), the 70 percent coverage criteria is adjusted as follows: if the native vegetation covers 50 percent of the ground, 70 percent of 50 percent (0.70 X 0.50 = 0.35) would require 35 percent total cover for final stabilization. On a beach with no natural vegetation, no stabilization is required.
- 3. In arid and semi-arid areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:
  - a. Temporary erosion control measures (e.g., degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by you,
  - b. The temporary erosion control measures are selected, designed, and installed to achieve 70 percent vegetative coverage within three years.
- 4. For individual lots in residential construction, final stabilization means that either:
  - a. The homebuilder has completed final stabilization as specified above, or
  - b. The homebuilder has established temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for, and benefits of, final stabilization.
- 5. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land, staging areas for highway construction, etc.), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to "water of the United States," and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization criteria (1) or (2) or (3) above.

"Indian country" is defined at 40 CFR §122.2 to mean:

- 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.

"Large Construction Activity" is defined at 40 CFR §122.26(b)(14)(x) and incorporated here by reference. A large construction activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than five acres of land or will disturb less than five acres 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 five acres. Large

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.

"Municipal Separate Storm Sewer System" or "MS4" is defined at 40 CFR §122.26(b)(8) to mean 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.

"New Project" means the "commencement of construction activities" occurs after the effective date of this permit.

"Ongoing Project" means the "commencement of construction activities" occurs before the effective date of this permit.

"Operator" for the purpose of this permit and in the context of stormwater associated with construction activity, means 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 which are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions). 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.

"Owner or operator" means the owner or operator of any "facility or activity" subject to regulation under the NPDES program.

"Permitting Authority" means the United States Environmental Protection Agency, EPA, a Regional Administrator of the Environmental Protection Agency or an authorized representative.

"Point Source" means 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" is 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.

### "Project Area" means:

- 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: 1. 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 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 BMPs will be constructed and operated, including any areas where stormwater flows to and from BMPs. (Example: Where a stormwater retention pond would be built.)
- The areas upstream and /or downstream from construction activities discharges into a stream segment that may be affected by the said discharges. (Example: Where sediment discharged to a receiving stream settles downstream and impacts a breeding area of a listed aquatic species.)
- "Receiving water" means the "Water of the United States" as defined in 40 CFR §122.2 into which the regulated stormwater discharges.
- "Runoff coefficient" means the fraction of total rainfall that will appear at the conveyance as runoff.
- "Semi-Arid Areas" means areas with an average annual rainfall of 10 to 20 inches.
- "Site" means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

"Small Construction Activity" is 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.

"Stormwater" means stormwater runoff, snow melt runoff, and surface runoff and drainage.

"Stormwater Discharge-Related Activities" as used in this permit, include: activities that cause, contribute to, or result in stormwater point source pollutant discharges, including but not limited to: excavation, site development, grading and other surface disturbance activities; and measures to control stormwater including the siting, construction and operation of BMPs to control, reduce or prevent stormwater pollution.

"Total Maximum Daily Load" or "TMDL" means the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If a 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.

"Waters of the United States" is as defined at 40 CFR §122.2.

"Wetland" means 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.

## **ACRONYMS**

BMP - Best Management Practices

CGP - Construction General Permit

CFR - Code of Federal Regulations

CWA - Clean Water Act

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

NHPA - National Historic Preservation Act

NMFS - United States National Marine Fisheries Service

NOI - Notice of Intent

NOT - Notice of Termination

NPDES - National Pollutant Discharge Elimination System

POTW - Publicly Owned Treatment Works

SHPO - State Historic Preservation Officer

SWPPP - Stormwater Pollution Prevention Plan

THPO - Tribal Historic Preservation Officer

TMDL - Total Maximum Daily Load

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:

## 1. EPA Region 1: CT, MA, ME, NH, RI, VT

US EPA, Region 01 Office of Ecosystem Protection NPDES Stormwater Program 1 Congress St, Suite 1100 (CMU) Boston, MA 02114-2023

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
MAR100000	Commonwealth of Massachusetts (except Indian country)
MAR10000I	Indian country within the State of Massachusetts
CTR10000I	Indian country within the State of Connecticut
NHR100000	State of New Hampshire
RIR10000I	Indian country within the State of Rhode Island
VTR10000F	Federal Facilities in the State of Vermont

### 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 ÉPA, 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. NYR10000I Areas of Coverage/Where EPA is Permitting Authority

Indian country within the State of New York

PRR100000

The Commonwealth of Puerto Rico

## 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

**DCR100000** 

The District of Columbia

**DER10000F** 

Federal Facilities in the State of Delaware

## 4. EPA Region 4: AL, FL, GA, KY, MS, NC, SC, TN

US EPA, Region 04
Water Management Division
NPDES Stormwater Program
61 Forsyth St SW
Atlanta, GA 30303-3104

Coverage Not Available. Construction activities in Region 4 must obtain permit coverage under an alternative permit.

### 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, except the Grand
•	Portage Band of Chippewa
WIR10000I	Indian country within the State of Wisconsin, except the Sokaogon
	Chippewa (Mole Lake) Community.

# 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
LAR10000I	Indian country within the State of Louisiana
NMR100000	The State of New Mexico, except Indian country
NMR10000I	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.
OKR10000I	Indian country within the State of Oklahoma
OKR10000F	Discharges in the State of Oklahoma that are not under the
1	authority of the Oklahoma Department of Environmental Quality,
4	including activities associated with oil and gas exploration,
1	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).
TXR10000F	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.
TXR10000I	Indian country within the State of Texas.

# 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
IAR10000I	Indian country within the State of Iowa
KSR10000I	Indian country within the State of Kansas
NER10000I	Indian country within the State of Nebraska, except Pine Ridge
	Reservation lands (see Region 8)

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
COR10000F	Federal Facilities in the State of Colorado, except those located on
	Indian country
COR10000I	Indian country within the State of Colorado, as well as the portion
	of the Ute Mountain Reservation located in New Mexico
MTR10000I	Indian country within the State of Montana
NDR10000I	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)
SDR10000I	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)
UTR10000I	Indian country within the State of Utah, except Goshute and
	Navajo Reservation lands (see Region 9)
WYR10000I	Indian country within the State of Wyoming

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.

<u>Permit No.</u>	Areas of coverage/where EPA is Permitting Authority	
ASR100000	The Island of American Samoa	
<b>AZR10000I</b>	Indian country within the State of Arizona, as well as Navajo	
	Reservation lands in New Mexico and Utah	
CAR10000I	Indian country within the State of California	
GUR100000	The Island of Guam	
JAR100000	Johnston Atoll	
MWR100000	Midway Island and Wake Island	
MPR100000	Commonwealth of the Northern Mariana Islands	
NVR10000I	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	

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 The State of Alaska, except Indian country AKR100000 AKR10000I Indian country within the state of Alaska The State of Idaho, except Indian country IDR100000 Indian country within the State of Idaho, except Duck Valley **IDR10000I** Reservation lands (see Region 9) **ORR10000I** Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9) Federal Facilities in the State of Washington, except those located **WAR10000F** on Indian country WAR10000I Indian country within the State of Washington

## Appendix C - Endangered Species Act Review Procedures

You must meet at least one of the six criteria in Part 1.3.C.6 to be eligible for coverage under this permit. You must follow the procedures in this Appendix to assess the potential effects of stormwater discharges and stormwater discharge-related activities on listed species and their critical habitat. When evaluating these potential effects, operators must evaluate the entire project area.

For purposes of this Appendix, the term "project area" is inclusive of the term "Action Area." Action area is defined in 50 CFR §402.02 as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action.

This includes areas beyond the footprint of the construction area that may be affected by stormwater discharges and stormwater discharge related activities. "Project area" is defined in Appendix A.

(Operators who are eligible and able to certify eligibility under Criterion B, C, D, or F of Part 1.3.C.6 because of a previously issued ESA section 10 permit, a previously completed ESA section 7 consultation, or because the operator's activities were already addressed in another operator's certification of eligibility may proceed directly to Step Four.)

# Step One: Determine if Listed Threatened or Endangered Species are Present On or Near Your Project Area

You must determine, to the best of your knowledge, whether listed species are located on or near your project area. To make this determination, you should:

- Determine if listed species are 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. Visit <a href="http://www.epa.gov/npdes/stormwater/cgp">http://www.epa.gov/npdes/stormwater/cgp</a> to find the appropriate site for your state or check with your local office. In most cases, these lists allow you to determine if there are listed species in your county or township.
- If there are listed species in your county or township, check to see if critical habitat has been designated and if that area overlaps or is near your project area.
- Contact your local FWS, NMFS, or State or Tribal Heritage Center to determine if the listed species could be found on or near your project area and if any critical habitat areas have been designated that overlap or are near your project area. Critical habitat areas maybe designated independently from the listed species for your county, so even if there are no listed species in your county or township, you must still contact one of the agencies mentioned above to determine if there are any critical habitat areas on or near your project area.

You can also find critical habitat designations and associated requirements at 50 CFR Parts 17 and 226. <a href="http://www.access.gpo.gov">http://www.access.gpo.gov</a>.

- If there are no listed species in your county or township, no critical habitat areas on or near your project area, or if your local FWS, NMFS, or State or Tribal Heritage Center indicates that listed species are not a concern in your part of the county or township, you may check box A on the Notice of Intent Form.
- If there are listed species and if your local FWS, NMFS, or State or Tribal Heritage Center indicates that these species could exist on or near your project area, you will need to 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 on or near the project
    area and whether there are likely adverse effects to such species. Biological
    surveys are frequently performed by environmental consulting firms. A biological
    survey may in some cases be useful in conjunction with Steps Two, Three, or
    Four of these instructions.
  - Conduct an environmental assessment under the National Environmental Policy Act (NEPA). Such reviews may indicate if listed species are in proximity to the project area. Coverage under the CGP does not trigger such a review because the CGP does not regulate new sources (that is, dischargers subject to New Source Performance Standards under section 306 of the Clean Water Act), and is thus statutorily exempted from NEPA. See CWA section 511(c). However, some construction activities might require review under NEPA for other reasons such as federal funding or other federal involvement in the project.
  - If listed threatened or endangered species or critical habitat are present in the project area, you must look at impacts to species and/or habitat when following Steps Two through Four. 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.

Step Two: Determine if the Construction Activity's Stormwater Discharges or Stormwater Discharge- Related Activities Are Likely to Adversely Affect Listed Threatened or Endangered Species or Designated Critical Habitat

To receive CGP coverage, you must assess whether your stormwater discharges or stormwater discharge related activities is likely to adversely affect listed threatened or endangered species or designated critical habitat that are present on or near your project area.

Potential adverse effects from stormwater discharges and stormwater 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 BMPs, 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 must contact the appropriate office of the FWS, NMFS or Natural Heritage Center for assistance. If adverse effects are not likely, then you may check box E on the NOI form and apply for coverage under the CGP. If the discharge may adversely effect listed species or critical habitat, you must follow Step Three.

Step Three: Determine if Measures Can Be Implemented to Avoid Adverse Effects If you make a preliminary determination that adverse effects are likely to occur, you can still receive coverage under Criterion E of Part 1.3.C.6 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 BMPs, or by changing the "footprint" of the construction activity. You should contact the FWS and/or NMFS to see what appropriate measures might be suitable to avoid or eliminate the likelihood of adverse impacts to listed species and/or critical habitat. (See 50 CFR §402.13(b)). This can entail the initiation of informal consultation with the FWS and/or NMFS (described in more detail in Step Four).

If you adopt measures to avoid or eliminate adverse affects, you must continue to abide by those measures for the duration of the construction project and coverage under the CGP. These measures must be described in the SWPPP and are enforceable CGP conditions and/or conditions for meeting the eligibility criteria in Part 1.3. If appropriate measures to avoid the likelihood of adverse effects are not available, you must follow Step Four.

## Step Four: Determine if the Eligibility Requirements of Criterion B, C, D, or F of Part 1.3.C.6 Can Be Met

Where adverse effects are likely, 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 B, C, D, or F of Part 1.3.C.6 of the CGP. These criteria are as follows:

1. An ESA Section 7 Consultation Is Performed for Your Activity (See Criterion B or C of Part 1.3.C.6 of the CGP).

Formal or informal ESA section 7 consultation is performed with the FWS and/or NMFS that addresses the effects of your stormwater discharges and stormwater discharge-related activities on federally-listed and threatened species and designated critical habitat. FWS and/or NMFS may request that consultation take place if any actions are identified that may affect listed species or 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.

Most consultations are accomplished through informal consultation. By the terms of this CGP, EPA has automatically designated operators as non-federal representatives for the purpose of conducting informal consultations. See Part 1.3.C.6 and 50 CFR §402.08 and §402.13. 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, estuaries, and anadromous species. Operators should also be aware that while formal section 7 consultation provides protection from incidental takings liability, informal consultation does not.

2. An Incidental Taking Permit Under Section 10 of the ESA is Issued for the Operators Activity (See Criterion D of Part 1.3.C.6 of the CGP).

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 stormwater discharge(s) and stormwater 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 (<a href="http://www.fws.gov">http://www.fws.gov</a> and <a href="http://www.nmfs.noaa.gov">http://www.nmfs.noaa.gov</a>) or by contacting the appropriate FWS and NMFS regional office.

3. You are Covered Under the Eligibility Certification of Another Operator for the Project Area (See Criterion F of Part 1.3.C.6 of the CGP).

Your stormwater discharges and stormwater discharge-related activities were already addressed in another operator's certification of eligibility under Criteria A through E of Part 1.3.C.6 which also included your project area. For example, a general contractor or developer may have completed and filed an NOI for the entire project area with the necessary Endangered Species Act certifications (criteria A-E), subcontractors may then rely upon that certification and must comply with any conditions resulting from that process. By certifying eligibility under Criterion F of Part 1.3.C.6, you agree to comply with any measures or controls upon which the other operator's certification under Criterion F of Part 1.3.C.6 is discussed in more detail in the Fact Sheet that accompanies this permit.

You must comply with any terms and conditions imposed under the eligibility requirements of Criterion A through F to ensure that your stormwater discharges and stormwater discharge-related activities are protective of listed species and/or critical habitat. Such terms and conditions must be incorporated in the project's SWPPP. If the eligibility requirements of Part 1.3.C.6 cannot be met, then you are not eligible for coverage under the CGP. In these instances, you may consider applying to EPA for an individual permit.

#### Appendix D - 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.

#### A. 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 the 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: <a href="www.epa.gov/npdes/stormwater/lew">www.epa.gov/npdes/stormwater/lew</a>. 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 may submit a rainfall erosivity waiver electronically via EPA's eNOI system (<a href="https://www.epa.gov/npdes/eNOI">www.epa.gov/npdes/eNOI</a>) 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 operators;
- 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 G, Subsection 11, that 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: (<a href="http://www.epa.gov/npdes/pubs/construction\_waiver\_form.pdf">http://www.epa.gov/npdes/pubs/construction\_waiver\_form.pdf</a>). Paper copies of the form must be sent to one of the addresses listed in Part D of this section.

Note: If the R factor is 5 or greater, you cannot apply for the rainfall erosivity waiver, and must apply for permit coverage as per Subpart 2.1 of the construction general permit, unless you qualify for the Water Quality Waiver as described 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 the site SWPPP. 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 five (5) or above, you must submit an NOI as per Part 2.

#### B. TMDL Waiver

This waiver is available if EPA has established or approved a TMDL that addresses the pollutant(s) of concern 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 <a href="http://www.epa.gov/owow/tmdl/">http://www.epa.gov/owow/tmdl/</a> 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 water body(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 G, Subsection 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. Equivalent Analysis Waiver

This waiver is available for non-impaired waters only. The operator can develop an equivalent analysis that determines allocations for his 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 water bodies 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 G, Subsection 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.

#### D. 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/eNOI) must be sent to one of the following addresses:

Regular U.S. Mail Delivery
EPA Stormwater Notice Processing
Center
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 20460

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 E - Notice of Intent Form and Instructions

From the effective date of this permit, operators are to use the Notice of Intent Form contained in this Appendix to obtain permit coverage.

This Form Replaces Form 3510-9 (8-98)
Refer to the Following Pages for Instructions

Form Approved OMB Nos. 2040-0188 and 2040-0211

NPDES FORM



United States Environmental Protection Agency Washington, DC 20460

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

Submission of this Notice of Intent (NOI) constitutes notice that the party 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 party identified in Section II of this form meets the eligibility requirements 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 the CGP. To obtain authorization, you must submit a complete and accurate NOI form. Refer to the instructions at the end of this form.

THE PROPERTY MANUAL CONTROL TO THE SECOND SE
la Permit Number
II. Operator Information
Name
IRS Employer Identification Number (EIN):
Mailing Address:
Street:
City:
Phone: Fax (optional):
E-mail:
III. Project/Site Information
Project/Site Name:
Project Street/Location:
City: Zip Code: Zip Code:
County or similar government subdivision:
Latitude/Longitude (Use one of three possible formats, and specify method)
Latitude 1°′″ N (degrees, minutes, seconds) Longitude 1°′″ W (degrees, minutes, seconds)  2° N (degrees, minutes, decimal) 2° W (degrees, minutes, decimal)
3 ° N ( degrees decimal) 3 ° W (degrees decimal)
Method: U.S.G.S. topographic map
If you used a U.S G.S. topographic map, what was the scale?
Project located in Indian Country?  YES  NO
If yes, name of reservation, or if not part of a reservation, put "Not Applicable:"
Estimated Project Start Date: / / / / Estimated Project Completion Date: / / / / / / / / / / / / / / / / / / /
' Month Day Year Month Day Year
Estimated Area to be Disturbed (to the nearest quarter acre)

IV: SWPRP Information
Has the SWPPP been prepared in advance of filling this NOI? West NOIS NO
Location of SWPP for Viewing: Address in Section II Address in Section III Other If other:
SWPPP Street:
City: Zip Code: Zip Code:
SWPPP Contact Information (if different than that in Section II):
. Name:
Phone: Phone: Fax (optional):
E-mail:
M. Discharge Information
Identify the name(s) of waterbodies to which you discharge.
Is this discharge consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s)? 🔲 YES 🔲 NO
VI. Endangered Species Protection
Under which criterion of the permit have you satisfied your ESA eligibility obligations?
If you select criterion F, provide permit tracking number of operator under which you are certifying eligibility:
VII: 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.
Print Name:
Signature: Date:
E-mail:
NOI Preparer (Complete if NOI was prepared by someone other than the certifier)  Prepared by
Organization:
Phone: E-mail:

#### 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

This Form Replaces Form 3510-9 (8/98)

Form Approved OMB Nos. 2040-0188 and 2040-0211

#### Who Must File an NOI Form

Under the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et. seg.; the Act), federal law prohibits storm water 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(s) 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 SWPPP requirements or other permit conditions. If you have questions about whether you need an NPDES storm water 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 the Storm Water Notice Processing Center at (866) 352-7755.

#### Where to File NOI Form

See the applicable CGP for information on where to send your completed NOI form.

#### Completing the Form

Obtain and read a copy of the appropriate EPA Storm Water Construction General Permit for your area. 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 <a href="https://www.epa.gov/npdes/stormwater/cgp">www.epa.gov/npdes/stormwater/cgp</a> or telephone the Storm Water Notice Processing Center at (866) 352-7755. Please submit original document with signature in ink. do not send a photocopied signature.

#### Section I. 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 II. Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application. An operator of a project is a legal entity that controls at least a portion of site operations and is not necessarily the site manager. 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 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.

#### Section III. 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.

The applicant must also provide the latitude and longitude of the facility either in degrees, minutes, seconds; degrees, minutes, decimal; or 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.

Indicate whether the project is in Indian country, and if so, provide the name of the Reservation. If the project is in Indian Country Lands that are not part of a Reservation, indicate "not applicable" in the space provided.

Enter the estimated construction start and completion dates using four digits for the year (i.e., 05/27/1998). Enter the estimated area to be disturbed including but not limited to: grubbing, excavation, grading, and utilities and infrastructure installation. Indicate to the nearest quarter acre. Note: 1 acre = 43,560 sq. ft.

#### Section IV. SWPPP Information

Indicate whether or not the SWPPP was prepared in advance of filing the NOI form. Check the appropriate box for the location where the SWPPP may be viewed. Provide the name, fax number (optional), and e-mail address of the contact person if different than that listed in Section II of the NOI form.

#### Section V. Discharge Information

Enter the name(s) of receiving waterbodies to which the project's storm water will discharge. These should be the first bodies of water that the discharge will reach. (Note: If you discharge to more than one waterbody, please indicate all such waters in the space provided and attach a separate sheet if necessary.) For example, if the discharge leaves your

#### 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

This Form Replaces Form 3510-9 (8/98)

Form Approved OMB Nos. 2040-0188 and 2040-0211

site and travels through a roadside swale or a storm sewer and then enters a stream that flows to a river, the stream would be the receiving waterbody. Waters of the U.S. include lakes, streams, creeks, rivers, wetlands, impoundments, estuaries, bays, oceans, and other surface bodies of water within the confines of the U.S. and U.S. coastal waters. Waters of the U.S. do not include man-made structures created solely for the purpose of wastewater treatment. U.S. Geological Survey topographical maps may be used to make this determination. If the map does not provide a name, use a format such as "unnamed tributary to Cross Creek". If you discharge into a municipal separate storm sewer system (MS4), you must identify the waterbody into which that portion of the storm sewer discharges. That information should be readily available from the operator of the MS4.

Indicate whether your storm water discharges from construction activities will be consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s). To answer this question, refer to <a href="https://www.epa.gov/npdes/stormwater/cgp">www.epa.gov/npdes/stormwater/cgp</a> for state- and regional-specific TMDL information related to the construction general permit. You may also have to contact your EPA regional office or state agency. If there are no applicable TMDLs or no related requirements, please check the "yes" box in the NOI form.

#### Section VI. Endangered Species Information

Indicate for 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. See Part 1.3.C.6 and Appendix C of the permit. If you select criterion F, provide the permit tracking number of the operator under which you are certifying eligibility. The permit tracking number is the number assigned to the operator by the Storm Water Notice Processing Center after EPA acceptance of a complete NOI.

#### Section VII. 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, title, and email address 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. 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 name, organization, phone number and email address of the NOI preparer.

#### **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.

Visit this website for mailing instructions: www.epa.gov/npdes/stormwater/mail

Visit this website for instructions on how to submit electronically:

www.epa.gov/npdes/stormwater/enoi

## Appendix F - Notice of Termination Form and Instructions

From the effective date of this permit, operators are to use the Notice of Termination Form contained in this Appendix to terminate permit coverage.

This Form Replaces Form 3517-7 (8-98) Refer to the Following Page for Instructions

Form Approved OMB Nos. 2040-0086 and 2040-0211

NPDES FORM



United States Environmental Protection Agency Washington, DC 20460

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge stormwater associated with construction activity under the NPDES program 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.

necessary information must be included on this form. Refer to the instructions at the end of this form.
I Permit Information
NPDES Stormwater General Permit Tracking Number:
Reason for Termination (Check only one):
Final stabilization has been achieved on all portions of the site for which you are responsible.
Another operator has assumed control, according to Appendix G, Section 11.C of the CGP, over all areas of the site that have not been finally stabilized.
Coverage under an alternative NPDES permit has been obtained.
For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.
II. Operator information
Name:Name:
IRS Employer Identification Number (EIN):
Mailing Address:
Street:
City:
Phone:       -         Fax (optional):       -       -
E-mail:
III. Project/Site Information
Project/Site Name:
Project Street/Location:
City: State: Zip Code:
County or similar government subdivision:
IV. 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.
Print Name.
Print Title:
Email:
Signature:
Date:

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

This Form Replaces Form 3517-7 (8-98)

Form Approved OMB Nos. 2040-0086 and 2040-0211

#### Who May File an NOT Form

Permittees who are presently covered under the EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity may submit an NOT form when final stabilization has been achieved on all portions of the site for which you are responsible, another operator has assumed control in accordance with Appendix G, Section 11.C of the General Permit over all areas of the site that have not been finally stabilized; coverage under an alternative NPDES permit has been obtained; or for residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

"Final stabilization" means that all soil disturbing activities at the site have been completed and that a uniform perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed. See "final stabilization" definition in Appendix A of the Construction General Permit for further guidance where background native vegetation covers less than 100 percent of the ground, in arid or semi-arid areas, for individual lots in residential construction, and for construction projects on land used for agricultural purposes.

#### 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 <a href="https://www.epa.gov/npdes/stormwater/cgp">www.epa.gov/npdes/stormwater/cgp</a> or telephone the Stormwater Notice Processing Center at (866) 352-7755. Please submit original document with signature in ink - do not send a photocopied signature.

#### Section I. 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 <a href="https://www.epa.gov/npdes/stormwater/cgp">www.epa.gov/npdes/stormwater/cgp</a> or contact the Stormwater Notice Processing Center at (866) 352-7755.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box. Check only one:

Final stabilization has been achieved on all portions of the site for which you are responsible.

Another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally

Coverage under an alternative NPDES permit has been obtained.

For residential construction only, if temporary stabilization has been completed and the residence has been transferred to the homeowner.

#### Section II. 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. The operator of the project is the legal entity that controls the site operation, rather than the site manager. 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 III. 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 IV. 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.

Visit this website for mailing instruction: www.epa.gov/npdes/stormwater/mail

Visit this website for instructions on how to submit electronically: www.epa gov/npdes/stormwater/enoi

# Appendix G - Standard Permit Conditions STANDARD PERMIT CONDITIONS

#### 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.

- A. You must comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
- B. The Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) 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 \$27,500 per day for each violation). The Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than 1 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 2 years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or 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. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places 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 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 CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

C. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Pursuant to 40 CFR Part 19 and the Act, administrative penalties for Class I violations are 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 \$11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$27,500). Pursuant to 40 CFR Part 19 and the Act, penalties for Class II violations are 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 \$137,500).

## 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 a new permit.

## 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.

#### 4. Duty to Mitigate

You must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

#### 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) which 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.

#### 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.

### 7. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privileges.

#### 8. Duty to Provide Information

You must furnish to EPA, within a reasonable time, any information which 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 upon request, copies of records required to be kept by this permit.

#### 9. Inspection and Entry

You must allow EPA, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

- A. 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;
- B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- D. 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.

## 10. Monitoring and Records

- A. Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity.
- B. 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 3 years from the date of the sample, measurement, report or application. This period may be extended by request of EPA at any time.
- C. Records of monitoring information must include:
  - 1. The date, exact place, and time of sampling or measurements;
  - 2. The individual(s) who performed the sampling or measurements;
  - 3. The date(s) analyses were performed
  - 4. The individual(s) who performed the analyses;
  - 5. The analytical techniques or methods used; and
  - 6. The results of such analyses.
- D. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.
- E. 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.

### 11. Signatory Requirements

- A. All applications, including NOIs, must be signed as follows:
  - 1. 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.

- 2. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or
- 3. 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).
- B. All reports required by this permit, including SWPPPs, must be signed by a person described in Appendix G, Subsection 11.A above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - 1. The authorization is made in writing by a person described in Appendix G, Subsection 11.A;
  - 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
  - 3. The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.
- C. Changes to Authorization. If an authorization under Part 2.1 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 2.1 must be submitted to EPA prior to or together with any reports, information, or applications to be signed by an authorized representative. The change in authorization must be submitted within the time frame specified in Part 2.4, and sent to the address specified in Part 2.2.
- D. Any person signing documents required under the terms of this permit 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 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."
- E. 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.

## 12. Reporting Requirements

- A. 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:
  - 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
  - 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).
- B. 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.
- C. Transfers. This permit is not transferable to any person except after notice to EPA. EPA may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (See 40 CFR §122.61; in some cases, modification or revocation and reissuance is mandatory.)
- D. Monitoring reports. Monitoring results must be reported at the intervals specified elsewhere in this permit.
  - 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.
  - 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 Part 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.
  - 3. Calculations for all limitations which require averaging of measurements must use an arithmetic mean.
- E. 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.
- F. Twenty-four hour reporting.

- 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.
- 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(g).)
  - b. Any upset which exceeds any effluent limitation in the permit
  - c. Violation of a maximum daily discharge limitation for any of the pollutants listed by EPA in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)
- 13. EPA may waive the written report on a case-by-case basis for reports under Appendix G, Subsection 12.F.2 if the oral report has been received within 24 hours.
- G. Other noncompliance. You must report all instances of noncompliance not reported under Appendix G, Subsections 12.D, 12.E, and 12.F, at the time monitoring reports are submitted. The reports must contain the information listed in Appendix G, Subsection 12.F.
- H. 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.

## 13. Bypass

#### A. Definitions.

- 1. Bypass means the intentional diversion of waste streams from any portion of a treatment facility
- 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.
- B. 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 G, Subsections 13.C and 13.D.

#### C. Notice-

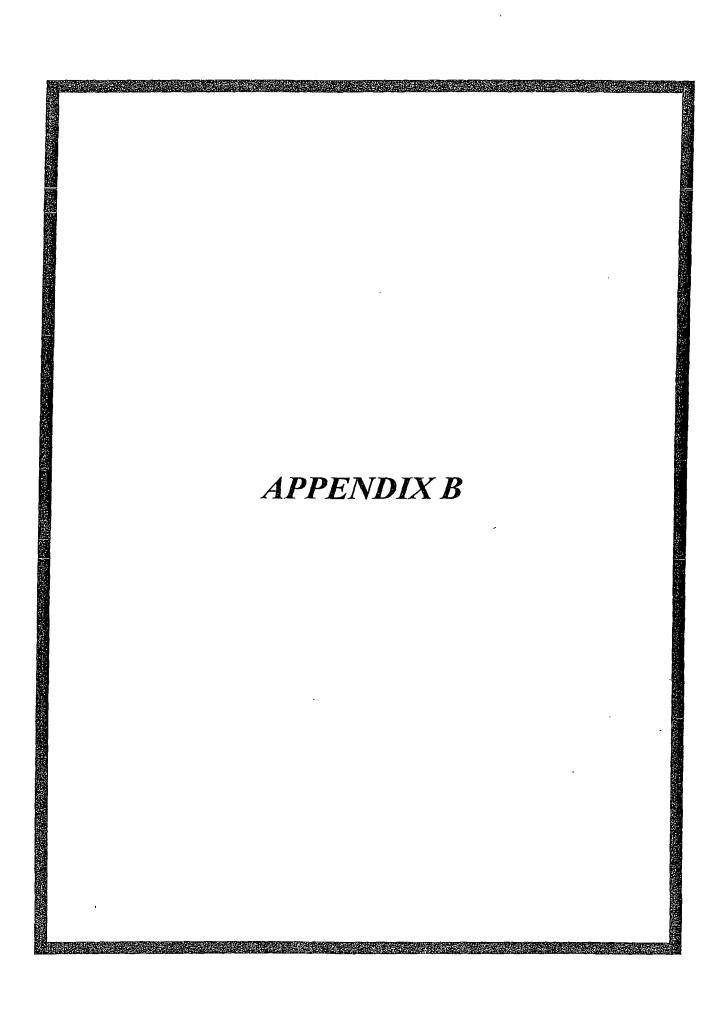
- 1. Anticipated bypass. If you know in advance of the need for a bypass, you must submit prior notice, if possible at least ten days before the date of the bypass.
- 2. Unanticipated bypass. You must submit notice of an unanticipated bypass as required in Appendix G, Subsection 12.F (24-hour notice).

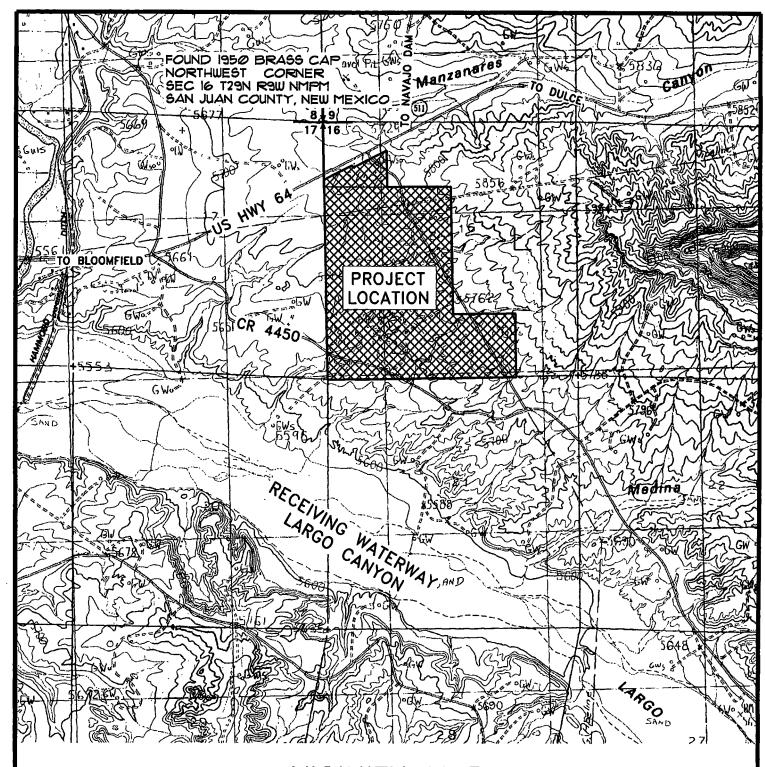
### D. Prohibition of bypass.

- 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 G, Subsection 13.C.
- 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 G, Subsection 13.D.1.

### 14. Upset

- A. 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.
- B. 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 G, Subsection 14.C 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.
- C. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - 1. An upset occurred and that you can identify the cause(s) of the upset;
  - 2. The permitted facility was at the time being properly operated; and
  - 3. You submitted notice of the upset as required in Appendix G, Subsection 12.F.2.b(24 hour notice).
  - 4. You complied with any remedial measures required under Appendix G, Section 4.
- D. Burden of proof. In any enforcement proceeding, you, as the one seeking to establish the occurrence of an upset, has the burden of proof.





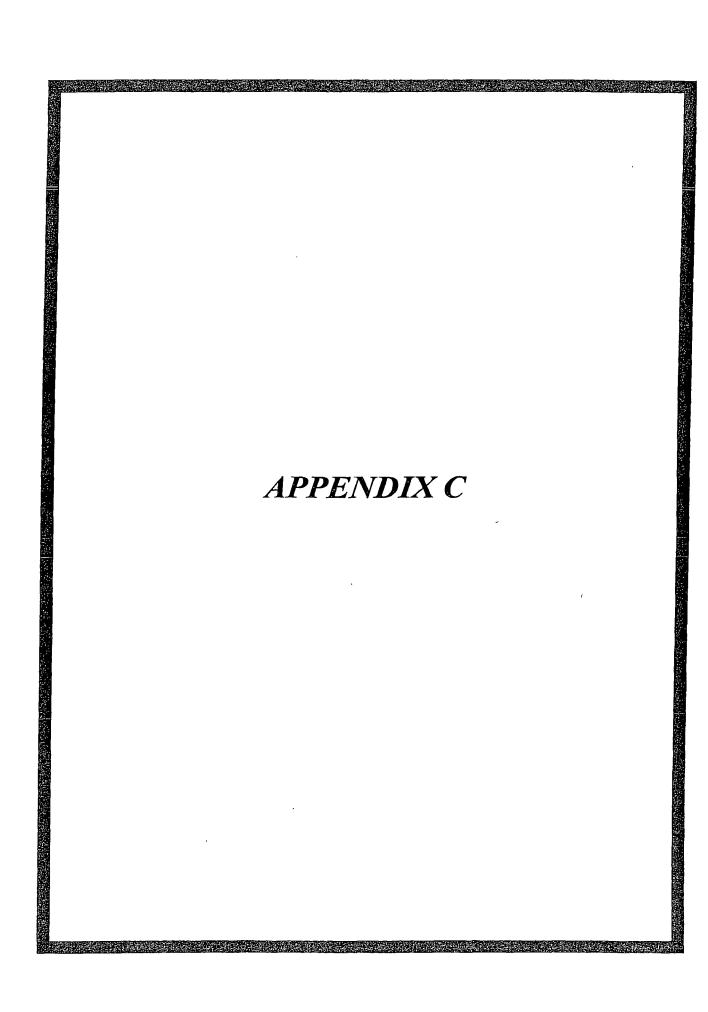
VICINITY MAP
INDUSTRIAL ECOSYSTEM
BLANCO, SAN JUAN COUNTY
NEW MEXICO

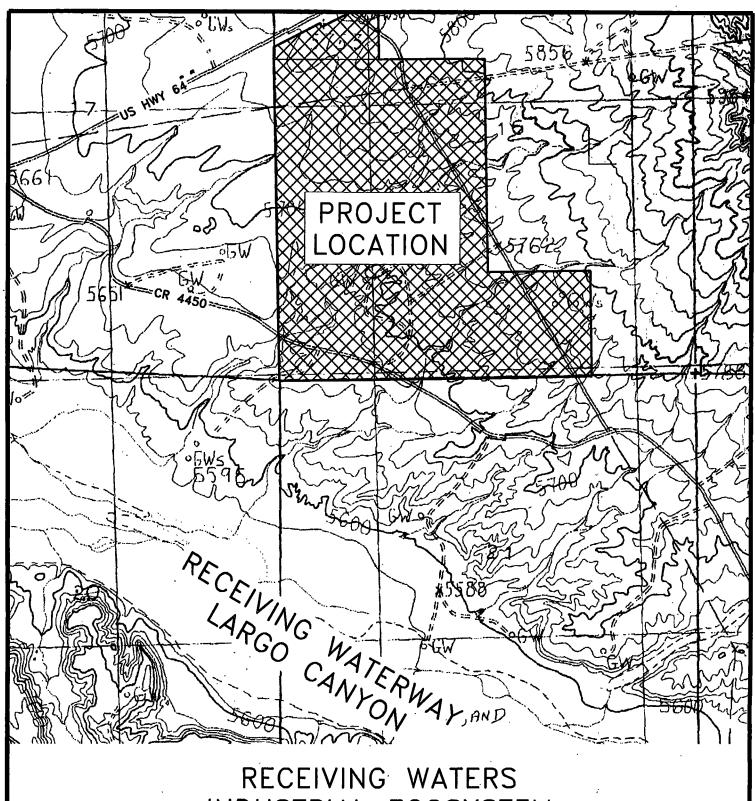




ISSUE DATE: 10/12/2009
PRINTED: October 22, 2009

FILE: C:\D\DWG-HWS\2009\09467\9467VIN.dwg





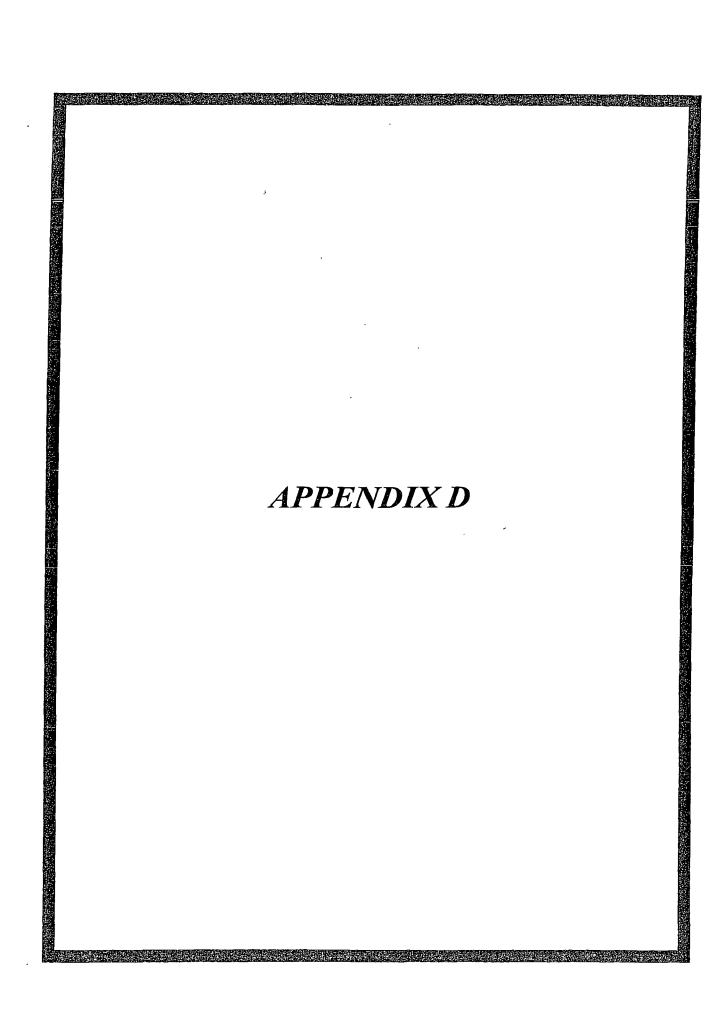
RECEIVING WATERS
INDUSTRIAL ECOSYSTEM
BLANCO, SAN JUAN COUNTY
NEW MEXICO



SCALE = N.T.S.

ISSUE DATE: 10/12/2009 PRINTED: October 22, 2009

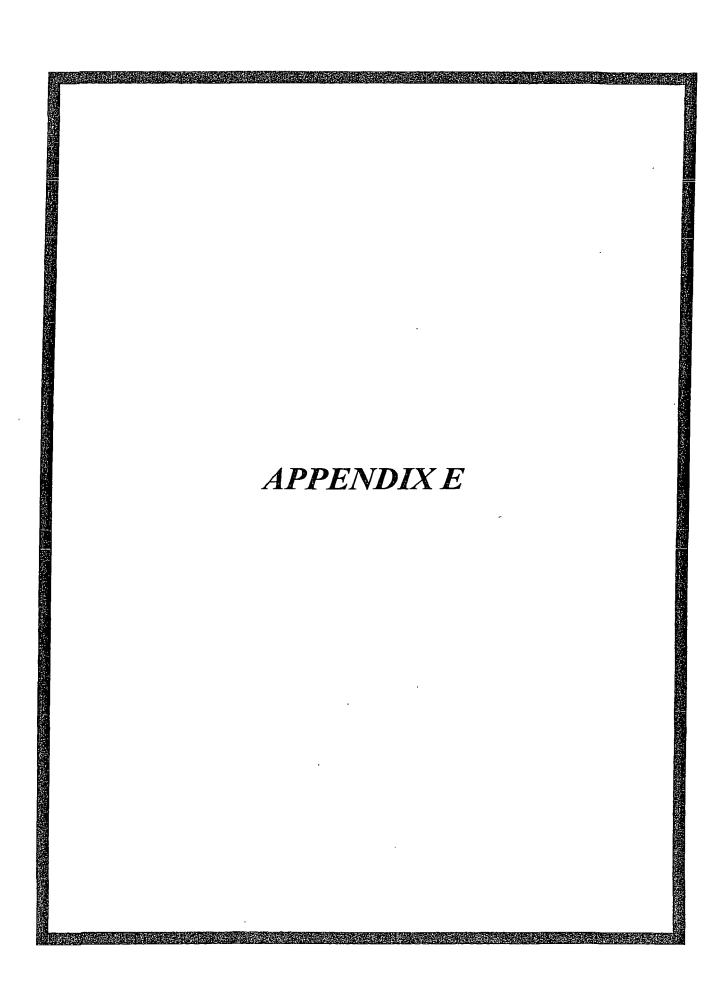
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## Industrial Ecosystems Blanco Land Farm Blanco, San Juan County, New Mexico

## **AMENDMENTS TO SWPPP**

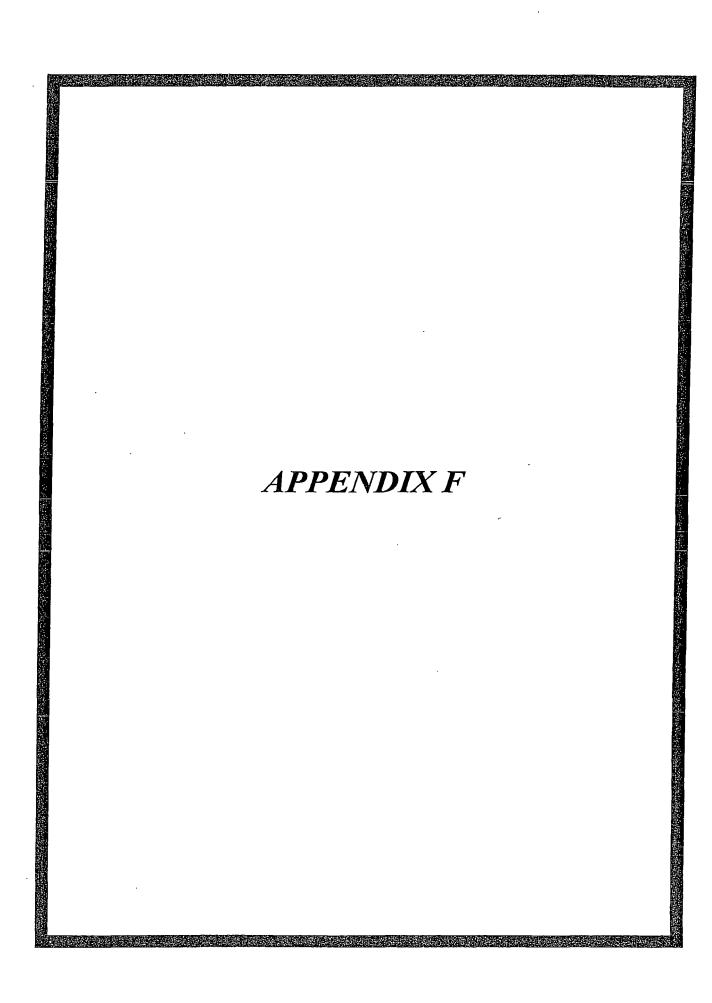
Amendment Date	Description and Reason for Amendment	Section and Page Affected	Amendor's Signature
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## Industrial Ecosystems Blanco Land Farm Blanco, San Juan County, New Mexico

## **INSPECTION AND MAINTENANCE REPORT**

	e:		n not available	Date:	
Inspector's	Qualifications	(if informatio	n not available	e on previous	report):
Weather sinc	e last inspection	(estimated begin	nning, duration, in	ches of any stor	m events):
Discharges s	nce last inspection	n (describe locati	on, any evidence d	of pollutants exitin	g the site):
Weather durin	g inspection:				
	ccurring during ins ts exiting the site):		discharge; include	location, any sedir	ment or
locations whe the SWPPP ne	re additional BMPs	are needed. Also mentation dates:	be maintained, BM o, list corrective act Modifications to the	ion including any o	changes to
					· · ·
<u>.</u>	NSPECTION AN	D MAINTENAN	CE REPORT CE	RTIFICATION	•
direction or suproperly gather persons who nather information am aware the	upervision in accor ered and evaluated nanage the system n submitted is, to t	rdance with a sys the information s or those persons o the best of my kno penalties for subm	ent and all attachme tem designed to as submitted. Based o directly responsible owledge and belief, nitting false informa	ssure that qualified on my inquiry of the for gathering the in true, accurate and	personnel e person or nformation, I complete.
Signed:			Date:		

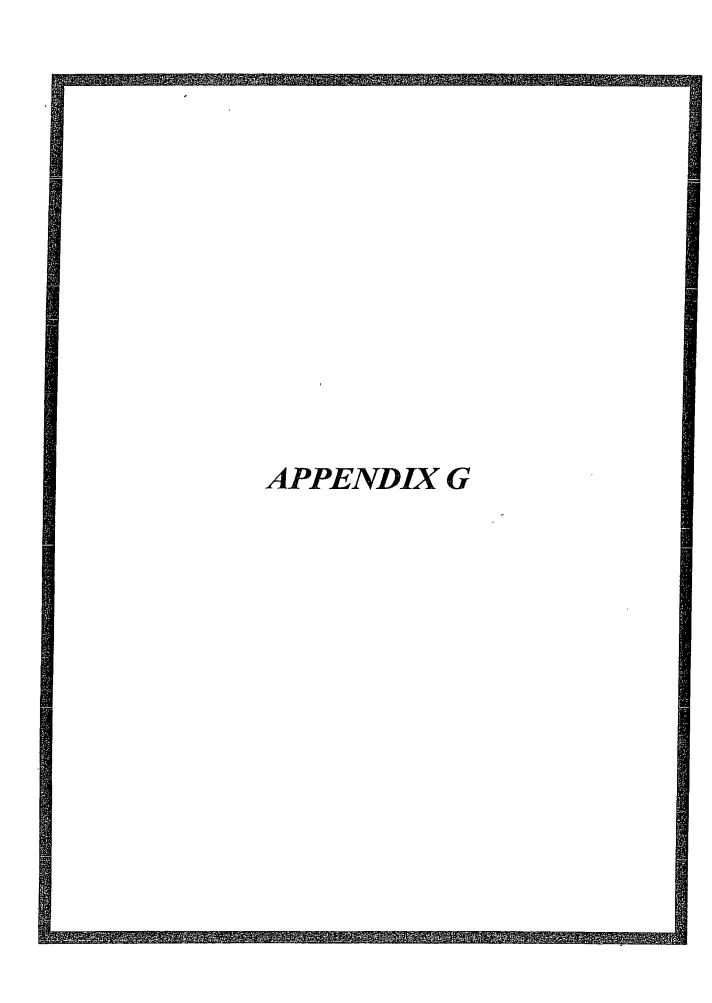


# Industrial Ecosystems Blanco Land Farm Blanco, San Juan County, New Mexico

## **RECORD OF ACTIVITIES**

Facility Location: Blanco, San Juan County, New Mexico
Recorder:

Title (Owner/Operator/Authorized Representative): Description (major grading activities, construction temporarily or permanently Date ceased, stabilization measures initiated)



This Form Replaces Form 3510-9 (8-98) Refer to the Following Pages for Instructions Form Approved OMB Nos. 2040-0188 and 2040-0211

NPDES FORM



United States Environmental Protection Agency . Washington, DC 20460

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

Submission of this Notice of Intent (NOI) constitutes notice that the party 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 party identified in Section II of this form meets the eligibility requirements 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 the CGP. To obtain authorization, you must submit a complete and accurate NOI form. Refer to the instructions at the end of this form.

le Permit Numbers					
li/Operatorinformation.					
Name:					
IRS Employer Identification Number (EIN):					
Mailing Address:					
Street:					
City: State: Zip Code:					
Phone: Fax (optional):					
E-mail:					
IIIi Broject/Site/Information					
Project/Site Name:					
Project Street/Location:					
City: Zip Code: Zip Code:					
County or similar government subdivision:					
Latitude/Longitude (Use one of three possible formats, and specify method)					
Latitude 1					
Method: U.S.G.S. topographic map EPA web site GPS Other					
tf you used a U.S.G.S. topographic map, what was the scale?					
Project located in Indian Country? YES NO					
If yes, name of reservation, or if not part of a reservation, put "Not Applicable:"					
Estimated Project Start Date:     /     /					
Estimated Area to be Disturbed (to the nearest quarter acre):					

IV/SWPRP/Information
Has the SWPPP been prepared in advance of filing this NOI? YES NO
Location of SWPP for Viewing: Address in Section II Address in Section III Other If other:
SWPPP Street:
City:
SWPPP Contact Information (if different than that in Section II):
Name:
Phone: Fax (optional): Fax (optional):
E-mail:
V Discharge Information
Identify the name(s) of waterbodies to which you discharge.
Is this discharge consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s)?  YES NO
VI, Endangered Species Protection
Under which criterion of the permit have you satisfied your ESA eligibility obligations?
If you select criterion F, provide permit tracking number of operator under which you are certifying eligibility:
VIII. 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.
Print Name:
Title:
Signature: Date:
E-mail:
NOI Preparer (Complete if NOI was prepared by someone other than the certifier)
Prepared by:
Organization:
Phone:
'

### 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

This Form Replaces Form 3510-9 (8/98)

Form Approved OMB Nos. 2040-0188 and 2040-0211

### Who Must File an NOI Form

Under the provisions of the Clean Water Act, as amended (33) U.S.C. 1251 et. seg.; the Act), federal law prohibits storm water 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(s) 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 SWPPP requirements or other permit conditions. If you have questions about whether you need an NPDES storm water 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 the Storm Water Notice Processing Center at (866) 352-7755.

### Where to File NOI Form

See the applicable CGP for information on where to send your completed NOI form.

### Completing the Form

Obtain and read a copy of the appropriate EPA Storm Water Construction General Permit for your area. 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 <a href="https://www.epa.gov/npdes/stormwater/cgp">www.epa.gov/npdes/stormwater/cgp</a> or telephone the Storm Water Notice Processing Center at (866), 352-7755. Please submit original document with signature in ink. do not send a photocopied signature.

### Section I. 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 II. Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application. An operator of a project is a legal entity that controls at least a portion of site operations and is not necessarily the site manager. 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 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.

### Section III. 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.

The applicant must also provide the latitude and longitude of the facility either in degrees, minutes, seconds; degrees, minutes, decimal; or 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 <a href="https://www.epa.gov/npdes/stormwater/cgp">www.epa.gov/npdes/stormwater/cgp</a> 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.

Indicate whether the project is in Indian country, and if so, provide the name of the Reservation. If the project is in Indian Country Lands that are not part of a Reservation, indicate "not applicable" in the space provided.

Enter the estimated construction start and completion dates using four digits for the year (i.e., 05/27/1998). Enter the estimated area to be disturbed including but not limited to: grubbing, excavation, grading, and utilities and infrastructure installation. Indicate to the nearest quarter acre. Note: 1 acre = 43,560 sq. ft.

### Section IV. SWPPP Information

Indicate whether or not the SWPPP was prepared in advance of filing the NOI form. Check the appropriate box for the location where the SWPPP may be viewed. Provide the name, fax number (optional), and e-mail address of the contact person if different than that listed in Section II of the NOI form.

### Section V. Discharge Information

Enter the name(s) of receiving waterbodies to which the project's storm water will discharge. These should be the first bodies of water that the discharge will reach. (Note: If you discharge to more than one waterbody, please indicate all such waters in the space provided and attach a separate sheet if necessary.) For example, if the discharge leaves your

### 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

This Form Replaces Form 3510-9 (8/98)

Form Approved OMB Nos. 2040-0188 and 2040-0211

site and travels through a roadside swale or a storm sewer and then enters a stream that flows to a river, the stream would be the receiving waterbody. Waters of the U.S. include lakes, streams, creeks, rivers, wetlands, impoundments, estuaries, bays, oceans, and other surface bodies of water within the confines of the U.S. and U.S. coastal waters. Waters of the U.S. do not include man-made structures created solely for the purpose of wastewater treatment. U.S. Geological Survey topographical maps may be used to make this determination. If the map does not provide a name, use a format such as "unnamed tributary to Cross Creek". If you discharge into a municipal separate storm sewer system (MS4), you must identify the waterbody into which that portion of the storm sewer discharges. That information should be readily available from the operator of the MS4.

Indicate whether your storm water discharges from construction activities will be consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s). To answer this question, refer to <a href="https://www.epa.gov/npdes/stormwater/cgp">www.epa.gov/npdes/stormwater/cgp</a> for state- and regional-specific TMDL information related to the construction general permit. You may also have to contact your EPA regional office or state agency. If there are no applicable TMDLs or no related requirements, please check the "yes" box in the NOI form.

### Section VI. Endangered Species Information

Indicate for 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. See Part 1.3.C.6 and Appendix C of the permit. If you select criterion F, provide the permit tracking number of the operator under which you are certifying eligibility. The permit tracking number is the number assigned to the operator by the Storm Water Notice Processing Center after EPA acceptance of a complete NOI.

### Section VII. 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, title, and email address 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. 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 name, organization, phone number and email address of the NOI preparer.

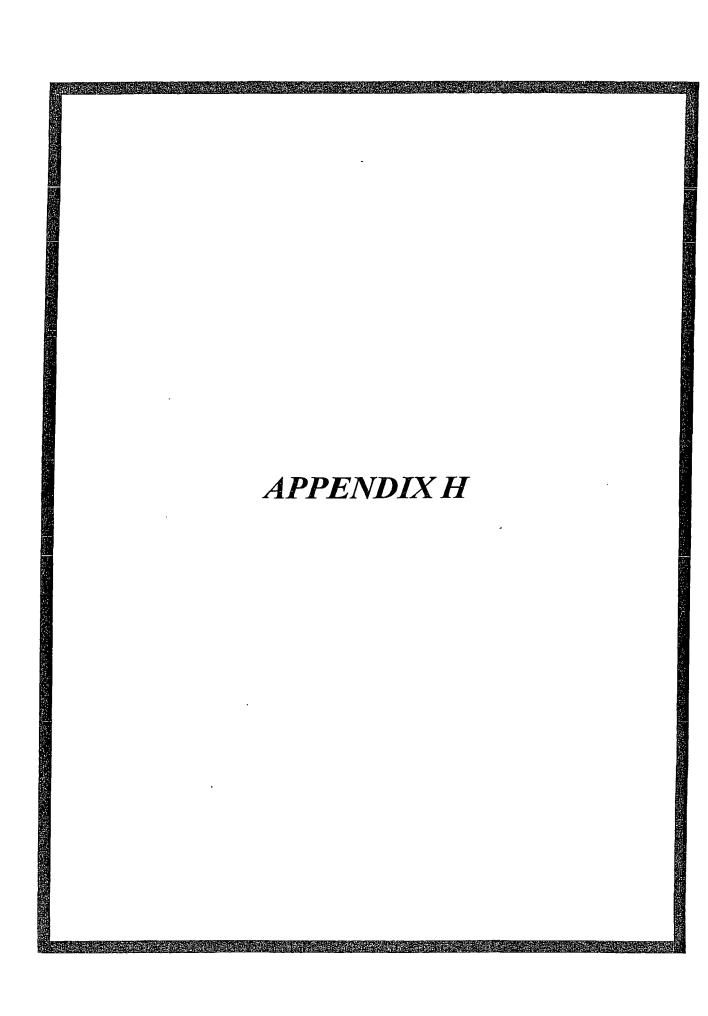
### Paperwork Reduction Act Notice

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.

Visit this website for mailing instructions: www.epa.gov/npdes/stormwater/mail

Visit this website for instructions on how to submit electronically:

www.epa.gov/npdes/stormwater/enoi



This Form Replaces Form 3517-7 (8-98) Refer to the Following Page for Instructions

Form Approved OMB Nos. 2040-0086 and 2040-0211

**NPDES FORM** 



United States Environmental Protection Agency Washington, DC 20460

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to

discharge stormwater associated with construction activity under the NPDES program 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.
!! Permit Information
NPDES Stormwater General Permit Tracking Number:
Reason for Termination (Check only one):
Final stabilization has been achieved on all portions of the site for which you are responsible.
Another operator has assumed control, according to Appendix G, Section 11.C of the CGP, over all areas of the site that have not been finally stabilized.
Coverage under an alternative NPDES permit has been obtained.
For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.
ill: Operator Information
Name:
IRS Employer Identification Number (EIN):
Mailing Address:
Street.
City: State: Zip Code:
Phone: Fax (optional):
E-mail: [
III Project/Site Information
Project/Site Name:
Project Street/Location:
City:   Zip Code:
County or similar government subdivision:
IV. 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.
Print Name:
Print Title:
Email:
Signature:
Date

### 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

This Form Replaces Form 3517-7 (8-98)

Form Approved OMB Nos. 2040-0086 and 2040-0211

#### Who May File an NOT Form

Permittees who are presently covered under the EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity may submit an NOT form when final stabilization has been achieved on all portions of the site for which you are responsible; another operator has assumed control in accordance with Appendix G, Section 11.C of the General Permit over all areas of the site that have not been finally stabilized; coverage under an alternative NPDES permit has been obtained; or for residential construction only, temporary stabilization has been completed and the residence has been transferred to the

"Final stabilization" means that all soil disturbing activities at the site have been completed and that a uniform perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed. See "final stabilization" definition in Appendix A of the Construction General Permit for further guidance where background native vegetation covers less than 100 percent of the ground, in arid or semi-arid areas, for individual lots in residential construction, and for construction projects on land used for agricultural purposes.

### 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 <a href="https://www.epa.gov/npdes/stormwater/cgp">www.epa.gov/npdes/stormwater/cgp</a> or telephone the Stormwater Notice Processing Center at (866) 352-7755. Please submit original document with signature in ink - do not send a photocopied signature.

### Section I. 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 www.epa.gov/npdes/stormwater/cgp or contact the Stormwater Notice Processing Center at (866) 352-7755.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box. Check only one:

Final stabilization has been achieved on all portions of the site for which you are responsible.

Another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized.

Coverage under an alternative NPDES permit has been obtained.

For residential construction only, if temporary stabilization has been completed and the residence has been transferred to the homeowner.

# Section II. 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. The operator of the project is the legal entity that controls the site operation, rather than the site manager. 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 III. 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 IV. 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).

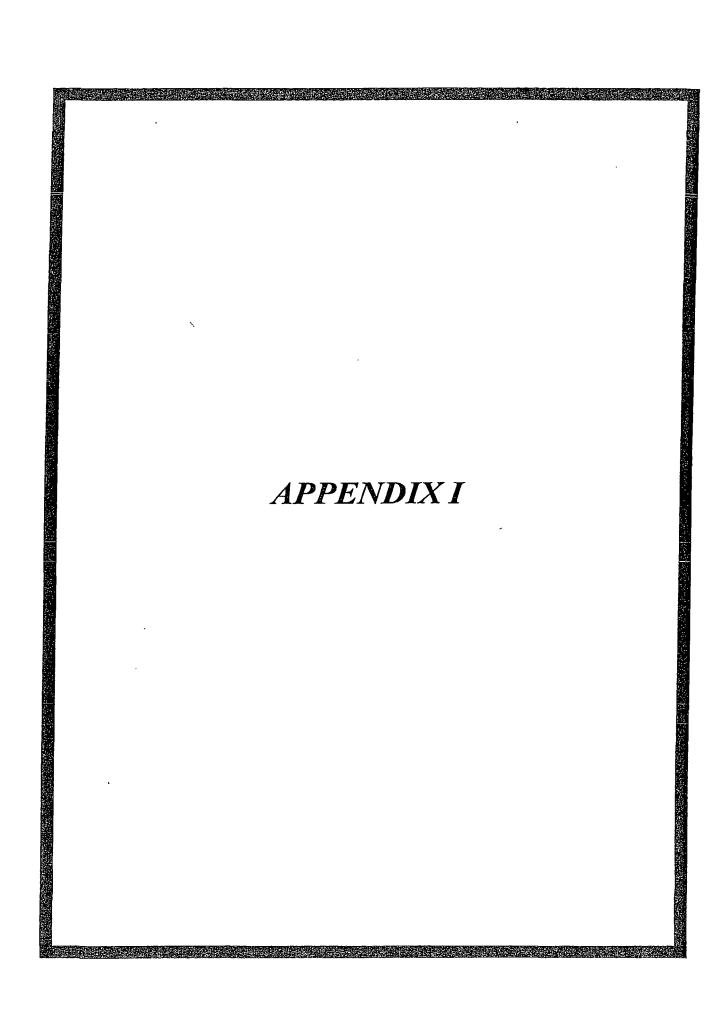
Include the name, title, and email address of the person signing the form and the date of signing. An unsigned or undated NOT form will not be considered valid termination of permit coverage.

### **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.

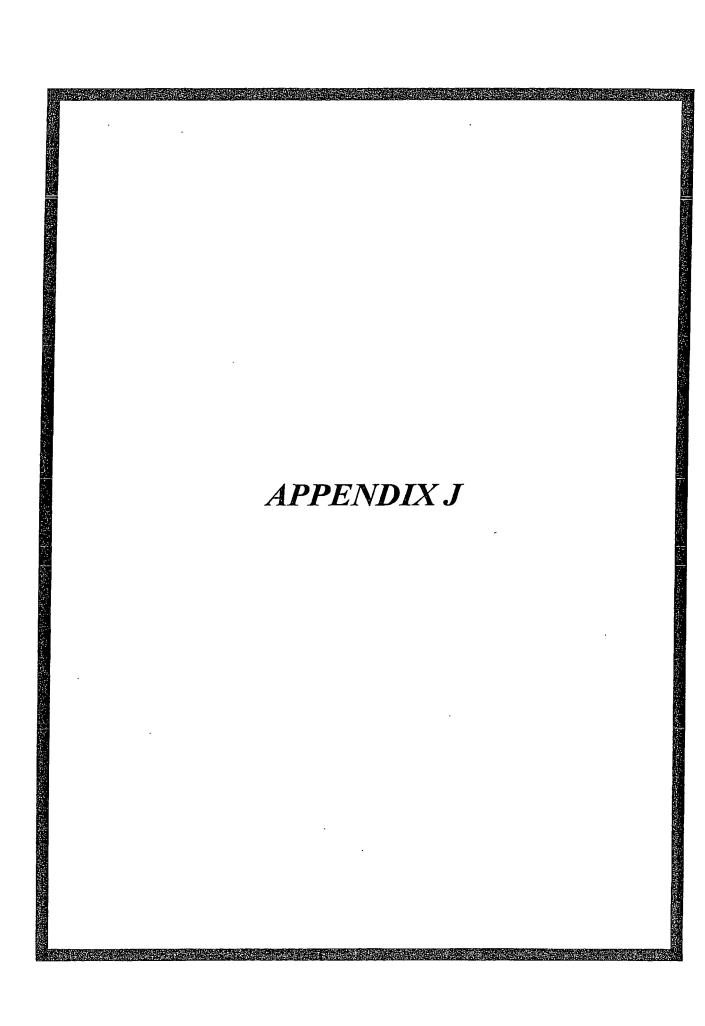
Visit this website for mailing instruction: www.epa.gov/npdes/stormwater/mail

Visit this website for instructions on how to submit electronically: www.epa.gov/npdes/stormwater/enoi



A review of the available resource agencies have determined that there are no species eligible for the Endangered Species Act (ESA) protection on the undeveloped property.

According to the U.S. Fish and Wildlife Service, there are 10 federally listed threatened, endangered or tentative plant and animal species with potential to occur in San Juan County, New Mexico. The listed species consist of one mammal, two fish, four birds and three plants. The State of New Mexico has identified 13 species as being listed as threatened or endangered with the potential to occur in San Juan County. There are no plants as listed on the endangered species on this property. The bird species as listed on the threatened and endangered list all occur along the Animas River corridor which is not in the immediate vicinity of this development. The Mexican Spotted Owl does not nest in this area due to a lack of caves, cliffs or trees within steep walled canyons. There are no prairie dog colonies on the property which is a habitat association for the black footed ferret. We believe that the project will not and is not likely to have any adverse affects to any species eligible (or their critical habitat) for coverage under the ESA.



# SEDIMENT CONTROL PLAN Industrial Ecosystems Blanco Land Farm Blanco, San Juan County, New Mexico

# PROJECT DESCRIPTION

The 289 acre project site for the Land Farm is located on the south side of U.S. Highway 64, near mile marker 75.8. The facility is planned to have two full access, one existing and one proposed. The site is described as Lot 4 of the Blanco Land Subdivision No. 1 and Lots 1A thru 7A of the Blanco Land Subdivision No. 2, lying in the W½ and the SW¼ SW¼ of Section 16, T29N, R09W, N.M.P.M. Blanco, San Juan County, New Mexico. The site will be used to remediate contaminated soil waste.

# **SITE DESCRIPTION (HISTORICAL)**

The vacant project site consists of sparse grass, juniper and sagebrush. The average slope is 3% over a distance of 600 feet. There are 3 major waterways that bisect the property. Each waterway will be protected from storm water runoff with v-ditches, berms, silt fences and straw bales.

# SITE DESCRIPTION (DEVELOPED)

The developed Land Farm will be a soil remediation site for contaminated oilfield waste. The soils to be remediated will be stockpiled on one of the 10 acre cells. When a cell reaches capacity, a new cell will be prepared for occupancy. The perimeter of the site will be bermed with a v-ditch to divert the fresh water into one of the waterways and the contaminated water into one the holding ponds. Additional controls of storm water runoff include straw bales, retention ponds, and dikes. The sediment and erosion control measures will remain installed for the life of the Land Farm. The control measures will be maintained according to the CGP 2008.

### **SOILS**

The soils within the project area are classified by the San Juan County Soil Survey as Doak Avalon association, gently sloping (DN) and Fruitland-Persayo-Sheppard complex, hilly (FX).

Doak-Avalon association, gently sloping soils are found on mesas, plateaus, and terraces. The native vegetation is mainly grass and the slopes range between 0% and 5%. The Doak Loam soils make up about 50% of the unit and the Avalon Loam soils make up about 35%. The hydrologic soil group for the Doak-Avalon soil is B.

The Doak soil is deep and well drained, formed in alluvium derived dominantly from sandstone and shale. The surface layer is typically brown loam about 5 inches thick. The underlying layer is brown and light brown silty clay loam and clay loam, approximately 38

inches thick. The substratum is light yellowish brown clay loam to a depth of 69 inches or more. The permeability of the Doak soil is 0.6 -2.0 inches per hour to a depth of 5 inches. Below this depth to a depth of 69 inches, the permeability is 0.2 - 0.6 inches per hour. The permeability of the Doak soil is classified as moderately slow. The available water capacity is very high, runoff is slow, and the hazard of water erosion is slight. The vegetation supported by the Doak soil is mainly blue grama, western wheatgrass, Indian ricegrass, and needleandthread. The soil loss tolerance is 5 and the soil erodability factor is 0.37.

The Avalon soil is a deep well drained soil, formed in alluvial and eolian material derived from sandstone and shale. The surface layer is typically brown loam about 4 inches thick. The underlying layer to a depth of 14 inches is also brown loam. The upper 22 inches of the substratum is pinkish white loam. The lower part to a depth of 60 inches or more is light yellowish brown loam. The permeability of the Avalon soil is 0.6 - 2.0 inches per hour to a depth of 60 inches. The permeability of the Avalon soil is classified as moderate. The available water capacity is high, runoff is medium, and the hazard of water erosion is moderate. The soil is slightly saline, used for grazing and wildlife habitat. The vegetation of the Avalon soil consists of Indian ricegrass, winterfat, galleta, and blue grama. The soil loss tolerance is 3 and the soil erodability factor is 0.43.

Fruitland-Persayo-Sheppard complex hilly soils are found on mesas, plateaus, fans and breaks. The slopes range between 5% and 30%. The native vegetation is mainly grass and scattered pinyon and juniper. The unit is 40% Fruitland sandy loam, 30% Persayo clay loam, and 25% Sheppard loamy fine sand. It was not practical to map these soils separately at the scale used.

The Fruitland soil is deep and well drained, formed in alluvium derived dominantly from sandstone and shale. The surface layer is typically brown sandy loam about 4 inches thick. The underlying material is brown fine sandy loam, to a depth of 60 inches or more. The permeability of the Fruitland soil is 2.0 - 6.0 inches per hour, classified as moderately rapid, and the available water capacity is moderate. Runoff is medium and the hazard of water erosion is moderate. The hydrologic soil group for the Fruitland soil is B. The soil loss tolerance is 5 and the soil erodability factor is 0.24 to a depth of 4 inches.

The Persayo soil is shallow and well drained, formed in residuum derived from shale. The surface layer is typically light brownish gray clay loam, about 2 inches thick. The underlying layer is light yellowish brown clay loam to a depth of 18 inches. Shale is at a depth of 18 inches. Permeability of the Persayo soil is 0.2 - 0.6 inches per hour, classified as moderately slow, and the available water capacity is very low. Runoff is rapid and the hazard of water erosion is high. The soil is slightly saline. The hydrologic soil group for the Persayo soil is D. The soil loss tolerance is 1 and the soil erodability factor is 0.37.

The Sheppard soil is deep and somewhat excessively drained, formed in eolian material derived from mixed sources. Typically the surface layer is light yellowish brown loamy fine sand about 4 inches thick. The underlying material to a depth of 60 inches or more is light yellowish brown loamy fine sand and fine sand. The permeability of the Sheppard soil is

6.0 - 20.0 inches per hour, classified as rapid, and the available water capacity is low. Runoff is slow and the hazard of water erosion is slight. The hydrologic soil group for the Sheppard soil is A. The soil loss tolerance is 5 and the soil erodability factor is 0.15.

# PLANNED EROSION, SEDIMENT AND STORM WATER CONTROL PRACTICES

See the Storm Water Pollution Prevention Plan and site plan for control practices to be implemented as part of this development.

# MAINTENANCE SCHEDULE

The sediment control measures as described above shall be constructed and maintained as shown on the site grading plan and SWPPP. The Best Management Practices (BMP's) will be inspected on a bi-weekly basis, and any breach of these measures will be documented and repaired. In the course of these inspections, if the Owner/Operator determines that the measures being used are insufficient, the measures will be modified on the plan and in the field to reflect more appropriate BMP's. The Operator will be responsible for general maintenance, as necessary, resulting from disturbances to sediment control measures by construction equipment or any other means.

# **RUSLE SOIL LOSS COMPUTATIONS**

The Rusle Program was used to evaluate the estimated soil loss due to water erosion for the project area. Several scenarios were evaluated. The first case is for the historical condition, where a total of 29.0 tons per year of soil loss were estimated. The next condition analyzed is for during construction, when an estimated 12.6 tons per year of material will be eroded. During the construction phase, the erosion and sediment control measures will be installed and remain in place for the duration of the Land Farm. The final condition, after completion of construction, will yield an estimated 13.5 tons per year. Both the construction phase and the developed phase yield less water erosion than the historical phase.

# CERTIFICATION

This is to certify that this Sediment Control Plan was prepared in accordance with good engineering practices. The Rusle program was used according to instruction from the State Agronomist with the Natural Resources Conservation Service (NRCS).

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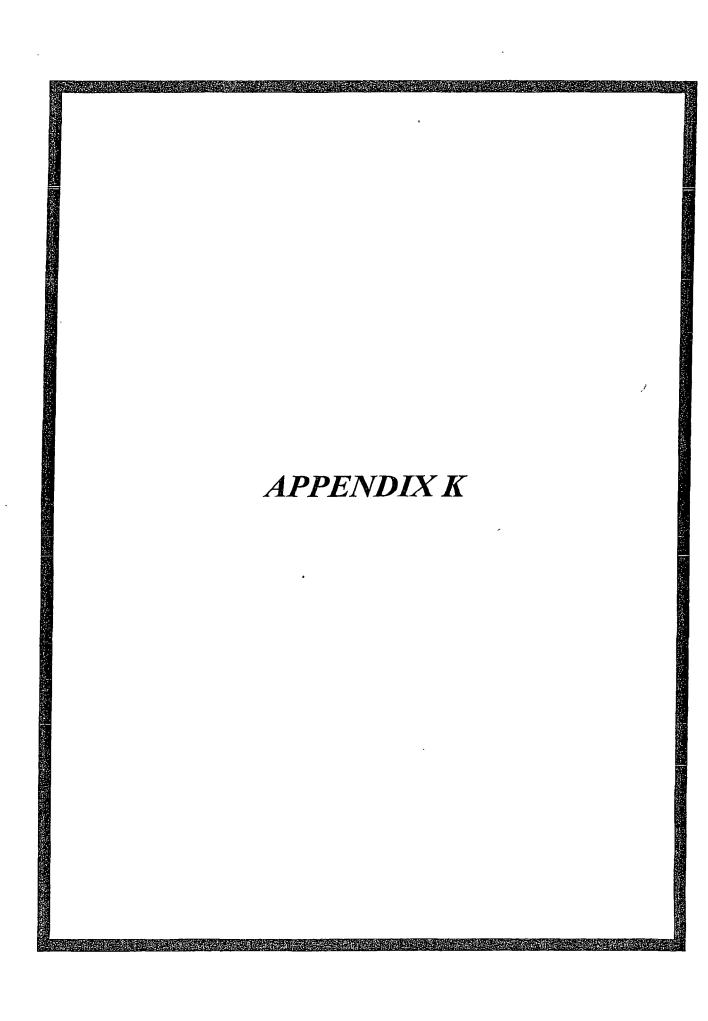
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Irriga	tion type:	Furrow		] Flood		]	Sprinkler		(check one)	٠	
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EROSION	SUMMA	ARY TOT	ALS	ļ					•		
			Tons/	Acre/Year by	Field			Tons	Year by Fie	ld	
Field	Size	Wind	Water	Rill/Gully	Irr	Total	Wind	Water	Rill/Gully	irr	Total
(num)	(ac)	(t/ac/yr)	(t/ac/yr)	(t/ac/yr)	(t/ac/yr)			(t/yr)	(t/yr)	(t/yr)	(t/yr)
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VII IOIIII2	All forms of erosion are controled under T, no additional control is required.										

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Alter	native Tr	reatment:	Х	(check one)	L	.ocation:	Blanco, I	NM		_
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		(field 3):		Mgt.					acility. The c	
		(field 5):		Condition:						
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_	Width (in):				<del></del>					
_	Depth (in):								ļ	measured
	tons loss):							,		
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Based on a	12.5 foot	long strip	). I	No. of Ac w/G	ully Ero:		Tot	al Tons of	Soil Loss:	0.0

CLASSIC	CLASSIC GULLY EROSION (voided area method)										
	Gully formula: (L x W x D) x 80 lbs/cf / 2000 = Ton of Soil loss										
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Ave	. Width (ft):							(measured)			
Ave	. Depth (ft):							(measured)			
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EROSION SUMMARY TOTALS											
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						-					
Field	Size	Wind	Water	Riff/Gully	irr	Total	Wind	Water	Rill/Gully	Irr	Total
(num)	(ac)	(t/ac/yr)	(t/ac/yr)	(t/ac/yr)	(t/ac/yr)	(t/ac/yr)	(t/yr)	(t/yr)	(t/yr)	(t/yr)	(t/yr)
1	281	0.0	0.0	0.00	0.0	0.0	0	88	0.0	0	8
2	8	0.0	0.5	0.00	0.0	0.5	0	4	0.0	0	4
Total Ac:	289										
Wt. Ave (	t/ac/yr):	0.00	0.04	0.00	0.00	0.04					
	_		Total	Loss by typ	e (t/yr a	l fields):	0.0	12.6	0.0	0.0	
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All forms of erosion are controled under T, no additional control is required.											

				SOIL LOS	SCON	IPUTA	TION			
	Bei	nchmark:		]		Client:	Industria	I Ecosyste	ems Land I	Ħ
Alter	native Tr	eatment:	Х	(check one)	Location: Blanco, NM				T	J
Rainfal	I Factor	(RUSLE):	10	-			San Jua		1	
,			1	Doak Avalor	. Fruitlan		<b>}</b>	2/2009	1	
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		(field 2):	<del></del>	1						ns Land Far
(field 3)					be a rem	ediation si	te for cont	aminated o	oilfield waste	e. Ten acre d
		(field 4):		Mgt.	will deve	loped whe	n needed.	Approxima	ately 3 cells	will be in us
		(field 5):		Condition:	time.				•	
-,		(field 6):								
	Type	of Land:	Disturbed	d Land	,				- 5	• • •
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	,	Rainfall				Length- Slope	Mgt	Support Practices	Soil Loss	Tone by
Field	Size	R	Soil K	Slope	Length	LS	C	P	A	Field
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1	. 251	- 10	0.37	. 3.00	300	0.69	0.059	0.1	0.0	3.8
2	38	10	0.37	3.00	300	0.69	1	0.1	0.3	9.7
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	otal Loss	٠ , ,	0	l	Create:			-	ar (t/ac/yr):	<del></del>
*Based on a	12.5 foot	long strip	). N	No. of Ac w/G	ully Ero:	Ì	Ťota	al Tons of	Soil Loss:	0.0

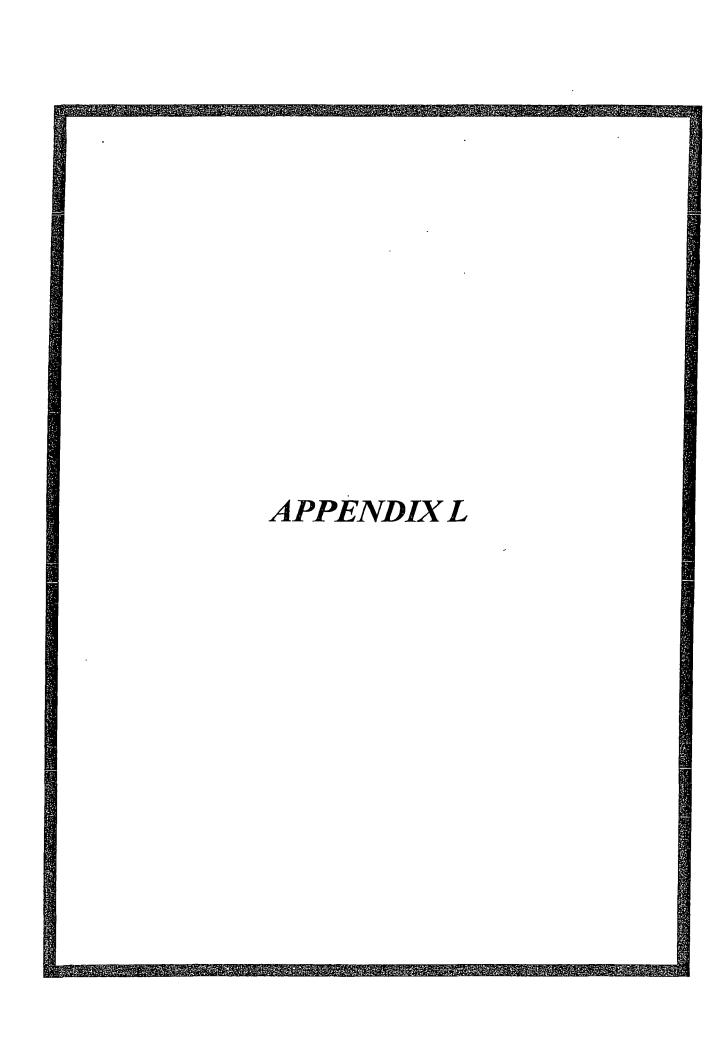
CLASSIC							] (		-		
Culle			<del> </del>	30 lbs/cf / 200				٦			
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				No. of Ac w/G	Sully Ero:		Tot	al Tons of	f Soil Loss:	0.0	
IRRIGATION	ON ERO	SION		Are the fields	irrigated?	N	Y or N				
Irrigat	tion type:	Furrow		Flood		]	Sprinkler		(check one)		
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Wt. Ave (	t/ac/yr):[	0.00	0.05	0.00	0.00	0.05					-
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Water ero	sion is l	ess than	T, but st	till may req	uire co	ntrol.					
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All forms of erosion are controled under T, no additional control is required.											



# Industrial Ecosystems Blanco Land Farm Blanco, San Juan County, New Mexico

# SAMPLE AUTHORIZATION LETTER

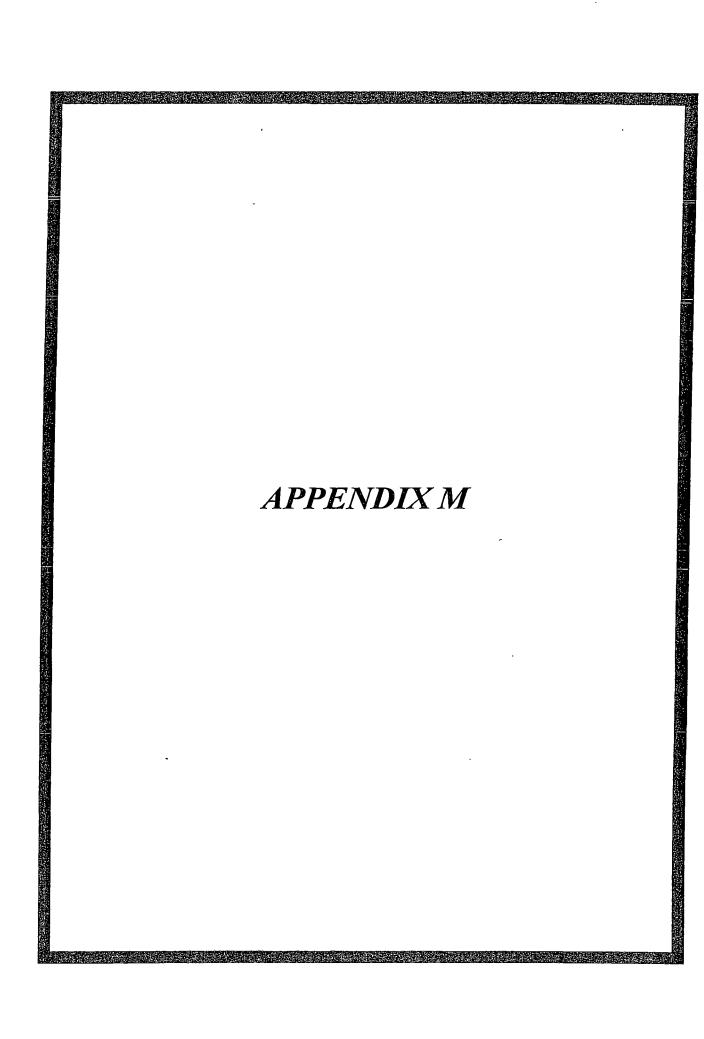
(DATE)	
To Whom it May Concern:	
I,, of	(Corporation/Partnership/Municipality)
do hereby authorize(Name or Po	sition)
System General Permit for Disch Activities, in compliance with the p	e National Pollutant Discharge Elimination arges from Large and Small Construction provisions of the Clean Water Act, effective the Stormwater Pollution Prevention Plan.
Signature of Authorizing Agent	<del></del>



# Industrial Ecosystems Blanco Land Farm Blanco, San Juan County, New Mexico SAMPLE AGREEMENT

# **BETWEEN OPERATOR AND OWNER**

The purpos	se of this Agreement is to co	ertify that the Land Farm located at					
		(Address)					
has been o	completed by the Operator,	and is prepared for occupation by the owner. The					
operator ha	as established temporary s	tabilization including perimeter controls, and has					
informed th	ne owner of the need for an	d benefits of final stabilization. Final stabilization					
means that	soil disturbing activities hav	ve ceased, and that one of the following conditions					
has been n	net:						
a.	A uniform vegetative cove	er with a density of 70% of the native vegetation has					
	been established on all unpaved areas and areas not covered by permanent						
	structures, or;						
b.	Other stabilization measu	Other stabilization measures (such as landscape rock or geotextile fabrics)					
	have been placed. Final	stabilization will prevent or reduce the discharge of					
	sediment pollutants to wa	aters of the United States.					
By signing	below, the operator and	owner acknowledge that the above described					
transaction	has taken place.	,					
Operator		Date					
Owner		Date					



### 1 General Permit Notice of Intent to Discharge

History

Form Review

# **Construction General Permit**

NM Project Located on Indian Land? No Is this industrial facility a federal facility? No General Permit Number you are seeking coverage under: NMR100000 **Permit Tracking Number:** NMR10GQ48 **Operator Information-**Operator/Company Name: Industrial Ecosystems Inc. IRS EIN: 943200034 Street: 49 CR 3150 City/State/ZIP: Aztec NM 87410 Phone: 505-632-1782 Fax: 505-632-1876 Email: terry@industrlalecosystems.com **Project/Site Information** 

**Facility Name:** Industrial Ecosystems Blanco Land Farm Facility Address: Highway 64, near mile marker 75.8

County: San Juan

City/State/ZIP: Blanco NM 87412

Facility/Site Latitude and Longitude

**Project Dates** 

Degrees/Minutes/Seconds (Latitude): 36 ° 43 ' 22 " N 107 ° 47 ' 19 " W Degrees/Minutes/Seconds (Longitude): Latitude/Longitude Method: **GPS** 

The distance between your facility and the location determined by the Latitude/Longitude 20.6 miles

provided:

Estimated Project Start Date: 10/20/2009 **Estimated Project Completion Date:** 01/30/2010 Estimated area to be disturbed: 289 (acres)

Same as Operator's Address

Stormwater Pollution Prevention Plan Information

SWPPP Contact Name: Terry Lattin

How can the SWPPP Contact be Reached?

Telephone Number: SWPPP E-mail: terry@industrialecosystems.com Address of location for viewing the SWPPP:

Discharge Completed **Recieving Water Impaired Pollutants** (Yes/No) (Yes/No) Largo Wash No Water Quality Standards Are any of your discharges into, or within one linear mile upstream of any portion of a receiving water designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds level necessary to support propogation of fish, shelifish, and wildlife and recreation in and on the water)? Has the receiving water(s) been designated by the state or tribal authority under its antidegradation policy as a Tier III water(Outstanding Natural Resource Waters)? No Federal Effluent Limitation Guidelines and Sector-Specific Requirements Are you requesting coverage under the MSGP for any stormwater discharges subject to effluent limitations ? Effluent limitation guidelines that apply to your stormwater discharge: Affected MSGP 40 CFR Part/Subpart Eligible Discharges Sector Runoff from landfills Part 445, Subparts A & B K.L If you are a Sector S (Air Transportation) facility, do you anticipate using more than 100,000 gallons of glycol-based delcing/anti-icing chemicals and/or 100 tons or more of urea on an average annual basis? Is your site inactive and unstaffed? No Standard Industrial Classification (SIC) Code Information All Landfill, Land Application Sites and Open Dumps, except Municipal Solid Waste Landfill **Activity Code:** (MSWLF) Areas Closed in Accordance with 40 **CFR 258.60** Sector/Subsector Information Sector(s) and Subsector(s): Landfills, Land Application Sites, and Open Dumps All Landfill, Land Application Sites and Open Dumps Stormwater Pollution Prevention Plan Information SWPPP Contact Name: Terry Lattin SWPPP Email: terry@industrialecosystems.com How can the SWPPP Contact be Reached? Same as Operator's Contact

-Endangered Species Protection

ESA Criterion:

Criterion A.

No federally-listed threatened or endangered species or their designated critical habitat are likely to occur in the "action area".

Historic Preservation Information

Historic Preservation:

Criterion A - Your stormwater discharges and allowable non-stormwater discharges do not have the potential to have an effect on historic properties and you are not constructing or installing new stormwater control measures on your site that cause subsurface disturbance; or

Certifying Official Information-

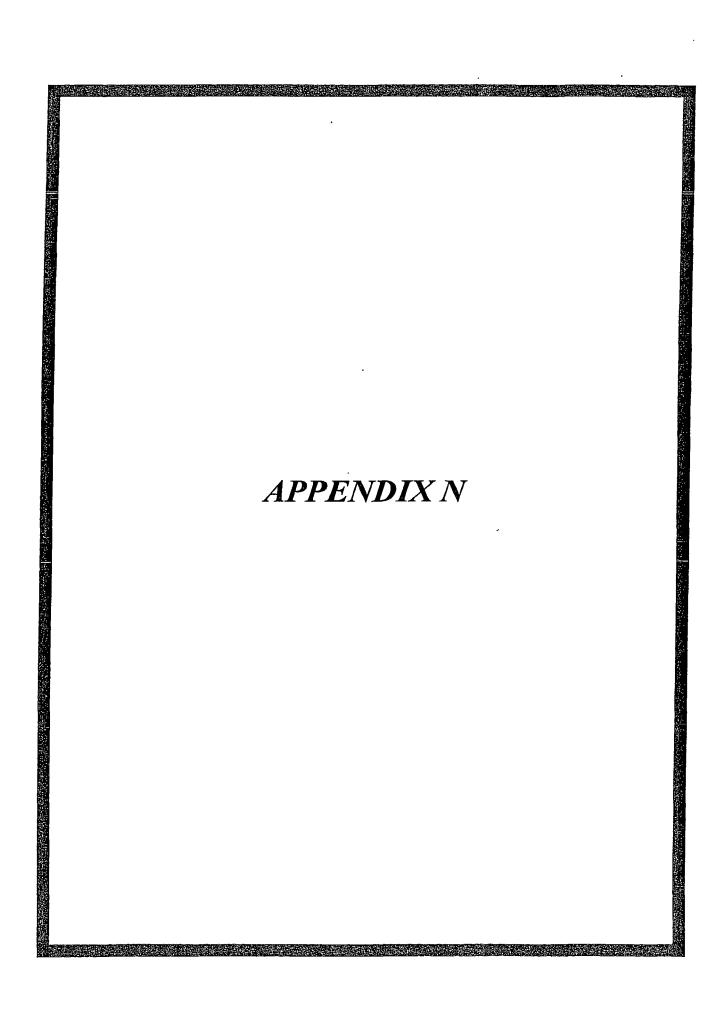
Certifying Official Name:

Terry Lattin

Certifying Official Email:

terry@industrialecosystems.com

Coeffic

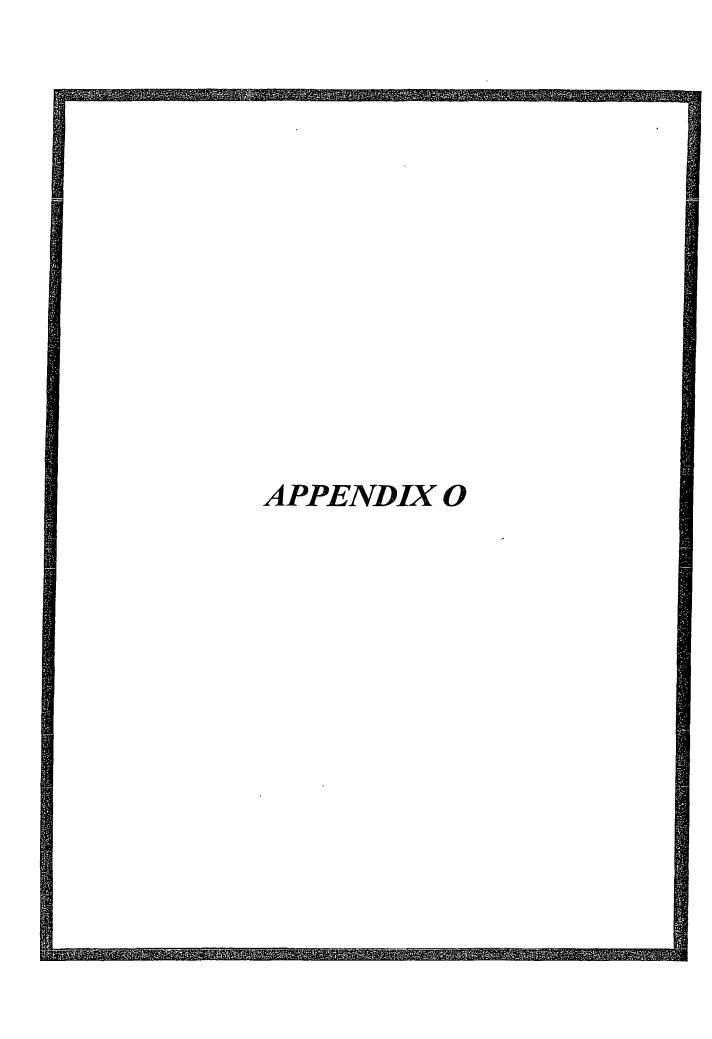


# Industrial Ecosystems Blanco Land Farm Blanco, San Juan County, New Mexico

# STORMWATER POLLUTION PREVENTION PLAN CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel property 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.

Signature:		Date:	
Print:			
Datata	•		
		;	
			•
OPERATOR:			



# Industrial Ecosystems Blanco Land Farm Blanco, San Juan County, New Mexico

# **OPERATOR AGREEMENT**

The Operator(s) listed below agree that their activities will not destroy or render ineffective any control measures placed to prevent the pollution of stormwater. The Operator(s) shall also implement pollution control measures as part of this plan, or develop and implement their own SWPPP which meets the EPA's NPDES Stormwater Requirements.

PRINT:	_
SIGNATURE:	<del>_</del> ,
DATE:	
AREA OF RESPONSIBILITY (DESCRIBE THE EXPERTISE AND/OR PHYSICAL AREA OF SEPA	
PRINT:	
SIGNATURE:	
DATE:	· 
AREA OF RESPONSIBILITY (DESCRIBE THE EXPERTISE AND/OR PHYSICAL AREA OF SEPA	

# **Bill Richardson**

Governor

Jon Goldstein Cabinet Secretary

Jim Noel
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division



April 27, 2010

John J. Kiely President Crowe Blanco, LLC 401 S. LaSalle, Suite 606 Chicago, Illinois 60605

RE: Request for Additional Information – Permit Application Review for a Proposed

**Commercial Surface Waste Management Facility** 

Crowe Blanco, LLC - Blanco Landfarm

Facility Location: W/2 and SW/4 SE/4 of Section 16, Township 29 North, Range 9

West NMPM

San Juan County, New Mexico

Dear Mr. Kiely:

The Oil Conservation Division (OCD) has reviewed Crowe Blanco, LLC's application for a commercial surface waste facility permit for the Blanco Landfarm located in the W/2 and SW/4, SE/4 of Section 16, Township 29 North, Range 9 West NMPM, San Juan County, New Mexico. The review of the submittal is to determine if any additional information or modifications may be required before considering deeming the permit application complete. The application has been determined to be incomplete. Therefore, the OCD requests additional information.

Enclosed is a list of items that must be addressed prior to completing the review. Once this information is submitted, the OCD will determine if additional information is required. The OCD suggests that meetings be conducted with the OCD on a periodic basis to discuss the request for information. The OCD recommends that a meeting be scheduled with the Division's Santa Fe office Environmental Bureau prior to making revisions to the application in order to determine if the proposed location is capable of satisfying the siting requirements of Subsections A and B of 19.15.36.13 NMAC for consideration of an application submittal.

The OCD recommends that all corrections, additions, and modifications to the application be reviewed and cross-referenced before they are submitted, in order to verify that all responses correlate and coincide with each other throughout the application.



Crowe Blanco, LLC Blanco Landfarm April 27, 2010 Page 2 of 32

If there are any questions regarding this matter, please do not hesitate to contact me at (505) 476-3487 or brad.a.jones@state.nm.us.

Sincerely,

Brad A. Jones Environmental Engineer

BAJ/baj

Attachments: 1) Request for Additional Information

2) Copy of 19.15.36 NMAC Surface Waste Management Facilities Regulations

Cc: OCD District III Office, Aztec w/ attachment 1
Terry Lattin, Industrial Ecosystems, Inc., 49 CR 3150, Aztec, NM 87410 w/ attachments

Crowe Blanco, LLC Blanco Landfarm April 27, 2010 Page 3 of 32

# Request for Additional Information Crowe Blanco, LLC – Blanco Landfarm Commercial Surface Waste Management Facility April 27, 2010

in the

# **Page 1.1**

Pursuant to Paragraph (1) of 19.15.36.8.C NMAC, the application shall include "the names and addresses of the applicant and principal officers and owners of 25 percent or more of the applicant." Please provide the name and address of the applicant (Crowe Blanco, LLC).

# **Page 2.2**

The map is titled "On-site Off-site Topography." The map illustrates the contours across the proposed facility, but fails to provide elevations and a scale. The map also only illustrates the topography northeast and east of the proposed facility. It fails to illustrate the topography to the west, southwest, and south of the proposed facility, the areas in which all surface water runoff flow and discharge. Please provide the information identified above and/or addition maps that illustrate all of the surrounding areas.

# **Page 2.3**

Pursuant to Paragraph (2) of 19.15.36.8.C NMAC, the application shall include "a plat and topographic map showing the surface waste management facility's location in relation to governmental surveys (quarter-quarter section, township and range); highways or roads giving access to the surface waste management facility site; watercourses; fresh water sources, including wells and springs; and inhabited buildings within one mile of the site's perimeter." The map is titled "Water Well Locations within 1 Mile." Please provide a map or maps that satisfy this requirement.

# **Page 4.1**

Pursuant to Paragraph (4) of 19.15.36.8.C NMAC, the application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas." A brief written description was provided. Please provide "a diagram indicating the location of fences and cattle guards, and detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas" as required.

# Page 5.0, Section 5

Pursuant to Paragraph (5) of 19.15.36.8.C NMAC, the application shall include "engineering designs, certified by a registered professional engineer, including technical data on the design elements of each applicable treatment, remediation and disposal method and detailed designs of surface impoundments." Please provide the engineering designs, as required.

# **Page 5.2**

Please provide the engineering designs for the shaker pits, the slurry holding pit, the centrifuge, storage tanks, and centrate tank. The engineering designs should include the

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secondary containment features associated with the above-mentioned items. Also, include "technical data on the design elements of each applicable treatment, remediation and disposal method" as required by Paragraph (5) of 19.15.36.8.C NMAC.

The biopiles are described as having such dimensions as "approximately 12-15" wide and no more than 12' tall." Please demonstrate how the proposed dimensions comply with the regulatory maximum amount of soils of "3000 cubic yards per acre" of Subsections D and F of 19.15.36.15 NMAC. Please provide the proposed length of the biopile and the maximum number of biopiles allowed per acre. Also, please identify the source of the manure that will be utilized to enhance the bioremediation process and provide an engineering design for the manure containment and storage feature.

# **Page 6.1**

Introduction:

The last sentence of the first paragraph states that "these procedures comply with the applicable requirements contained pursuant to 19.15.36.13, 19.15.36.15, and 19.15.36.17 NMAC." There is no information provided in the Operational Plan that addresses any of the requirements of 19.15.36.17 NMAC. Please explain or demonstrate compliance with the applicable provisions of 19.15.36.17 NMAC, Specific Requirements Applicable to Evaporation, Storage, Treatment, and Skimmer Ponds.

# Section 1, Waste:

The last sentence or paragraph provided in this section states "exempt waste is prohibited from being mixed with non-exempt waste." Based upon the flow chart provided on page 5.1, please explain how this requirement will be implemented with the development of the biopile.

# Section 1.1, Exempt Oilfield Waste:

In the first sentence of the first paragraph of the section, please identify the "applicable test and analytical methods required by NMOCD" mentioned in the text and provide the appropriate regulatory references.

Pursuant to Paragraph (3) of 19.15.36.7.A NMAC ""Landfarm" means a discrete area of land designated and used for the remediation of petroleum hydrocarbon-contaminated soils and drill cuttings." Pursuant to Subsection A of 19.15.36.15 NMAC, "Only soils and drill cuttings predominantly contaminated by petroleum hydrocarbons shall be placed in a landfarm. The division may approve placement of tank bottoms in a landfarm if the operator demonstrates that the tank bottoms do not contain economically recoverable petroleum hydrocarbons." The information provided in this section identifies four "major types of operations that generate exempt waste." The second type of operation identified is the "production of tank bottom sludge" which includes "the pigging of transmission lines, and the maintenance and reclamation of settling ponds." Please compare this interpretation to the definition of "tank bottoms" provided in Paragraph (1) of 19.15.2.7.T NMAC. Also, waste generated from "the pigging of transmission lines" may be classified as RCRA non-exempt depending on the status of the transmission line. The third type of operation identified is the "production of drilling fluids." The definition of "landfarm" provided in Paragraph (3) of 19.15.36.7.A NMAC and the landfarm waste acceptance criteria of Subsection A of 19.15.36.15 NMAC clearly identifies the acceptance of drill cuttings, not "drilling fluids." The fourth type of operation identified is the "production of high TDS fluids." Please reference a provision within 19.15.36 NMAC that

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clearly states that such fluids satisfy the waste acceptance criteria for landfarms. Please confirm and verify the proposed exempt waste streams in order to determine if they comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms.

# Section 1.2, Non-Exempt, Non-Hazardous Oilfield Waste:

Please provide examples of potential types of RCRA non-exempt, non-hazardous waste that is anticipated to be received at the proposed landfarm.

The first sentence of the first paragraph states that RCRA non-exempt, non-hazardous waste will be identified by "all applicable test and analytical methods required by NMOCD." The determination of the status (hazardous or non-hazardous) of RCRA non-exempt waste is dictated the USEPA and the requirements of RCRA. The applicable tests, analytical methods, and standards are identified in subpart C of 40 CFR part 261. Please modify the response to address appropriate testing requirements. Also, please identify any additional waste acceptance criteria applicable to the requirements of 19.15.36 NMAC in regards to non-exempt waste.

Also as a clarifying point regarding a statement provided in the second paragraph, RCRA exempt waste loses it's' exemption if mixed with RCRA non-exempt waste. Therefore, it becomes RCRA non-exempt.

# **Page 6.2**

# Section 1.4, Waste Characterization:

Pursuant to Subsection A of 19.15.36.15 NMAC, "Only soils and drill cuttings predominantly contaminated by petroleum hydrocarbons shall be placed in a landfarm. The division may approve placement of tank bottoms in a landfarm if the operator demonstrates that the tank bottoms do not contain economically recoverable petroleum hydrocarbons." Please view the comments provided for Section 1.1 regarding "drilling fluids." Also, "debris waste" is not a term used or defined within the OCD rules. Please provide an explanation of what "debris waste" may represent. Please confirm and verify the proposed waste streams in order to determine if they comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms.

### Section 1.5, Prohibited Waste

Pursuant to Subsection E of 19.15.36.13 NMAC, "The operator shall not place oil field waste containing *free liquids* in a landfill or landfarm cell." Please identify "free liquids" as a waste prohibited from being disposed of at the facility.

# Section 2, Waste Acceptance:

The second bullet of the waste acceptance protocol discusses the monitoring of hydrogen sulfide of liquid waste. Please clearly identify or define the "liquid" waste. Also, please identify the concentration regarding the "unacceptable levels of hydrogen sulfide."

The fifth bullet of the waste acceptance protocol discusses the chloride concentration limit (1000 mg/kg) in regards to the depth to ground water. The fifth bullet also notes that the "facility is located where ground water is 100" or more below the lowest elevation." The proposed facility location has not been properly investigated or assessed in regards to the siting criteria. Based upon the information provided within the application, there is some concern in respect to the determination of the separation to ground water. Water well SJ 02883, as properly

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located and illustrated on the water well map of Page 2.3, is noted on the Office of the State Engineer well log information sheet to have a depth to water of 87 feet (page 46 of Section 15). Water well SJ 02883 is abutting the proposed facility to the east within Section 16. Please make arrangements to schedule a meeting with myself to discuss the submittal of a boring plan in order to properly assess the proposed location in regards to the siting criteria of 19.15.36 NMAC.

# Page 6.3

*Section 3.1, Form C-138:* 

The information provided in Section 1.3, on page 6.2, indicates that the facility may accept emergency non-oilfield waste. Pursuant to Paragraph (3) of 19.15.36.13.F NMAC, if such waste is received "the operator shall complete a form C-138, oil field waste document, describing the waste, and maintain the same, accompanied by the department of public safety order, subject to division inspection." The information provided in this section, 3.1, does not recognize that a C-138 is required for emergency non-oilfield waste, or that the C-138 must be accompanied by the department of public safety order, and it does not include the regulatory reference in the subject title. Please modify the response appropriately.

# **Page 6.4**

Section 4.1, Flowchart for Waste Acceptance/Disposal:

The pink boxes, the third box on the left side and the fourth box on the right side of the flow chart, indicate that the waste must pass the paint filter test upon arrival at the landfarm. Then the flow chart continues on each side with the acceptance of liquids. If the waste material is determined to contain free liquids, it fails the paint filter test. Please explain. Also, please explain why chloride testing is not performed on any of the solidified tank bottoms prior to placement into a biopile.

# **Page 6.5**

Section 4.2, Migratory Bird Protection:

Pursuant to Paragraph (4) of 19.15.36.8.C NMAC, the application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and <u>detailed construction/installation diagrams of pits, liners</u>, dikes, piping, sprayers, <u>tanks</u>, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas." Please provide "detailed construction/installation diagrams" of any pits, liners, and tanks and illustrate the proposed screen or netting that will be utilized for the protection of migratory birds.

# Section 5.0, Treatment/Bioremediation:

Pursuant to Paragraph (4) of 19.15.36.15.C NMAC, within "72 hours after receipt, the operator shall spread and disk contaminated soils in eight-inch or less lifts or approximately 1000 cubic yards per acre per eight-inch lift or biopile." The language provided in the first paragraph of the response is not the equivalent to the regulatory requirement. The written response would allow for the waste to be placed into a biopile without any limits in regards to lift thickness or volume. Please modify the response to comply with the requirement.

Also, there is no language in the response that provides the details and regulatory requirements that must satisfied if such a lift is placed on existing soils. Please address the requirements of Subsection D of 19.15.36.15 NMAC regarding adding an additional lift.

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# Section 5.1, Solid Waste:

Please make a distinction in the title to identify if this section is referring to exempt or non-exempt solid waste. Also, please either identify the waste acceptance criteria or reference a section that directly addresses it in detail.

The title or heading for everything addressed under Section 5.0 is identified as treatment and bioremediation. The OCD anticipates that the treatment and bioremediation details will be provided when each waste stream is addressed. Such as in Step 3, please provide the mixing ratio of manure to petroleum hydrocarbon-contaminated soils and drill cuttings. Also, please identify what types of "organic waste" may be added to get the remediation process started. Please provide MSDS's for the proposed chemical enhancers.

In Step 4, please explain what is meant that a "biopile/lift is completed"? Please explain the process in which this is determined.

In Step 5, please identify the temperatures, initial and maintenance, that must be obtained in order to promote and facilitate the remediation process. Also, please identify what types of "additional remediation materials" may be added to maintain and control the remediation process.

Step 6 states that "soils will be disked bi-weekly." Based upon the description of biopiles (page 5.2) of being "approximately 12-15" wide and no more than 12' tall," how will disking occur as the height of the biopile increases? Please explain.

In Step 8, please identify the test frequency, test protocols and test methods required by Subsection D of 19.15.36.15 NMAC.

# Section 5.2, Liquid Waste:

Please make a distinction in the title to identify if this section is referring to exempt or non-exempt liquid waste. Also, please either identify the waste acceptance criteria or reference a section that directly addresses it in detail.

Step 1 indicates that liquid waste will be "offloaded in the concrete impoundment or tank." In the review of the application there has not been any mention of concrete impoundments. Pursuant to Subsection C of 19.15.36.9 NMAC, please provide engineering designs and detailed construction/installation diagrams of any concrete impoundment and/or tanks and also provide a facility map that illustrates their locations within the facility boundary.

In Step 3, please define and explain what would constitute "reclaimed" soils. Also, please explain how the "Biopile Records" form, as discussed in Step 2 of Section 5.1, will be maintained when mixing non-separated generator liquids with generator load specific "reclaimed" soils.

In Step 4, please provide the mixing ratio of manure to petroleum hydrocarbon-contaminated soils and drill cuttings. Also, please identify what types of "organic waste" may be added to get the remediation process started. Please provide MSDS's for the proposed chemical enhancers.

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In Step 5, please explain why chloride testing is not required for biopiles in which liquid waste is stabilized with potentially "reclaimed" soils prior to placement within the landfarm cell.

#### **Page 6.6**

Section 5.3, Non-Exempt Waste:

Based upon the information in this section, the only assumption that can be made is that only solid non-exempt waste will be accepted. The steps for treatment/bioremediation do not include or address stabilization of fluids or liquids. If this is not correct, please provide treatment/ bioremediation process procedures regarding liquid non-exempt waste. Pursuant to Subsection C of 19.15.36.9 NMAC, please provide a facility map that illustrates the separate section of the facility that is "strictly designated for the storage and bioremediation of non-exempt waste." The map should also illustrate the location of the storage and treatment impoundments and the area which is dedicated for non-exempt waste biopiles within the facility boundary.

Please either identify the waste acceptance criteria or reference a section within the permit application that directly addresses it in detail. There are only five process steps provided regarding the handling of RCRA non-exempt waste. Please explain why the eight process steps provided in Section 5.1 for solid waste would not be appropriate for RCRA non-exempt waste.

Pursuant to Paragraph (5) of 19.15.16.15 NMAC, the "operator shall ensure that soils are disked biweekly and biopiles are turned at least monthly." Please explain why compliance with this provision does not apply to biopiles of RCRA non-exempt waste.

In Step 3, please provide the mixing ratio of manure to RCRA non-exempt waste. Also, please identify what types of "organic waste" may be added to get the remediation process started. Please provide MSDS's for the proposed chemical enhancers.

In Step 4, please identify the temperatures, initial and maintenance, that must be obtained in order to promote and facilitate the remediation process. Also, please identify what types of "additional remediation materials" may be added to maintain and control the remediation process.

In Step 5, please identify the test frequency, test protocols and test methods required by Subsection D of 19.15.36.15 NMAC.

#### Section 5.4, Produced Water:

Please identify the "acceptable criteria" and the associated concentrations for produced water that may be suitable for dust control within the facility. Also, please provide a regulatory reference in regards to the "acceptable criteria." Please describe how the produced water will be utilized for dust control within the facility boundary, such as where and how it will be applied.

The last sentence of the paragraph states that a "form C-133 showing State approval must accompany produced water sent off-site." Pursuant to Subsection A of 19.15.34.8 NMAC, a "person shall not transport produced water, drilling fluids or other liquid oil field waste, including drilling fluids and residual liquids in oil field equipment, except for small samples removed for analysis, by motor vehicle from a lease, central tank battery or other facility without an approved form C-133, authorization to move liquid waste. The transporter shall maintain a

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photocopy of the approved form C-133 in the transporting vehicle." The approved C-133 is linked the transporter only, not the produced water. Please modify the response to properly reflect the regulatory requirements of 19.15.34.8 NMAC.

#### **Page 6.7**

Section 7.1, Treatment Zone Monitoring:

Please describe how the implementation of the semi-annual treatment zone monitoring will occur. Based upon the information provided in Section 5 of the application, biopiles will be constructed in a generator specific manner. Since each biopile will be in a different stage of remediation, will each biopile be sampled? Please describe the protocol.

Pursuant to Paragraph (4) of 19.15.36.15.C NMAC, within "72 hours after receipt, the operator shall spread and disk contaminated soils in eight-inch or less lifts or approximately 1000 cubic yards per acre per eight-inch lift or biopile." The language provided in the second paragraph of the response is not the equivalent to the regulatory requirement. The written response would allow for the waste to be placed into a biopile without any limits in regards to lift thickness or volume. Please modify the response to comply with the requirement. Also, please describe the protocols that will be implemented and the conditions that must be satisfied in order the soils to be utilized for the stabilization of liquid waste.

The second bullet of the treatment zone additional lift protocol discusses the chloride concentration limit (1000 mg/kg) in regards to the depth to ground water. The second bullet also notes that "ground water is 100" or more below the lowest elevation." The proposed facility location has not been properly investigated or assessed in regards to the siting criteria. Based upon the information provided within the application, there is some concern in respect to the determination of the separation to ground water. Water well SJ 02883, as properly located and illustrated on the water well map of Page 2.3, is noted on the Office of the State Engineer well log information sheet to have a depth to water of 87 feet (page 46 of Section 15). Water well SJ 02883 is abutting the proposed facility to the east within Section 16. Please make arrangements to schedule a meeting with myself to discuss the submittal of a boring plan in order to properly assess the proposed location in regards to the siting criteria of 19.15.36 NMAC.

In the third paragraph, please provide the estimated number of biopiles that would be equivalent to maximum thickness of treated soils in a landfarm cell of "two feet or approximately 3000 cubic yards per acre." Please provide the standard dimensions (height, width, and length) of the biopile utilized for this assessment.

#### Section 7.2, Vadose Zone Monitoring:

Pursuant to Paragraph (1) of 19.15.36.E NMAC, the "operator shall monitor the vadose zone beneath the treatment zone in each landfarm cell." The first sentence/paragraph of the response states that "sampling will be obtained from the ground below landfarm cell treatment areas." Please modify the language in order to clarify that sampling will occur beneath the treatment zone in each landfarm cell.

#### Semi-annual Monitoring:

Please modify the language in the first sentence of the first paragraph to clarify that sampling will occur beneath the treatment zone in each landfarm cell. Also, please identify additional sampling protocols, such as obtaining samples beneath active landfarm cells/biopiles

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and measures that will be implemented to backfill sampling locations, within the sampling criteria bullets.

#### Five Year Monitoring:

Please describe the sampling protocol for the five year monitoring event of Paragraph (3) of 19.15.36.15.E NMAC or refer to the semi-annual monitoring sampling protocol.

#### **Page 6.8**

Section 8.0, Treatment Zone Closure Standards:

Please describe how the implementation of the treatment zone closure performance standard sampling will occur. Based upon the information provided in Section 5 of the application, biopiles will be constructed in a generator specific manner. Since each biopile will be in a different stage of remediation, will each biopile be sampled? Please describe the protocol.

Please modify the fourth bullet regarding the analytical test method and closure standard for TPH to comply with the requirements of Paragraph (3) of 19.15.36.15.F NMAC.

The fifth bullet discusses the chloride concentration limit (1000 mg/kg) in regards to the depth to ground water. The fifth bullet also notes that "ground water is 100' or more below the lowest elevation." The proposed facility location has not been properly investigated or assessed in regards to the siting criteria. Based upon the information provided within the application, there is some concern in respect to the determination of the separation to ground water. Please make arrangements to schedule a meeting with myself to discuss the submittal of a boring plan in order to properly assess the proposed location in regards to the siting criteria of 19.15.36 NMAC.

Please provide a clarifying statement at the end of the sixth bullet that recognizes the responsibility of the operator to comply with the requirements of Paragraph (4) of 19.15.36.15.G NMAC, if the result of the site specific risk assessment is a request of an alternative closure standard.

#### Section 9.0, Final Disposition of Treated Soils:

Please correct the regulatory reference at the end of the first sentence of the second paragraph. The current regulatory reference, 19.15.36.15.H, refers to the bioremediation endpoint approach. This approach/method is not proposed or discussed within the application and would not be applicable based upon the methods of biopile construction and development proposed within Section 5 of the application. Please provide the correct regulatory reference, Paragraph (2) of 19.15.36.15.G NMAC, that coincides with the language provided in the sentence.

In the last sentence of the second paragraph, please identify the responsibility of the operator to "give division-approved public notice of an application for alternative soil closure standards in the manner provided in 19.15.36.9 NMAC" pursuant to Paragraph (4) of 19.15.36.15.G NMAC.

Please provide language that recognizes the potential impact on the operator's financial assurance, pursuant to Paragraph (3) of 19.15.36.15.G NMAC, if the closure standards cannot be achieved.

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#### Section 10.1, Facility Identification:

Pursuant to Subsection J of 19.15.36.13 NMAC, the sign is required to have the operator's name on it. Please modify the response appropriately.

#### Section 10.2, Facility Requirements:

On the application form, the C-137, Line 21 requires the applicant to attach demonstrations of compliance in regards to the siting requirements of Subsection A and B of 19.15.36.13 NMAC. The OCD was unable to locate any documents within the application that illustrate or demonstrate that the proposed facility area satisfies or complies with siting requirements. Please provide documents that demonstrate compliance to each of the siting criterion and reference its location within the application. Also, on the top of the front page of the C-137 application, there is a note that instructs the applicant of the following: A meeting should be scheduled with the Division's Santa Fe office Environmental Bureau prior to pursuing an application for a surface waste management facility in order to determine if the proposed location is capable of satisfying the siting requirements of Subsections A and B of 19.15.36.13 NMAC for consideration of an application submittal. The OCD recommends that such a meeting be scheduled prior to making revisions to the application.

#### Section 10.3, Berms:

Please provide the correct regulatory reference in the title of this section. Please modify and reference Paragraph (1) of 19.15.36.15. NMAC.

Pursuant to Paragraph (4) of 19.15.36.8.C NMAC, the application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas." Please provide detailed construction/installation diagrams of the berms within the surface waste management facility and reference their location within the application.

#### **Page 6.9**

Section 10.5, Placement of Contaminated Waste:

Please provide the correct regulatory references in the title of this section. Please modify and reference Paragraphs (2) and (3) of 19.15.36.15. NMAC.

Please provide a facility map that illustrates the areas in which contaminated soils may be placed within the facility in regards to compliance with the appropriate siting and operational setbacks requirements of 19.15.36 NMAC. The facility map should also illustrate the proposed locations of buildings, roads, utilities, processing areas, remediation areas (exempt and non-exempt), and other site improvements.

#### Section 10.6, Spill Reporting:

Pursuant to Subsection K of 19.15.36.13 NMAC, the operator "shall comply with the spill reporting and corrective action provisions of 19.15.30 NMAC or 19.15.29 NMAC." The response indicates that compliance is "outlined in the company Spill Prevention Control & Contingency Plan." The OCD was unable to find a document in the application by that title, please reference a page number or section in which the plan can be located within the permit

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application. A Storm Water Pollution Prevention (SWPP) Plan was submitted separately but with the permit application. The information provided Section 4.4, Spill Prevention and Response, of the SWPP plan *does not demonstrate compliance* with spill reporting and corrective action required by state regulation. Such documents should not be referenced.

Also, please properly rename the title of this section. The regulations identified within this provision address both <u>spill reporting and corrective action</u>, not just spill reporting.

#### Section 10.7, Monthly Inspections & Maintenance Activities:

The response indicates that only Paragraph (3) of 19.15.36.13.L NMAC is addressed in the company Routine Inspection & Maintenance Activities plan. Based upon information provided in the permit application regarding the use of surface impoundments, the plan must address compliance with Paragraph (1) of 19.15.36.13.L NMAC. Also, please reference a page number or section in which the "company Routine Inspection & Maintenance" plan can be located within the permit application.

#### Section 10.8, Run On/Off Water Control:

A Storm Water Pollution Prevention (SWPP) Plan was submitted separately but with the permit application. The information provided within the SWPP plan does not address the provisions of Subsection M of 19.15.36.13 NMAC. Please provide the information required of Subsection M of 19.15.36.13 NMAC or reference the location within the permit application where the required information is provided.

#### Section 10.9, Contingency Plans:

Please provide the correct regulatory references in the title of this section. Please modify and reference 19.15.11 NMAC regarding compliance with hydrogen sulfide.

The response indicates that "contingency plan(s)" are only required to "comply with provision 19.15.36.13.N NMAC." This is not correct. The contingency plan required by Subsection N of 19.15.36.13 NMAC and Paragraph (10) of 19.15.36.8.C NMAC is required to "be designed to minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water." Pursuant to Paragraph (8) of 19.15.36.8.C NMAC, the application shall include "a hydrogen sulfide prevention and contingency plan that complies with those provisions of 19.15.11 NMAC that apply to surface waste management facilities." These are two separate plans based upon the requirements of two separate regulations. Please reference a page number or section in which each plan can be located within the permit application.

#### Section 11.0, Records Management:

Please include and recognize the recordkeeping responsibilities of the operator in accordance with Section 15 of 19.15.35 NMAC, such as waste acceptance, background sampling, operations, treatment and vadose zone monitoring, and closure.

#### Page 6.10

#### Section 11.2, Material Entry Record:

Pursuant to Subsection G of 19.15.36.13 NMAC, the "operator of a commercial facility shall maintain records reflecting the generator, the location of origin, the location of disposal

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within the commercial facility, the volume and type of oil field waste, the date of disposal and the hauling company for each load or category of oil field waste accepted at the commercial facility." Please include the two unlined items above in the list of information that will be compiled for compliance with Subsection G of 19.15.36.13 NMAC.

#### Page 6.13

Exhibit (C)

Please identify the provisions with 19.15.36 NMAC that allows the acceptance of the following waste material: tank cleaning residue, charcoal filter material, and washout liquids. If no such provisions can recognized to allow the acceptance of such waste or provisions prohibit the acceptance of such waste, please remove the waste streams from the form.

#### Page 6.17

Sheet 6 of 11, 10 Acre Cells Map:

The map illustrates that several of the landfarm cells extend beyond the proposed facility boundary. Please modify the map to represent the area that has requested to be permitted. The current map confuses this matter. Please provide a facility map that illustrates the areas in which contaminated soils may be placed within the facility in regards to compliance with the appropriate siting and operational setbacks requirements of 19.15.36 NMAC. The facility map should also illustrate the proposed locations of buildings, roads, utilities, processing areas, remediation areas (exempt and non-exempt), and other site improvements.

#### Page 6.18

Sheet 7 of 11, Site Plan:

The site plan only illustrates a small portion of the proposed facility. Please explain the purpose and function of the designated area "set aside for water."

#### **Page 7.1**

Table 1, Routine Maintenance Activities:

The control and collection of fugitive trash and debris should be a daily task rather than weekly. Please modify the frequency in order to prevent violations of other state rules and regulations.

Compliance with Paragraph (1) of 19.15.36.13.L NMAC, regarding the inspection, sampling, maintenance and recordkeeping requirements of leak detection systems is not addressed in this section. Information provided within the application suggests and discusses the use of surface impoundments, but the application does not include the detailed engineering designs and construction/installation diagrams required of Paragraphs (4) and (5) of 19.15.36.8.C NMAC. Please include the required diagrams and designs and if such impoundments requirement leak detection and please modify and address the requirements of Paragraph (1) of 19.15.36.13.L NMAC.

#### **Page 7.3**

Moisture/Dust Control:

The last sentence of the response provided in the "results expected" column states that "biopiles will be trenched with water." Please explain this process.

*Unloading/Mixing Area(s):* 

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The instructions provided in the "results expected" column, regarding leaking metal pits and spills, does not include compliance with the requirements of Subsection K of 19.15.36.13 NMAC. Please modify.

#### **Page 7.4**

Tank Battery:

In the row that addresses liner, please explain why a liner would require maintenance and be fully covered if visible. Also, please clarify in the liner "results expected" column by adding the following language "replacement of liner material requires OCD approval prior to replacement and installation."

The instructions provided in the "results expected" column, regarding spills does not include compliance with the requirements of Subsection K of 19.15.36.13 NMAC. Please modify.

#### **Page 8.0**

Hydrogen Sulfide Contingency Plan:

Pursuant to Paragraph (8) of 19.15.36.8.C NMAC, the application shall include "a hydrogen sulfide prevention and contingency plan that complies with those provisions of 19.15.11 NMAC that apply to surface waste management facilities." The H2S contingency plan provided in this section of the permit application does not address all of the requirements nor does it provide all of the information required of 19.15.11 NMAC. The plan incorporates provisions of Subsection N of 19.15.36.13 NMAC and refers to documents (the SPCC plan) which are not provided in the permit application packet, both which are not appropriate or applicable when addressing a H2S release.

#### **Page 8.1**

H2S / Contingency Plan:

As stated above, pursuant to Paragraph (8) of 19.15.36.8.C NMAC, the application shall include "a hydrogen sulfide prevention and contingency plan that complies with those provisions of 19.15.11 NMAC that apply to surface waste management facilities." The regulatory references, "19.15.3.11 & 19.15.36.13.N", provided beneath the title at the top of the page are not correct. The general contingency plan required of Paragraph (8) of 19.15.36.8.C NMAC and Subsection N of 19.15.36.13 NMAC is a separate plan or submittal from the hydrogen sulfide prevention and contingency plan required of Paragraph (8) of 19.15.36.8.C NMAC. The requirements of Subsection N of 19.15.36.13 NMAC should not be incorporated and addressed in the H2S contingency plan. Please provide the correct references, such as Paragraph (8) of 19.15.36.8.C NMAC and 19.15.11 NMAC. The building address provided on this page is for IEI/JFJ's current landfarm, Permit NM1-010 B. The H2S contingency plan should address the facility proposed in the application. Please modify.

Pursuant to Paragraph (2) of 19.15.11.9.B NMAC, the hydrogen sulfide contingency plan shall contain "telephone numbers of emergency responders, public agencies, local government and other appropriate public authorities." The only telephone number provided is 9-911. Please provide properly identify the appropriate parties and their associated numbers as required by the regulations.

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#### Section I: Purpose and Objectives

In accordance with the provisions of 19.15.11 NMAC, the owner/operator is responsible for providing training to emergency responders regarding the H2S contingency plan, briefings and training to residents and public officials, coordination with the state emergency plan, and filing an annual inventory of contingency plans with the appropriate local emergency planning committee and the state emergency response commission. These requirements are not identified or addressed in the contingency plan. The last sentence of the second paragraph references compliance to "19.15.36.13.N.2 & 19.15.36.13.N.7" which apply the general facility contingency plan, but are not applicable to the requirements of 19.15.11 NMAC. Please focus the development of the H2S contingency plan on the applicable and required requirements of 19.15.11 NMAC.

#### **Page 8.4**

Section III: Responsibilities of Primary Emergency Coordinator and/or Alternative Emergency Coordinator(s)

Items 13 through 16 on this page provide reference of compliance for provisions in regards to a general contingency plan required by 19.15.36.13 NMAC. There are also references to the implementation of the SPCC Plan in an event of a hydrogen sulfide gas release. The OCD has been unable to locate a SPCC Plan within the permit application in order to determine if it addresses the response and actions that must be implemented during a hydrogen sulfide gas release. Spill Prevention, Control and Countermeasure (SPCC) Plans usually identify preventive measures to assure that a spill from an Aboveground Storage Tank (AST) is contained and countermeasures are established to prevent oil spills that could reach navigable waters. The procedures and protocols in a SPCC Plan usually are not applicable when addressing a hydrogen sulfide gas release. Please focus the development of the H2S contingency plan on the applicable and required requirements of 19.15.11 NMAC.

#### **Page 8.5**

Signs and Markers:

Pursuant to Section 10 of 19.15.11 NMAC, the "sign or marker shall be readily readable, and shall contain the words "poison gas" and other information sufficient to warn the public that a potential danger exists. The person shall prominently post signs or markers at locations, including entrance points and road crossings, sufficient to alert the public that a potential danger exists." Please modify this section in order to demonstrate compliance to the above-referenced provision.

#### Regulatory Threshold:

The first sentence of the first paragraph states "It has been determined that H2S concentrations on the facility are below 100 ppm." The OCD finds this statement difficult to accept since the facility has not been permitted, constructed, or that any waste material has been delivered to the proposed facility location in order to make a determination. The second sentence of the first paragraph states that "all trucks.... will be screened for H2S upon arrival." Please identify the H2S screening level that will insure any further development of H2S in the liquid waste storage tanks that would exceed any regulatory limit.

The first sentence of the second paragraph states "As per 19.15.11 NMAC no further actions are required for concentrations below 100 ppm." This statement is not accurate. Pursuant to Section 2 of 19.15.11 NMAC, "19.15.11 NMAC does not exempt or otherwise

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excuse surface waste management facilities the division permits pursuant to 19.15.36 NMAC from more stringent conditions on the handling of hydrogen sulfide required of such facilities by 19.15.36 NMAC or more stringent conditions in permits issued pursuant to 19.15.36 NMAC, nor shall the facilities be exempt or otherwise excused from the requirements set forth in 19.15.11 NMAC by virtue of permitting under 19.15.36 NMAC." Furthermore, Subparagraph (f) of Paragraph (2) of 19.15.11.9.B NMAC states that the "hydrogen sulfide contingency plan shall include the activation level and a description of events that could lead to a release of hydrogen sulfide sufficient to create a concentration in excess of the activation level." Also, pursuant to Subsection C of 19.15.11.9 NMAC the "person shall activate the hydrogen sulfide contingency plan when a release creates a hydrogen sulfide concentration greater than the activation level set forth in the hydrogen sulfide contingency plan. At a minimum, the person shall activate the plan whenever a release may create a hydrogen sulfide concentration of more than 100 ppm in a public area, 500 ppm at a public road or 100 ppm 3000 feet from the site of release." Please review the definitions for "public area" and "public road." Also, please establish "activation levels" that will prevent the exposure to workers and other parties within the proposed facility to H2S that exceeds other regulatory thresholds.

#### Activation Levels:

Subparagraph (f) of Paragraph (2) of 19.15.11.9.B NMAC states that the "hydrogen sulfide contingency plan shall include the activation level and a description of events that could lead to a release of hydrogen sulfide sufficient to create a concentration in excess of the activation level." Please see the comments above provided in the "Regulatory Threshold" section. The Immediately Dangerous to Life or Health (IDLH) concentration for hydrogen sulfide is 100 ppm. The emergency activation level proposed in the permit application is "100 ppm or higher." The US National Institute of Occupational Safety and Health (NIOSH) define IDLH as exposure to airborne contaminants that is "likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment." Please establish "activation levels" that will prevent the exposure to workers and other parties within the proposed facility to H2S that exceeds other regulatory thresholds.

#### *In the Event of a H2S Release:*

In the first step, please identify the concentration limit in which the alarm system will be activated. Please describe how or what the alarm systems sound like and how the alarm that identifies a hydrogen sulfide release will be or can be distinguished from other alarms. Also, please provide information regarding the H2S monitors/sensors and their capabilities that will be used to determine if a release has occurred. The second sentence of the first step mentions "monitor boxes" and "evacuation maps." Please discuss the function of the "monitor boxes" and provide the "evacuation maps" in this section or reference the location of the maps within the permit application. The OCD was unable to locate any "evacuation maps."

In the second step, please explain how a person would discover a hydrogen sulfide release and at what concentration a person would initiate the notice process. Please provide.

#### General Public Protection from H2S at Tank Battery:

Please include the posting of a sign or marker that complies with the requirements of Section 10 of 19.15.11 NMAC.

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The regulatory reference provided with the subject title of this section is not appropriate for this subject. Pursuant to Subparagraph (a) of Paragraph (2) of 19.15.11.9.B NMAC, the hydrogen sulfide contingency plan shall contain "an immediate action plan as described in the API document referenced in Paragraph (1) of Subsection B of 19.15.11.9 NMAC" and shall "include the locations of potentially affected public areas and public roads and shall describe proposed evacuation routes, locations of road blocks and procedures for notifying the public..." Based upon the information provided in this section, the hydrogen sulfide contingency plan was not developed "with due consideration of paragraph 7.6 of the guidelines in the API publication Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide, RP-55, most recent edition," as required by Paragraph (1) of 19.15.11.9.B NMAC. Please modify this section to reflect the provisions of the document identified above.

#### **Page 8.6**

Section VI: Disabled Occupants

The actions and protocols proposed in this section to address to removal of any "disabled occupants" does not consider the risk and concerns associated with a hydrogen sulfide release. If a hydrogen sulfide plume were to develop and evacuation is required, any personnel or emergency responders would need to don the appropriate PPE prior to entering the area in order to prevent become victims themselves. Also, waiting for assistant may not be an option unless the "disabled occupant" is provided some type of supplied air/oxygen breathing device. Please modify this section and provide response procedures that address the concerns of a hydrogen sulfide release.

#### Section VII: Accountability Procedures for Emergency Evacuation

An evacuation in response to a hydrogen sulfide release should be based upon the assessment of the status of the plume. Designated meeting sites may be downwind of hydrogen sulfide plume and gathering at such designated locations may pose a greater risk of exposure. Procedures and protocols should be established to readily identify the potential source of the hydrogen sulfide release, such as having H2S sensors that have flashing beacons on top that activate when a certain concentration is detected. If such a monitoring system is installed then the evacuation procedures and responses could include the assessment of the wind direction in order to ensure the personnel, visitors, and delivery personnel evacuate the area in a manner away from the downwind direction of hydrogen sulfide plume. The accountability procedures should expand beyond just on-site personnel and include all visitors and any delivery personnel or contractors. Also, if the Emergency Coordinator responsibility include searching for any remaining personnel prior to leaving the area, then it would be advisable to ensure that the Emergency Coordinator don the appropriate PPE prior to beginning the task so not to become a victim.

#### Section VIII: Rescue and Medical

Release notification should be established in order to ensure that relevant information is provided to all first responders. If emergency responders are not informed that they are responding to a hydrogen sulfide release, then they may be placed in great risk of exposure and become victims themselves. Please modify this section appropriately. Injured personnel should be removed from the hydrogen sulfide release exposure area prior to receiving any medical attention.

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#### **Page 8.7**

Section IX: Resources and Responsibility List

As stated above, pursuant to Paragraph (8) of 19.15.36.8.C NMAC, the application shall include "a hydrogen sulfide prevention and contingency plan that complies with those provisions of 19.15.11 NMAC that apply to surface waste management facilities." The regulatory reference, "19.15.36.13.N", provided beside "Emergency Contact Names and Numbers" heading is not correct. The general contingency plan required of Paragraph (8) of 19.15.36.8.C NMAC and Subsection N of 19.15.36.13 NMAC is a separate plan or submittal from the hydrogen sulfide prevention and contingency plan required of Paragraph (8) of 19.15.36.8.C NMAC. The requirements of Subsection N of 19.15.36.13 NMAC should not be incorporated and addressed in the H2S contingency plan. Please provide the correct references. The building address and contact information provided on this page is for IEI/JFJ's current landfarm, Permit NM1-010 B. The H2S contingency plan should address the facility proposed in the application. Please modify.

#### **Page 8.8**

Section X: Operations Shutdown

In the event of a hydrogen sulfide release, the shutting down of equipment should not take precedence over the safety of personnel. If shutting down certain equipment will result in the containment or prevent the further release of hydrogen sulfide, the protocols and procedure should initially address the protection of the response personnel, such as donning appropriate PPE. Please modify this section to insure that response personnel do not become victims of a hydrogen sulfide release.

#### Section XI: Training and Communications

Pursuant to Subparagraph (d) of Paragraph (2) of 19.15.11.9.B NMAC, the "hydrogen sulfide contingency plan shall provide for training and drills, including training in the responsibilities and duties of essential personnel and periodic on-site or classroom drills or exercises that simulate a release, and shall describe how the person will document the training, drills and attendance. The hydrogen sulfide contingency plan shall also provide for training of residents as appropriate on the proper protective measures to be taken in the event of a release, and shall provide for briefing of public officials on issues such as evacuation or shelter-in-place plans." The information provided in this section does not address all of the requirements of the provision. Please modify and provide the required information. Also, the topic of "Communications" is not addressed in this section. Please provide information regarding "Communications."

#### **Page 8.9**

Section XII: Plan Amendments

Please modify the information in this section to demonstrate compliance with the applicable provisions of 19.15.11 NMAC, instead of 19.15.36.13.N NMAC. Please address the submission provisions of Subsection D of 19.15.11.9 NMAC and the review and amendment provisions of Subsection F of 19.15.11.9 NMAC.

#### Page 8.10

Hydrogen Sulfide Characteristics and Effects

Please correct the spelling of "sulfide" and provide the appropriate regulatory reference in the title of this page. Pursuant to Subparagraph (b) of Paragraph (2) of 1.15.11.9.B NMAC,

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the "hydrogen sulfide contingency plan shall include a discussion of the characteristics of <u>hydrogen sulfide</u> and <u>sulfur dioxide</u>." Please provide the required information in regards to the characteristics of sulfur dioxide.

#### Page 8.11

Table #3

Please limit the information in the table to the information required by the regulation. Pursuant to Subparagraph (b) of Paragraph (2) of 1.15.11.9.B NMAC, the "hydrogen sulfide contingency plan shall include a discussion of the characteristics of <u>hydrogen sulfide</u> and <u>sulfur dioxide</u>." It is recommended to keep the characterization of each compound separate for accessibility and applicability instead of combining the information.

#### STEL (short term exposure limits)

The last sentence provided in this section states "IEI has procedures to evacuate the area at 10 PPM and to mask at 15 PPM." The OCD is unable to locate the procedures identified in the statement above within the hydrogen sulfide contingency plan. Please provide this information in the appropriate sections of the hydrogen sulfide contingency plan, such as when addressing the "activation levels" and in the required "immediate action plan."

The following underlined provisions were not addressed in the submitted hydrogen sulfide contingency plan:

- 19.15.11.9.B(1) NMAC The person shall <u>develop the hydrogen sulfide contingency</u> plan with due consideration of paragraph 7.6 of the guidelines in the API publication Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide, RP-55, most recent edition, or with due consideration to another division-approved standard.
- 19.15.11.9.B(2)(a) NMAC The hydrogen sulfide contingency plan shall contain information on emergency procedures the person will follow in the event of a release and shall include, at a minimum, information concerning the responsibilities and duties of personnel during the emergency, an immediate action plan as described in the API document referenced in Paragraph (1) of Subsection B of 19.15.11.9 NMAC, and telephone numbers of emergency responders, public agencies, local government and other appropriate public authorities. The plan shall also include the locations of potentially affected public areas and public roads and shall describe proposed evacuation routes, locations of road blocks and procedures for notifying the public, either through direct telephone notification using telephone number lists or by means of mass notification and reaction plans.
- 19.15.11.9.B(2)(b) NMAC The hydrogen sulfide contingency plan shall include  $\underline{a}$  discussion of the characteristics of hydrogen sulfide and sulfur dioxide.
- 19.15.11.9.B(2)(c) NMAC The hydrogen sulfide contingency plan shall include <u>maps</u> and drawings that depict the area of exposure and public areas and public roads within the area of exposure.
- 19.15.11.9.B(2)(d) NMAC Training and drills. The hydrogen sulfide contingency plan shall provide for training and drills, including training in the responsibilities and duties of essential personnel and periodic on-site or classroom drills or exercises that simulate a release, and shall describe how the person will document the training, drills and attendance. The hydrogen sulfide contingency plan shall also provide for training of residents as appropriate on the proper protective measures to be taken in the event of a release, and shall provide for briefing of public officials on issues such as evacuation or shelter-in-place plans.

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- 19.15.11.9.B(2)(e) NMAC Coordination with state emergency plans. The hydrogen sulfide contingency plan shall <u>describe how the person will coordinate emergency response actions under the plan with the division and the New Mexico state police consistent with the New Mexico hazardous materials emergency response plan.</u>
- 19.15.11.9.B(2)(f) NMAC Activation levels. The hydrogen sulfide contingency plan shall <u>include the activation level and a description of events that could lead to a release of hydrogen sulfide sufficient to create a concentration in excess of the activation level.</u>
- 19.15.11.13 NMAC PERSONNEL PROTECTION AND TRAINING: The person shall provide persons responsible for implementing a hydrogen sulfide contingency plan training in hydrogen sulfide hazards, detection, personal protection and contingency procedures.
- 19.15.11.13 NMAC NOTIFICATION OF THE DIVISION: The person shall notify the division upon a release of hydrogen sulfide requiring activation of the hydrogen sulfide contingency plan as soon as possible, but no more than four hours after plan activation, recognizing that a prompt response should supersede notification. The person shall submit a full report of the incident to the division on form C-141 no later than 15 days following the release.

#### **Page 9.1**

Closure and Post Closure Plan:

The plan only addresses the closure and post closure requirements in regards to the landfarm soils and cells. The plan fails to address the closure of the processing of waste material in pits, tanks, and other site improvements. Please modify the closure and post closure plan to address all operations associated with the proposed facility within the facility boundary. Also, please explain the February 14, 2007 date that follows all of the regulatory references. The February 14, 2007 date is the effective date of 19.15.36 NMAC. Since the effective date, the regulation has been amended and can be subject to future changes and amendments. If the purpose is to attempt to revert back to the February 14, 2007 regulations, then the OCD cannot consider the application for approval. The OCD does not recommend dating regulatory reference since regulations are subject to change.

Pursuant to Paragraph (2) of 19.15.36.18.A NMAC, the "division shall notify the operator within 60 days after the date of cessation of operations specified in the operator's closure notice of modifications of the closure plan and proposed schedule or additional requirements..." The current language in the second paragraph suggests that the division has 60 days from the operator's notice to respond. This is incorrect. Please modify the last sentence of the second paragraph to coincide with the regulatory language and requirements.

Pursuant to Paragraph (5) of 19.15.36.18.A NMAC, "Closure shall proceed in accordance with the approved closure plan and schedule and modifications or additional requirements the division imposes." The first sentence of the provision identifies that OCD approval is required in order to proceed with the closure. Please modify the third paragraph to identify the condition in which closure can proceed.

The fourth paragraph seems to out of sequence. It seems to be the lead in to the sixth paragraph and the other identified provisions associated with Paragraph (4) of 19.15.36.18.D NMAC. Please relocate the proposed language to its appropriate place within the closure plan.

The fifth paragraph, which addresses re-vegetation, seems to out of sequence. Please relocate the proposed language to its appropriate place within the closure plan and to the

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sequence in which activities will be completed. The fifth paragraph also fails to identify the minimum regulatory seed mixture requirements regarding re-vegetation and the duration in which the operator is responsible for maintaining the vegetative cover, as specified within Paragraph (6) of 19.15.36.18.A NMAC. Please modify the fifth paragraph to identify all of the regulatory requirements of the operator in regards to re-vegetation.

The third bullet in the sixth paragraph fails to identify the operator's responsibility to fill in the cell, after the treated soils are removed, with native soils pursuant to Subparagraph (d) of Paragraph (4) of 19.15.36.18.D NMAC. Please modify in order to satisfy the regulatory language and requirements.

The fourth bullet in the sixth paragraph fails to identify the operators' responsibility to fill in the landfarm remediation area, after contaminated soils are removed, with native soils pursuant to Subparagraph (c) of Paragraph (4) of 19.15.36.18.D NMAC. Please modify in order to satisfy the regulatory language and requirements.

The eighth (last) bullet addresses the protocol an operator must satisfy if the operator utilizes the bioremediation endpoint approach. This approach/method is not proposed or discussed within the application and would not be applicable based upon the methods of biopile construction and development proposed within the application. Please omit the eighth bullet.

The closure portion of the plan fails to address the closure of the pits and tanks associated with the processing of liquids and soils prior to placement within a landfarm cell and biopile. The OCD requires that such closures be addressed in the closure plan by utilizing the applicable provisions of Paragraph (1) of 19.15.36.18.D NMAC for tanks and Subsection E of 19.15.36.18 NMAC for pits. Please provide.

The last paragraph on the page discusses the option for IEI to pursue an alternative to revegetation. Pursuant to Subsection G of 19.15.36.18 NMAC only the "landowner" can pursue such a request. Since IEI is not identified as the landowner within the permit application, the language in the paragraph must be modified in order to satisfy the regulatory language and requirements. Please modify. Also, please include language that identifies the impact on the release of the operator's financial assurance.

#### **Page 9.2**

Closure / Post Closure Estimate:

Pursuant to Paragraph (9) of 19.15.36.8.C NMAC, the application shall include "a closure and post closure plan, including a responsible third party contractor's cost estimate, sufficient to close the surface waste management facility in a manner that will protect fresh water, public health, safety and the environment." The cost estimates should reflect those costs the OCD would incur to hire a third party to complete the closure and post closure activities if the operator is no longer involved. Based upon information provided in the application, the size of the facility is 291 acres with 30 proposed landfarm cells that are approximately 10 acres each. The application also identifies that soils remediation will be accomplished by the use of biopiles rather than landfarm cells. Please provide a detailed breakdown of the proposed closure and post closure cost estimates.

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The first cost estimate is based upon "testing for two years." It identifies that 20 of the proposed 30 landfarm cells will be tested at a cost of \$1200.00 per test. Please justify the testing of 20 landfarms cells, rather than individual biopiles (especially when each biopile will be in a different phase of remediation). Also, please provide a breakdown of the \$1200 test cost estimate. How much will be dedicated for hiring a field tech to mobilize to facility, obtain the sample, demobilize, deliver the sample to the laboratory, and submit a report of the results to the OCD per sampling event? How much will it cost per sampling event for equipment rental and delivery, especially for vadose zone monitoring? How much will each of the semi-annual treatment zone monitoring events cost? How much will each semi-annual vadose monitoring event costs and will the costs include equipment and equipment operators to obtain the sample? How much will each treatment zone closure sampling event cost? Please provide a breakdown for each cost and identify the number of sampling events.

If testing is estimated for two years, then the bi-weekly disking of soils and monthly turning of biopiles must continue "until soils within the cells are remediated to the standards provided in Subsection F of 19.15.36.15 NMAC, or as otherwise approved by the division," pursuant to Subparagraph (a) of Paragraph (4) of 19.15.36.18.D NMAC. Please provide a cost estimate for the OCD to hire a third party to complete this task and include the cost estimates for equipment rental and/or mobilization and demobilization to and from the proposed facility.

Pursuant to Subparagraph (f) of Paragraph (4) of 19.15.36.18.D NMAC, please include the cost estimates associated with the removal of buildings, fences, roads and equipment, site cleaned-up and tests conducted on the soils for contamination.

In regards to the proposed cost estimates associated with grading and shaping, please justify why only 200 acres of the 291 acre facility requires this work. Please provide a breakdown of the equipment hourly rate. Does it include mobilization and demobilization to and from the facility and does it include the cost of the equipment operator? Please clarify by providing a breakdown of costs. The same should be done in regards to seeding. Why will only 200 acres of the 291 acres be seeded? How many pounds of seed is required per acre to obtain the re-vegetation requirements of Paragraph (6) of 19.15.36.18.A NMAC? What method will be utilized to complete the task? Please provide a breakdown of the seeding costs.

The removal of tanks and pits will also include the removal and disposal of any remaining liquids and contaminated waste material, the disposal of the tank and/or pit material, and the testing beneath each tank and pit to determine if the operation of the tank or pit resulted in the contamination of soils beneath it. Please provide a breakdown for costs associated with each of the tasks identified above.

During the post closure period, the operator "shall regularly inspect and maintain required re-vegetation." Pursuant to Paragraph (6) of 19.15.36.18.A NMAC, the operator is required to provide maintenance of the vegetative cover "through two successive growing seasons." Please provide a cost breakdown of the proposed \$300.00 quarterly cost and a description of what it represents.

#### Page 10.1

Contingency Plan:

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The first paragraph identifies the function of the facility as "specializing in remediating RCRA exempt oilfield waste." This statement conflicts with the non-exempt waste identified on page 10.4 of the contingency plan. Please modify the statement to coincide with information provided in the application.

In the first sentence of both the second and third paragraphs, the proposed language suggests that the contingency plan should only address actions to be taken "in the event of a major spill, fire, or other response to incident" and "whenever there is a major emergency." The regulation does not make a distinction between major or minor emergencies, spills, and fires. Pursuant to Subsection N of 19.15.36.13 NMAC, the "operator shall carry out the plan's provisions immediately whenever there is a fire, explosion or release of contaminants or oil field waste constituents that could threaten fresh water, public health, safety or the environment." The regulation also requires the plan to "be designed to minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water."

In the last paragraph, please clarify that copies of the plan will be maintained at the SWMF and "provided to", not maintained by, the local law enforcement and emergency response departments for use during an emergency. Also, pursuant to Section N of 19.15.36.13 NMAC the "operator shall provide the division's environmental bureau with a copy of an amendment to the contingency plan, including amendments required by Paragraph (8) of Subsection N of 19.15.36.13 NMAC; and promptly notify the division's environmental bureau of changes in the emergency coordinator or in the emergency coordinator's contact information." Please provide language that expresses the responsibility of the operator to OCD.

#### Page 10.3

Section II: General Facility Information

Items a through h in this section each identify the subject matter of the information that is provided after it. Please identify the subject matter for item a.

#### Section III: Description of Business

The second sentence in this section states that the facility accepts non-hazardous RCRA exempt waste(s). This statement conflicts with the first sentence in the first paragraph of Section IV and the non-exempt waste identified on page 10.4 of the contingency plan. Please modify the statement to coincide with information provided in the application.

#### Page 10.4

Waste Characterization:

Pursuant to Paragraph (3) of 19.15.36.7.A NMAC "Landfarm" means a discrete area of land designated and used for the remediation of petroleum hydrocarbon-contaminated soils and drill cuttings." Pursuant to Subsection A of 19.15.36.15 NMAC, "Only soils and drill cuttings predominantly contaminated by petroleum hydrocarbons shall be placed in a landfarm. The division may approve placement of tank bottoms in a landfarm if the operator demonstrates that the tank bottoms do not contain economically recoverable petroleum hydrocarbons." The information provided in this section identifies four "category groups that are related to the physical form of" exempt waste. The second "category group" includes "tank cleaning residue." Please compare this interpretation to the definition of "tank bottoms" provided in Paragraph (1) of 19.15.2.7.T NMAC. Also, "tank sludge and tank bottom" waste may be classified as RCRA

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non-exempt depending on product or material stored within the tank. The third "category group" is "drilling fluids." The definition of "landfarm" provided in Paragraph (3) of 19.15.36.7.A NMAC and the landfarm waste acceptance criteria of Subsection A of 19.15.36.15 NMAC clearly identifies the acceptance of *drill cuttings*, not "drilling fluids." The fourth "category group" is the "debris waste." The OCD is unfamiliar of this category of waste. Please provide examples and reference a provision within 19.15.36 NMAC that clearly states that such waste satisfy the waste acceptance criteria for landfarms. Please verify the proposed exempt waste streams in order to determine if they comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms.

#### Exempt Waste(s):

Please defer to the comments provided for the *Waste Characterization* section for page 10.4. Please verify the proposed exempt waste streams to determine if they comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms.

The following wastes: "drilling fluids; well completion, treatment, and stimulation fluids; gas plant dehydration wastes; cooling tower blowdown; gas plant sweetening waste, produced water; and spent filters, filter media, and backwash" do not comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms. Such wastes as, "accumulated materials such as hydrocarbons, solids, sands, and emulsion; and workover wastes" are not clearly defined enough to determine if the wastes comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms. Please list examples of proposed "workover wastes" and reference a provision within 19.15.36 NMAC that clearly states that such waste satisfy the waste acceptance criteria for landfarms. As for "accumulated materials such as hydrocarbons, solids, sands, and emulsion," such waste may be classified as RCRA non-exempt depending on how it is generated. Also, such waste materials as "solids" and "sands" may not be appropriate for acceptance at a landfarm if such waste is not "predominantly contaminated by petroleum hydrocarbons," pursuant to Subsection A of 19.15.36.15 NMAC and the waste are not conducive to remediation pursuant to Paragraph (3) of 19.15.36.7.A NMAC. Please clarify.

#### *Non-Exempt:*

The four proposed RCRA non-exempt waste do not satisfy or comply with the waste acceptance provisions of 19.15.36 NMAC regarding landfarms. Please defer to the comments provided for the *Waste Characterization* section and the *Exempt Waste(s) section* of page 10.4 for suggestions regarding potential RCRA non-exempt waste. Please modify.

#### Page 10.6

Section VII: Response Procedures

Pursuant to Subsection N of 19.15.36.13 NMAC, the "contingency plan shall be <u>designed</u> to <u>minimize hazards</u> to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water." Pursuant to Paragraph (1) of 19.15.36.13.N NMAC, the contingency plan shall "<u>describe the actions surface waste management facility personnel shall take</u> in response to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents <u>that could threaten</u> fresh water, public health, safety or the environment." The intent of the development of the contingency plan is to establish standard operating procedures and protocols to expeditiously respond to fires,

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explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste in order to minimize hazards to air, soil, surface water or ground water.

#### Response Classification:

The second paragraph of this section attempts to classify events and responses into two categories: incidental situations and major emergencies. The distinction is rather the response requires outside assistance or not. The regulation does not make a distinction between incidental or major emergencies, spills, and fires. Please "describe the actions surface waste management facility personnel shall take in response to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents that could threaten fresh water, public health, safety or the environment" in order to "minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water," as required by Subsection N of 19.15.36.13 NMAC.

#### Page 10.7

#### Incidental Event:

Please defer to the comments provided for the *Response Classification* section for page 10.6 regarding incidental situations and major emergencies. Please "describe the actions surface waste management facility personnel shall take in response to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents that could threaten fresh water, public health, safety or the environment" in order to "minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water," as required by Subsection N of 19.15.36.13 NMAC.

#### Major Emergency:

Please defer to the comments provided for the *Response Classification* section for page 10.6 regarding incidental situations and major emergencies.

The title of Section VII, in which the heading "Major Emergency" is listed under is *Response Procedures*. The section fails to provide or identify any response procedures. Please "describe the actions surface waste management facility personnel shall take in response to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents that could threaten fresh water, public health, safety or the environment" in order to "minimize hazards to fresh water, public health, safety or the environment from fires, explosions or an unplanned sudden or non-sudden release of contaminants or oil field waste to air, soil, surface water or ground water," as required by Subsection N of 19.15.36.13 NMAC.

#### Spill Reporting:

The proposed language restrict spill reporting to only releases "from a tank system" and only to releases of "petroleum or any other hazardous substances." This proposal contradicts the requirements Subsection K of 19.15.36.13 NMAC. Pursuant to Subsection K of 19.15.36.13 NMAC, the operator "shall comply with the <u>spill reporting and corrective action</u> provisions of 19.15.30 NMAC or 19.15.29 NMAC." Releases can occur from vehicles delivering waste, onsite fixed equipment, and on-site mobile equipment such as frontend loaders, trucks, track

Crowe Blanco, L'LC Blanco Landfarm April 27, 2010 Page 26 of 32

loaders, backhoe loaders, and tractors. Please review the requirements of 19.15.29 NMAC or 19.15.30 NMAC and provide an appropriate response.

#### Section VIII: Identification of Waste(s)

Pursuant to Paragraph (6) of 19.15.36.13.N NMAC, the contingency plan shall "include an evaluation of expected contaminants, expected media contaminated and <u>procedures for investigation</u>, <u>containment and correction or remediation</u>." The information provided in this section of the contingency plan addresses how known sources are identified but does not include "<u>procedures for investigation</u>, <u>containment and correction or remediation</u>." Please provide all of the required information.

#### Section IX: Assessment

Pursuant to Paragraph (10) of 19.15.36.13.N NMAC, the contingency plan shall "describe how the emergency coordinator, whenever there is a release, fire or explosion, will immediately identify the character, exact source, amount and extent of released materials." The information provided in Section VIII, *Identification of Waste(s)*, of the contingency plan addresses how known sources are identified. Please explain how the emergency coordinator will "identify the character, exact source, amount and extent" of released materials from unknown sources whenever there is a release, fire or explosion. Each scenario is different and may require different procedures.

#### Page 10.8

#### Section X: Notification

The first sentence at the top of the page states "if the event is classified as incidental, then it is handled by facility personnel," thus suggesting that no notice is required. This assumption is incorrect. Please defer to the comments provided for the *Response Classification* section for page 10.6 regarding incidental situations and major emergencies. Please modify this section appropriately.

#### Page 10.9

#### Section XI: Control Procedures

Pursuant to Paragraph (1) of 19.15.36.13.N NMAC, the contingency plan shall "describe the actions surface waste management facility personnel shall take in response to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste containing constituents that could threaten fresh water, public health, safety or the environment." Please ensure that each of the underlined scenarios is addressed, as required by regulation. Also, the contingency plan should standardize operating procedures and protocols in order to expeditiously respond to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste in order to minimize hazards to air, soil, surface water or ground water regardless if the event occurs within or spreads outside of the facility boundary.

#### Incidental Spills:

Please defer to the comments provided for the *Response Classification* section for page 10.6 regarding incidental situations and major emergencies. These comments also apply to incidental and major spills. In the first paragraph of this section, an attempt is made to define an "incidental spill." This is not a term that is recognized or defined in 19.15.36 NMAC. The regulation does distinguish between incidental and major spills. The information provided in this section indicates that only soils have the potential for contamination during incidental spills.

Crowe Blanco, LLC Blanco Landfarm April 27, 2010 Page 27 of 32

There are no procedures or protocols provided to address releases to air, surface water, and ground water as required by Subsection N of 19.15.36.13 NMAC. If soils are contaminated, then compliance with the corrective action provision Section 11 of 19.15.29 NMAC may be required. Please modify the contingency plan to address all of the types of releases identified in Paragraph (1) of 19.15.36.13.N NMAC and include protocols that identify the responsibilities of the operator/owner to comply with the applicable provisions of 19.15.29 NMAC and 19.15.30 NMAC regarding the submittal and approval of remediation plans and/or abatement plans.

#### Major Spills:

Please defer to the comments provided for the *Incidental Spills* section for page 10.9 regarding incidental spills. Please modify the contingency plan to provide and identify standardize operating procedures and protocols in order to expeditiously respond to fires, explosions or releases to air, soil, surface water or ground water of contaminants or oil field waste in order to minimize hazards to air, soil, surface water or ground water regardless if the event occurs within or spreads outside of the facility boundary. Pursuant to Paragraph (1) of 19.15.36.13.N NMAC, the contingency plan "shall describe the actions surface waste management facility personnel shall take..." Please described or recommend methods that may be utilized and implemented "to retain, contain, isolate, or slow the flow" of a release within the contingency plan. Please modify the contingency plan to address all of the types of releases identified in Paragraph (1) of 19.15.36.13.N NMAC and include protocols that identify the responsibilities of the operator/owner to comply with the applicable provisions of 19.15.29 NMAC and 19.15.30 NMAC regarding the submittal and approval of remediation plans and/or abatement plans.

#### Page 10.10

Fires and Explosions:

Pursuant to Paragraph (1) of 19.15.36.13.N NMAC, the contingency plan "shall <u>describe</u> the actions surface waste management <u>facility personnel shall take...</u>" Please described or recommend methods that may be utilized and implemented to contain and isolate a fire within the contingency plan. Is there heavy equipment that can be utilized to isolate a fire from the biopiles and/or to cover the fire with soils? If the use of water is required to extinguish a fire, what will be the source of the water, where will it be obtained, and how will it be contained during use?

Pursuant to Subparagraph (a) of Paragraph (2) of 19.15.29.2.A NMAC, the definition of a major release includes "an unauthorized release of a volume that results in a fire." Please modify the information provided in the sixth paragraph to reflect the operator's responsibility regarding proper notice. Also in the seventh paragraph, please identify the responsibilities of the operator/owner to comply with the applicable provisions of 19.15.29 NMAC and 19.15.30 NMAC regarding the submittal and approval of remediation plans and/or abatement plans.

Please address the emergency coordinator's responsibility in regards to a fire or explosion in accordance with the requirements of Paragraph (11) of 19.15.36.13.N NMAC.

#### Page 10.11

Section XII: Prevention of Recurrence or Spread

For this type of facility, the OCD requires the owner/operator to ensure that all aboveground tanks have impermeable secondary containment (e.g., liners and berms), which will

Crowe Blanco, LLC Blanco Landfarm April 27, 2010 Page 28 of 32

contain a volume of at least one-third greater than the total volume of the largest tank or all interconnected tanks, unless such aboveground tanks contain fresh water. Please modify the last paragraph of this section to properly address aboveground tanks.

#### Section XIV: Container Spills and Leakage

Please explain how "solid wastes" will be utilized to capture spilled residue liquids, as identified in the last sentence of the second paragraph.

#### Page 10.14

Section XVIII: Coordination Arrangements

Pursuant to Paragraph (2) of 19.15.36.13.N NMAC, the contingency plan shall "describe arrangements with local police departments, fire departments, hospitals, contractors and state and local emergency response teams to coordinate emergency services." Please describe and address the arrangements with "contractors and state and local emergency response teams to coordinate emergency services," as required by the regulations.

#### Section XIX: Evacuation Plan

Please provide a facility map that illustrates the proposed evacuation routes. The facility map should illustrate the proposed development of the facility and the proposed location of permitted activities.

#### Section XX: Reporting Requirements

Please defer to the comments provided for the *Response Classification* section for page 10.6 regarding incidental situations and major emergencies and the *Incidental Spills* section for page 10.9 regarding incidental spills. Please modify this section to reflect compliance with the reporting requirements of 19.15.29 NMAC. Also, please include and provide a copy of the appropriate form to report and file a written notification.

#### Page 10.15

Section XXII: Availability and Revision of the Contingency Plan

If revisions and modifications are made to the contingency plan, a copy should be provided to the OCD for regulatory compliance review. Please modify this section to ensure that OCD receives a copy of the contingency plan.

#### Page 11.1

Drainage Plan:

The second sentence of the second paragraph states "the drawings indicate the location of the berms, v-ditches, and dykes designed to protect the major waterways." Pursuant to Paragraph (4) of Subsection C of 19.15.36.8 NMAC, the application shall include "detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas." Please provide "detailed construction/installation diagrams" of the storm water control features, as required by 19.15.36 NMAC.

The last paragraph states that "the Construction Storm Water Protection Plan" has been submitted "as part of this report and drawings. The OCD was unable to locate the "Construction Storm Water Protection Plan" in this section of the application. Please provide the document or reference the location or the correct title of the document.

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#### Page 11.15

Waterways Map, Sheet 3 of 11:

Pursuant to Paragraph (2) of Subsection B of 19.15.36.13 NMAC, "no surface waste management <u>facility</u> shall be located within 200 feet of a watercourse." The Waterways Map illustrates three waterways within the facility boundary. Two of the three watercourses intersect the facility, splitting the proposed location into three separate sections or three separate surface waste management facilities. These three areas are better illustrated on the Drainage Map provided on page 11.16. Please address this issue.

#### Section 12

No information or pages were provided for Section 12 of the permit application.

#### **Section 13**

No information or pages were provided for Section 13 of the permit application.

#### Page 14.1

Best Management Practice Guideline:

Please provide the correct regulatory references in the title of this section. Please modify and reference 19.15.36:8.<u>C(14)</u> NMAC.

#### Page 14.5

Section 4, Roads and Yard Dust:

Please identify the source and quality of the "recycled water" that is proposed for spraying on unpaved roadways in the third bullet under this subject heading.

#### Section 4, Odor Control:

Please identify the "gases" in which incoming liquid waste will be screened, as proposed in the fourth bullet under this subject heading. Also, please identify the "unacceptable levels" in which waste will be rejected.

#### Section 5, Wastewater and Stormwater:

Please provide a best management practice for this section.

Section 6, Handling and Disposal of RCRA Exempt and Non-exempt, Non-Hazardous Wastes:

The first bullet states that "only RCRA exempt, Non-hazardous waste is accepted for disposal." This statement conflicts with the title of this section and other proposals throughout the permit application which state that RCRA non-exempt, non-hazardous waste streams will also be accepted for remediation. Please clarify or modify the response.

#### Page 14.7

Section 12, Wastewater:

Please identify the source of the "re-use wastewater" that is proposed for dust control and suppression, as proposed in the first bullet under this subject heading. Also, please identify the "acceptable reuse criteria."

The third bullet under this heading proposes the use or "reuse" of collected stormwater for "remediation and/or dust control." This is a new proposal that is not discussed in the rest of

Crowe Blanco, LLC Blanco Landfarm April 27, 2010 Page 30 of 32

the application, especially Section 6 of the permit application, the *Management Plan*. Please ensure that such proposals coincide with other proposals in the *Management Plan* when addressing the appropriate operational requirements. Also, please identify the "acceptable reuse criteria."

#### Page 14.9

Stormwater Pollution Prevention Plan Map, Sheet 10 of 11:

Pursuant to Paragraph (4) of Subsection C of 19.15.36.8 NMAC, the application shall include "a description of the surface waste management facility with a diagram indicating the location of fences and cattle guards, and detailed construction/installation diagrams of pits, liners, dikes, piping, sprayers, tanks, roads, fences, gates, berms, pipelines crossing the surface waste management facility, buildings and chemical storage areas." Pursuant to Paragraph (4) of Subsection C of 19.15.36.8 NMAC, the application shall include "engineering designs, certified by a registered professional engineer, including technical data on the design elements of each applicable treatment, remediation and disposal method and detailed designs of surface impoundments." There are items identified and discussed within the "Keyed Notes" of the *Stormwater Pollution Prevention Plan Map* in which "detailed construction/installation diagrams" and/or "engineering designs" are not provided in the permit application. Please provide all of the required "detailed construction/installation diagrams" and/or "engineering designs."

Pursuant to Paragraph (1) of Subsection C of 19.15.36.15 NMAC, the operator "shall berm each landfarm cell to prevent rainwater run-on and run-off." The proposed locations of the berms of the *Stormwater Pollution Prevention Plan Map* do not demonstrate compliance to the above referenced provision. Please provide a map that demonstrates compliance regarding the placement and installation of berms.

#### Section 15, Pages 1-48, Geological Data

Pursuant to Subparagraph (a) of Paragraph (15) of Subsection C of 19.15.36.8 NMAC, the application shall include "geological/hydrological data" including "a map showing names and location of streams, springs or other watercourses, and water wells within one mile of the site." The OCD was unable to find such a map within this section and the permit application. Please provide the required map.

Pursuant to Subparagraph (b) of Paragraph (15) of Subsection C of 19.15.36.8 NMAC, the application shall include "geological/hydrological data" including "laboratory analyses, performed by an independent commercial laboratory, for major cations and anions; BTEX; RCRA metals; and TDS of ground water samples of the shallowest fresh water aquifer beneath the proposed site." The first sentence of the first paragraph on page 35, titled Water Quality, of this section, indicates that a water sample was obtained and analyzed from a water well (SJ 03185) located within the southeast portion of the proposed facility boundary. The OCD was unable to find the required laboratory analyses within this section and the permit application. Please provide the required laboratory analyses. The chain of custody document should be included when submitting laboratory results.

Pursuant to Subparagraph (c) of Paragraph (15) of Subsection C of 19.15.36.8 NMAC, the application shall include "geological/hydrological data" including "depth to, formation name, type and thickness of the shallowest fresh water aquifer." Based upon the information provided

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throughout the permit application and in this section, water well SJ-02883 has been improperly located within Section 16, Township 29 North, Range 9 West, NMPM. The first sentence of the third paragraph on page 32 states "another water well, SJ-02883, north of U.S. Highway 64 and the project area, probably at the site of a roadside business, now removed, was drilled in 1998." Figure 13, page 34 of this section, illustrates water well SJ-02883 in the NW/4 of the NW/4 of the NW/4 of Section 16, Township 29 North, Range 9 West, NMPM. The record search results of the Office of the State Engineer database, on page 46 of this section, places water well SJ-02883 in the SW/4 of the SW/4 of the NE/4 of Section 16, Township 29 North, Range 9 West, NMPM, which is near the center of Section 16 and abutting the eastern side of the proposed facility. On the top of the front page of the C-137 application form, there is a note that instructs the applicant of the following: A meeting should be scheduled with the Division's Santa Fe office Environmental Bureau prior to pursuing an application for a surface waste management facility in order to determine if the proposed location is capable of satisfying the siting requirements of Subsections A and B of 19.15.36.13 NMAC for consideration of an application submittal. Since depth to ground water is the siting criterion identified in Subsection A of 19.15.36.13 NMAC, the OCD recommends that such a meeting be scheduled prior to making revisions to the application to ensure that a proper site assessment is performed for the proposed facility. During the meeting, we will discuss the submittal of a boring plan to the OCD for consideration of approval. Information obtained from the implementation of the approved boring plan will allow for this provision to be properly addressed.

Pursuant to Subparagraph (d) of Paragraph (15) of Subsection C of 19.15.36.8 NMAC, the application shall include "geological/hydrological data" including "soil types beneath the proposed surface waste management facility, including a lithologic description of soil and rock members from ground surface down to the top of the shallowest fresh water aquifer." The OCD was unable to locate the site specific information require above within this section and the permit application. The information provided in the application is based on regional assessments of the San Juan Basin area. The OCD recommends that a meeting be scheduled prior to making revisions to the application to ensure that a proper site assessment is performed for the proposed facility. During the meeting, we will discuss the submittal of a boring plan to the OCD for consideration of approval. Information obtained from the implementation of the approved boring plan will allow for this provision to be properly addressed.

Pursuant to Subparagraph (e) of Paragraph (15) of Subsection C of 19.15.36.8 NMAC, the application shall include "geological/hydrological data" including "geologic cross-sections." The OCD was unable to locate the site specific information require above within this section and the permit application. The information provided in the application is based on regional assessments of the San Juan Basin area. The OCD recommends that a meeting be scheduled prior to making revisions to the application to ensure that a proper site assessment is performed for the proposed facility. During the meeting, we will discuss the submittal of a boring plan to the OCD for consideration of approval. Information obtained from the implementation of the approved boring plan will allow for this provision to be properly addressed.

Pursuant to Subparagraph (f) of Paragraph (15) of Subsection C of 19.15.36.8 NMAC, the application shall include "geological/hydrological data" including "potentiometric maps for the shallowest fresh water aquifer." The OCD was unable to locate the site specific information require above within this section and the permit application. The information provided in the application is based on regional assessments of the San Juan Basin area. The OCD recommends

Crowe Blanco, LLC Blanco Landfarm April 27, 2010 Page 32 of 32

that a meeting be scheduled prior to making revisions to the application to ensure that a proper site assessment is performed for the proposed facility. During the meeting, we will discuss the submittal of a boring plan to the OCD for consideration of approval. Information obtained from the implementation of the approved boring plan will allow for this provision to be properly addressed.

#### Section 15, Pages 49-92

Background Sampling:

There is no discussion provided in the permit application regarding background sampling. The map provided on page 49 illustrates twelve sampling points, but no information is provided on the sampling protocol which was implemented. Please provide a copy of the sampling plan that was utilized during the background sampling event. The laboratory analytical results, pages 51-92, did not include any quality control/ quality assurance results nor did it include the chain of custody. Please provide the missing documents. In regards to background sampling, pursuant to Subsection B of 19.15.36.15 NMAC the operator "shall analyze the background soil samples for TPH, as determined by EPA method 418.1 or other EPA method approved by the division; BTEX, as determined by EPA SW-846 method 8021B or 8260B; chlorides; and other constituents listed in Subsections A and B of 20.6.2.3103 NMAC, using approved EPA methods." OCD's review of the laboratory analytical resulted in the discovery that TPH was not determined by EPA method 418.1, as required by the regulation, but instead by EPA method 8015M. Also, the samples were not tested for vinyl chloride, a constituents listed in Subsection A of 20.6.2.3103 NMAC. The sampling results remain incomplete. Please resolve and provide the laboratory analytical results required by the regulations.

### RECEIVED

# PM 2 INDUSTRIAL ECOSYSTEMS PERMIT APPLICATION FOR BLANCO LAND FARM

SAN JUAN COUNTY NEW MEXICO

**NOVEMBER 2009** 

THE P. CHARLES AND A STATE OF NEW MAN

PREPARED BY:
CHENEY ▲ WALTERS ▲ ECHOLS, INC.
909 WEST APACHE
FARMINGTON, NM 87401

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#### PRINCIPAL OFFICERS/OWNERS/MANAGEMENT

#### President/Treasurer:

John J. Kiely 401 S. LaSalle, Suite 606 Chicago, IL 60605

#### Vice President/Assistant Secretary:

Jeff Mohajir 1900 Shawnee Mission Parkway Mission Woods, KS 66205

#### Secretary:

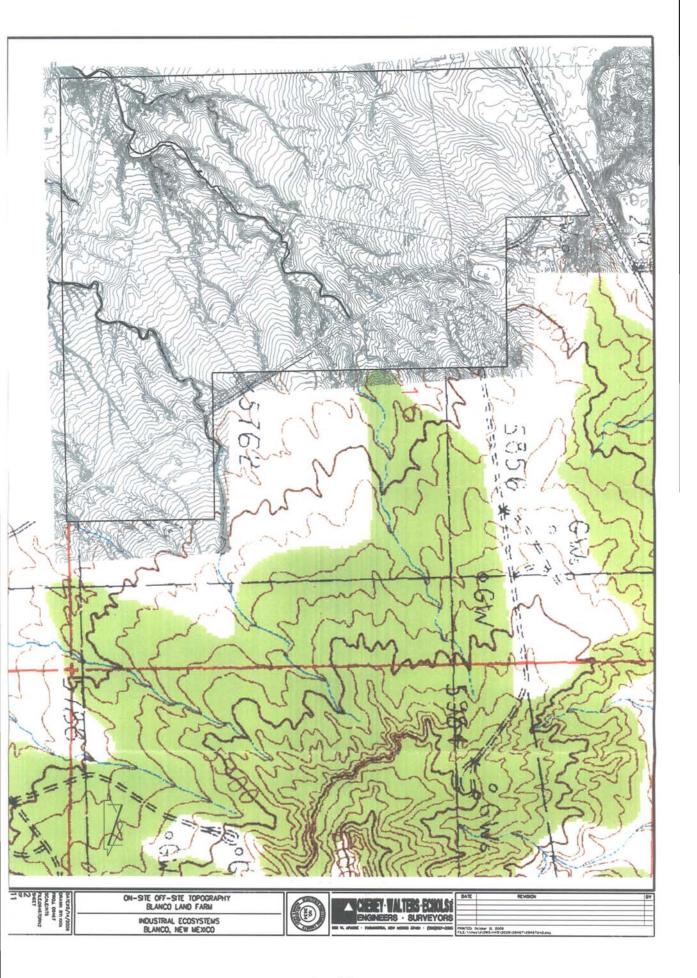
John P. Crowe 1015 W. 54<sup>th</sup> Street Kansas City, MO 64112

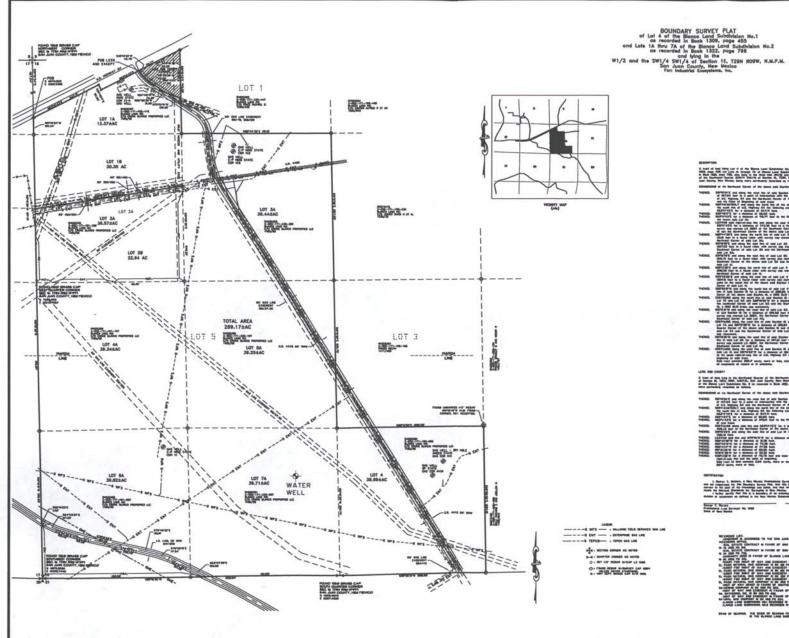
#### Owner 25% or more:

John P. Crowe

#### Individual(s) Primary Responsible for Management of Facility:

Terry Lattin 49 CR 3150 Aztec, NM 87410





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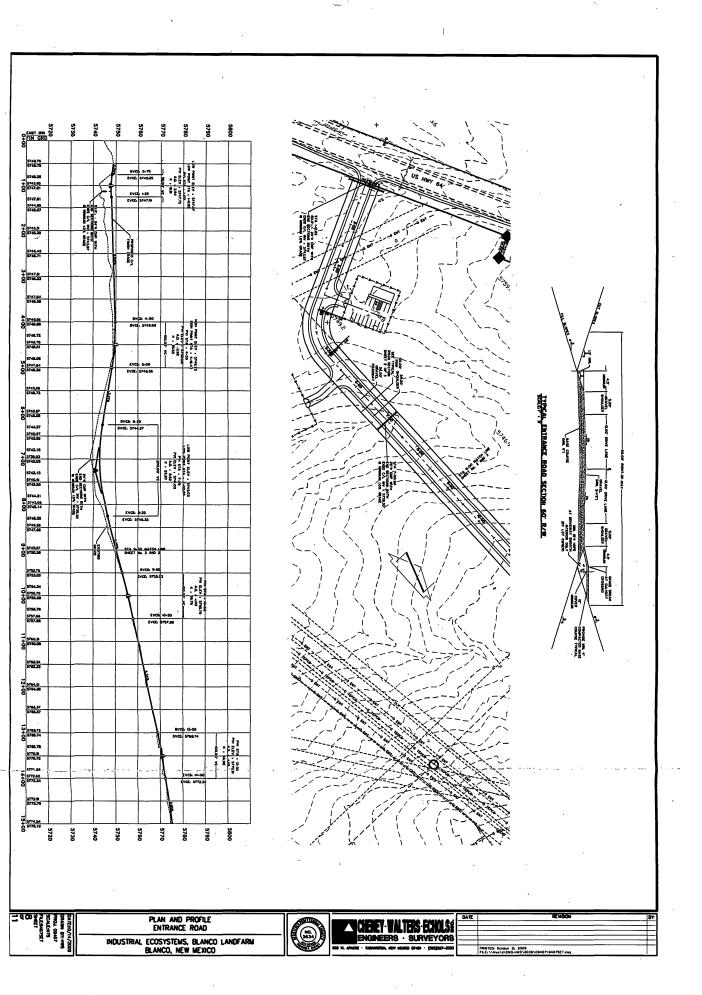


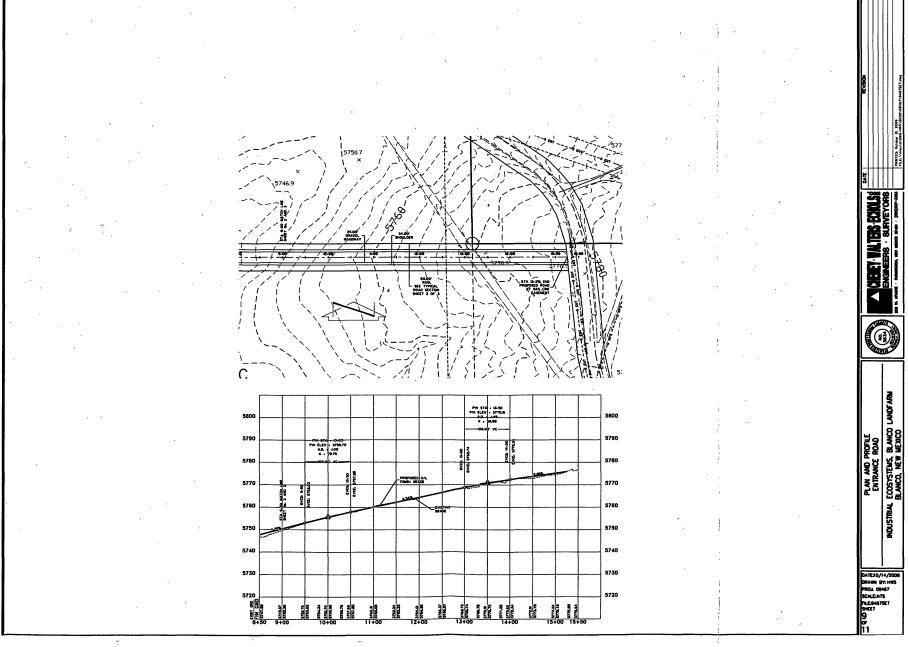
BOUNDARY SURVEY BLANCO LAND FARM INDUSTRAL ECOSYSTEMS BLANCO, NEW MEXICO

DATESO/16/2001 DRAWN BY, KKIN PROJ. 06467 SCALE:HTS FILEGTHOS467 SHEET

## WATER WELL LOCATIONS WITHIN 1 MILE OF INDUSTRIAL ECOSYSTEMS, BLANCO NM IN SECTION 16, T29N R09W, N.M.P.M., SAN JUAN COUNTY, NEW MEXICO BLANCO QUADRANGLE NEW MEXICO-SAN JUAN CO. 7.5 MINUTE SERIES (TOPOGRAPHIC N9467SETDON 2009/00467 SWG/b/swh/ Filename: 3000 1500 3000 0 Printed: SCALE: 1"=3000" Engineers · Surveyors FILE: 09467 **REVISION DATE: 8/19/2009**

909 W. APACHE · FARMINGTON, NEW MEXICO 87401 · (505)327-3303







MICHAEL L. SMITH, President

221 N. Auburn • Farmington, New Mexico 87401 (505) 325-2895 • FAX (505) 327-1585

09467

July 21, 2009

Cheney-Walters-Echols 909 W. apache Farmington, NM 87401

ATTN: George T. Walters, P.S.

RE: Adjacent Landowner List Within 1 Mile Of Perimeter Of The Property

Crowe Blanco Properties, LLC Blanco Land Subdivision No. 1

Lot 4

Blanco Land Subdivision No. 2

Lots 1A, 2A, 3A, 4A, 5A, 6A and 7A

Guardian File 0946267

#### Gentlemen:

Referring to the captioned matter, we enclose a list of the owners and their addresses pursuant to the San Juan County Records, excluding roadways and alleys. Since the width of the roads is unknown, all roadways were measured 100' feet wide. We certify the attached list to be completed and accurate as to such owners and their addresses according to the records of the San Juan County Clerk through July 20, 2009 at 5:00 p.m.

We trust this information will be sufficient for your purpose. Our invoice number 13225R is also enclosed. If you have any question concerning this matter, please do not hesitate to contact us.

Sincerely,

Cheryl Hewitt

CH/s

**Enclosures** 

#### **WARRANTY DEED**

SNM Properties, LLC, a N	Yew Mexico Limited Li	ability Company , for consideration paid, grant to
Crowe Blanco Properties, whose address is , 4050 Per		
the following described real	estate in	SAN JUAN County, New Mexico:
		ION NO. 1, San Juan County, New Mexico, as shown on the Plat of said Book 1309, page 455, records of said County.
AND		
	New Mexico, as shown	ur A (4A), Five A (5A), Six A (6A) of the BLANCO LAND SUBDIVISION on the Plat of said Subdivision filed for record May 30, 2001 in Book 1322,
Subject to patent reservati	ons, restrictions, and ea	asements of record and taxes for the year 2009 and subsequent years.
with warranty covenants. WITNESS our hands	and seals this <u>11th</u> d	ay of <u>June</u> , <u>2009</u> .
Seas O. //	laze	
By: Brad Magee, Mana	ging Member	
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	, · .	200908593 06/12/2009 11:43 AM 1 of 1 B1495 P99 R \$39.00 San Juan County, NM DEBBIE HOLMES
	, 1	individual Capacity:
State of New Mexico	)	
County of San Juan	) SS.	
This instrument was and on behalf of SNM Pro	acknowledged before me perties, LLC, a New M	e on the 11th day of June, 2009, by Brad Magee, Managing Member of exico Limited Liability Company.
My commission expires: M	arch 18, 2010	Notary Public
(Seal)		roday rubie
PUBLIS		

			, for consideration p	aid, grant to
Prowe Blanco Properties, LLC, a New Me Phose address is 4050 Pennsylvania Ave., Su				<del></del>
nose address is 4050 Fennsylvania Ave., Su	nte 215, Kan	sas City, MO 04111	<del></del>	
ne following described real estate in	SAN	JUAN	County, New Mexico:	,
ot Seven A (7A) of the BLANCO LAND aid Subdivision filed for record May 30, 20	SUBDIVISIO	ON NO. 2, San Jua 322, page 796, reco	n County, New Mexico, as shown ords of said County.	on the Plat
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itate of New Mexico ) County of San Juan ) This instrument was acknowledged befausband and wife.		11th day of June,	2009, by Brad D. Magee and Marci	a A. Magee

## GUARDIAN ABSTRACT & TITLE CO., INC. 221 NORTH AUBURN FARMINGTON, NEW MEXICO 87401

PROPERTY OWNERS WITHIN 1 MILE, EXCLUDING ROADWAYS AND ALLEYS OF THE FOLLOWING DESCRIBED PROPERTY: **Blanco Land Subdivision No. 1, Lot 4, and Blanco Land Subdivision No. 2, Lots 1A, 2A, 3A, 4A, 5A, 6A and 7A.** 

OWNER:

Crowe Blanco Properties, LLC 4050 Pennsylvania Ave., Ste. 215

Kansas City, MO 64111 1495/98 and 1495/99

ADJOINING OWNER	ADDRESS	LEGAL DESCRIPTION
Chavez, Dennis O. and Maria Emma, Living Trust 1236/424, 1236/426, 1491/672 1328/175, 1328/176	288 Road 4800 Bloomfield, NM 87413-9203	T29N, R9W, Sec. 18 Pt. NE1/4NE1/4 T29N, R9W, Sec. 9 Pt. NE1/4NW1/4
Yeager, James G. and Beatrice V. 1154/947	P.O. Box 611 Blanco, NM 87412-7412	T29N, R9W, Sec. 18 Pt. NE1/4NE1/4
Sieg, Susan K. 1164/202	P.O. Box 480 Blanco, NM 87412-7412	T29N, R9W, Sec, 18 Pt. NE1/4NE1/4
Martinez, Theresa R. 1451/444, 1469/755	2108 Surrey Rd. Sacramento, CA 95815-3409	T29N, R9W, Sec. 7 Pt. SE1/4SE1/4
Holcomb, William and Sharron 1392/247	P.O. Box 2058 Farmington, NM 87499-7499	T29N, R9W, Sec. 7 Pt. SE1/4SE1/4
Travis, David Z. and Sally A. 1292/369, 1293/34	P.O. Box 607 Blanco, NM 87412-7412	T29N, R9W, Sec. 7 Pt. SE1/4SE1/4
Hircock, Eric and Virginia Nickels 1316/839, 1318/347	P.O. Box 613 Blanco, NM 87412-0613	T29N, R9W, Sec. 7 Pt. SE1/4SE1/4

Hawthorne, Doris E. 1452/739	P.O. Box 305 Blanco, NM 87412-7412	T29N, R9W, Sec. 7 Pt. NE1/4SE1/4 T29N, R9W, Sec. 8 Pt. NW1/4SW1/4
Valencia, Johnny 1130/610	P.O. Box 475 Blanco, NM 87412-0475	T29N, R9W, Sec. 8 Pt. NW1/4SW1/4
Atencio, Esther 1065/124	P.O. Box 1295 Aztec, NM 87410-1295	T29N, R9W, Sec. 8 Pt. NE1/4SW1/4
Martinez, Debbie 1211/349	P.O. Box 402 Blanco, NM 87412-0402	T29N, R9W, Sec. 8 Pt. NW1/4SW1/4
Chavez, Mary Rodriquez, Frances J. 1243/214, 1477/973	P.O. Box 392 Blanco, NM 87412-0392	T29N, R9W, Sec. 8 Pt. NW1/4SW1/4
Montoya, Joe 1452/1027	HC 71 Box 15 Dulce, NM 87528-7528	T29N, R9W, Sec. 8 Pt. SW1/4
Valencia, Seledonio and Orie (Oralia) 1054/425, 1233/668	P.O. Box 233 Bloomfield, NM 87413-0233	T29N, R9W, Sec. 8 Pt. SW1/4
Hood, John N. and Julie A. 1371/55	P.O. Box 482 Blanco, NM 87412-7412	T29N, R9W, Sec. 8 Pt. NE1/4SW1/4
Wood, Annette 1211/998	4708 Sundance Tr. NW Albuquerque, NM 87420-7420	T29N, R9W, Sec. 8 Pt. NE1/4SW1/4
Chavez, Koggie 1211/655	8841 Grove St. Westminster, CO 80030-3328	T29N, R9W, Sec. 8 Pt. NE1/4SW1/4
New Mexico State Game Commission 1078/472	P.O. Box 25112 Santa Fe, NM 87504-7504	T29N, R9W, Sec. 8 NW1/4NE1/4

Archuleta, Milton J. and Lucy, Trustees 1060/205	330 Road 4599 Blanco, NM 87412-9730	T29N, R9W, Sec. 8 NE1/4NE1/4
Gurule, Cristobal S. and Carlota F. 1495/57	ATTN: Michael Gurule P.O. Box 393 Blanco, NM 87412-7412	T29N, R9W, Sec. 9 Pt. NW1/4NW1/4
Jeter, Larry A. and Patricia D. 1417/928	P.O. Box 506 Blanco, NM 87412-7412	T29N, R9W, Sec. 9 Pt. NE1/4NW1/4
Witcombe, Lisa Murray, Billy Jack 1474/965	P.O. Box 6393 Farmington, NM 87499-7499	T29N, R9W, Sec. 9 Pt. NE1/4NW1/4
Farmington Investment Co. Hutton, Katherine K. Porter, Kathryn, Custodian 863/412, 763/57, 1204/1066	P.O. Box 229 Farmington, NM 87499-0229	T29N, R9W, Sec. 9 NE1/4NW1/4
Bolack, Tommy 1478/732	3901 Bloomfield Hwy Farmington, NM 87401-7401	Michael E. Atchison Subdivision No. 1 Lot 1, 2, 4, 5 T29N, R9W, Sec. 16 Pt. NE1/4NW1/4
Atchison, Michael E. 1486/964	P.O. Box 537 Blanco, NM 87412-7412	Michael E. Atchison Subdivision No. 1 Lot 3
Price, Michael D. 1298/336	P.O. Box 5 Flora Vista, NM 87415-7415	Blanco Land Subdivision No. 1 Lot 1
Castro, Alfred R. and Elvera 1290/842	P.O. Box 571 Blanco, NM 87412-7412	T29N, R9W, Sec. 16 NW1/4NE1/4
Adams, William J. and Sondra A. 1278/14	P.O. Box 28093 Santa Fe, NM 87592-8093	T29N, R9W, Sec. 16 NE1/4NE1/4

Joiner, David W. and Nancy S. Waggoner, Jeff W. and Deena A. 1220/32	P.O. Box 570 Blanco, NM 87412-0570	T29N, R9W, Sec. 16 SW1/4NE1/4		
Prado, Ralph 1404/863, 1411/400	6784 US 64 Bloomfield, NM 87413-7413	T29N, R9W, Sec. 16 SE1/4NE1/4		
Prado, Ralph 1411/400	1624 US 64 Bloomfield, NM 87413-7413	Blanco Land Subdivision No. 1 Lot 3		
Prouse, Bradley D. and Wendy R. 1454/197	23259 CR G2 Cortez, CO 81321-1321	Blanco Land Subdivision No. 1 Lot 2		
Bolli, Richard E. and Joellen M. 1469/943	P.O. Box 579 Blanco, NM 87412-0579	T29N, R9W, Sec. 16 SE1/4SE1/4		
El Paso Field Services Company 1296/5, 1305/176	ATTN: Enterprise Property Tax P.O. Box 4018 Houston, TX 77210-4324	T29N, R9W, Sec. 17 Pt. SE1/4NE1/4		
San Juan County 1116/693	100 S. Oliver Dr. Aztec, NM 87410-2400	T29N, R9W, Sec. 17 Pt. NW1/4NW1/4		
Baca, Larry R. and Nora J. 1425/808	P.O. Box 617 Blanco, NM 87412-7412	T29N, R9W, Sec. 18 Pt. SE1/4SE1/4		
Baca, Patricia J. Baca, Larry R. and Nora J. 1427/248	2503 Schofield Ln. Farmington, NM 87401-7401	T29N, R9W, Sec. 18 Pt. SE1/4SE1/4		
Chavez, Jose F. and Loyola E., Revocable Living Trust 1273/134	3409 Northridge Court Farmington, NM 87401-7401	T29N, R9W, Sec. 18 Pt. SE1/4SE1/4		
Baca, Larry R. and Nora J. 1425/809	P.O. Box 617 Blanco, NM 87412-7412	T29N, R9W, Sec. 18 Pt. SE1/4SE1/4		

Arrighetti, Richard F. and 1200 Florida NE T29N, R9W, Sec. 18 Tina M. Albuquerque, NM Pt. NE1/4SE1/4 1318/765 87110-7110 Naranjo, Victor R. and P.O. Box 553 T29N, R9W, Sec. 18 Michelle F. Blanco, NM Pt. NE1/4SE1/4 1318/764 87412-7412 Valencia, Ernest D. P.O. Box 347 T29N, R9W, Sec. 18 1160/250, 1238/311 Blanco, NM Pt. NE1/4SE1/4 87412-0461 Pt. SE1/4NE1/4 Valencia, Ernest D. P.O. Box 347 T29N, R9W, Sec. 18 1442/562 Pt. NE1/4SE1/4 Blanco, NM 87412-7412 United States Of America 1235 La Plata Hwy T29N, R9W, Sec. 17 (Federal Lands) Farmington, NM SW1/4, SE1/4, 87401 Pt. NW1/4, Pt. NE1/4 (Per Phone Book) T29N, R9W, Sec. 8 S1/2SW1/4, SE1/4, SE1/4NW1/4, S1/2NE1/4 T29N, R9W, Sec. 9 S1/2NW1/4, Pt. NE1/4, SW1/4, SE1/4 T29N, R9W, Sec. 10 NW1/4, SW1/4, SE1/4 T29N, R9W, Sec. 15 ALL T29N, R9W, Sec. 22 ALL T29N, R9W, Sec. 21 ALL T29N, R9W, Sec. 27 NW1/4 T29N, R9W, Sec. 28 NE1/4, NW1/4 T29N, R9W, Sec. 29 NE1/4 T29N, R9W, Sec. 20 ALL T29N, R9W, Sec. 19 NE1/4

The existing pipelines located on the project site are shown on the boundary survey map (see Section 2, Plat and Topographic Map).

## **Facility Description**

The facility consists of 291 +- acres.

The facility perimeter is contained with four foot field fence topped with barbed wire.

A perimeter berm will serve as the outer boundary of cells developed within the facility.

Entrance/exit from the facility will be gained through gates which will remain locked when the facility is not in operation. Only authorized personnel will be given access to gate keys.

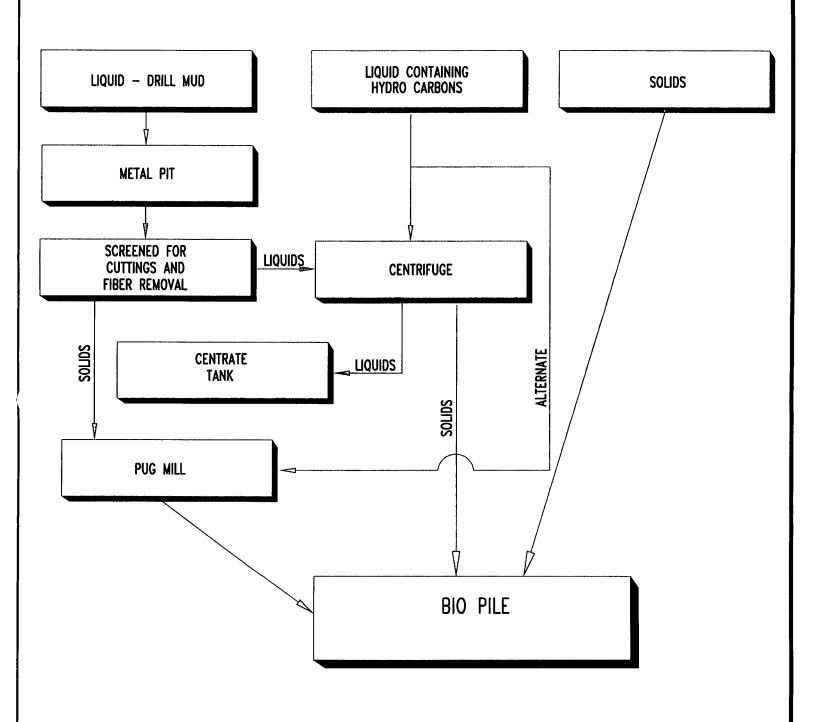
The office will be located at the entrance of the facility to monitor all incoming and outgoing traffic.

Interior roads will be developed within the facility to provide access for personnel and transporters.

The "tank battery" area will be contained within a 6 foot chain-link fence to prevent unauthorized access. The area will be lined and will also be bermed to contain 1½ the volume of the largest tank or all interconnected tanks and above ground metal pits.

# REMEDIATION PROCEDURE

FLOW CHART



5.1



ISSUE DATE: 11/09/2009

PRINTED: November 09, 2009

FILE: \\Hws\d\DWG-HWS\2009\09467\09467PREMEDIA

#### **EQUIPMENT SPECIFICATIONS**

Shaker Pits - Shaker Pits shall be 45ft. length, 8'6" wide 10ft. high, 14" floor (v-bottom), 1/4" steel walls, one man-way on lower rear side wall, ladder and platform on front of tank. Two (2) chemtronic 4ft. x 8ft. shale shakers mounted on top. (60 mesh screens0

<u>Slurry Holding Pit</u> - Slurry Holding Pits shall be 45ft. length, 8' 6" wide 10ft. high, 1/4" floor (v-bottom), 1/4" corrugated walls, one man-way on lower rear side wall, ladder and platform on front of tank. Gorman Rupp 6" pump for transferring slurry to centrifuge or storage tanks.

Centrifuge - The Centrifuge shall be Hutchinson-Hayes Model 1448 14" diameter 48" length normal centrifufal force 2118 G's at 3250 RPM, Maximum 3180 G's at 4000 RPM. The basic purpose of centrifuge is to separate the liquid and solids from the feed slurry ie: drill mud, drill cuttings, tank bottoms. A stainless steel rotating bowl, driven by a 50 H.P. electric motor is used to centrifuge the slurry: this is to sling the solids against the inside wall surface while a stainless steel screw conveyor (faced with hard tiles) gathers and conveys these solids to a central discharge area. The conveyor is driven at a slightly slower RPM thru a planetary gear reducer. The liquids migrate to the front end of the machine and are dispelled thru four (4) adjustable plate dam openings, to a central discharge area then pumped to a liquid storage tank to be disposed of.

Storage Tanks - Storage Tanks shall be standard, 400 barrel, oil field tanks (12' diameter x 20' tall).

<u>Centrate Tank</u> - The Centrate Tank shall be a 20' diameter x 16' tall steel tank of approximately 900 barrels.

Fresh Water Tank - The Fresh Water Tank shall be a 12' diameter x 20' tall 400 barrel tank.

#### **BIO-PILES**

Bio-Piles shall be approximately 12-15' wide and no more than 12' tall. Manure shall be mixed with the material to be remediated at a ratio or 1 part manure to 5 parts of contaminated material. The Bio-Pile shall reach an initial temperature of 120°F and maintained at a temperature of 10°F-15°F above ambient until remidiation is complete.



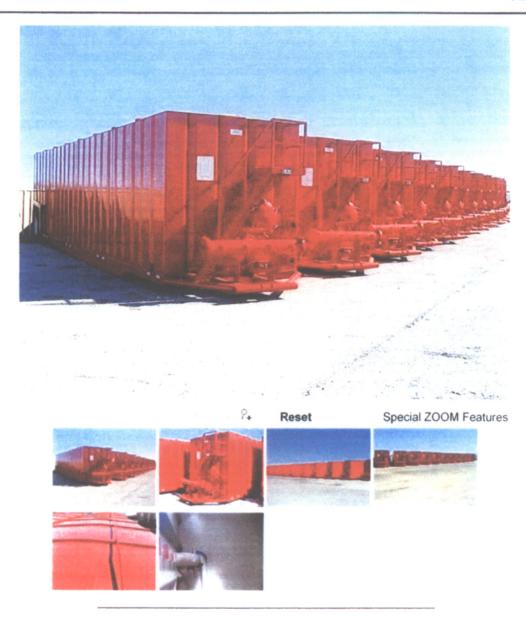
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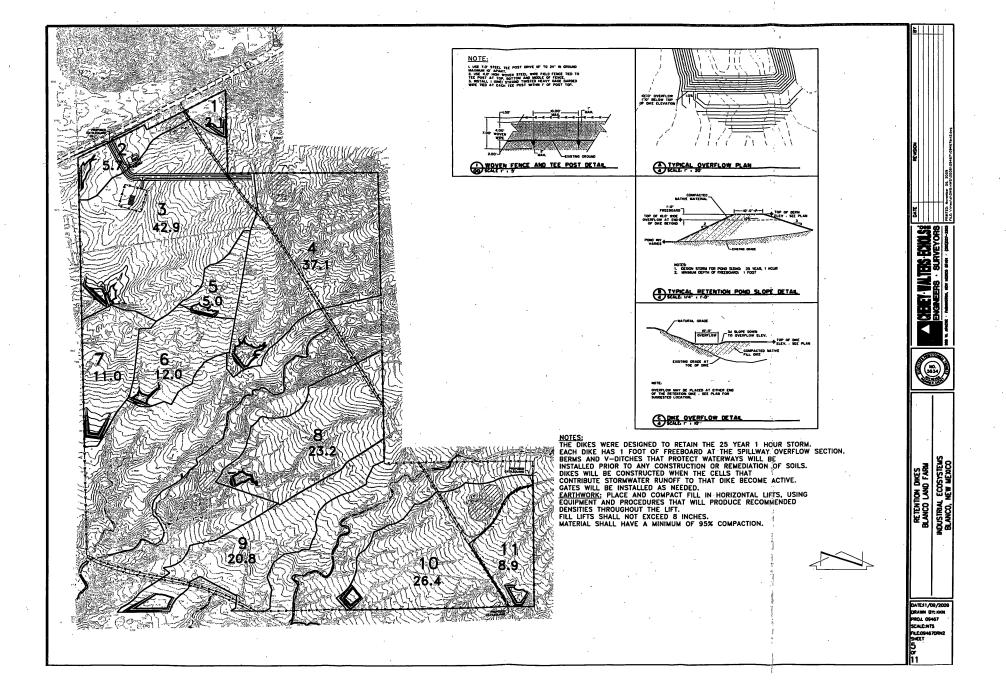
Add To Trailers of Interest

Print This

## 2008 TIGER 500 BBL



Specifications	
Quantity	1
Year	2008
Manufacturer	TIGER
Model	500 BBL
Price	Call
Location	Abilene. Texas
Condition	New
Composition	Steel



#### OPERATIONAL PLAN

#### Introduction

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This purpose of this Waste Acceptance and Operational Management Plan is to establish the minimum requirements and procedures for acceptance, management, treatment, bioremediation and final disposal of oilfield waste. These procedures comply with the applicable requirements contained pursuant to 19.15.36.13, 19.15.36.15, and 19.15.36.17 NMAC.

This plan includes test methods, details of planned waste sampling and analysis, description of waste shipment screening/verification and operational processes.

Supervisors and employees involved in the handling of oilfield waste shall comply with these procedures. Responsible supervisor(s) and employee(s) shall make frequent inspections and collect and maintain all data as outlined under the provisions of the permit.

#### 1. WASTE (19.15.36.13.F)

Prior to accepting RCRA Exempt or Non-Exempt Oilfield Waste from a generator, the generator must comply with the applicable requirements of this plan.

Only Non-Hazardous, RCRA Exempt and Non-Exempt waste will be accepted at the facility. These materials are wastes generated from oil and gas exploration and production operations and are usually the by-product of "down-hole" operations.

Exempt waste is prohibited from being mixed with Non-Exempt waste.

#### 1.1 Exempt Oilfield Waste (19.15.36.13.F.1)

Exempt Oilfield Waste destined for disposal at the facility will be identified by the generator using acceptable knowledge and all applicable test and analytical methods required by NMOCD.

Exempt waste is generated by various producers from a variety of sites and by various specific processes and activities. Examples of the major types of operations that generate exempt waste include:

- Production of Hydrocarbon Stained Soils and Gravels Production of hydrocarbon stained soils or gravels includes spillage, line failure, leaking vessels or valves, and the reclamation of production pits.
- 2. Production of tank bottom sludge Production of tank bottom sludge includes cleaning of oil storage tanks, the pigging of transmission lines, and the maintenance and reclamation of settling ponds.
- 3. Production and/or drilling fluids-Production of drilling fluids includes drill mud and cuttings from drilling and completion operations.
- 4. Production of high TDS liquids Production of high TDS liquids includes tank cleaning operations, drilling operations, backwashing filters and lines, and drilling mud pit reclamation.

#### 1.2 Non-Exempt, Non-Hazardous Oilfield Waste (19.15.36.13.F.2)

Non-Hazardous, Non-Exempt Oilfield Waste will be identified by the generator using acceptable knowledge and all applicable test and analytical methods required by NMOCD. Additional documentation and/or testing will be required to determine the waste to be Non-Hazardous.

Non-Exempt, Non-Hazardous Waste is designated and stored separately from Exempt Oilfield Waste. Non-Hazardous/Non-Exempt waste and/or Non-Hazardous/Non-Exempt Waste mixed with Exempt waste require additional documentation/testing in order to be accepted into the facility.

#### 1.3 Emergency Non-oilfield Waste (19.15.36.13.F.3)

The facility may accept non-hazardous, non-oilfield waste in an emergency and only if ordered by the department of public safety.

#### 1.4 Waste Characterization

Characterization requirements for individual shipments of Exempt Oilfield Waste are specified on a waste stream basis. A waste stream is defined as waste material generated from a single site and a single process or an activity that is similar in material, physical form, and constituents. Exempt Oilfield Waste is initially categorized into four category groups that are related to the physical form of the waste.

- Hydrocarbon stained soil and ravel
- 2. Tank Sludge, Tank Bottoms, Tank Cleaning Residue
- 3. Drilling fluids
- 4. Debris Waste

#### 1.5 Prohibited Waste:

The following waste PROHIBITED from being disposed of at the facility:

- 1. Hazardous Waste
- 2. RCRA regulated materials
- 3. Waste containing NORM

#### 2. WASTE ACCEPTANCE (19.15.36.13.A.2, 19.15.36.13.E, and 19.15.36.15.A.)

A completed C-138 form shall be submitted to the facility prior to the shipment arriving or must accompany the shipment. Waste will NOT be accepted prior to receipt of the completed C-138 which has been executed by the generator.

Once the waste has arrived at the gate, prior to acceptance, facility personnel will ensure:

- through visual examination and review of the C-138, that the waste holds NO unacceptable waste;
- through H2S ambient monitoring, that liquid waste does not contain unacceptable levels of Hydrogen Sulfide;
- o through visual examination and review of the C-138, that tank bottoms do not contain economically recoverable petroleum hydrocarbons (19.15.36.15.A);
- o through "paint filter" testing, prior to placing waste in a biopile/landfarm cell, the waste is sufficiently free of liquid content (19.15.36.13.E & 19.15.36.15.A);
- o through "chloride content sampling", waste does not have a chloride concentration exceeding 1000 mg/kg (19.15.36.13.A.2 & 19.15.36.15.A) \*Facility is located where ground water is 100' or more below the lowest elevation.

Anytime the facility requests additional information concerning a waste shipment, the generator will provide the necessary analysis and other supporting documentation to verify the contents of the shipment in question.

#### 2.1 Denied/Rejected Waste

Shipments of waste which do not meet the acceptance criteria shall be Denied/Rejected at the gate. The generator of the waste will be notified immediately that the waste had been denied/rejected and given the specifics as to why it has been denied/rejected. Copies of the C-138 indicating the waste has been Denied/Rejected will be kept on file.

#### 3. FORMS

The following forms, specific to landfarms, will be utilized by the facility as required.

#### 3.1 Form C-138 (19.15.36.13.F.1 and 19.15.36.13.F.2)

All material, exempt and non-exempt, arriving at the facility must be accompanied by a "C-138-Request for Approval to Accept Solid Waste" (Exhibit A). The facility shall be responsible for the procurement and review of the C-138 and characterization information to verify compliance with the NMOCD permit.

C-138 forms are a permit requirement and must contain the following:

- 1. Generator name and address
- 2. Originating Site
- 3. Location of Material (Address or ULSTR)
- 4. Source and Description of Waste
  - o Waste status: **EXEMPT** or **NON-EXEMPT** as defined by the 1988 RCRA act.
  - o Hazardous waste is PROHIBITED and will NOT be accepted into the facility.

The following documentation must also accompany the C-138 form for Non-Exempt waste:

- Pertinent MSDS information; and/or
- RCRA Hazardous Waste Analysis; and/or
- Process Knowledge; and/or
- Other information that may be needed to define waste material
- A. Generator representative signature certifying the waste conforms with RCRA and US
   Environmental Protection Agency's regulatory determination that the waste is RCRA Exempt or
   RCRA Non-Hazardous, Non-Exempt waste.
  - B. Representative/Agent signature certifying the waste samples have been subjected to the paint filter and chloride content tests and that said samples have been found to conform to specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. (Results are attached to the C-138)
- 6. Transporter of the waste
- 7. Name, Permit #, Address, Method of Treatment/Disposal, Acceptance Status: Approved or Denied (must be maintained as permanent record), and
- 8. Authorization from facility personnel to dispose of the waste

C-138 forms can be accepted on a monthly, weekly, or per load basis.

#### 3.2 Form C-133 (19.15.36.13.D)

A division approved C-133 "Authorization to Move Produced Water" (EXHIBIT B) shall accompany the transporter of the waste. Copies can be kept on file for future reference.

Form C-133 must contain the following:

- 1. Transporter name, address and phone number
- 2. State Corporation Commission Permit Number
- 3. Signature of authorized agent/responsible party
- 4. State approval Officer and title

#### 4. DISPOSAL (19.15.36.13.H)

Disposal at the facility will only occur when an employee/attendant is on duty. The facility will be secured to prevent unauthorized disposal.

#### 4.1 Flowchart for Waste Acceptance/Disposal: Non Hazardous Exempt E&P Waste Non Hazardous Non-Exempt E&P Waste C-138 form must be completed, signed, & submitted to IEI prior to C-138 form (& acceptable additional waste being accepted into the documentation to determine the landfarm waste is Non-Hazardous) must be completed, signed, & submitted to IEI prior to waste being accepted into the landfarm Upon arrival, the waste will be tested for acceptable Chloride Levels, screened for H2S, & must pass the "paint filter" test (liquids) Additional documentation to determine waste is Non-Hazardous: MSDS, RCRA Hazardous Waste Analysis, Process Knowledge, Other, must accompany C-138 form. Liquid-Liquid-**Drill Mud** Hydrocarbons unloaded unloaded into into metal tank(s) Upon arrival at the landfarm, the pit **Solids** waste will be tested for acceptable Placed Chloride Levels, screened for H2S, & into a must pass the "paint filter" test biopile (liquids) Run through shaker pit to remove cuttings and cedar fibers Liquids-**Solids** Must be solidified Placed into a by use of the Pug Mill or biopile in the Transferred Centrifuge "Non-Exempt" to tank(s) designated area of the landfarm Solidified by use of the Tested to ensure the waste Pug Mill OR Centrifuge passes the "paint filter" test Tested to ensure the waste passes Place into a biopile in the the "paint filter" test "Non-Exempt" designated area of the landfarm Place into a biopile

#### 4.2 Migratory Bird Protection (19.15.36.13.I)

To protect migratory birds, tanks exceeding 8' in diameter and/or exposed pits and ponds shall be screened/netted or covered.

#### 5.0 TREATMENT/BIOREMEDIATION (19.15.36.15.C)

Within 72 hours of receipt, waste shall be placed into a biopile or shall be spread and disked in 8" or less lifts or approximately 1000 cy per acre per 8" lift" as per 19.15.36.15.C.4 NMAC.

Alternative landfarm treatment procedures may be used if demonstration can be made that they provide equivalent protection of fresh water, public health/safety and the environment, with prior division approval (19.15.36.15.C.10).

#### 5.1 Solid Waste

Upon meeting waste acceptance criteria, solid waste material is:

- 1. Placed into a "under construction" biopile/lift. The "under construction" phase is completed upon generator notification that all materials associated with the "C-138" have been delivered;
- 2. Waste specific to each biopile/lift is recorded by use of the "Biopile Records" form which contains the following information: Generator of Material, Origin of Material, Type and Volume of Waste, Transported By/Truck #, Date Received;
- 3. During the "construction" phase, the remediation process is started by adding manure, organic waste or chemical enhancers to accelerate the decomposition of hydrocarbons. Division approval will be obtained prior to applying microbes to soils (19.15.36.C.7);
- 4. Once the biopile/lift is completed and no other waste will be added, a location and number is assigned. Biopile/Lift numbers are assigned in consecutive order and numbers are never reused;
- 5. Soils will be monitored weekly for temperatures and additional remediation materials may be added to maintain and control decomposition of hydrocarbons;
- 6. Soils will be disked bi-weekly and turned monthly (19.15.36.15.C.5);
- 7. Moisture will be added to the soils to enhance the bioremediation process and to help control fugitive dust emissions (19.15.36.15.C.6);
- 8. Soil samples are taken at regular intervals and tested by independent laboratories. A "Chain of Custody" form accompanies all lab samples. Laboratory results are used to determine if further remediation is required and results are kept on file.

#### 5.2 Liquid Waste

Upon meeting waste acceptance criteria, liquid waste material is:

- 1. Offloaded into the concrete impoundment or tanks;
- Liquids are processed to separate water from solids;
- 3. The liquid waste is solidified by mixing with solid clean material, (usually reclaimed, State approved, soils);
- 4. During the mixing process, the remediation process is started by adding manure, organic waste or chemical enhancers to accelerate the decomposition of hydrocarbons. Division approval will be obtained prior to applying microbes to soils (19.15.36.c.7):
- 5. After the waste has been solidified, to pass the paint filter test, it is then placed into a "under construction" biopile/lift. The "under construction" phase is completed upon generator notification that all materials associated with the "C-138" have been delivered; and
- 6. Steps 4 through 8 above (Solid Waste)

#### 5.3 Non-Exempt Waste

Non-exempt waste usually consists of material NOT generated by down hole operations. Non-exempt wastes are closely regulated under the RCRA act and, therefore, are more stringently controlled than exempt wastes. A section of the facility is strictly designated for the storage and bioremediation of "Non-Exempt" waste. This area is segregated and bermed in a manner that limits the probability of cross contamination with other waste streams.

Upon meeting waste acceptance criteria, "Non-Exempt" waste material is:

- 1. Placed into a biopile/lift, in the "Non-Exempt" designated area of the facility and assigned a number. Biopile/Lift numbers are assigned in consecutive order and numbers are never reused;
- Waste specific to each biopile/lift is recorded by use of the "Biopile Records" form which contains the following information: Generator of Material, Origin of Material, Type and Volume of Waste, Transported By/Truck #, Date Received;
- 3. The remediation process is started by adding manure, organic waste or chemical enhancers to accelerate the decomposition of hydrocarbons. Division approval will be obtained prior to applying microbes to soils (19.15.36.C.7);
- 4. Bio-piles/lifts will be monitored weekly for temperatures and additional remediation materials may be added to maintain and control decomposition of hydrocarbons;
- 5. Soil samples are taken at regular intervals and tested by independent laboratories. A "Chain of Custody" form accompanies all lab samples. Laboratory results are used to determine if further remediation is required and results are kept on file.

#### 5.4 Produced Water

Water separated during the treatment phase is tested for PH, TDS, H2S and Chloride content, upon meeting the acceptable criteria, may be reused/recycled on the facility for dust control. Water not meeting acceptable criteria is transported and disposed of at an NMOCD approved facility for deep well injection. A form C-133 showing State approval must accompany produced water sent off-site.

#### 6.0 BACKGROUND TESTING (19.15.36.15.B)

To establish background soil concentrations for the facility, prior to beginning operations, background sampling shall be collected and analyzed as follows:

- Soils samples shall be taken from at least 6" below the original ground surface;
- 12 composite soil samples (at a minimum) shall be collected, each sample shall consist of 16 discrete samples;
- Samples will be tested for:
  - TPH (EPA 418.1);
  - BTEX (EPA SW-846 8021B or 8260B);
  - Chloride (EPA 300.0);
  - Constituents of Subsections A & B of 20.6.2.3103 NMAC

#### 7.0 MONITORING (19.15.36.15.D & 19.15.36.15.E)

Waste streams are strictly monitored and controlled from entry into the facility through the remediation process to state approval for final disposition.

#### 7.1 Treatment Zone Monitoring (19.15.36.15.D)

Treatment zone monitoring shall be completed semi-annually. A minimum of one composite soil sample, consisting of four discrete samples will be collected and analyzed.

Waste shall be placed into a biopile or shall be spread and disked in 8" or less lifts or approximately 1000 cy per acre per 8" lift" as per 19.15.36.15.C.4 NMAC. Prior to adding additional biopiles/lifts, treatment zone monitoring will be conducted to ensure soils meet the following criteria:

- o TPH concentrations (EPA SW-846 8015M or EPA 418.1) do not exceed 2500 mg/kg and
- Chloride concentrations (EPA 300.0) do not exceed 1000 mg/kg (groundwater is 100' or more below the lowest elevation).

The maximum thickness of treated soils shall not exceed 2' or approximately 3000 cy per acre. Upon reaching the maximum thickness, additional oilfield waste will not be placed in the landfarm cell until contaminated soils have been treated to the standards specified in 19.15.36.15.F NMAC or the contaminated soils have been removed to a division-approved SWMF.

#### 7.2 Vadose Zone Monitoring (19.15.36.15.E)

Vadose zone sampling will be obtained from the ground below landfarm cell treatment areas to monitor any release of contaminated waste into the vadose zone.

Vadose zone monitoring records shall be maintained at the facility office or facility records storage and made available for division inspection upon request.

#### **SEMI-ANNUAL MONITORING**

Semi-annual vadose zone sampling will be performed to monitor the ground below the landfarm cell treatment areas. TPH (EPA SW-846 8015M or 418.1), BTEX (EPA SW-846 8021B or 8260B) & Chloride (EPA 300.0) levels shall be analyzed and results shall be compared to the higher of the PQL or background soil concentrations to determine whether a release has occurred.

Sampling of the vadose zone shall meet the following criteria:

- o Samples will be obtained from soils between 3' 4' feet below the original ground surface; and
- o A minimum of four, randomly selected, independent samples shall be collected and analyzed.

#### **FIVE YEAR MONITORING**

Vadose zone sampling will be performed to monitor the ground below the landfarm cell treatment areas. The constituents of Subsections A & B of 20.6.2.3103 NMAC shall be analyzed and results shall be compared to the higher of the PQL or background soil concentrations to determine whether a release has occurred.

#### **RELEASE RESPONSE**

In the event that sampling results show concentrations of TPH, BTEX, or Chloride levels exceeding the higher of the PQL or background concentrations, the following actions shall be taken:

- NMOCD shall be notified;
- Four additional randomly selected, independent samples, shall be immediately collected and analyzed for TPH, BTEX, Chlorides and the constituents listed in Subsections A & B of 20.6.2.3103
   NMAC.

The re-sampling results along with a response action plan shall be submitted to NMOCD for approval within 45 days of the initial notification of a release. The response action plan shall address changes of the facility's operation to prevent further releases, and if necessary, a plan for remediating the existing contaminated soils.

#### 8.0 TREATMENT ZONE CLOSURE STANDARDS (19.15.36.15.F)

Once a landfarm cell has been filled to the maximum thickness of 2' or approximately 3000 cy per acre, treatment shall continue until contaminated soils have been remediated to the higher of the background concentrations or upon meeting closure performance standards.

Closure performance standards are met by collecting and analyzing a minimum of one composite soil sample, consisting of four discrete samples to meet the following criteria:

- o Benzene (EPA SW-846 8021B or 8260B) shall not exceed 0.2 mg/kg;
- BTEX (EPA SW-846 8021 B or 8260B) shall not exceed 50 mg/kg;
- Combined fractions of DRO & GRO (EPA SW-846 8015M) shall not exceed 500 mg/kg;
- TPH (EPA SW-846 method 8021B or 8260B) shall not exceed 50 mg/kg;
- o Chloride (DPA 300.0) shall not exceed 1000 mg/kg (where groundwater is more than 100' or more below the lowest elevation); and
- The concentration of constituents listed in Subsections A & B of 20.6.2.3103 NMAC (EPA SW-846 6010B or 6020) shall not exceed the PQL or background concentrations. If exceeded, a site specific risk assessment shall be performed and shall propose closure standards based upon individual site conditions that protect fresh water, public health/safety and the environment. The assessment will be subject to division approval or waste shall be removed pursuant to 19.15.36.15.G.2. NMAC.

#### 9.0 FINAL DISPOSITION OF TREATED SOILS (19.15.36.15.G)

Upon achieving treatment zone closure performance standards, treated soils will be left in place or, with division approval, will be reused or disposed of accordingly.

Failure to meet closure performance standards within five (5) years, or as extended by NMOCD, shall require the removal of the contaminated soils from the landfarm cell to be disposed of at a division-permitted landfill, or reuse or recycle it in a manner approved by the division as set forth in 19.15.36.15.H. Alternative soil closure method(s) may be submitted to the division for approval as specified in 19.15.36.15.G.4 NMAC.

#### 10. OPERATIONAL (19.15.36.15.C)

#### 10.1 Facility Identification (19.15.36.13.J)

Signage will be posted outside of the facility entrance and will comply with the following requirements:

- Readable from a distance of 50';
- Will provide the facility Name and Permit Number;
- o Will provide the facility's location by Unit Letter, Section, Township, Range (ULSTR); and
- o Will provide Emergency Contact Name(s) and Number(s)

#### 10.2 Facility Requirements (19.15.36.13.B & 19.15.36.13.C)

As per SWMF requirements, the landfarm will not be:

- o within 200' of a watercourse, lakebed, sinkhole or playa lake (arroyos will be bermed and contaminated waste will not be placed within 200')
- o Located within an existing wellhead protection area or 100 year floodplain;
- o Located within, or within 500' of a wetland;
- Located within the area overlying a subsurface mine;
- Located within 500' from the nearest permanent residence, school, hospital, institution or church in existence at the time of initial application;
- o Located within an unstable area; and
- More than 500 acres.

#### 10.3 Berms (19.15.36.15.1)

Landfarm cells shall be bermed to prevent rainwater run-on/off.

#### 10.4 Freestanding Liquids (19.15.36.15.C.8)

Freestanding liquids will be removed from the facility within 24 hours. This will be accomplished by use of water or king vacuum trucks.

#### 10.5 Placement of Contaminated Waste (19.15.36.15.2 & 19.15.36.15.3)

Contaminated waste will not be placed within 100' of the facility's boundaries or within 20' of a pipeline crossing the facility.

#### 10.6 Spill Reporting (19.15.36.13.K)

The facility will comply with spill reporting and corrective action provisions of 19.15.30 NMAC or 19.15.29 NMAC as outlined in the company Spill Prevention Control & Contingency Plan.

#### 10.7 Monthly Inspections & Maintenance Activities (19.15.36.13.L)

The facility will comply with inspection and maintenance plan provisions of 19.15.36.13.L.3 NMAC. Refer to the company Routine Inspection & Maintenance Activities plan.

#### 10.8 Run On/Off Water Control (19.15.36.13.M)

The facility will comply with provisions of 19.15.36.13.M to control run-on and run-off water. Refer to the company Stormwater Pollution Prevention Plan (SWPPP).

#### 10.9 Contingency Plans (19.15.3.11 & 19.15.36.13.N)

The facility will comply with provision of 19.15.36.13.N to have contingency plan(s) in place. Refer to the company Contingency Plan & H2S Contingency Plan.

#### 10.10 Training Program (19.15.36.13.P)

All key personnel will receive annual training related to:

- o General Operations;
- o Permit Conditions;
- o Emergencies;
- o Proper sampling methods;
- o Identification of Exempt and Non-Hazardous, Non-Exempt Waste

Training records shall be maintained at the facility office or facility records storage for no less than five (5) years and made available for division inspection upon request.

#### 11.0 RECORDS MANAGEMENT (19.15.36.13.G)

Data obtained through the plan implementation will be used to ensure the facility meets the conditions of the permit and to ensure that all waste is properly managed.

Records related to waste acceptance, sampling, material tracking, biopile temperature testing, waste status, generator, location of origin, volume/type of waste, date of disposal, trucking company, waste storage location and other applicable records will be maintained at the facility.

Said data/records will be maintained at the facility office or facility records storage and made available for division inspection upon request. Data/records shall be maintained at the facility office or facility records storage for no less than five (5) years after the closure of the facility.

#### 11.1 Forms (19.15.36.13.G & 19.15.36.15.C.9)

In order to comply with requirements set forth in 19.15.36, the following forms will be utilized and maintained at the facility office or facility records storage:

- C-138 Request for Approval to Accept Solid Waste (Exhibit A);
- C-133 Authorization to Move Produced Water (Exhibit B);
- Material Entry Record –Short Form (Exhibit C) Long Form (Exhibit D)
- o Biopile Record (Exhibit E)
- Biopile Temperature Maintenance Record (Exhibit F)

#### 11.2 Material Entry Record (19.15.36.13.G)

The Material Entry Record contains the following information:

- Date
- Generator
- Company Representative & Phone Number
- Origin of Material
- Transporting Company
- Driver's Name
- Truck Number
- Pile Number
- Type of Waste
- Amount of Waste
- Exempt or Non-Exempt Waste
- Test results for H2S, Chlorides, PH, TDS, Paint Filter
- If the load is DENIED/REJECTED
- Driver(s) Signature(s)
- Facility Attendant Signature

#### 11.3 Biopile Record (19.15.36.15.C.9)

The Biopile Record contains the following information:

- Name/Description of Biopile (i.e., Conoco Drill Mud, Community Liquids, BP Dirt)
- Date Biopile Created
- Pile #
- Cell #
- Generator
- Origin of Material
- Transported By/Truck #
- Quantity Received
- Date Received
- Comments

#### 11.4 Biopile Temperature & Maintenance Record (19.15.36.15.C.9)

The Biopile Temperature & Maintenance Record contains the following information:

- Page #
- Pile #
- Cell#
- Date Pile Created/Pile Number Placed on Pile
- Name/Description of Biopile (i.e., Conoco-Drill Mud, Community-Liquid, BP-Dirt)
- Weekly Pile Temperature Date
- Monthly Pile "Turned" Date

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

## State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

## EXHIBIT (A)

Form C-138 Revised March 12, 2007

\*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection

## REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1.	Generator Name and Address:
2.	Originating Site:
3.	Location of Material (Street Address, City, State or ULSTR):
4.	Source and Description of Waste:
Est	imated Volume yd³/bbls Known Volume (to be entered by the operator at the end of the haul) yd³/bbls
5.	GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS
I,	, representative or authorized agent for do hereby
cer	Generator Signature tify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988
	ulatory determination, the above described waste is: (Check the appropriate classification)
	RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.  Operator Use Only: Waste Acceptance Frequency Monthly Weekly Per Load
	RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)
	MSDS Information    RCRA Hazardous Waste Analysis    Process Knowledge    Other (Provide description in Box 4)
	GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS
1;	, representative for do hereby certify that
R	epresentative/Agent Signature
	resentative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples
	we been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of
19.	15.36 NMAC.
6.	Transporter:
	D Permitted Surface Waste Management Facility
1	Jame and Facility Permit #:
A	Address of Facility: #
N	Method of Treatment and/or Disposal:
	☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other
Was	te Acceptance Status:
	APPROVED DENIED (Must Be Maintained As Permanent Record)
<b>}</b>	√T NAME: DATE:
SIG	NATURE:  Surface Waste Management Facility Authorized Agent  TELEPHONE NO.:
	Surface waste management racinty Authorized Agent

## EXHIBIT (B)

Submit a single copy to Santa Fe Office

#### State of New Mexico Energy Minerals and Natural Resources

Form C-133 Revised May 27, 2007

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

## AUTHORIZATION TO MOVE PRODUCED WATER

Iransporter	Name	•	· · · · · · · · · · · · · · · · · · ·
Address			Office Location (If different)
		<u></u>	
Phone Num	bers(s)		
State Corpor	ration Commission Permit ?	No	
corporation r Secretary of S ( commission t ( New Mexico; ( commission a ( exceeding 25 in another en violating divi and hearing,	name or LLC has <u>not</u> been esta State Office. In accordance wi (1) the applicant is a corpor, o do business in New Mexico; (2) the applicant is a limited (3) the applicant does not po- administers, if it is required to (4) the applicant or an office percent, is or was within the p tity that possesses or has posses sion rules or other state or feat finding such entity to be in vio	ablished with the PRC or ith Section 51 of 19.6.2 It ation or limited liability partnership, and is not a bases a carrier permit us have such a permit under, director or partner in past five years an officer, essed an approved form the level of the order required the order required the such as order required.	on Commission (PRC) Warrant for Transportation Services, if a en partnership has not been established with the New Mexico NMAC, "the division may deny approval of a form C-133 if company, and is not registered with the public regulation registered with the New Mexico secretary of state to do business it inder the single state registration system the public regulation or applicable statutes or rules; or the applicant, or a person with an interest in the applicant of director, partner or person with an interest exceeding 25 percental c-133 that has been cancelled or suspended, has a history of the subject to a commission or division order, issued after notice ring corrective action; or has a penalty assessment for violation of days after issuance of the order assessing the penalty"
NOTE:	personnel with the cont operations in compliance	tent of Sections 51 and ce therewith. Failure to ns 51 and 52 of 19.15.	oproved Form C-133 to familiarize its 152 of 19.15.2 NMAC and to assure to move and dispose of produced water in .2 NMAC are cause for cancellation of Form ater.
I hereby cert	tify that the information abo	ove is true and comple	te to the best of my knowledge and belief.
Signature			Date
Printed Nam	ne		Title
E-mail Addı	ress		
(This space	for State Use)		
Approved by	у		Title
Date			

## EXHIBIT (C)



Industrial Ecosystems Inc. Blanco Landfarm

Material	l Entry	Reco	ord							
Date:		<del></del>			Company	Representa	atives Nam	e:		
Generator of N	/laterial:				Phone Nu	mber:			<del></del> .	
Origin of Mate	rial (Locat	ion):			Paykey / I	Purchase O	order Numb	er: <u> </u>		<u>·</u>
Material Trans				<b>-</b> :	H2S Gas	□ No	n-Detect	□ De	etect: Leve	
Driver's Ce Truck Num	oll #:		<del></del>		Chl	orides	PH		TI	os
Pile Numbe	er:					er Test:	•		iled □ Pit □	Tanks
<u> </u>	ial				□ DEN	ED / REJ	JECTED .			
Soil					Tank Bottom Sludge					
Gravel			j		Tank Cleaning Residue					
Solidified Liq	uid	,	J .		Charcoal	Filter Media	a			
Other	-			•	Washout	by:	<del></del>			
Amount of Ma	<u>terial</u>			÷						
	Load #1	Load #2	Load #3	Load #4	Load #5	Load #6	Load #7	Load #8	Load #9	Load #10
Cubic Yards		·							;	
3arrels		<u> </u>		<u>.                                    </u>	<u> </u>	<u> </u>	1		<u> </u>	<u> </u>
<u>Status</u>					•		,			
Exempt		xxx	}				•			•
Non Exempt	ţ					•				
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o. signat	ture:			· · · · · · · · · · · · · · · · · · ·						
Attendant's sig	gnature:			·					i	

\*Attach copy of test results to C-138/COW

EXHIBIT (D)

## Andlustrical Mesoyotoms Inc.

#### Industrial Ecosytems Inc Blanco Landfarm Material Entry Record (Long For

		Material Er	try Record	(Long Fom	n)			•
		AL(LOCATION):	•	COMPANY REPPHONE #PAYKEY/P.O#				
NOTES:					<del></del>	H2S GAS NON E Chlorides Paint Filter Test:	DETECT DETECT DETECT DETECT DETECT DETECT	:T TDS □ Pit □ Tanks
Date	Time	Transported by	Truck#	Yards	Barrels	Driver's Name (Print)		Checked in by
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Ecosystems	Н	<b>211.</b> 4

PILE#:	
CELL#:	

Generator of Material	Origin of Material	Transported By/ Truck #	Quantity Received	Date Received	Comments
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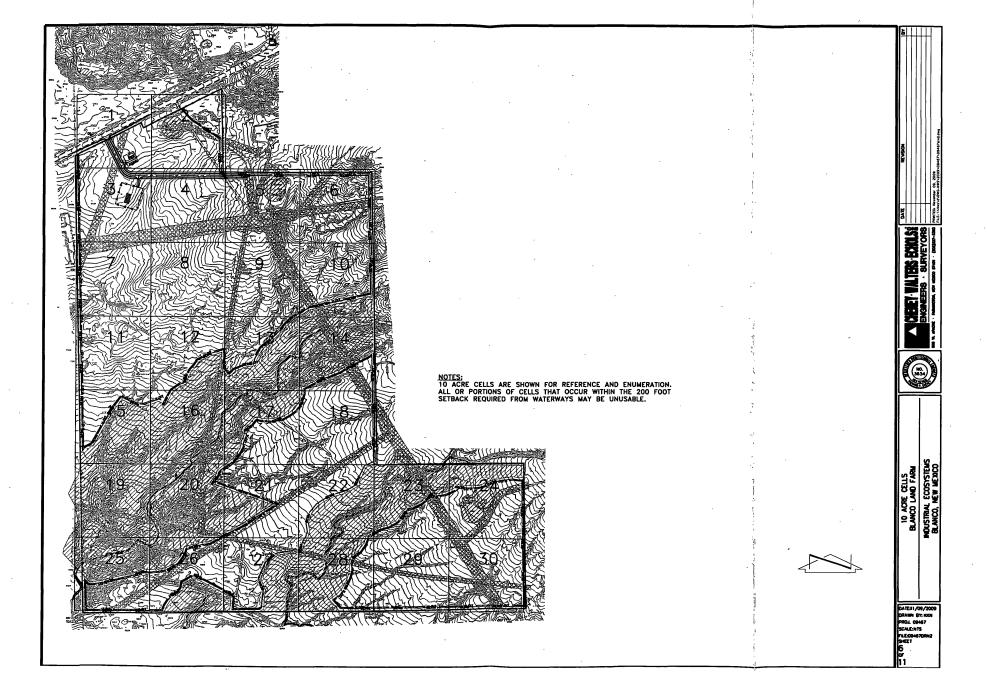
Andlestrial Ecosystems Inc.

## 2009 BIOPILE TEMPERATURE & MAINTENANCE RECORDS

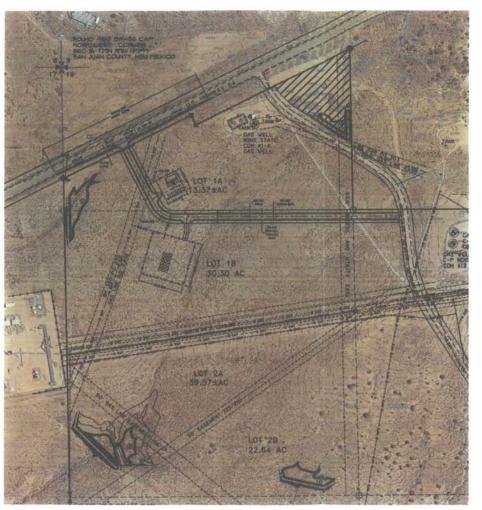
Page #:	Pile #:	Cell #:	
Date Pile Created/Pi	le Number P	laced on Pile:	
Name/Description of	f Material:		

Date	Pile Temp	Date Turned
01/07/09		
01/14/09		
01/21/09		
01/28/09		
02/04/09		
02/11/09		
02/18/09		
02/25/09		
03/04/09		
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Date	Pile Temp	Date Turned
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12/30/09		



Page 6.18





KEYED NOTES:

① HE MEE SET ASSE FOR HATER SHALL RE EXCLUSES FROM MAY CONSTRUCTION.

② STORMHATER RETEXTION POWD DIESS THYCEL. SEE DRAMADE SET FOR SPECIFICATIONS.



DATEST/09/2009 DRAWS BY: HWS PROAL GOME? SCALCINTS FALSHG/SET SHEET 7 Or



#### IEI Blanco

## Routine Inspection & Maintenance Activities (19.15.36.13.L. NMAC)

Primary inspection and maintenance activities include general facility, stormwater containment, berm integrity, unloading/mixing and tank battery areas.

Routine maintenance activities, and the frequency conducted, are shown in Table 1.

Table 1 Routine Maintenance Activities					
No.	Maintenance Task	Frequency of Task			
1	General Security (Facility & Vehicles/Equipment)	Daily			
2	Trash & Debris	Weekly			
3	Condition of Gate(s)	Daily			
4	Condition of Fencing	Weekly			
5	Freestanding Liquids	Daily			
6	Condition of Stormwater Containment Pond(s) (19.15.36.13.L3. NMAC)	(Per SWPPP) Bi-Weekly and/or within 24 hours of the end of a storm event (0.5" or greater)			
7	Dust Control / Moisture Received	Daily			
8	Condition of Berms (19.15.36.13.L3. NMAC)	(Per SWPPP) Bi-Weekly and/or within 24 hours of the end of a storm event (0.5" or greater) or after a major windstorm.			
9	Unloading/Mixing Area (Metal Pits/Pugmill/Centrifuge)	Daily			
10	Condition of Tank Battery Area	Daily			

#### Inspections

The attached Inspection and Maintenance Checklist shall be used to conduct inspections, as specified in Table 1, to identify needed maintenance and to record maintenance that is conducted.

## IEI Blanco Inspection and Maintenance Checklist

Inspector(s):	rinspection:		e of Inspection: ☐ Daily/Weekiy ☐ After heavy rainfal ☐ Other:	
Defect	Conditions When Maintenance Is Needed	Maintenance Needed? (Y/N)	Comments (Describe maintenance completed and if any needed maintenance was not conducted, note when it will be done.)	Results Expected When Maintenance Is Performed
General Securi	ty and Housekeeping (Daily/We	eekly)	ALEX LETTING TO BE A S	
Facility &	Evidence the Facility was illegally entered after hours or evidence the	Mon Tue		Facility, Vehicles and Equipment are in the same condition as they were the previous day. If not, authorities have been notified.
Vehicles/ Equipment	vehicles/equipment were	Wed	· · · · · · · · · · · · · · · · · · ·	No visible grease, oil, gasoline, or other
Equipment	tampered with  Evidence of oils, gasoline,	Thu		contaminants present on the ground in the vehicle/equipment parking area(s).
	or other contaminants on ground	Fri		
Trash & Debris	Trash and debris accumulated on the facility			Trash and debris will be cleared from site and disposed of properly.
Gates and Fend	ing (Daily/Weekly)	200		
Gate(s) - missing or broken parts	Any defect or damage to the gate which would allow easy entry to the facility	Mon Tue Wed Thu Fri		Gate(s) are repaired to proper working condition.
Fence	Any defect or damage to the fence which would allow easy entry to the facility			Fencing is repaired to design specification.
Freestanding L	iquids (Daily)			
Freestanding	Freestanding liquids on the	Mon		Freestanding liquids must be removed within 24 hours.
Liquids	facility	Tue		
	,	Wed	•	
		Thu		•
		Fri	,	

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? (Y/N)	Comments (Describe maintenance completed and if any needed maintenance was not conducted, note when it will be done.)	Results Expected When Maintenance Is Performed
Stormwater Co	ntainment (Bi-Weekly and/or v	vithin 24 hours o	f the end of a storm event 0.5" or greater).	
Containment Ponds	Stormwater runoff not directed or contained as needed			Monitor and restore the integrity of the containment area(s) and the flow of the storm water runoff.
Moisture/Dust (	Control (DailyWeekly)			
Blowing Dust	During drier months when natural precipitation is not frequent and has not been	Mon		Moisture will be added (sprayed with water truck) to the
	received w/in the prior 48 hours	Wed		unpaved roadways to reduce the potential of fugitive dust emissions. Biopiles will be trenched with water to
Has the facility	Specify: □ Rain	vved		enhance the bioremediation process.
received moisture w/in the last 48	□ Snow □ Ice	Thu		
hours?		Fri	,	
Berms (Bi-Wee	kly and/or within 24 hours of t	he end of a storn	n event 0:5" or greater major windstorm gr	eater)
Settlement	Berm settlement or berm integrity has been compromised			Berm is built back to the design elevation and specifications.
Erosion	Eroded over 2" deep where cause of damage is still present or potential for continued erosion			Cause of erosion is managed appropriately. Side slopes or berms are restored to design specifications, as needed.
Unloading/Mixi	ng Area(s) - Metal Pits/Pugmill	/Centrifuge (Dail	y/Weekly)	A CONTRACT OF THE PARTY OF THE
Metal Pits	Visible leaks or cracks in the walls or floor	Mon		Waste is not accepted into the tank(s) until it has been cleaned and repaired.
	, want of hoof	Tue	,	oleaned and repaired.
٠.		Wed		
		Thu		
	Otalia ad a cilitata	Fri		
Spills	Stained soil below or around the metal tank(s)	Mon		Stained soil is cleaned from the area.
		Tue		
		Wed	<u> </u>	·
		Thu		
		Fri		·

### Inspection and Maintenance Checklist continued

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? (Y/N)	Comments (Describe maintenance completed and if any needed maintenance was not conducted, note when it will be done.)	Results Expected When Maintenance Is Performed
Tank Battery (	Daily/Weekly)			
Liner	Liner is visible and has tears	Mon		Liner repaired or replaced & is fully covered.
	or holes in it	Tue		
		Wed		;
·	Thu			
Spills	Any visible leaks on or	Mon		Stains are cleaned from the area.
	around the supply pump(s)	Tue		
:	Any Stained soil around	Wed	÷ .	Hoses/Pipes are checked for leaks and to ensure
Any Stained soil around the tank(s) or hoses/pipes		Thu		proper attachment/connection
	Fri ·			

Inspector(s) Signature(s):		_		
	 		÷	

### **H2S / CONTINGENCY PLAN**

(19.15.3.11 & 19.15.36.13.N)

Company Name: Industrial Ecosystems Incorporated

Building Name: Main Office / Land Farm / Tank Battery

Building Address: # 49 CR 3150

Emergency Coordinator: Rodney L. Williams

Emergency Coordinator Phone Number: (505) 860 -4068

Designated Meeting Site(s) are:

1. Main entrance to property

Plan prepared by: Rodney L. Williams

Date: June 26, 2009

#### **Emergency Numbers**

(Please keep posted)

Fire 9-911 Medical 9-911 Sherriff's Office / Police 9-911

Industrial Ecosystems Incorporated:

Main Office: (505) 632-1782

Contact: Marcella Marquez

. HSE Department: (505) 860 - 4068

Contact: Rodney Williams

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#### **SECTION I: PURPOSE AND OBJECTIVES**

Potential emergencies at the Industrial Ecosystems Property (IEI) (Main office, Land Farm, and Tank Battery) such as a H2S release and all other emergencies require employees to evacuate the building or land farm immediately. An H2S / Contingency Plan (H2S CP) and adequate occupant familiarity with the buildings and land farm minimize threats to life and property. This plan applies to all emergencies where employees may need to evacuate for personal safety.

This H2S CP is intended to communicate the policies and procedures for employees to follow in an emergency situation. This written plan will be made available to employees and their designated representatives, local police, fire and medical facilities by the Primary Emergency Coordinator for the IEI properties (19.15.36.13.N.2 & 19.15.36.13.N.7).

Under this plan, employees will be informed of:

- The plan's purposé,
- Preferred means of reporting a H2S release,
- Emergency escape procedures and route assignments,
- Procedures to be followed by employees who remain to control plant operations before they
  evacuate,
- Procedures to account for all employees after emergency evacuation has been completed,
- · Rescue and medical duties for those employees who perform them,
- The alarm system.

**Rodney L. Williams** is the Primary Emergency Coordinator for this facility and has overall responsibility for the preparation and implementation of this plan.

Steve Abeyta is the Alternate Emergency Coordinator.

Clyde Tafoya is the Alternate Emergency Coordinator.

Richard Chavez is the Alternate Emergency Coordinator.

The Primary Emergency Coordinator will review and update the plan as necessary. Copies of this plan will be maintained in the Safety department office.

#### **SECTION II: GENERAL GUIDELINES**

The following guidelines apply to this H2S CP:

- 1. All personnel must be trained in safe evacuation procedures. Refresher training is required whenever the employee's responsibilities or designated actions under the plan change, and whenever the plan itself is changed.
- 2. The training may include use of workplace maps which clearly show the emergency escape routes included in the H2S CP. Maps should be posted at all times in main work areas to provide guidance in an emergency.
- 3. No employee is permitted to re-enter the work area until advised by Emergency personnel.

# SECTION III: RESPONSIBILITIES OF PRIMARY EMERGENCY COORDINATOR AND/OR ALTERNATE EMERGENCY COORDINATOR(S)

The Emergency Coordinator(s) are responsible for:

- 1. Obtaining and posting work areas and route evacuation maps.
  - Overseeing the development, communication, implementation and maintenance of the overall H2S CP.
  - 3. Ensuring the training of building occupants, operations personnel, and notifying all personnel of changes to the plan.
  - 4. Maintaining up to date lists of building occupants, operations personnel, and any other personnel with assigned duties under this plan.
  - 5. In the event of an H2S release or other emergency, the primary emergency coordinator must relay applicable information to emergency personnel, occupants and operations personnel.
  - 6. Familiarizing personnel with emergency procedures.
  - 7. Acting as liaison between management and their work area.
  - 8. Ensuring that occupants have vacated the premises in the event of an evacuation and for checking assigned areas.
  - Knowing where their designated meeting site is and for communicating this information to occupants.
  - 10. Having a list of personnel on the property, so a head count can be made at their designated meeting site.
  - 11. Ensuring that disabled persons and visitors are assisted in evacuating the building.
  - 12. Posting the H2S Contingency Plan in their work areas, communicating plans to occupants, and updating the plan annually.
  - 13. In the event of imminent or actual emergency situation shall immediately activate the facility alarms or communication systems, to notify personnel and visitors (19.15.36.13.N.9.a)
  - 14. In the event of imminent or actual emergency situation shall notify appropriate state and local agencies with designated response roles if their assistance is needed (19.15.36.13.N.9.b).
  - 15. In the event of a release, fire or explosion will immediately identifying the character, exact source, amount and extent of released materials by use of the Daily Tank Battery Reading and associated C-138 forms and will implement the SPCC Plan accordingly (19.15.36.13.N.10)
  - 16. Following an emergency, the Emergency Coordinator will follow the SPCC plan for treating, storing or disposing of related oilfield waste from a release, fire or explosion and ensuring that no oilfield waste, which may be incompatible with the released material, is treated, stored or disposed of until cleanup procedures are complete (19.15.36.13.N.12 & 19.15.36.13.N.13)

# SECTION IV: ALERTING BUILDING / LAND FARM OCCUPANTS OF POSSIBLE H2S PRESENCE/RELEASE

#### Signs and Markers (19.15.11.10):

For each entrance onto the facility signs or markers (conforming to ANSI standards) will be posted to notify the general public of the possible presence of H2S.

#### Regulatory Threshold (19.15.11.8.B)

It has been determined that H2S concentrations on the facility are below 100 ppm. All trucks entering the facility with liquid waste are screened for H2S upon arrival.

As per 19.15.11 NMAC no further actions are required for concentrations below 100 ppm. Any additional H2S equipment, procedures, and actions (above and beyond the requirements of 19.15.11.8.B) are performed at the company's discretion.

#### **Activation Levels:**

Emergency activation level will be set at 100 ppm or higher (19.15.11.8).

#### In the event of a H2S release (19.15.11.9):

- 1. The alarm system(s) will activate. The locations of the monitor boxes are noted on the evacuation maps. The alarm alerts building occupants and land farm occupants of the need to evacuate to the designated meeting site.
- 2. Persons discovering a **H2S release** should notify the Emergency Coordinator with pertinent information of the release location (Tank #) Emergency contact telephone numbers are listed in Section IX of the H2S CP.

#### General Public Protection from H2S at Tank Battery:

- Tank battery area will be fenced in with locking gates;
- Windsocks will be utilized to determine wind direction;
- Stairs and Ladders will be equipped with safety chains to prevent unauthorized access to the top of tank(s).

# SECTION V: GENERAL EVACUATION PROCEDURES FOR BUILDING / LAND FARM OCCUPANTS (19.15.36.13.N.5)

- 1. When the alarm sounds, all personnel should ensure that nearby personnel are aware of the emergency, quickly shutdown operating equipment and head directly to the designated meeting site. Building occupants need to close doors and exit the building using evacuation routes.
- 2. All occupants should proceed to their designated meeting site and await further instructions from the Emergency Coordinator.
- 3. All personnel should know where primary and alternate exits are located, and be familiar with the various evacuation routes available. Floor plans and maps with escape routes, alternate escape routes, exit locations and designated meeting sites are posted in the buildings and work locations.

#### SECTION VI: DISABLED OCCUPANTS

If a disabled occupant is unable to exit the building unassisted, the Emergency Coordinator must notify the emergency response personnel of the person's location. Transporting of disabled individuals up or down stairwells should be avoided until emergency response personnel have arrived. Unless imminent lifethreatening conditions exist in the immediate area occupied by a non-ambulatory or disabled person, relocation of the individual should be limited to a safe area.

#### SECTION VII: ACCOUNTABILITY PROCEDURES FOR EMERGENCY EVACUATION

Designated Meeting Sites: Groups working together on or in the same area should meet outside the building in the prearranged designated meeting site. A list of the primary and alternate designated meeting sites is posted in the main office and work locations.

Department organization list: A roster of personnel to ensure that everyone has evacuated has been developed by the Emergency Coordinator. The list will be updated whenever there is a personnel change.

The Emergency Coordinator will conduct head counts once evacuation has been completed.

The Emergency Coordinators are to be trained in the complete workplace layout and the various primary and alternate escape routes from the workplace. All trained personnel are made aware of employees with disabilities that may need extra assistance and of hazardous areas to be avoided during emergencies. Before leaving, the Emergency Coordinators are to check rooms and other enclosed spaces in the workplace for other employees who may be trapped or otherwise unable to evacuate the area, and convey this information to emergency personnel. A list of Emergency Coordinators will be located in the main office and at each work location.

Once each evacuated employees have reached their designated meeting site, the Emergency Coordinator will:

- 1. Assembles his/her group in the designated meeting site.
- Take a head count of his/her group.
- 3. Assumes role of department contact to answer questions.
- 4. Instructs personnel to remain in area until further notice.
- 5. Reports status to General Manager.
- 6. Instructs personnel to remain at designated meeting site until further notice.

#### SECTION VIII: RESCUE AND MEDICAL

In the event of an emergency staff will call 911. The facility is located in a rural area with the local volunteer fire department located approximately 1 ½ miles away.

- The Fire Department, Emergency Medical Technicians (EMT) will conduct all rescue and medical duties.
- Do not move injured personnel. Keep the people lying down, covered and warm.

#### SECTION IX: RESOURCE AND RESPONSIBILITIES LIST

H2S CP Organization: The following lists includes the names of employees, managers, staff or other personnel and their job titles, job positions and relative H2S CP collateral duties. The purposes served by the lists are:

1. To tell employees who to see for additional information on the H2S CP.

2. To provide emergency response personnel with a list of department personnel which may be needed in order to provide additional information about the H2S release,

3. The lists should be updated by the Primary Emergency Coordinator on an as-needed basis.

**Emergency Contact Names and Numbers (19.15.36.13.N.3)** 

Company Name: Industrial Ecosystems Incorporated

Building Name: Main Office / Land Farm / Tank Battery

Address: #49 CR 3150

Title: HSE Specialist

Name: Rodney L. Williams

**Location: Main Office** 

Telephone: (505) 860 -4068

Title	Name	Location	Telephone
Primary Emergency Coordinator	Rodney L. Williams	Main Office	(505) 860-4068
Alternate Emergency Coordinator	Clyde Tafoya	Land Farm	(505) 860 -7360
Alternate Emergency Coordinator	Richard Chavez	Land Farm	(505) 860 -1141
Alternate Emergency Coordinator	Steve Abeyta	Main Office	(505) 860 -3801
Management	Terry Lattin	Main Office	(505) 860 -2885
Office Staff	Marcella Marquez	Main Office	(505) 632 -1782

#### SECTION X: OPERATIONS SHUTDOWN

**Operation Shutdown:** Critical operations, including equipment that must be shut off and persons designated to complete these actions are identified below. Procedures for rapid shutdown should be predetermined for life safety and loss control purposes, as well as ensuring complete evacuations in a timely manner.

The Operations Shutdown procedures to be followed by those employees who have been assigned to care for essential building operations include:

#### PERSONNEL ASSIGNED TO OPERATIONS RESPONSIBILITIES

Operation	Required Shutdown	Name	Job Position	Work Area
Trucking	Trucks	Doug Davis	Field Operations Manager	Main Office
Land Farm	Heavy Equipment	Clyde Tafoya	Landfarm Operations. Manager	Land Farm
Administration	Main Office	Marcella Marquez	HSE Administrator	Main Office

On-site supervisors will be responsible for monitoring for leaks, pressure build-up, gas generation and ruptured valves (19.15.36.13.N.11).

Persons involved in the Operations Shutdown listed above shall be notified by management of this responsibility in advance, identified in the H2S CP, and will be appropriately trained for the particular situation.

#### Section XI: Training and Communications

Each occupant should know that evacuation is necessary and what his/her role is in carrying out the plan. Employees should also know what is expected of them during an emergency to assure their safety. Training on the H2S CP content is required annually.

A method of training building occupants in the requirements of the emergency evacuation plan is to give all employees a thorough briefing and demonstration. The HSE department will have all managers and supervisors present this plan to their staff in staff meetings. Annual practice drills are to be implemented and documented by the Primary Emergency Coordinator. The Environmental Health and Safety Department can assist with training, drills and demonstrations (19.15.11.9.d)

#### Section XII. Plan Amendments (19.15.36.13.N.8 & 19.15.36.13.N.14)

The H2S CP will be amended and/or reviewed as follows:

- On an annual basis;
- The emergency coordinator may amend the plan during an emergency as necessary to protect fresh water, public health, safety or the environment.

The H2S CP will be amended within 5 working days whenever:

- The SWMF permit is revised or modified;
- In the event of emergency failure;
- Change of design, construction, operation or maintenance of the facility which increases the potential for fires, explosions, or a release;
- · The list of emergency coordinators or their contact information changes; or
- The list of emergency equipment changes.

#### HYDROGEN SULFIED CHARACTERISTICS AND EFFECTS (19.15.11.9.b)

Hydrogen Sulfide, Invisible, Flammable, Explosive, Deadly

The above words describe hydrogen sulfide, or as we commonly call it—H2S.

H2S is a by-product of decaying organic matter. Workers in oil & gas operations, mining, sewage, landfills, laboratories and public utilities are the most commonly exposed groups.

Because of the dangers of working with H2S, IEI is required by law to follow certain safety standards and procedures, such as monitoring the air in certain work areas and providing engineering controls. But, and most importantly, you must know how to protect yourself from H2S. If you recognize the hazard and follow specific procedures, you can work around H2S safely.

#### Recognizing the conditions:

- H2S smells like rotten eggs, but only at low concentrations. Do not trust your sense of smell to warn you because:
- Other chemical odors can hide or mask the smell.
- Continued contact with H2S can kill the olfactory ability to detect the smell. Never think that because there is no smell there is no H2S.
- H2S is heavier than air and tends to collect in low-lying areas. Always test before entering any pit, sump or enclosed pump unit.
- H2S is flammable. The paradox is that concentrations that will explode would have killed you anyway. 43,000 to 460,000 PPM.
- Burning H2S emits another dangerous chemical, sulfur dioxide, or SO2. SO2 combined with moisture becomes sulfuric acid that can severely irritate the eyes, nose, throat and respiratory system.
- H2S is soluble in water, oils and most organic liquids. Solubility in liquid is about 1.23% or 12300
   PPM. H2S release from liquid is greater as the temperature increases.
- H2S reacts to oxidizers, metals, peroxides and alkalis. It is corrosive to iron and forms "iron oxide scale". So caution should be taken when cleaning vessels or piping that may have been in contact with H2S.

#### Effects are:

#### 0 to 100 P.P.M.

- Rotten egg smell
- Burning eyes
- Respiratory irritation
- Loss of smell
- Headache
- Dizziness
- Coughing

#### TOXIC EFFECTS OF HYDROGEN SULFIDE

Hydrogen sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen sulfide is heavier than air (specific gravity = 1.19) and colorless. It forms an explosive mixture with air between 4.3 and 46.0 percent by volume. Hydrogen sulfide is a chemical asphyxiate. Toxicity data for hydrogen sulfide and various other gases are compared in table #3.

#### **TOXICITY OF VARIOUS GASES**

#### TABLE #3

COMMON NAME	CHEMICAL FORMULA	SPECIFIC GRAVITY (SG = 1)	THRESHOLD LIMIT (TLV)	HAZARDOUS LIMIT	LETHAL CONCERN
			(1)	(2)	(3)
HYDROGEN CYANIDE	HCN	0.94	10 PPM	150 PPM/HR.	300 PPM
HYDROGEN SULFIDE	H2S	1.19	10 PPM	250 PPM/HR.	600 PPM
SULFUR DIOXIDE	S02	2.21	5 PPM	100 PPM	1000 PPM
CHLORINE	CL2	2.45	1 PPM	4 PPM/HR.	1000 PPM
CARBON MONOXIDE	СО	0.97	50 PPM	400 PPM/HR.	1000 PPM
CARBON DIOXIDE	CO2	1.52	5000 PPM	5 %	10 %
METHANE	CH4	0.55	90000 PPM (9%)	COMBUSTIBLE	

- 1. Threshold Limit concentration at which it is believed that all workers may be exposed to day after day without adverse effects.
- 2. Hazardous Limit concentration that may cause death.
- 3. Lethal Concentration concentration that will cause death with short-term exposure.

Threshold Limit = 10 PPM – 1972 by the ACGIH (American Conference of Governmental Industrial Hygienists)

#### 100 to 300 PPM

- Drowsiness
- Severe eye and throat irritation
- Possible pulmonary edema (fluid in the lungs)

#### 300 to 600 PPM

- Loss of reasoning
- Unconsciousness

Above 600 PPM will kill you almost immediately.

#### PEL (Permissible exposure limit).

OSHA defines the PEL as 10 PPM. This is the amount you can safely breathe, based on an 8-hour day.

#### STEL (short term exposure limit)

OSHA defines STEL for H2S as 15 PPM or the amount you can be exposed to for 15 minutes or less. IEI has procedures to evacuate the area at 10 PPM and to mask at 15 PPM.

Air Monitoring can be accomplished in several ways:

- Personal monitors
- Portable Monitors
- Fixed, full time area monitoring equipment.

Ventilation of H2S areas can be done with natural ventilation or mechanical ventilation.

#### PPE

- Escape units
- Air-line or supplied-air units
- SCBA

#### Emergency procedures for eye exposure:

- Flush eyes with clear running water for 15 minutes
- Force your eyelids open if necessary
- Seek medical attention

#### Emergency procedures for skin exposure:

- Remove contaminated clothing
- Rinse skin thoroughly
- Wash or dispose of contaminated clothing

## **Toxicity of Hydrogen Sulfide to Humans**

H2S %	РРМ	0-2 MINUTES	0-15 MINUTES	15-30 MINUTES	30-60 MINUTES	1-4 HOURS	4-8 HOURS	8-40 HOURS
0.005 0.010	50 100			Loss pf sense of smell	Respiratory tract irritation	Irritation of eyes & throat, coughing, labored breathing	Pain in eyes, sleeplessness 	Increased symptoms
0.010	100		Loss of sense of smell; coughing	Irritation of eyes, throat, coughing	ves, throat, sleeplessness, & mucous		Increased symptoms	Hemorrhage & death
00.20	200	Loss of sense of smell	Irritation of eyes, throat, coughing	Labored breathing, sleeplessness, pain in eyes	Blurred vision, difficult breathing, light shy	Increased symptoms	Hemorrhage & death	
0.025	250	Irritation of eyes, throat, coughing,	Painful secretion of	Labored breathing & dull	Increased pain in eyes, light	Hemorrhage &		
0.035	350	loss of sense of smell	tears, weariness	pain in head	shy, nasal catarrh, difficult breathing	death	-	
0.035 0.045	350 450	Irritation of eyes, throat, coughing, loss of sense of smell	Irritation of eyes, throat, coughing, Labored	Increased pain in eyes, light shy, nasal catarrh, difficult	Dizziness, weakness, increased irritation	Death		
0.050	500	Pain in eyes, difficulty breathing	breathing Salivation & mucous discharge, severe pain in eyes, weariness	breathing Severe eye pain, sleeplessness, heart palpitations, few cases of death	Dizziness, trembling in extremities, severe eye pain, great weakness & death.			,
0.060 0.070 0.080 0.100 0.150	600 700 800 1000 1500	Collapse. Unconsciousnes s. Death.	Collapse. Unconsciousne ss. Death.			·		

# EMERGENCY EQUIPMENT (19.15.36.13.N.4) (Updated 08/09)

Equipment	Capacity	Location(s)	Capabilities/Description
Telephone System		Office	Provides ability to contact police, fire and medical response teams in the event of an emergency.
Cell Phones			Key personnel are provided with cell phones.
CB Radio(s)		Main office Tank Battery In Heavy Equipment	Provides the ability for office and landfarm personnel as well as truck drivers to communicate on the facility at all times.
Fire Extinguisher(s)	10 lb – ABC type 5 lb-ABC type 20 lb ABC type	Office Heavy Equipment Tank Battery	ABC type universal system effective on paper, wood and electrical fires as well as solvents.
Spill Containment Kits		Office Storage Tank Battery	
Absorbent		Office Storage Tank Battery	Sheets and granular material
Shovels, Rakes, Squeegees, Brooms		Storage Tank Battery	Used to spread and remove absorbents
OSHA CERTIFIED PPE: Gloves Eye Protection Hearing Protection Head Protection		Office	Cotton, leather, chemical resistant. Safety glasses, goggles, face shields. Ear plugs. Hard Hat.
Eye Wash Stations Safety Shower Units		Office Tank Battery	Personnel exposed to toxic or hazardous commodities should shower or irrigate at these stations as instructed or until emergency medical services arrive.
First Aid Kits		Office Tank Battery	To provide immediate care until medical aid arrives. Meets OSHA standards.
Body Fluid Spill Kit		Office Tank Battery	Provide protection, containment & disposal of bodily fluids.
Self Contained Breathing Apparatus (SCBA)		Office	Designed to provide breathable air in environments with hazardous vapors and/or gases.
Respirators		Office	Designed to protect from inhaling harmful dusts, fumes, vapors, and/or gases.
Safety Harness		Office	Designed for use when working above ground to offer fall protection.
H2S Monitors		Office-Checked out to personnel for use	Monitor the environment to alert of toxic vapors and/or gases, combustibles and
4 Way Gas Monitors		on landfarm/in field	oxygen hazards.

### **EMPLOYEE EDUCATION AND TRAINING (19.15.36.13.P)**

IEI employees receive Health & Safety training initially upon employment and receive refreshers throughout the year. Employees will also receive specialized training specific to duties and functions of their job and the area they are working in. Training will be provided by a qualified Contractor, HSO, and/or qualified personnel. Documentation/Certification of required training will be maintained in the employee's personnel file.

HAZWOPER/HAZCOM 40 HOUR INITIAL TRAINING, 8 HOUR ANNUAL REFRESHER, SUPERVISOR'S ADDITIONAL 8 HOUR SPECIALIZED TRAINING, CONFINED SPACE, & H2S - Training is provided for all personnel involved with potential hazardous waste sites in compliance with Federal OSHA 29 CFR 1910.120(e) which give personnel a thorough knowledge of hazardous materials, health and safety hazard potentials.

CONFINED SPACE ENTRY - Employees must receive specialized training prior to assignment to a job requiring confined space entry. Refresher training will be completed every three years, or when the need for more frequent refresher training is recognized.

MINING OPERATIONS-employees will participate in required MSHA TRAINING.

GENERAL OPERATIONS, PERMIT CONDITIONS/REQUIREMENTS; EMERGENCY SAMPLING METHODS, AND IDENTIFICATION OF RCRA EXEMPT AND NON-EXEMPT WASTE-key employees will be trained annually and/or as needed (permit or personnel changes).

Weekly TAILGATE & SAFETY MEETINGS to address site/daily specific safety matters (e.g. weather, tight locations, heavy traffic, use of fire extinguishers, etc.). Attendance Records will be kept in the Safety Meeting binder.

Training records will be maintained and kept at the main office for a period of 5 years.

#### **CLOSURE AND POST CLOSURE PLAN**

The purpose of the closure and post closure plan is to establish the minimum requirements and procedures for closure of the facility and/or cell(s) within the facility.

Industrial Ecosystems, Inc. (IEI) shall notify the division's environmental bureau at least 60 days prior to the cessation of operations at the surface waste management facility (SWMF) and provide a proposed schedule for closure (19.15.36.18.A.1 NMAC 02/14/07). If additional closure requirements are not received from the division within 60 days of notification, IEI will proceed with closure in accordance with the approved closure plan (19.15.36.18.A.3 NMAC 02/14/07).

During closure operations IEI will maintain the SWMF to protect fresh water, public health, safety and the environment (19.15.36.18.A.5 NMAC 02/14/07).

The following minimum standards shall apply to closure and post closure of the entire facility and/or part of the facility (19.15.36.18.D.4 NMAC 02/14/07).

Upon completion of closure, the operator shall re-vegetate the site unless the division has approved an alternative site use plan as provided in 19.15.36.18.G. NMAC 02/14/07. Re-vegetation shall consist of establishment of a vegetative cover equal to 70 percent of the native perennial vegetative cover (19.15.36.18.A.6).

The operator shall ensure that:

- Disking and addition of bioremediation enhancing materials continues until contaminated soils are remediated to the standards provided in 19.15.36.15.F. NMAC 02/14/07, or as otherwise approved by the division;
- Treated soils remediated to the foregoing standards are left in place are re-vegetated in accordance with 19.15.36.18.A.6. NMAC 02/14/07;
- When treated soils remediated to the foregoing standards are removed; the cell(s) will be revegetated in accordance with 19.15.36.18.A.6. NMAC 02/14/07;
- Contaminated soils that have not or cannot be remediated to the standards in 19.15.36.15.F.
   NMAC 02/14/07 are removed to a division-approved SWMF and the landfarm remediation area is re-vegetated in accordance with 19.15.36.18.A.6. NMAC 02/14/07;
- o Berms will be removed;
- o Buildings, fences, roads (constructed for SWMF purposes) and equipment are removed, the site cleaned-up and tests conducted on the soils for contamination;
- Annual vadose zone and treatment zone sampling reports are submitted to the division's environmental bureau until the division has approved final closure; and
- o If choosing to use the methods specified in 19.15.36.15.H. NMAC 02/14/01, that the soil has an ECs of less than or equal to 4.0 mmhos/cm (dS/m) and SAR of less than or equal to 13.0

The post-closure care period for the SWMF shall be three years if the operator has achieved clean closure. During the three year period, IEI or designated responsible entity shall regularly inspect and maintain the re-vegetation. If a release occurs to the vadose zone and/or ground water, IEI or designated responsible entity shall comply with the applicable requirements of 19.15.30 and 19.15.29 NMAC 02/14/07 (19.15.36.18.F NMAC 02/14/07).

If IEI contemplates use of the land for purposes inconsistent with re-vegetation, IEI may, with division approval, implement an alternative surface treatment, provided that the alternative treatment will effectively prevent erosion (19.15.36.18.G. NMAC 02/14/07).



## **CLOSURE / POST CLOSURE ESTIMATE**

TESTING FOR TWO YEARS		
20 Cells $\times$ 2 = 40 Tests 40 $\times$ \$1,200.00		\$ 48,000.00
Grading and Shaping Including Dike and Berm Removal 200 Acres 5 Acres/Day = 40 Days x 8 Ho Equipment @ \$300/Hour x 240		\$ 72,000.00
Seeding of 200 Acres @ \$2,00	0/Acres	\$ 40,000.00
Tank and Pit Removal 30 @ \$200 Each		\$ 6,000.00
3 Year Monitoring Quarterly (F 12 Quarters @ \$300 Each	ost Closure)	\$ 3,600.00
Contingency (Post Closure)		<u>\$ 20,000.00</u>
TOTAL		<b>\$ 243,600.00</b> ]

#### **CONTINGENCY PLAN**

(19.15.36.13.N)

#### INTRODUCTION

The facility functions as a New Mexico Oil Conservation Division (NMOCD) permitted Surface Waste Management Facility (SWMF) specializing in remediating RCRA Exempt Oilfield Waste.

The Contingency Plan describes the actions to be taken by the SWMF personnel in the event of a major spill, fire or other response to incident. It includes information necessary to address response situations efficiently and in such a manner as to prevent or minimize hazards to human health and the environment due to fire, explosion or any other release of contaminants to the air, soil, surface water or groundwater.

The Contingency Plan is to be expeditiously carried out whenever there is a major emergency that could threaten human health or the environment. Implementing the procedures contained in this plan should effectively mitigate such threats.

The Emergency Coordinator, or the Alternate Emergency Coordinator(s), are responsible for implementing the Contingency Plan during an emergency response event; however, employees must also be familiar with the procedures in this plan to ensure that it is properly implemented.

Copies of the plan are maintained at the SWMF office and by the local law enforcement and emergency response departments for use during an emergency.

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Section I: Purpose and Objectives

Section II: General Facility Information

Section III: Description of Business Activity

Section IV: Waste Descriptions (19.15.36.12.N.6 NMAC)

Section V: Emergency Coordinators (19.15.36.12.N.3, 19.15.36.12.N.9 & 19.15.36.12.N.10 NMAC)

Section VI: Implementation

Section VII: Response Procedures (19.15.36.12.N.1 NMAC)

Section VIII: Identification of Waste(s) (19.15.36.12.N.6 NMAC)

Section IX: Assessment

Section X: Notification

Section XI: Control Procedures (19.15.36.12.N.1, 19.15.36.12.N.11 & 19.15.36.12.N.12 NMAC)

Section XII: Prevention of Recurrence or Spread

Section XIII: Incompatible Waste(s) (19.15.36.12.N.13 NMAC)

Section XIV: Container Spills and Leakage

Section XV: Pit/Tank Spills and Leakage

Section XVI: Post-Emergency Equipment Maintenance

Section XVII: Emergency Equipment (19.15.36.12.N.4 NMAC)

Section XVIII: Coordination Arrangements (19.15.36.12.N.2 NMAC)

Section XIX: Evacuation Plan (19.15.36.12.N.5 NMAC)

Section XX: Reporting Requirements

Section XXI: Pollution Incident History

Section XXII: Availability and Revision of the Contingency Plan (19.15.36.12.N.7, 19.15.36.12.N.8 &

19.15.36.12.N.14)

#### **SECTION I: PURPOSE AND OBJECTIVES**

This Contingency Plan is designed to minimize hazards to human health and the environment from fire, explosions, or any unplanned sudden or non-sudden release of contaminants or oilfield waste to air, soil, surface water or ground water. The plan will demonstrate that facility-specific emergency procedures have been developed and will be implemented immediately whenever an emergency hazardous waste situation occurs at the facility.

#### SECTION II: GENERAL FACILITY INFORMATION

- a. Crowe Blanco
- Operator: Industrial Ecosystems, Inc. 49 CR 3150 Aztec, NM 87410 (505) 632-1782
- c. Physical Address of the facility: (include county-latitude/longitude, and direction if necessary
- d. Mailing address:
- e. Permit #:
- f. Key Contacts:

Title	Name	Telephone ,
Primary Emergency Coordinator	Rodney L. Williams	(505) 860-4068
Alternate Emergency Coordinator	Clyde Tafoya	(505) 860 -7360
Alternate Emergency Coordinator	Richard Chavez	(505) 860 -1141
Alternate Emergency Coordinator	Steve Abeyta	(505) 860 -3801
Management	Terry Lattin	(505) 860 -2885
Office Staff	Marcella Marquez	(505) 632 -1782

- g. Facility Phone #
- h. Facility Fax #

#### **SECTION III: DESCRIPTION OF BUSINESS ACTIVITY**

The facility is a NMOCD permitted SWMF (landfarm) which provides environmental services to local oilfield companies. The facility accepts Non-Hazardous, Resource Conservation and Recovery Act (RCRA) exempt waste(s) generated from oil and gas exploration and production. The primary intent of the facility is to landfarm / remediate oilfield waste for reuse and recycling.

#### SECTION IV: WASTE DESCRIPTIONS

Only Non-Hazardous, RCRA exempt and non-exempt (case by case basis) wastes are accepted at the facility. These materials are generated from oil and gas exploration and production (E&P) operations and are usually the by-product of "down-hole" operations.

Waste is delivered in both solid and liquid forms. Solid waste is placed into biopiles and liquid waste is managed in both tanks and pits at the "tank battery" area. The "tank battery" area of the facility is provided with a secondary containment system.

The following provides information and descriptions of the most common waste streams handled at the facility and their associated characteristics and/or constituents:

#### Waste Characterization

Characterization requirements for individual shipments of waste are specified on a waste stream basis. A waste stream is defined as waste material generated from a single site and a single process or an activity that is similar in material, physical form, and constituents. Exempt Oilfield Waste is initially categorized into four category groups that are related to the physical form of the waste.

- 1. Hydrocarbon stained soil and gravel
- 2. Tank Sludge, Tank Bottoms, Tank Cleaning Residue
- 3. Drilling fluids
- 4. Debris Waste

#### Exempt Waste(s)

- Hydrocarbon stained soils and gravels
- o Tank bottom sludge
- o Drilling fluids
- o Drill cuttings
- o Well completion, treatment, and stimulation fluids
- o Basic sediment, water, and other tank bottoms
- o Accumulated materials such as hydrocarbons, solids, sands and emulsion
- Pit sludges
- o Gas plant dehydration wastes
- o Workover wastes
- o Cooling tower blowdown
- o Gas plant sweetening waste
- o Produced Water
- o Spent filters, filter media, and backwash

#### Non-Exempt

- Unused fracturing fluids
- o Gas plant cooling tower cleaning wastes
- o Unused and used equipment lubricating oils
- Used hydraulic fluids

#### **On-Site Generated Wastes**

As a result of operating the facility, waste material is generated. A review of the several of the most common wastes generated at the facility is provided below:

- Wastes from Tanks and pits-approximately once every two years, it is necessary to remove the tank bottom sediment consisting of free water, residual oilfield wastes, and other materials such as soot and grit. A vacuum truck is used for this purpose.
- Contaminated Gloves, Rags, Paper, Absorbents, etc.-Contaminated gloves, rags, paper, absorbent and other miscellaneous material such as personal protective equipment is generated by the facility as a result of the management of the oilfield wastes.

#### SECTION V: EMERGENCY COORDINATORS

The emergency coordinator (HSE Specialist) and alternate emergency coordinator(s) are trained to respond in the event of a response situation. The emergency coordinator and/or the alternate emergency coordinators are authorized to commit the facility's resources, equipment and personnel, as necessary, to carry out this Contingency Plan.

At least one emergency coordinator, or an alternate emergency coordinator, is at the facility or on call and capable of reaching the facility in time to effectively respond to potential response situations. Each emergency coordinator and alternate emergency coordinator is familiar with this Contingency Plan, the operations and activities at the facility, the location and characteristics of wastes handled, the location of facility records, the facility layout, and the location and use of response and spill control equipment.

Table A-1 presents the list of Titles, Names, Location, Address, and the office, mobile and home telephone numbers of the Emergency Response Coordinators.

## TABLE A-1

#### **EMERGENCY COORDINATORS**

Title	Name	Location	Address	Telephone .
Primary Emergency Coordinator	Rodney L. Williams	Main Office		(505) 632-1782 (O) (505) 860-4068 (C) (505) 326-5387 (H)
Alternate Emergency Coordinator	Clyde Tafoya	Land Farm		(505) 632-1782 (O) (505) 860-7360 (C) (505) 632-2679 (H)
Alternate Emergency Coordinator	Richard Chavez	Land Farm		(505) 632-1782 (O) (505) 860-1141 (C) (505) 326-1941 (H)
Alternate Emergency Coordinator	Steve Abeyta	Main Office		(505) 632-1782 (O) (505) 860-3801 (C) (505) 632-8880 (H)

Whenever there is an imminent or actual response situation, notice is given to the emergency coordinator and/or alternate(s). As is discussed in subsequent sections, it is then the responsibility of the emergency coordinator or the alternate emergency coordinator (when the emergency coordinator is not available) to:

- o evaluate the situation and decide whether to implement the Contingency Plan;
- o activate the internal alarm systems (if required);
- o whenever there is a release, fire or explosion identify the character, exact source, amount and extent of any released materials;
- o assess possible hazards to human health or the environment;
- if implementation is warranted, supervise the response following the procedures in the Contingency Plan;
- notify outside emergency responders and state and local agencies
- o based on the severity of the incident, supervise the evacuation plan, if law enforcement or emergency responders order an evacuation;
- act as liaison between emergency and state agencies and facility personnel;
- o supervise cleanup operations following the procedures in the Contingency Plan;
- perform follow-up emergency reporting procedures.

#### SECTION VI: IMPLEMENTATION

Response situations may occur at any time as a result of natural forces, trespassing, accidents, spills or other situations that disrupt essential operations. The emergency coordinator and alternate(s) must be prepared to respond in a technically-effective and time-efficient manner.

The decision to implement the Contingency Plan depends upon whether an imminent or actual incident such as a fire, explosion or release of contaminants could threaten human health or the environment. The emergency coordinator or alternate(s) decides if the Contingency Plan should be implemented. For general guidance and consideration, the Contingency Plan may be implemented in response to the situations detailed below. The decision to implement the Plan will ultimately rest with the emergency coordinator.

#### Fire or Explosion:

- Fire that may cause the release of toxic fumes;
- Fire that may spread and ignite waste materials or cause an explosion;
- o Fire that may spread off-site or cause personal injury;
- Use of water or chemical fire suppressants that may result in excessive runoff;
- o An imminent danger exists that an explosion may occur;
- o An explosion has occurred.

#### Spill or Release:

- Spill of a flammable liquid that presents an imminent danger of an explosion;
- Spill resulting in the release of liquids from a secondary containment system;
- o Spill that may cause potential ground water contamination;
- o Spill that can not be contained on-site;
- Spill of significant size or danger to threaten human health, contaminate the environment or cause personal injury.

Natural Disasters: (In the event of a flood, the Stormwater Management Plan is implemented.)

o In the event of a flood, the Stormwater Management Plan will be implemented.

#### Civil Unrest:

The facility's property has been breached by individual(s) intent on sabotage.

#### **SECTION VII: RESPONSE PROCEDURES**

Response Classification .

The facility has a classification system that is used to determine the severity of a given situation. Response activities and implementation procedures are dictated by how an event is classified. The emergency coordinator or the alternate emergency coordinator classifies the event based on his or her assessment and judgment.

Events are classified as either incidental situations or major emergencies. An incidental situation encompasses small spills or fires that can be effectively cleaned up or extinguished without outside assistance. Such an event would *not* require implementation of the Contingency Plan. A major emergency addresses any potential spill, fire or explosion involving wastes that could pose a serious threat to human health or the environment and could likely require outside assistance. A major emergency would require implementation of the Contingency Plan.

#### Incidental Event

An incidental event applies to minor fires or releases involving a waste that can be easily contained and effectively cleaned up and does not impact human health or the environment. A small leak, spill or fire would fall under this classification. The contaminant involved would be identifiable with its hazards known and the necessary emergency equipment available to facility personnel for response. Such an event would present only minimal potential for injury or property damage with essentially no potential for public exposure. The event would be controlled by the facility personnel without outside assistance. Such events do not require implementation of the Contingency Plan. Response actions would be performed by on-site personnel.

#### Major Emergency

A major emergency warrants full implementation of the Contingency Plan to address emergencies that could seriously threaten human health or the environment. Emergencies in this category would likely require the assistance of outside emergency response organizations.

Examples of major emergencies are:

- Non-containable, quickly-spreading fire or one that could potentially cause an explosion;
- o Non-containable release that threatens to enter storm sewers, surface or groundwater;
- release of materials that pose significant hazards to human health or the environment; or
- o an explosion.

#### Spill Reporting

Any release of contaminant to the environment from a tank system must be reported to the NMOCD within 24 hours of its detection (505) 334-6178. Spills or overfills that result in a release that is less 25 gallons of petroleum or any hazardous substances that are less than the reportable quantity shall immediately be cleaned up. NMOCD shall be notified if cleanup cannot be accomplished within 24 hours, or within another reasonable time period which has been established by NMOCD.

#### **SECTION VIII: IDENTIFICATION OF WASTE(S)**

Whenever there is a release, fire or explosion, the emergency coordinator must identify the character, source, amount and extent of any released materials and obtain other pertinent information related to the event as expeditiously as possible. Much of this information can be readily obtained from the facility operating logs (i.e. Material Entry Records and Tank Battery logs). These logs provide information on the type and volume of material brought into the facility and in the tanks and pits located at the "tank battery" area. The logs are maintained at the facility and are updated each operating day.

#### SECTION IX: ASSESSMENT

The emergency coordinator assesses the potential for a release or fire to get beyond the control of facility personnel. The assessment takes into account the magnitude of the event, the proximity to facility boundaries and surrounding neighbors, the potential for fires to spread or contaminant releases to reach groundwater or surface water and the progress being made by facility personnel in controlling the release or fire. The assessment also considers both direct and indirect effects of the release, fire or explosion (e.g., the effects of any toxic, irritating or asphyxiating gases that may be generated, or the effects of any contaminated runoff).

After identifying the nature of the event and the type of contaminants involved by review of the facility operating logs, the emergency coordinator determines the appropriate response. If necessary, the emergency coordinator reviews the North American Emergency Response Guidebook (ERG) for information on specific hazards. This publication lists materials by chemical name as well as by USDOT UN numbers and details the procedures that should be used to respond to an incident involving specific materials.

#### **SECTION X: NOTIFICATION**

If the event is classified as incidental, then it is handled by facility personnel.

If the event is a major emergency, the emergency coordinator performs the following:

- o implements the Contingency Plan;
- o supervises the response following the procedures in the Contingency Plan;
- o notifies NMOCD and the National Emergency Response Center, if necessary; and
- o notifies appropriate emergency, state and local agencies as detailed below:

Police Department	if there is imminent danger to human health.	i
Fire Department	if there is an uncontrollable fire or spill or potential for toxic fumes	3.
Hospital	if there are injuries or missing personnel.	
NMOCD	if the Contingency Plan is implemented.	
Cleanup Contractor	if assistance with cleanup is needed after a release.	

Table A-2 presents the emergency agencies with their telephone numbers that may be notified in the event of a major emergency requiring outside assistance.

# TABLE A-2 Outside Notification of Major Emergencies

Department or Agency	Phone Number	Initial Criteria for Contact
Emergency Notification Phone Numbers		•
Internal: Emergency Response Coordinators: Rodney Williams, HSE Specialist Clyde Tafoya, Facility Operations Mgr. Richard Chavez, Operators Supervisor Steve Abeyta, Operations Supervisor	(505) 860-4068 (505) 860-7360 (505) 860-1141 (505) 860-3801	Implementation of the Contingency Plan
External: National Response Center 24 hour Emergency Number	(800) 424-8802	Release of a reportable quantity of contaminants to the environment.
Chemtrec	(800) 262-8200	Hazardous materials & dispatch of HAZMAT response units.
State Patrol	(505) 334-6622 or (505) 325-7547	Notify if there is an imminent danger to human health.
NMOCD	(505) 334-6178	Notify if any spills or releases.
Local Law Enforcement  Non-Emergency Dispatch	911 (505) 334-6622	Notify if there is an imminent danger to human health.
Blanco Fire Department	911 or (505) 632-8135	Notify if there is a fire, uncontrolled spill, or other imminent danger.
Emergency Dispatch San Juan Regional Medical Center	911 (505) 609-2000	Notify if there are any injuries.

#### **SECTION XI: Control Procedures**

Response actions to be taken in specific situations are described in this Section. Incidents such as a fire, explosion or release of contaminants that could threaten human health or the environment are expeditiously reported to the emergency coordinator who then decides whether or not to implement the Contingency Plan.

#### Incidental Spills

An incidental spill is defined as a spill that does not impact human health or the environment and that can be completely cleaned up within 24 hours of detection.

Responses to incidental spills do not require implementation of the Contingency Plan. The following actions are taken in response to such a situation. If a spill occurs on the facility within a secondary containment area, actions are taken promptly to remove the spill. Should the spill occur outside a secondary containment area, different actions are taken according to whether the spill is on a paved or unpaved area:

- o If the spill is on a paved area, the contaminant will be collected with sorbent materials and/or by use of a king vacuum truck. The inert sorbents are collected and managed appropriately.
- If the spill is on an unpaved area, the contaminant will be collected with sorbent material and/or by use of a king vacuum truck. The sorbent material and any contaminated soil are collected and managed.
- o If a spill occurs while disposing of waste at the tank battery area, the response actions described above are followed. Spills inside the tank battery areas are prevented from contaminating the environment by the unit's secondary containment systems.
- Sorbent materials, resulting from cleanup actions will be collected and disposed of off-site at a properly permitted waste treatment or disposal facility. Contaminated soils containing recovered oilfield waste will be collected and treated on the facility.

The individual reporting a spill to NMOCD should be prepared to give his name, position, company name, address, telephone number, time and date. He should also describe the extent of injuries, material spilled, source and, if possible, an estimate of the amount, extent of any contamination and the containment status. More detailed reporting requirements are contained in Section XX.

Cleanup of incidental releases is overseen by the emergency coordinator. At the conclusion of the cleanup efforts, the emergency coordinator visually inspects the spill area to assess whether the on-site response actions were successful in preventing impact to the environment.

#### Major Spills

Any spill that cannot be completely remedied using the methods described above is a major spill. A major spill is usually the result of a vehicular accident, tank overfilling, equipment failure, inability to identify the contaminant released, and release of materials that pose significant health hazards, explosion or a fire. Spilled material, which escapes collection, could potentially contaminate soil, surface water, groundwater, sanitary sewer systems and storm sewer systems. If a major spill occurs, personnel must notify the emergency coordinator as soon as practicable. Under the direction of the emergency coordinator and after identifying and assessing the situation, emergency response to this type of spill should be as follows:

- put on protective equipment including the appropriate respiratory protection equipment (when required) following the instructions of the ERG;
- assist any injured people;
- stop or slow the flow of material (i.e., defensive actions), if possible without being exposed;
- o retain, contain, isolate, or slow the flow of the material if it cannot be stopped;
- o contact local law enforcement, emergency response personnel, NMOCD, and if necessary the National Response Center;
- o prevent further migration of leaks or spills to soils or surface water;
- o remove and dispose of and/or treat any visible contamination of soil or surface water;

If the facility stops operation in response to a major emergency, the emergency coordinator will monitor for leaks, pressure buildup gas generation or equipment ruptures as appropriate. Major emergencies are promptly reported by the emergency coordinator(s).

The individual reporting such an event should be prepared to give his name, position, company name, address, telephone number, time and date. He should also describe the extent of injuries, material spilled, source and, if possible, an estimate of the amount, extent of any contamination, the containment status, and specify any equipment needed. More detailed reporting requirements are contained in Section XX.

Aggressive remedial actions are expeditiously employed to minimize any impacts associated with a major emergency. Final response actions are implemented following consultation with NMOCD, if requested.

Contaminated material, resulting from cleanup actions for major spills are disposed of off-site at a properly permitted waste treatment or disposal facility. Contaminated soils containing recovered oilfield waste will be collected and treated on the facility.

#### Fires and Explosions

If a small fire occurs, personnel must act quickly with a fire extinguisher to put out the fire before it spreads without undue threat to personal safety. Such a fire would be defined as incidental and would not require implementation of the Contingency Plan.

If a fire cannot be extinguished immediately or an explosion occurs, implementation of the Contingency Plan is required. The fire department is promptly notified and the facility may be evacuated.

It should be noted that facility personnel should only respond to incidental fires; that is, those fires which can immediately be extinguished using a fire extinguisher. Any fire that cannot be brought under control immediately, or has the potential to become uncontrollable warrants implementation of the Contingency Plan. The emergency coordinator determines if evacuation of the facility is warranted. Should such action be taken, the emergency coordinator:

- o activates the internal facility communication systems to notify facility personnel for evacuation;
- o notifies the NMOCD, and the National Response Center, if necessary; and
- o notifies appropriate emergency, state and local agencies deemed necessary, such as law enforcement and emergency response departments;
- Sorbent materials will be collected and containerized for proper management and disposed of at the local landfill. Contaminated soils containing recovered oilfield waste will be collected and treated on the facility.

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Upon review of the fire or explosion incident, police and fire officials may initiate evacuation proceedings of the neighboring properties (based on guidance detailed in the ERG).

Any fire or response actions undertaken by off-site emergency response personnel are required to wear the appropriate personal protective equipment.

The emergency coordinator reporting a fire or explosion should be prepared to give his name, position, company name, address, telephone number, time and date. He should also describe the type of incident, extent of injuries, material, source and, if possible, an estimate of the amount, extent of any contamination, the containment status, and specify any equipment needed. More detailed reporting requirements are contained in Section XX.

Contaminated material, resulting from cleanup actions for fires or explosions will be disposed of off-site at a properly permitted waste treatment or disposal facility.

#### SECTION XII: PREVENTION OF RECURRENCE OR SPREAD

Quick response to a fire, explosion or release is the primary method by which recurrence or spread of fires, explosions or releases can be prevented. Specific actions to prevent the recurrence or spread of fires, explosions or releases include determining the source or cause of the incident; ceasing operations and turning off feed lines, auxiliary fuel lines and power supply to the affected area; cleaning up debris

from the situations and maintaining good housekeeping; containing and collecting released waste; recovering and isolating affected containers; ensuring that a fire is completely extinguished; and decontaminating the affected area/equipment.

Examples of further measures to prevent the recurrence or spread of fires, explosions or releases include:

- o prohibiting smoking except in designated areas; and
- protecting the waste management/storage areas from open flames, cutting and welding activities, hot surfaces and frictional heat.

If a leak was due to a release from a primary tank system into the secondary containment system, the source of the leak will be repaired before returning the system to service.

If the source of the leak is from a component not in secondary containment, facility personnel will provide secondary containment for that component before it is returned to service unless it is above ground and may be readily inspected.

#### SECTION XIII: INCOMPATIBLE WASTE(S)

No wastes that are incompatible with spilled or released material may be received by the facility until the emergency coordinator determines that the hazards posed by the response event have been fully remedied. The emergency coordinator will also ensure that no wastes incompatible with the spilled or released material will be stored in the area of the release until it is fully cleaned up.

#### SECTION XIV: CONTAINER SPILLS AND LEAKAGE

Upon discovery of any spills or leaks, precautions to protect personnel in the immediate area are taken. If necessary, the area is isolated. Responding personnel select and utilize the proper protective equipment and attempt, if feasible, to stop the leak by plugging the hole or by changing the position of the container. Personnel take precautions so as not to drive or walk into or through any vapors or spilled materials. Spills and leakage from containers holding waste are collected and placed into a new container. Damaged containers are placed in salvage containers, relabeled and marked accordingly. Cleanup in the container management areas may include:

- o use of sorbent material;
- o dry sweeping;
- o shoveling;
- o pumping;
- o damp mopping and wipe down;
- o complete washdown; or
- a combination of the above.

Rupture of a container at the facility elicits a response that is proportional to the seriousness of the release. Spilled liquid wastes are stabilized with sorbent material. Solid wastes and sorbent material used to capture spilled residual liquids are properly disposed of.

If a slow container leak is detected, the entire container is packed into an appropriately sized recovery drum, relabeled and marked. The facility inspection procedures assure that adequate spill cleanup equipment is available for spill containment and cleanup.

The specific actions to be taken in response to incidental or major spills or leaks are described in Section XI, respectively.

#### SECTION XV: PIT/TANK SPILLS AND LEAKAGE

In the event of a release involving any portion of the "tank battery" area, the operator immediately stops the flow of waste into the system and notifies the emergency coordinator. The system is then inspected to determine the cause and extent of the release. Based on this inspection, additional measures may be necessary to prevent further migration of the release. The actions to be taken in response to incidental and major releases are described in Section XI.

A release related to the "tank battery" area would most likely collect into the secondary containment system. Any released material in the secondary containment systems is removed within 24 hours or as expeditiously as possible to prevent harm to human health or the environment. The secondary containment systems prevent migration to soils and surface waters.

If the release was from the pit/tank system, facility personnel will remove as much waste from the pit/tank as is necessary to prevent further releases and to allow inspection of the pit/tank. This will be completed within 24 hours after detection of the leak or as soon as practical upon demonstration that the 24 hour time frame is not feasible.

#### SECTION XVI: POST-EMERGENCY EQUIPMENT MAINTENANCE

Following its use, non-disposable personal protective and response equipment owned by the facility is decontaminated with a soap and water solution and thoroughly rinsed. The emergency coordinator visually inspects the response equipment after decontamination for residual contamination, damage, excessive wear and proper operation. If equipment shows signs of residual contamination, the emergency coordinator may request that the equipment be decontaminated again or if these procedures fail to decontaminate the particular item, the emergency coordinator may choose to dispose of the item. If an emergency equipment item is damaged and cannot be repaired, the emergency coordinator will instruct personnel to dispose of the item. The emergency coordinator will order replacement equipment as needed and or make arrangements to repair any inoperable equipment as soon as practicable.

#### **SECTION XVII: EMERGENCY EQUIPMENT**

Table A-3 presents the list of emergency equipment, capacity, location(s), and capabilities/description of the equipment.

### Table A-3

## EMERGENCY EQUIPMENT

Capacity	Location(s)	Capabilities/Description
	7	
	Office	Telephones with loudspeaker/paging systems for internal and external communication.
		Key personnel are provided with cell phones.
	Main office Tank Battery In Heavy Equipment	Provides the ability for office and landfarm personnel as well as truck drivers to communicate on the facility at all times.
	Office Tank Battery	In case of power failure, used to notify facility personnel of an emergency.
10 lb – ABC type 5 lb-ABC type	Office Heavy Equipment	ABC type universal system effective on paper, wood and electrical fires as well as solvents.
20 lb ABC type		
	Office & Tank Battery	Provides quick flushing of eyes that have been exposed to chemicals.
	Tank Battery	Provides quick washing of personnel who have been exposed to injurious chemicals.
·	Office Tank Battery	To provide immediate care until medical aid arrives. Meets OSHA standards.
	Office Tank Battery	Provide protection, containment & disposal of bodily fluids.
·	Office	Cotton, leather, chemical resistant. Safety glasses, goggles, face shields. Ear plugs. Hard Hat.
	Office Storage Tank Battery	Inert sorbent to handle incidental spills.
·	Storage Tank Battery	Spill cleanup equipment to collect spills and spill residues
	Office	Respirators are selected and used on the basis of the hazards to which employees are potentially exposed. Dedicated and properly fit-tested respirators are available for use.
	Office	Designed for use when working above ground to offer fall protection.
·	Office-Checked out to personnel for use on landfarm/in field	Monitor the environment to alert of toxic vapors and/or gases, combustibles and oxygen hazards.
	10 lb – ABC type	Office  Main office Tank Battery In Heavy Equipment  Office Tank Battery  Office Tank Battery  Office & Tank Battery  Tank Battery  Office & Tank Battery  Tank Battery  Office  Office Tank Battery  Office  Office Tank Battery  Office Tank Battery  Office  Office  Office Tank Battery  Office  Office  Office  Office  Office  Office  Office

#### **SECTION XVIII: COORDINATION ARRANGEMENTS**

Arrangements will be made with the local law enforcement, and local emergency response teams to familiarize them with the layout of the facility, the properties of materials handled and associated hazards, locations where facility personnel normally work, entrances to and roads inside the facility and possible evacuation routes. A copy of the Contingency Plan will be sent to the agencies listed below:

- o Police Department;
- o Emergency Response Department (local fire and rescue); and
- o San Juan Regional Hospital.

#### **SECTION XIX: EVACUATION PLAN**

The facility exits are clearly marked and employees are aware of the potential escape routes. Posted in several locations at the facility is a figure showing available exits from the area and the direction to the personnel staging area. A drawing with the emergency evacuation routes for the facility will be attached to this plan.

In the event of a major emergency, the on-site emergency coordinator may signal personnel to evacuate the facility by sounding the alarm and/or air horn and verbally announcing the evacuation over the loudspeaker and/or CB radios.

Personnel evacuate in an orderly fashion to the staging area directly across from the main access gate to the facility. Law enforcement and emergency response teams are informed of the evacuation from a safe, on-site location or from a neighboring area. Everyone remains at the staging area and awaits instructions from law enforcement and emergency response personnel or the on-site emergency coordinator.

If the emergency coordinator believes that a threat to human health or the environment outside the facility exists, s/he notifies the appropriate agencies. The emergency coordinator is available to help the appropriate officials decide if evacuation of the neighboring properties is necessary. These evacuation proceedings are initiated by law enforcement or emergency response personnel.

#### SECTION XX: REPORTING REQUIREMENTS

In the event of an incidental release, the emergency coordinator notifies the general manager and NMOCD.

For major emergencies, the emergency coordinator(s) will notify the necessary and required parties listed in Table A-2. Any release of contaminants to the environment from a tank system must be reported to the NMOCD within 24 hours of its detection

Facility personnel will verbally report any noncompliance which may endanger health or the environment within 24 hours from the time personnel become aware of the circumstances, including information concerning the release of any contaminants that may cause an endangerment to public drinking water and any information of a release or discharge of contaminants or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility.

A written submission shall also be provided within 5 days of the time facility personnel become aware of the circumstances. This submission will 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 the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

When NMOCD is contacted, the reporting individual is prepared to provide the following information:

- Name and telephone number of notifier;
- o Name and address of the facility;
- o Time and type of incident;
- Name and quantity of material(s) involved, to the extent known;
- o Extent of injuries, if any; and
- o The possible hazards to human health or the environment outside the facility.

The emergency coordinator will document the time, date and details of any incident that requires the implementation of the Contingency Plan. Within 10 days of the incident, a written report, detailing the circumstances of any incident that requires the implementation of the Contingency Plan will be submitted.

#### The report will include:

- Name, address and telephone number of the owner or operator;
- Name, address and telephone number of the facility;
- > Date, time and type of incident;
- Name and quantity of material(s) involved;
- Extent of injuries, if any;
- Description of response activities;
- > An assessment of actual or potential hazards to human health or the environment;
- The likely route of migration of the release;
- Characteristics of surrounding soil;
- Results of monitoring and sampling;
- Proximity to ground and surface water, and populated areas; and
- Estimated quantity and disposition of recovered materials that result from the incident.

#### **SECTION XXI: POLLUTION INCIDENT HISTORY**

There are no records of a major pollution incident having occurred at this facility.

#### SECTION XXII: AVAILABILITY AND REVISION OF THE CONTINGENCY PLAN

This Contingency Plan is kept at the facility and is updated when there are changes to the facility that may affect the Plan. Copies of this document and revisions are provided to local authorities and organizations listed in Section XVIII. In addition, this Contingency Plan, and revisions to this Contingency Plan, are made available to the manager, supervisors and emergency response personnel as well as employees working at the facility.

The Emergency Coordinator may amend the plan during an emergency, as necessary, to protect fresh water, public health, safety or the environment.

The Contingency Plan will be reviewed and updated, within 5 days, whenever:

- o the facility's Permit is revised or modified;
- the list or location of emergency equipment changes;
- the facility changes in its design, construction, operation, maintenance, or other circumstances in a way that increases the potential for fires, explosions, or releases of contaminants, or changes the response necessary in an emergency;
- o the names, addresses, or phone numbers of emergency coordinators change; or
- the Contingency Plan fails when implemented in an emergency.

#### **DRAINAGE PLAN**

# INDUSTRIAL ECOSYSTEMS, INC. BLANCO LAND FARM

The attached maps, table, and graphs represent the Drainage Plan prepared for the above referenced facility.

The calculations were prepared utilizing SCSTR55 methods and also utilizing the point precipitation frequency estimates from the NOAA Atlas 14 for Bloomfield, NM. Calculations were prepared based on a 25 year 1 hour rain storm. The drawings indicate the location of berms, v-ditches, and dykes designed to protect the major waterways. In addition, the 200' setback was maintained from the major waterways.

In addition to the drainage study, we have included the Construction Storm Water Protection Plan as part of this report and drawings.

CHENEY-WALTERS-ECHOLS, INC. 909 W. APACHE FARMINGTON, NM 87401 (505) 327-3303

# **Hydrograph Summary Report**

					•					
1.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Return period (yrs)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	4.03	1	40	4,979	25				Basin 1
2	SCS Runoff	9.09	1	44	13,445	25	·	*****		Basin 2
3	SCS Runoff	53.79	1	50	99,939	25				Basin 3
. 4	SCS Runoff	53.15	,1	46	86,427	25		· 		Basin 4
5	SCS Runoff	10.23	1	38	11,648 ्	25				Basin 5
6	SCS Runoff	21.30	1	41	27,518	25				Basin 6
7	SCS Runoff	22.50	1	38	25,625	25				Basin 7
8	SCS Runoff	36.99 '	1	44	54,722	25				Basin 8
9	SCS Runoff	25.10	1	51	48,834	25				Basin 9
10	SCS Runoff	46.85	1	41	60,540	25		******		Basin 10
11	SCS Runoff	18.21	1	38	20,733	25				Basin 11
	<b>5</b> 10040	702								40.0000
Proj.	roj. file: 09467Drn2.GPW IDF file: blanco.IDF Run date: 10-16-2009					J-10-200 <del>9</del>				

Page 11.2

**Hydrograph Summary Report** 

		Peak	Time	Time to		Return		Maximum	Maximum	
	Hydrograph	Flow	interval	Peak	Volume	Period	Inflow	Elevation	Storage	Hydrograph
Hyd No.	Type (origin)	(cfs)	(min)	(min)	(cuft)	(yrs)	hyd (s)	(ft)	(cuft)	Description
1	SCS Runoff	4.03	1 .	40	4,979	25	·		7,144	Basin 1
2	SCS Runoff	9.09	1	44	13,445	25			19,109	Basin 2
3	SCS Runoff	53.79	1	50	99,939	25			104,473	Basin 3
4	SCS Runoff	53.15	. 1	46	86,427	25			111,581	Basin 4
5	SCS Runoff	10.23	1	38	11,648	25			18,003	Basin 5
6	SCS Runoff	21.3	- 1	41	27,518	25			29,420	Basin 6
7	SCS Runoff	22.50	1	38	25,625	25			32,260	Basin 7
8	SCS Runoff	36.99	1 1	44	54,722	25			60,017	Basin 8
9	SCS Runoff	25.10	1	51	48,834	25		~	50,414	Basin 9
10	SCS Runoff	46.85	1	41	60,540	25			66,791	Basin 10
11	SCS Runoff	18.21	1	38	20,733	25			22,671	Basin 11

Project File: HWS 2009 - 09467drn.xls

English

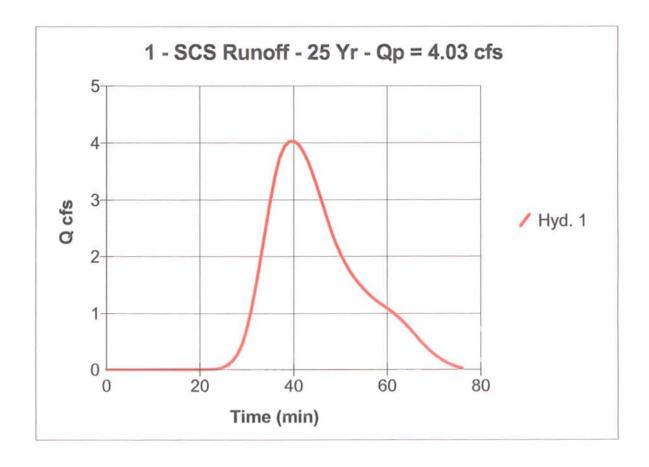
## Hyd. No. 1

Basin 1

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Drainage area = 2.10 ac
Basin Slope = 1.0 %
Tc method = LAG
Total precip. = 1.72 in
Storm duration = 1 hrs

Peak discharge = 4.03 cfs
Time interval = 1 min
Curve number = 86
Hydraulic length = 323 ft
Time of conc. (Tc) = 10.5 min
Distribution = Synthetic
Shape factor = 484

Total Volume = 4,979 cuft



English

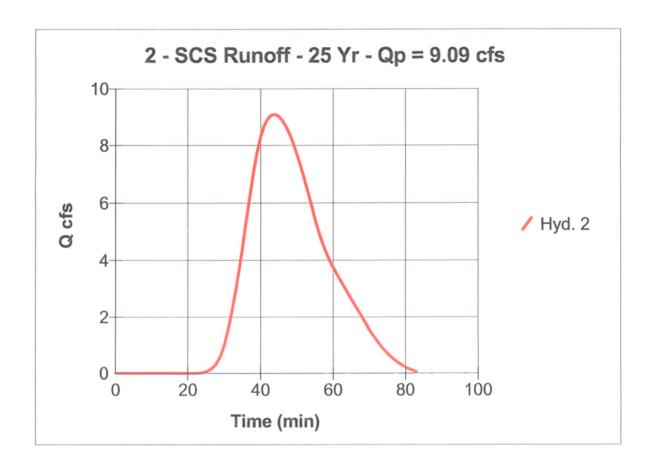
## Hyd. No. 2

Basin 2

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Drainage area = 5.70 ac
Basin Slope = 2.8 %
Tc method = LAG
Total precip. = 1.72 in
Storm duration = 1 hrs

Peak discharge = 9.09 cfs
Time interval = 1 min
Curve number = 86
Hydraulic length = 985 ft
Time of conc. (Tc) = 15.3 min
Distribution = Synthetic
Shape factor = 484

Total Volume = 13,445 cuft



English

## Hyd. No. 3

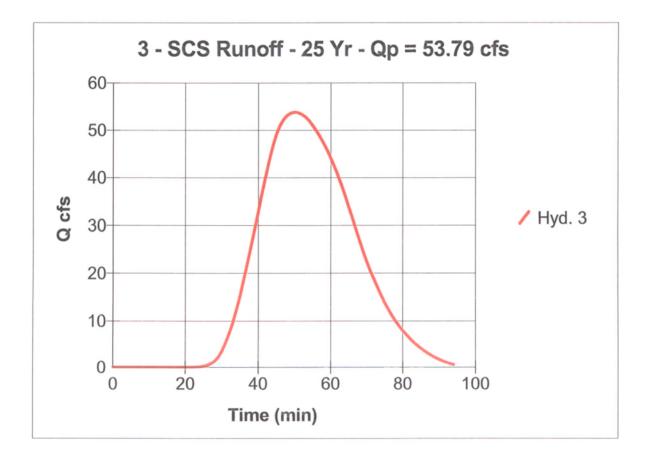
Basin 3

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Drainage area = 42.90 ac
Basin Slope = 2.4 %
Tc method = LAG
Total precip. = 1.72 in
Storm duration = 1 hrs

Peak discharge = 53.79 cfs
Time interval = 1 min
Curve number = 86
Hydraulic length = 1608 ft
Time of conc. (Tc) = 24.5 min
Distribution = Synthetic

Shape factor = 484

Total Volume = 99,939 cuft



English

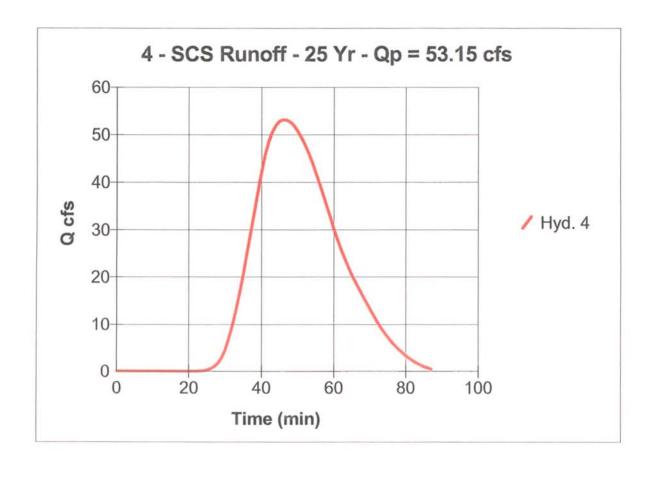
## Hyd. No. 4

Basin 4

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Drainage area = 37.10 ac
Basin Slope = 3.9 %
Tc method = LAG
Total precip. = 1.72 in
Storm duration = 1 hrs

Peak discharge = 53.15 cfs
Time interval = 1 min
Curve number = 86
Hydraulic length = 1673 ft
Time of conc. (Tc) = 19.9 min
Distribution = Synthetic
Shape factor = 484

Total Volume = 86,427 cuft



English

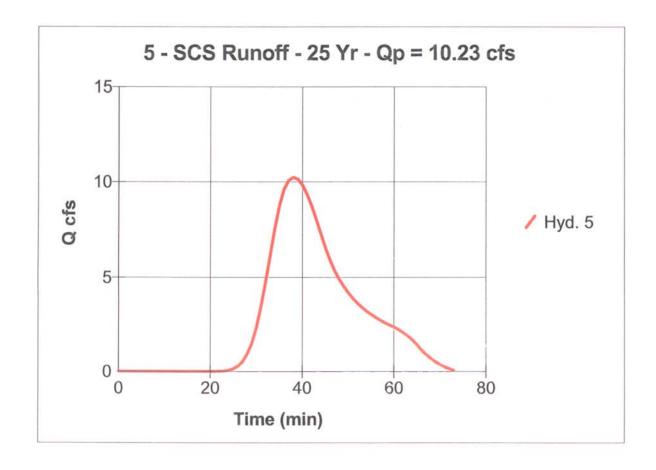
## Hyd. No. 5

Basin 5

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Drainage area = 5.00 ac
Basin Slope = 5.1 %
Tc method = LAG
Total precip. = 1.72 in
Storm duration = 1 hrs

Peak discharge = 10.23 cfs
Time interval = 1 min
Curve number = 86
Hydraulic length = 710 ft
Time of conc. (Tc) = 8.7 min
Distribution = Synthetic
Shape factor = 484

Total Volume = 11,648 cuft



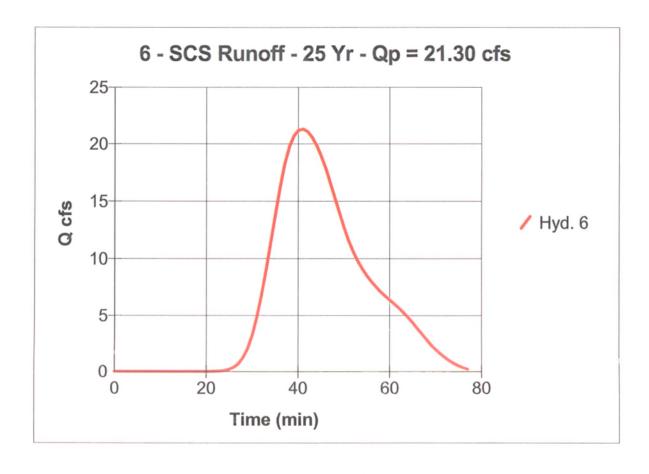
## Hyd. No. 6

Basin 6

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Drainage area = 12.00 ac
Basin Slope = 4.2 %
Tc method = LAG
Total precip. = 1.72 in
Storm duration = 1 hrs

Peak discharge = 21.30 cfs
Time interval = 1 min
Curve number = 86
Hydraulic length = 913 ft
Time of conc. (Tc) = 11.8 min
Distribution = Synthetic
Shape factor = 484

Total Volume = 27,518 cuft



English

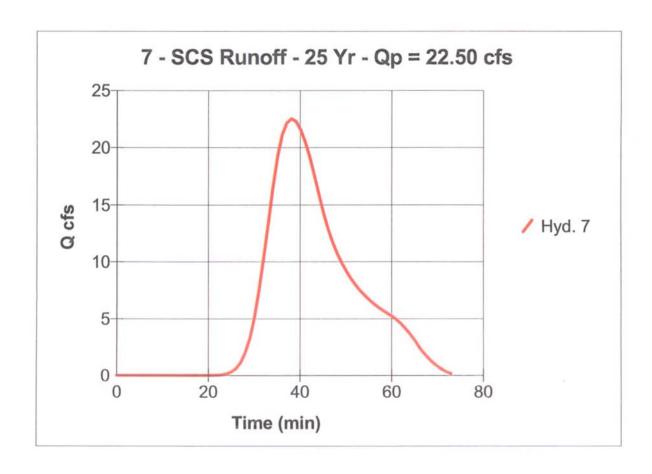
## Hyd. No. 7

Basin 7

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Drainage area = 11.00 ac
Basin Slope = 5.2 %
Tc method = LAG
Total precip. = 1.72 in
Storm duration = 1 hrs

Peak discharge = 22.50 cfs
Time interval = 1 min
Curve number = 86
Hydraulic length = 733 ft
Time of conc. (Tc) = 8.9 min
Distribution = Synthetic
Shape factor = 484

Total Volume = 25,625 cuft



English

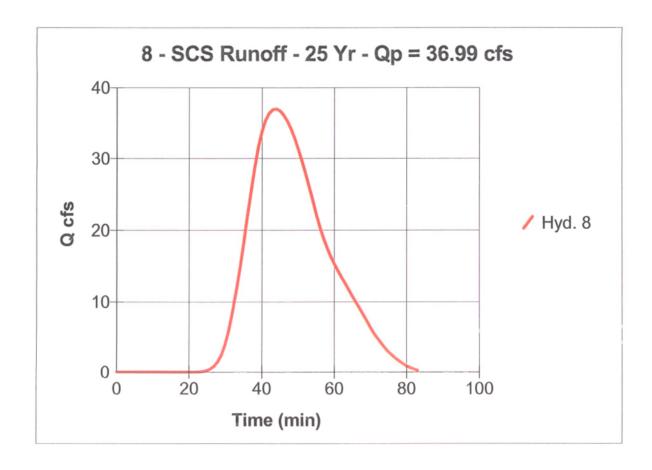
## Hyd. No. 8

Basin 8

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Drainage area = 23.20 ac
Basin Slope = 3.9 %
Tc method = LAG
Total precip. = 1.72 in
Storm duration = 1 hrs

Peak discharge = 36.99 cfs
Time interval = 1 min
Curve number = 86
Hydraulic length = 1326 ft
Time of conc. (Tc) = 16.5 min
Distribution = Synthetic
Shape factor = 484

Total Volume = 54,722 cuft



English

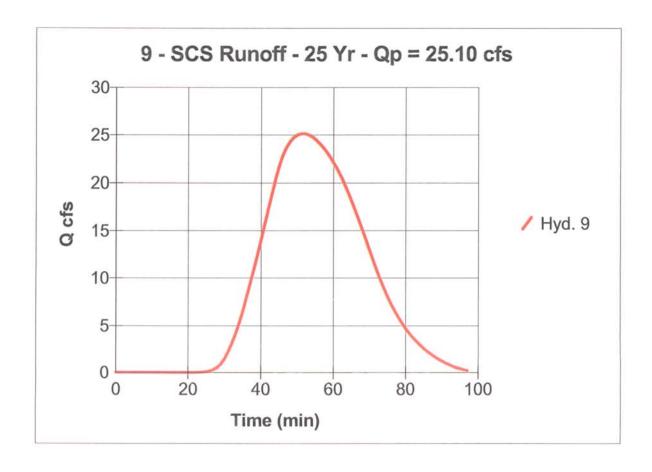
## Hyd. No. 9

Basin 9

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Drainage area = 20.80 ac
Basin Slope = 3.6 %
Tc method = LAG
Total precip. = 1.72 in
Storm duration = 1 hrs

Peak discharge = 25.10 cfs
Time interval = 1 min
Curve number = 86
Hydraulic length = 2288 ft
Time of conc. (Tc) = 26.6 min
Distribution = Synthetic
Shape factor = 484

Total Volume = 48,834 cuft



English

## Hyd. No. 10

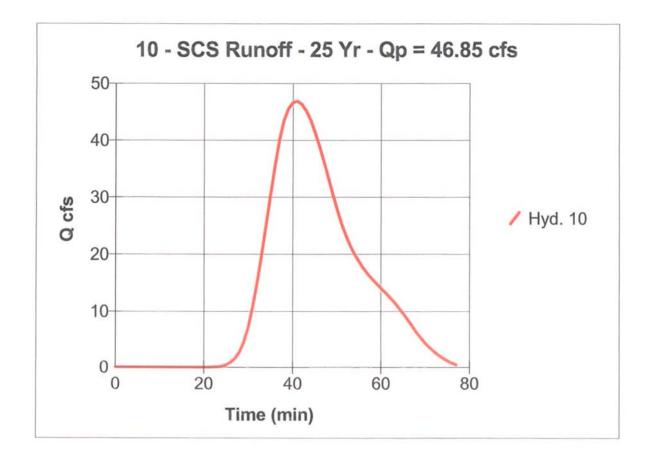
Basin 10

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Drainage area = 26.40 ac
Basin Slope = 4.4 %
Tc method = LAG
Total precip. = 1.72 in
Storm duration = 1 hrs

Peak discharge = 46.85 cfs
Time interval = 1 min
Curve number = 86
Hydraulic length = 1085 ft
Time of conc. (Tc) = 13.2 min
Distribution = Synthetic

Shape factor = 484

Total Volume = 60,540 cuft



English

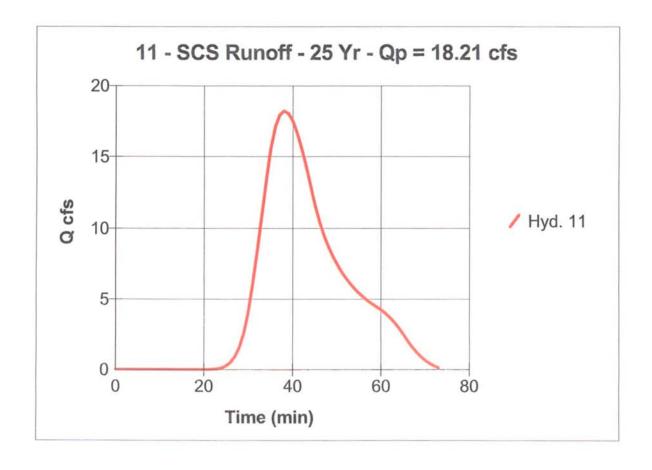
## Hyd. No. 11

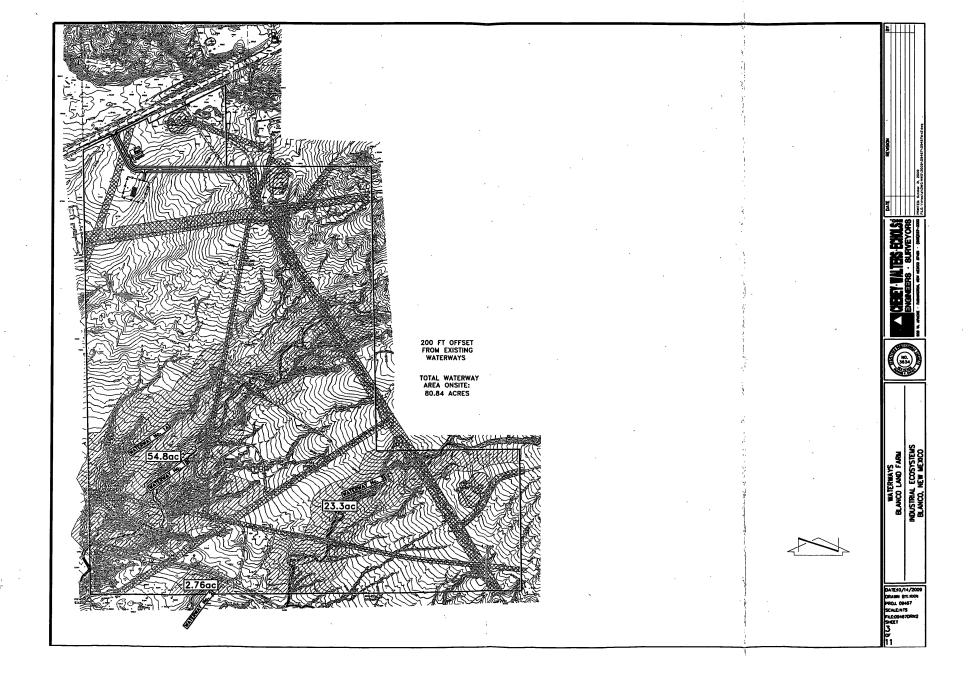
Basin 11

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Drainage area = 8.90 ac
Basin Slope = 3.6 %
Tc method = LAG
Total precip. = 1.72 in
Storm duration = 1 hrs

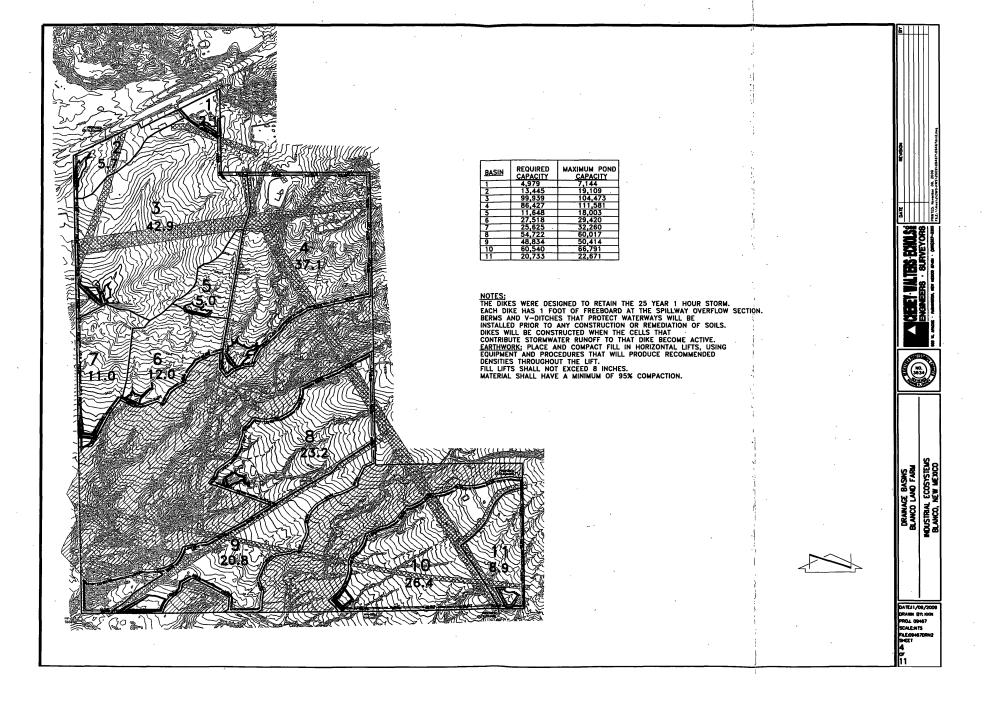
Peak discharge = 18.21 cfs
Time interval = 1 min
Curve number = 86
Hydraulic length = 673 ft
Time of conc. (Tc) = 10 min
Distribution = Synthetic
Shape factor = 484

Total Volume = 20,733 cuft









## **BEST MANAGEMENT PRACTICE GUIDELINE (19.15.36.8.14)**

#### 1. IEI Blanco Landfarm Environmental Best Practice Guideline

Our environmental best practice guideline is simply undertaking day-to-day landfarming activities in a way that is least likely to harm the environment. That is, the procedures and practices outlined in this document are 'best' for the environment and are preferred to certain existing procedures and practices that may create more waste and/or cause more pollution.

We are committed to ensuring our business activities are conducted in a manner that protects the environment and people who are impacted by our operations while also preserving, conserving and minimizing waste of resources.

We recognize that safe working practices and protection of the environment and those affected by our activities are fundamental to its long-term business success.

The company and its employees shall comply with all applicable health, safety and environmental laws and regulations, and apply responsible standards where laws or regulations do not exist.

This document is for guidance/advice only. Understanding and following this guideline will significantly reduce the risk of employees breaching environmental laws and regulations. The guideline should be followed, unless there is an alternative course of action that achieves the same or better environmental outcomes during landfarming activities.

#### In summary, this industry environmental best practice guideline:-

- Gives practical guidance on how environmental best practices can be achieved in the landfarming industry
- Should be followed unless there is an alternative course of action that achieves the same or a better environmental outcome.

#### 2. OBLIGATION OF EMPLOYEE(S)

#### MANAGER/SUPERVISOR RESPONSIBILITIES

Each manager/supervisor is responsible for safety and environmental activities within their area of supervision.

Responsibilities include:

- Setting good examples
- Properly communicating policies
- · Enforcing policies
- Promptly correcting substandard conditions
- Reporting and investigating spills

#### 2.1 Obligation of the General Manager

The General Manager is responsible for site planning issues and for demonstrating that environmental best management practices have been incorporated into the development application. Any regulatory requirements placed on the site, such as consent conditions or clean-up, must be brought to the attention of the site manager.

# 2.2 Obligations of the Facility and Field Supervisors (Operations Supervisor / Landfarm Operations Manager / Field Operations Manager / Field Supervisor)

The facility and field supervisors have the overall responsibility for facility/site issues, occupational health and safety (OH&S) and environmental management of the facility/site. The facility and field supervisors also have the responsibility to ensure that all workers under their supervision are aware of and are undertaking their duties in compliance with relevant environmental legislation and industry standards.

#### 2.3 Obligations of HSE Coordinator

IEI has responsibility to ensure appropriate training has been provided to the employees and must provide appropriate details and resources to enable them to complete their job duties without causing environmental pollution.

The HSE Coordinator is responsible for holding and documenting appropriate environmental awareness and ongoing training to all employees and subcontractors. Training should cover all aspects of environmental responsibility required of an employee, including spill response procedures, pollution controls, recycling procedures, dust/odor mitigation, and duty to notify.

#### **EMPLOYEE RESPONSIBILITIES**

Each employee shall demonstrate positive attitudes toward injury prevention and environmental stewardship.

Responsibilities include:

- Performing their job safely while protecting the environment.
- Understanding safety and environmental policies related to their job duties/tasks.
- Actively participating in safety and environmental training and meetings.
- Immediately reporting unsafe conditions and practices.
- Immediately reporting spills to their supervisor.

#### 2.4 Obligations of the truck driver(s)

The truck driver has responsibility for performing work at the facility and on locations without causing environmental harm through spillage or leakage of oilfield waste.

The driver is responsible for safe and timely work without causing spillage on site or en route. The driver should be made aware of, and should then observe, all environment requirements that apply to a particular site, such as site access, work restrictions and handling requirements.

The driver should understand the importance of appropriate environmental controls and raise any concerns regarding such controls with the Field Operations Manager. All spillages outside the construction site must be thoroughly cleaned up immediately. At no time should any excess or spilled oilfield waste be hosed or washed into the stormwater system.

# 2.5 Obligations of General Personnel (Equipment Operators, Field Technicians, Centrifuge Operators/Helpers, Laborers)

General personnel have a responsibility to ensure that they perform work in ways that do not cause environmental harm through spillages or leakage of oilfield waste.

It is the responsibility of all personnel to ensure oilfield waste and/or wash out/down residue from their activities does not contaminate drains or waterways. Clean-up of all equipment, including the concrete impoundment, tank battery (lines and hoses) and centrifuges must also be done in a manner that does not contaminate drains or waterways.

Wash-down water produced during clean-up of equipment must be disposed of in a manner that does not and will not contaminate nearby drains, waterways or soil. It is the responsibility of the facility personnel to manage the disposal of excess wash-down water generated during clean-up operations.

The company or business has a duty to provide appropriate on the job training that addresses industry competency standards in environmental awareness to all employees and subcontractors. Training should cover all aspects of environmental responsibility required of a landfarm employee, including spill response procedures, pollution controls, proper clean-up procedures, noise and dust mitigation and duty to notify relevant authorities.

#### 3. BEST PRACTICES

#### 3.1 Acceptance/Disposal of Oilfield Waste

#### Purpose

Proper management during the handling, acceptance, and disposal of oilfield waste can minimize the risk of detrimental impact on the environment.

#### **Applications**

- For facility personnel
- For site managers overseeing landfarm activities

#### **Best Management Practices**

- The proper handling/acceptance/disposal of oilfield waste must be ensured to prevent spillage which could potentially contaminate the stormwater system.
- Appropriate spills controls will be in place before disposal begins.
- The site managers will need to be satisfied that all appropriate pollution controls have been placed before disposal occurs.
- Spills and leaks occurring during the disposal process must be cleaned immediately.

#### **Inspection and Maintenance**

- Pollution controls should be in place before disposal of oilfield waste. If personnel have any concerns regarding pollution controls, they should be raised with the site manager(s).
- The site manager(s) must maintain vigilance or delegate authority to ensure that pollution control procedures are in place.

#### 3.2 Equipment Maintenance

#### **Purpose**

Proper vehicle/equipment maintenance can minimize the risk of any detrimental impact on the environment.

#### **Applications**

- For all personnel
- For the company contracted mechanic
- For site managers

#### **Best Management Practices**

- When selecting a contracted mechanic, the company will require them to be environmentally conscious.
- Vehicles/equipment and machinery must be regularly serviced and maintained to minimize noise and exhaust emissions and oil and fuel drips.
- The site manager or delegate must be satisfied that all appropriate pollution controls are in place before servicing begins.
- A third party company is utilized to pick up and recycle "used motor oil".
- Where possible, equipment should be set up on site. This reduces the potential of leakages from hoses and fittings that could contaminate the stormwater system.
- Where possible, ensure the servicing of vehicles/equipment occurs at a location where any spillage will not contaminate the stormwater system.
- Vehicles/equipment must be washed in the site wash-down area after all excess material has been removed by hand.
- To minimize the amount of wash-down water generated, excess waste/residue should be removed prior to washing.
- It is the responsibility of all personnel to properly manage the disposal of wash-down water generated during the cleaning process. Options for collection, treatment and disposal of wash-down water should be discussed with the site manager.

#### Inspection and Maintenance

- Inspect and maintain vehicles/equipment & machinery regularly to minimize leaks and drips.
- Pollution controls should be in place before vehicles/equipment/machinery is serviced. The Landfarm Operations Manager should inspect pollution controls to ensure they are adequate, and should consult with the Operations Supervisor if there are any problems.
- Facility personnel, mechanic and site managers must maintain vigilance during servicing activities to ensure that pollution control procedures are being followed.

#### 4. FUGITIVE DUST & ODOR EMISSIONS

As a landfarm facility, we are responsible for controlling fugitive dust and odor emissions related to landfarm operations.

**FUGITIVE DUST EMISSIONS** - are a result of the lack of natural precipitation and moisture to unpaved roadways and biopiles on the facility.

#### ROAD AND YARD DUST

- Minimize fugitive dust emissions due to vehicle travel by:
  - site layout and design
  - Posting vehicle speed limits
- During the drier months, when natural precipitation is not being received regularly, unpaved roadways will be sprayed recycled or fresh water to help control fugitive dust emissions
- Natural vegetation will be allowed to grow to help provide barriers

#### **DUST FROM BIOPILES**

- Minimize fugitive dust emissions from biopiles by:
  - o Trenching the biopiles, as needed, with water

**ODOR EMISSIONS** - are a natural result/occurrence associated with the bioremediation process.

#### ODOR CONTROL

- Minimize nuisance odors by:
  - o When feasible, manure, used as part of the bioremediation process, will be stored on areas of the facility furthest from nearby residence(s)
  - o Biopiles located nearest to residential areas will be "turned" early in the week between the hours of 8:00 am 5:00 pm, when neighbors are most likely to be at work
  - o Reducing the holding time of waste disposed of in the concrete impoundment; and
  - Screening incoming liquid waste for gases. Any loads of wasted detected with unacceptable levels
    of gases will be rejected for disposal.

#### 5. WASTEWATER AND STORMWATER

Stormwater runoff is another primary pollutant of concern resulting from landfarm operations. Potential wastewater and stormwater pollutants include oilfield waste, aggregate, bioremediation additive mixtures, fuels and lubricants.

#### 6. HANDLING AND DISPOSAL OF RCRA EXEMPT & NON-EXEMPT, NON-HAZARDOUS WASTES

The proper handling and disposal of oilfield waste is critical in assuring the health and safety of the public and protection of the environment. Some important things to remember are:

- Only RCRA exempt, NON-HAZARDOUS waste is accepted for disposal.
- Waste must conform with the chloride content test prior to being accepted for disposal.
- Waste must pass the paint filter test prior to being place into a biopile.
- Never mix EXEMPT and NON-EXEMPT wastes.

#### 7. 1 CONTAINERS

- Maintain containers in good conditions. Prevent leaks, ruptures and the accumulation of rainwater on the top
  of drums.
- If a container leaks, the material shall be transferred to a new container.
- Keep lids on, and containers closed, when not in use.
- · Use funnels when pouring liquids.
- Use containers that are compatible with the waste being stored.
- Do not mix different or incompatible wastes in the same container.

#### 7.2 LABELS

Proper labeling can reduce accidents and ensure proper disposal. Containers shall be labeled as follows:

#### **ORIGINAL CONTAINERS**

- o Labels must include the chemical or product name and the proper hazard warning to enable the user to immediately understand the material's primary health and/or physical hazard(s).
- o A recommended practice is to also include the common name of the material such as paint thinner, window cleaner, etc.
- o Employers or employees shall not remove or deface labels on containers of hazardous chemicals.
- o Labels will be legible and in English, however, for non-English speaking employees, the information will be relayed to them in their own language.

#### SECONDARY CONTAINERS

- o Labels must include the chemical name and hazard warning.
- A recommended practice is to also include the common name of the material such as paint thinner, window cleaner, etc.

#### LABELING REQUIREMENTS

- When two or more labels are required, they will be displayed next to each other;
- Labels will be on a background of contrasting color;
- o Labels may not be obscured by markings or attachments;
- Labels must be durable, weather resistant, and able to withstand exposure for 30 days without deterioration or discoloration;
- o Labels may be printed on or affixed to a tag when package surfaces are such that labels cannot be affixed.

#### 8. STORAGE AREAS

- When possible, storage containers will be stored in a single area; however incompatible materials shall not b
  stored beside each other. Collection points are allowed or work in progress, but should be moved to the
  main storage area once the container is filled or not in use.
- Wastes should be stored in a covered area to prevent stormwater runoff and protect the containers from weather exposure.
- Secondary containment should be provided that is able to contain at least 110% of the largest container's
  capacity in case of leaks, spills or punctures. It should have an impermeable (sealed) surface and should be
  under cover, preferably indoors.
- Sufficient aisle space between drums shall be allowed to ensure proper inspection for leaks or damage.

#### 9. OPPORTUNITIES

The company and personnel will continually look for additional opportunities to reduce wastes, protect fresh water, public health, safety and the environment.

#### 10. EMPLOYEE EDUCATION

Pollution prevention efforts can only be successful if all employees are committed to protecting the environment and minimizing operational wastes. Regular employee training and meetings will be held to discuss changes and ongoing practices and procedures related to the company environmental best practices guidelines.

Employees will be trained to:

- a) recognize and minimize environmental hazard's
- b) handle / dispose of waste in a manner to protect the environment
- c) clean and service vehicles/equipment in a manner to protect the environment
- d) prevent pollution and minimize waste
- e) deter fugitive dust and odor emissions
- f) Implement and practice proper container storage/labeling/disposal techniques
- g) Implement and practice proper or new pollution prevention techniques

#### 11. GENERAL SITE OPERATIONS/MAINTENANCE

- Maintain all equipment according to manufacturer's recommendations to prevent leaks.
- Implement procédures to minimize fugitive dust and odor emissions.
- Keep a routine maintenance log on-site of vehicles/equipment.
- Provide integrated quality, safety and environmental management systems for the facility, operations of the facility and waste handling/disposal process.

#### 12. WASTEWATER

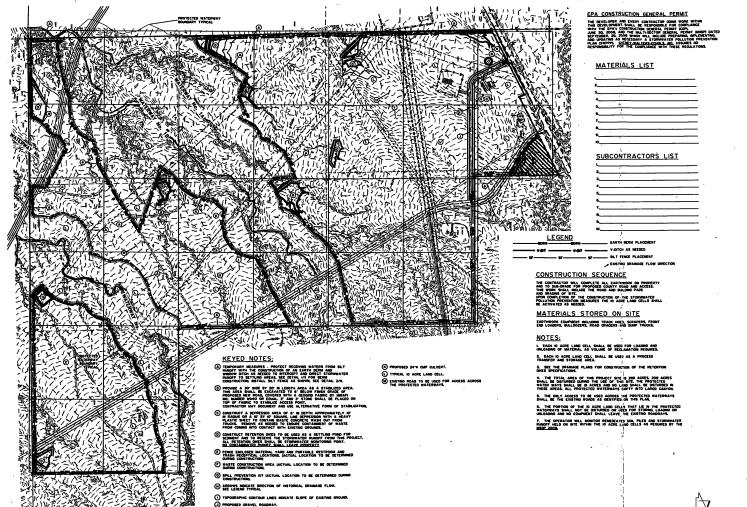
- Re-use wastewater for dust control and suppression (when meets acceptable reuse criteria).
- Divert clean stormwater (e.g. roof run-off) away from contaminated areas and into an approved stormwater discharge system.
- Use liners and berms around disposal areas to capture contaminated stormwater and process wastewater.
- Direct stormwater from the entire site to an on-site settling pond, or series of ponds. This water can be reused in the remediation and/or dust control process when it meets acceptable reuse criteria.
- Protect storm drain inlets from waste runoff.
- Develop a routine yard and equipment maintenance program to considerably reduce the potential for discharge of sediment to your wastewater collection and recycling system.
- Seal aboveground fuel and chemical additive storage areas with liners and berms to contain spills and leaks.

#### 13. GOOD HOUSEKEEPING

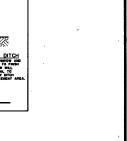
One of the easiest and least expensive ways to reduce waste is by keeping the facility clean. Poor housekeeping results in spills and overflows. This may double expenses by paying to replace lost material and also for its treatment and disposal. It can also lead to accidents and working injury.

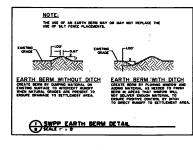
#### Good Housekeeping procedures:

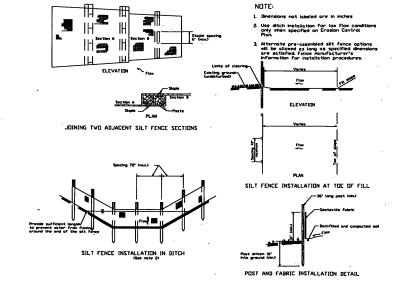
- Keep site clean from trash and debris.
- Store tools and equipment properly and in designated places. Tools left out of place may be a hazard.
- Avoid using dirty or greasy tools.
- Store hoses, chains, ropes, electrical cords, tool parts, etc., so they will not become tripping hazards.
- Stack materials in an orderly manner.
- Sweep site regularly to remove dust build-up.
- Repair leaks promptly.
- Clean up all spillages or deposits of materials on ground immediately.
- Use dry clean-up methods whenever practical (sweeping, dust collection vacuum, wiping, etc).
- Keep doorways, emergency exits, stairs and platforms clean and free of obstacles.
- Operations are responsible for housekeeping in their area. Maintenance shall restore the work site to its original condition. A job is not complete until the cleanup is finished.



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#### Geology

Volumes of material have been written about the San Juan Basin of New Mexico resulting from the exploration for, and the development of, oil and natural gas fields since the early 1950's. Four geology guide books have been written and published by the New Mexico Geological Society, as well as many professional publications, bulletins, maps, open files and other works by the United States Geological Survey. The Four Corners Geological Society, the Rocky Mountain Association of Geologists, area geologists, hydrologists and engineers, to name a few, have created this wealth of published information. A bibliography of these works alone would create a large publication. Still, we have questions about many of the formations encountered in drilling. Some of the most difficult are formations deposited during the Tertiary time, (see Figure 1.) The project area investigated is located in and on one of these formations. Figure 2 portrays drilling saturation in the San Juan Basin.

#### Regional Geologic Setting

Levings, and others, 1990, define the San Juan Structural Basin as a northwest—trending asymmetrical structural depression formed during the Laramide Orogeny (Late Cretaceous-early Tertiary time), (See Figures 1 and 3.) Structural boundaries of the basin are well defined in many places; elsewhere, the basin merges gradually into adjacent depression or uplifts (Kelley, 1951, p.124). The structural boundaries, as defined by Kelley, principally consist of large, elongate domal uplifts, low marginal platforms, and abrupt monoclines (see Figure 3.). Faulting is common, especially in the southeastern part of the basin. Maximum structural relief in the basin is about 10,000 feet (Kelley, 1951).

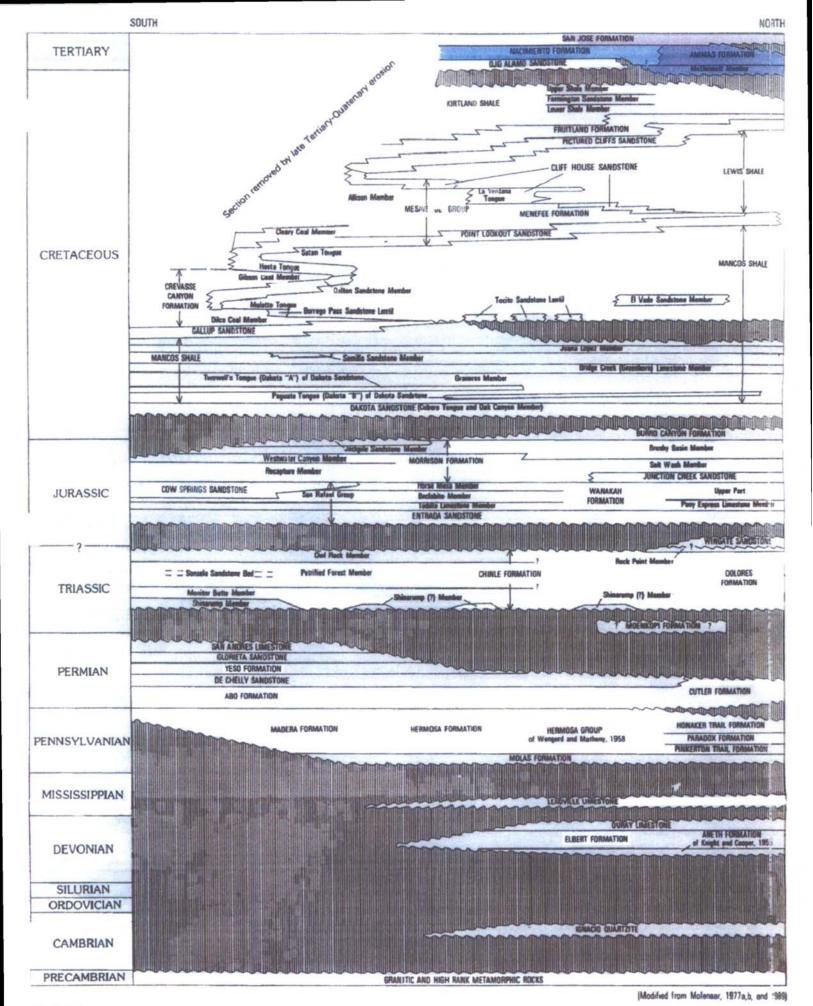


Figure 1.
Time- and rock-stratigraphic framework and nomenclature.

#### **EXPLANATION**



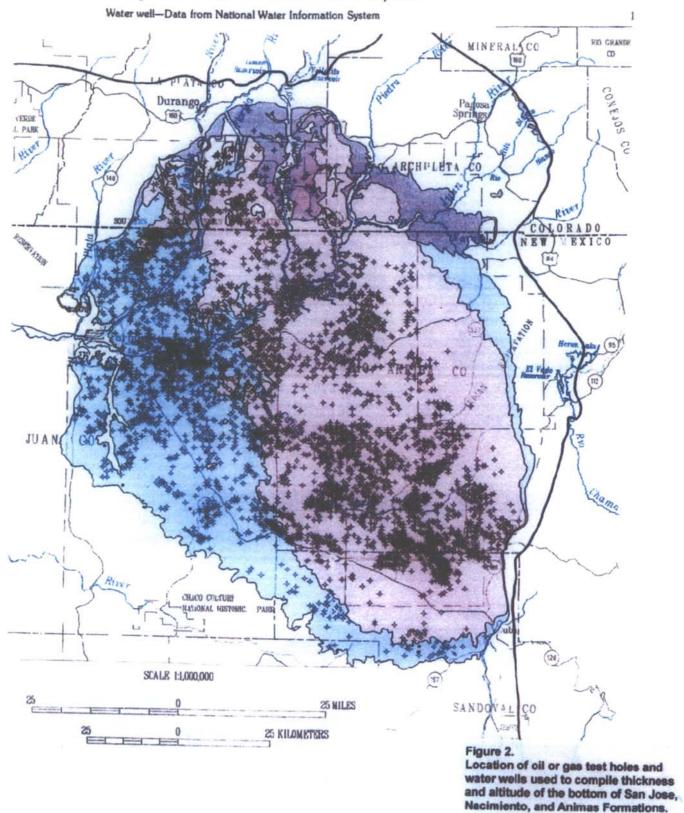
Outcrop of San Jose Formation-From Dane and Bachman, 1965; and Tweto, 1979

Outcrop of Nacimiento Formation-From Dane and Bachman, 1965; Fassett, 1974; and Tweto, 1979

Outcrop of Animas Formation—From Dane and Bachman, 1965; Fassett, 1974; and Tweto, 1979

Boundary of study area

Oil- or gas-test hole-Data from Petroleum Information Corporation



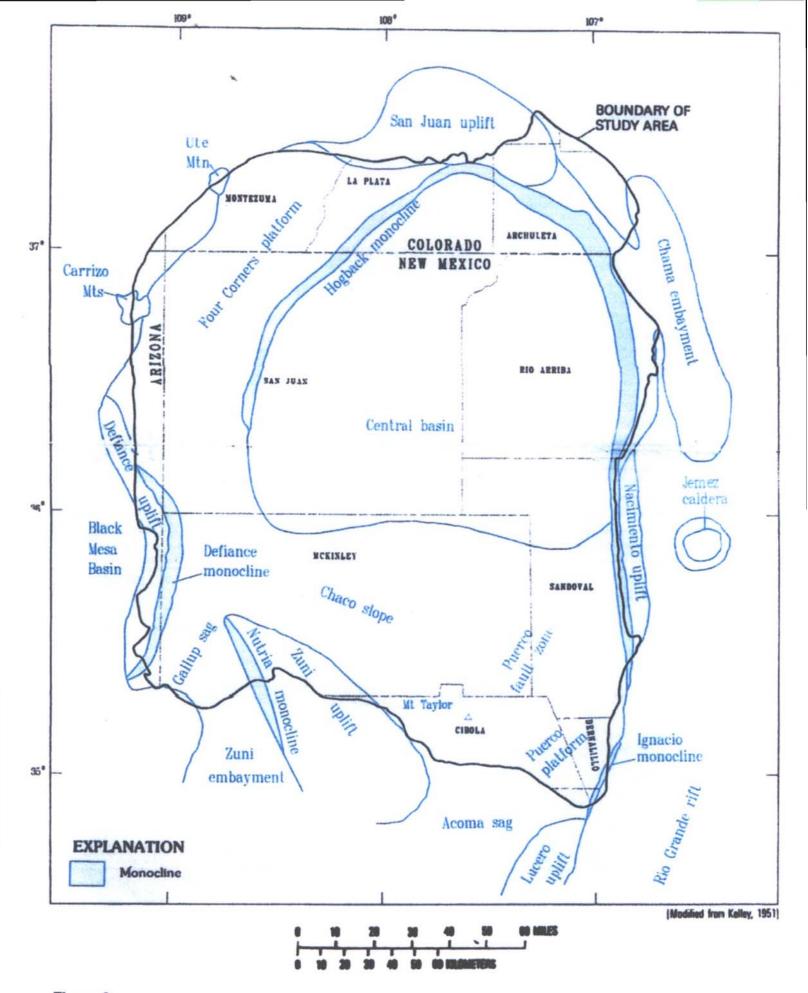


Figure 3, Structural elements of the San Juan structural basin and adjacent areas.

The San Juan structural basin contains a thick sequence of sedimentary rocks ranging in age from Cambrian through Tertiary, but generally is from Pennsylvanian through Tertiary (see Figure 4.). The maximum thickness of the rock sequence is about 14,000 foot (Fassett & Hinds, 1971). These sedimentary rocks dip basin-ward from the basin margins toward the trough-like structural center or deepest part of the basin. Older sedimentary rocks crop out around the basin margins and are successively overlain by younger rocks toward the center of the structural basin. Volcanic rocks of Tertiary age and various deposits of Quaternary age are also present in the basin. (See Diagram 1.)

Tertiary Stratigraphy

Tertiary deposition started at the close of the Cretaceous period during and after what is known as the Laramide Revolution. The Laramide Revolution was a period of crustal movement in early Tertiary times (dated 60-65 m.y.a.) during which the interior region of North America were folded producing both the Rocky Mountains and the Appalachian Mountains. During these crustal adjustments, the Four Corners Platform, Colorado Plateau, San Juan Basin, Rio Grand Rift and many other minor features along with periodic volcanism were emplaced. Evidence of volcanic activity is evident as Shiprock, Sleeping Ute Mountain, La Plata and San Juan Mountains, and the Silverton Calderas to list a few. During and following these orogenitic processes, considerable erosion and deposition was and still is taking place.

Three formations or units remain that were deposited during Tertiary time in the greater San Juan Basin of New Mexico. From oldest to youngest are the Ojo Alamo Sandstone unit, the Nacimiento Formation and the San Jose Formation. Time-wise, the

EON.	ERA	PERIOD	EPOCH	YEARS AGO	AGE	REVOLUTION OR DISTURBANCE
		QUATERNARY	HOLOCENE (RECENT)	0-10,000		
			PLEISTOCENE	2 MILLION		CASCADIAN REV.
	CENOZOIC		PLIOCENE	15 MILLION	AOTOF	
			MIOCENE	30 MILLION	MAMMALS	
P		TERTIARY	OLIGOCENE	40 MILLION		•
н			EOCENE	50 MILLION		
Α			PALEOCENE	65 MILLION	į.,	LARAMIDE REV.
N		CRETACEOUS	UPPER	80 MILLION	AGE OF	:
E			LOWER	125 MILLION	DINOSAURS	NEVADIAN DIST. OR R
'n	MESOZOIC	JURASSIC	] .	160 MILLION	<u> </u>	
0	·				AGEOF	PALISADE DISTURB.
Z		TRIASSIC		200 MILLION	REPTILES	APPALACHIAN REV.
Ö		PERMIAN		250 MILLION	1	
t	ļ	PENNSYLVANIAN		280 MILLION	CARBONI-	
C		MISSISSIPPIAN	,	310 MILLION	PEROUS	ACADIAN DISTURB.
	PALEOZOIC	DEVONIAN		350 MILLION	PISIT ·	
•	]	SILURIAN .		410 MILLION	AGEOP	
•		ORDOVICIAN ·		470 MILLION	inverte-	TACONIAN DISTURB
		CAMBRIAN		550 MILLION	BRATES	PSNOKEAN OROGEN
CRYPT	PRECAMBRIAN	LATE PRECAMBRIAN (PROTOROZOIC)		1.9 BILLION		KILLARNEY REV.
			.,,		SIMPLE LIFE	
: 0 Z		EARLY		0.0.001.101	Lointz	ALGOMAN REV.
0.		PRECAMBRIAN (ARCHEOZOIC)		3.3 BILLION		LAURENTIAN REV.
.: c	AZOIG		FORMATION OF CORE	4.6 BILLION	?	

Diagram 1. Geologic Time Chart.

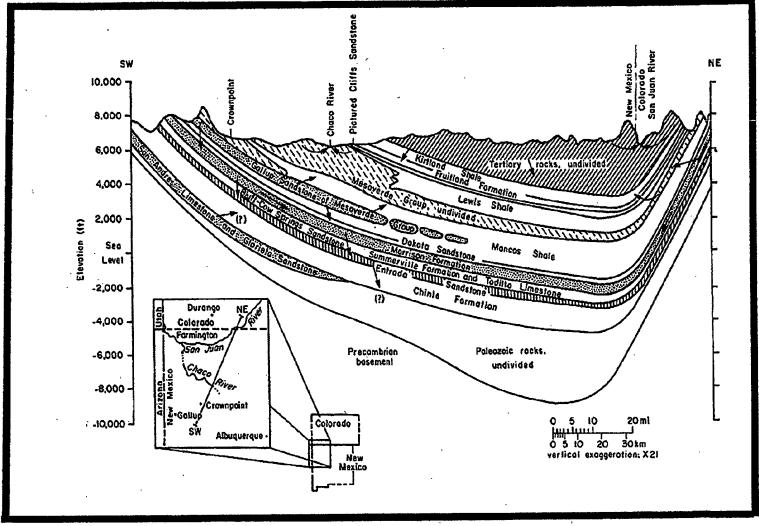


Figure 4.
Generalized hydrologic cross-section of the San Juan Basin, showing major aquifers (stippled), confining beds (blank), and direction of ground water flow (arrows). (after Stone and others, 1983)

Ojo Alamo unit and the Nacimiento Formation are Paleocene in age and the San Jose Formation is Eccene in age (see Figures 1 and 3.)

Where exposed in the Farmington area, the Ojo Alamo shows evidence of both high and moderate stream velocity type deposition, probable braided stream patterns, poorly sorted to well sorted sand and gravel (conglomerate) materials. Interbedded shale is common.

The Nacimiento Formation lies at the surface in a broad belt at the western and southern edges of the central basin and dips beneath the San Jose Formation in the basin center (see Figure 5.). The Nacimiento Formation is made up of nonresistant units and typically erodes to low, rounded hills or forms badlands topography. The Nacimiento Formation occurs only in approximately the southern two-thirds of the basin where it conformably over lies and intertongues with the Ojo Alamo Sandstone (Baltz 1967; Fassett, 1974.) Near the New Mexico — Colorado state line, the Nacimiento Formation grades laterally into the main part of the Animas Formation (Fassett & Hinds, 1979), thus, in this area the two formations occupy the same stratigraphic interval (See Figure 1.).

#### **Nacimiento Deposition**

Strata of the Nacimiento Formation were mainly deposited in lakebeds in the central basin area with lesser deposition in stream channels (Brimhall, 1973; Fassett, 1974.) In general, the Nacimiento consists of drab, interbedded black and gray shale with discontinuous, white, medium to very-coarse grained arkosic sandstone (Fassett, 1974; Stone & others, 1983.) Anderholm (1979) reported local carbonaceous shale and lignite in the unit. Baltz (1967) stated that the percentage of sandstone increases northward.

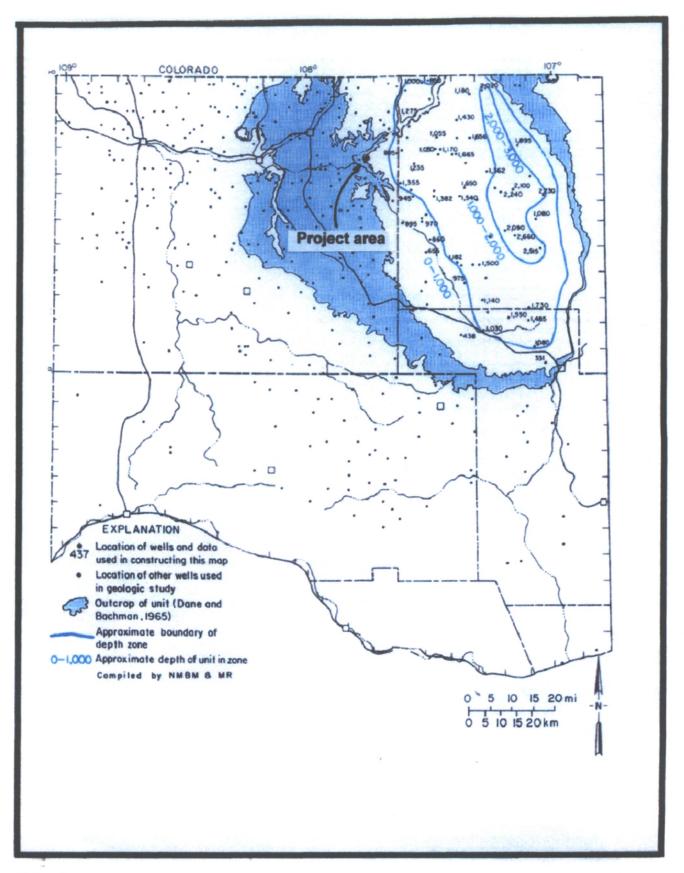


Figure 5. Elevation of top (structure) of Nacimiento/Animas Formations. (Stone and others, 1983)

Stone and others (1983) indicated that the formation may contain more sandstone than is commonly reported because some investigators assume the slope-forming strata in the unit are shales; whereas, in many places the strata actually are poorly consolidated sandstones.

The total thickness of the Nacimiento Formation ranges from about 500 to 1,300 feet (Molenar, 1977). The unit generally thickens from the basin margins toward the basin center (Baltz, 1967; Steven & others, 1974; Stone & others, 1983). The thicknesses of the sandstone deposits within the Nacimiento Formation are much less than the total thickness of the formation because their environment of deposition was localized stream channels (Brimhall, 1973). (See Figure 6.)

Note, many attempts have been made by geologists and paleontologists to correlate both sandstone and shale types in the Nacimiento Formation with very little to no success. Meandering and braided streams often have more than one source of materials and different kinds of mineral cementation. Porosity and permeability vary. Bogs may have formed in outwash areas creating a host for vegetative growth. The resulting peat deposits are then buried under later deposition creating pressure and high temperatures reducing the plant materials to carbonaceous shale or poor-quality lignite. These local occurrences seldom have continuity.

Simpson (1948a,b) describes the San Jose Formation which overlies the Nacimiento and Animas Formations as occurring in New Mexico and Colorado sections of the San Juan Basin. Its outcrop forms the land surface over much of the central basin area (see Figures 2 and 5.) It overlies the Nacimiento Formation in the area generally south of the state line (Fassett, 1974). The basal contact of the San Jose varies by

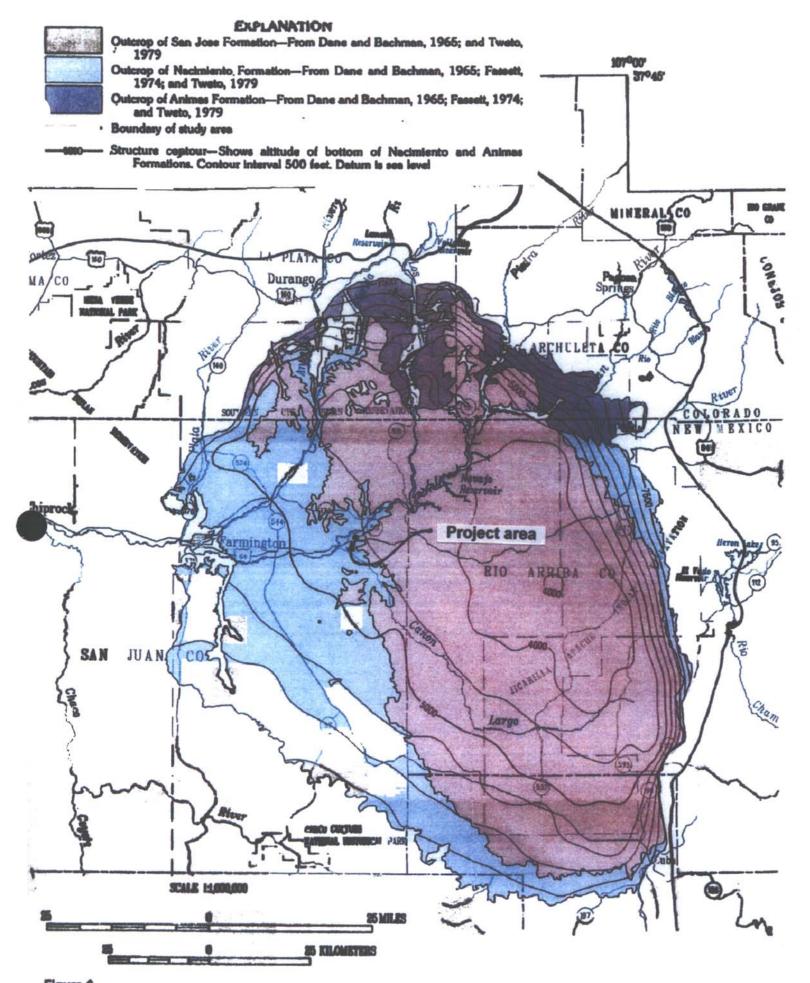


Figure 6.

Approximate altitude and configuration of the bottom of the Nacimiento and Animas Formations. (after Levings and others. 1990)

location in the basin. This contact is a disconformity along the basin margins and an angular unconformity along the Nacimiento uplift in the Cuba area. The contact is conformable in the central basin (Baltz 1967; Fassett, 1974.) (See Figure 7.)

The San Jose Formation was deposited in various fluvial-type environments (Baltz, 1967.) In general, the unit consists of an inter-bedded sequence of sandstone, siltstone and variegated shale. The sandstones are buff to yellow and rusty-colored, cross-bedded very fine to coarse grained arkose, which are locally conglomeratic and contains abundant silicified wood. (Baltz 1967; Fassett, 1974; Anderholm, 1979.)

Baltz (1967) recognized four formal members of the San Jose Formation in the east-central part of the basin. The members and their principal lithology in ascending order are: Cuba Mesa Member sandstone, Regina Member (shale), Llaves Member (sandstone), and Tapicitos Member (shale).

The stratigraphic relationship and subsequent mapability of these members are complicated by extensive intertonguing and pinchouts (Fassett, 1974; Anderholm 1979, Stone & others, 1983), and whether or not the members can be identified throughout the basin has been the subject of some discussion.

The thickness of the San Jose Formation generally increases from west to east. Fassett, (1974) reported a maximum thickness of 2,400 feet in the east-central part of the basin; Stone and others (1983) reported a range from about 200 feet in the west and south to almost 2,700 feet in the center of the structural basin. As indicated in Figure 3, the deepest part of the San Juan structural basin is in the northeast.

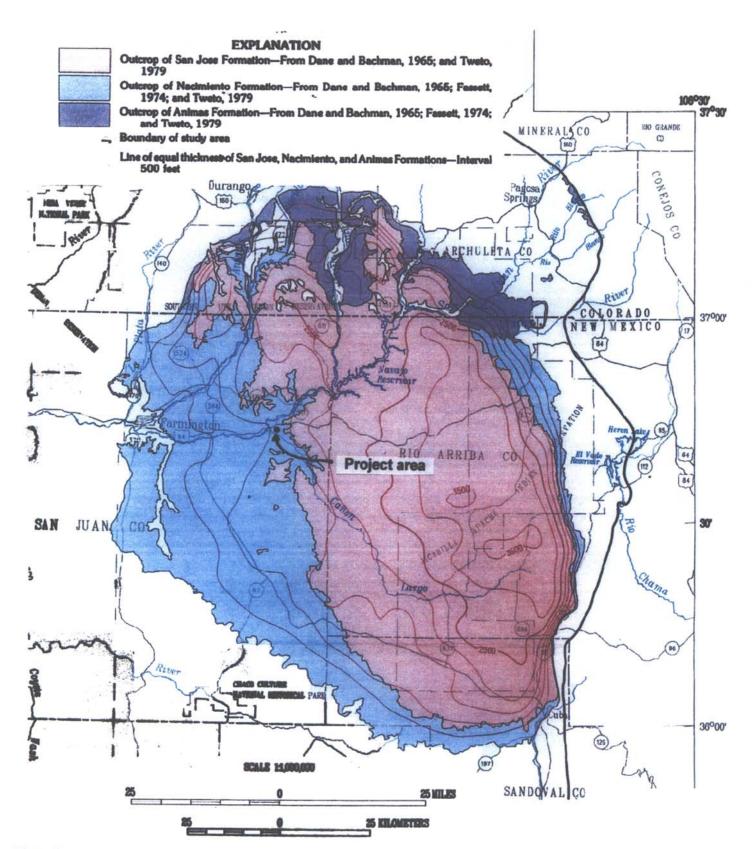


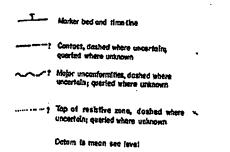
Figure 7.
Approximate thickness of the San Jose, Nacimiento, and Animas Formations. (after Levings and others, 1990)

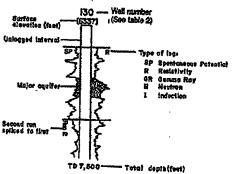
#### Cross-section A - A' Modified

A brief search of the available literature resulted in very little information in the way of cross-sectional material that would be useful in the area of interest. Levings and others (1990) constructed three cross-sections — A-A' from east to west, B-B' from northeast to southwest, and C-C' from north to south — across the San Juan Basin. (see Figure 8). A portion of Cross-section A-A' parallels U.S. Highway 64 crosses most of San Juan County and a large portion of Rio Arriba County. Part of Cross-section A-A' lies directly north of the project area. This modified diagram begins with Well No. 126 and ends at Well No. 136 (see Figure 9).

As drawn, the Nacimiento Formation crops out somewhere between Well No. 129 and Well No. 130 (see Figure 7.). To the east (on the right side of the section) the Cuba Mesa Member of the San Jose Formation is exposed. Between Wells 133 and 134 the Regina Member of the San Jose is encountered. The location of the project area is indicated by an X on the location map Figure 10

### **EXPLANATION**





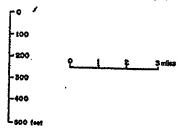
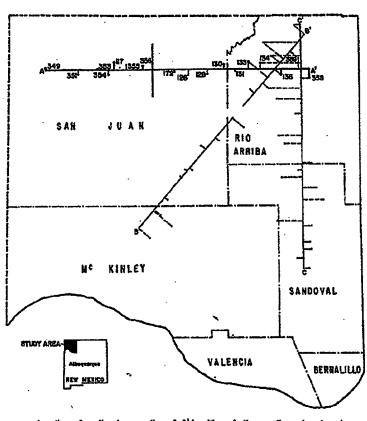
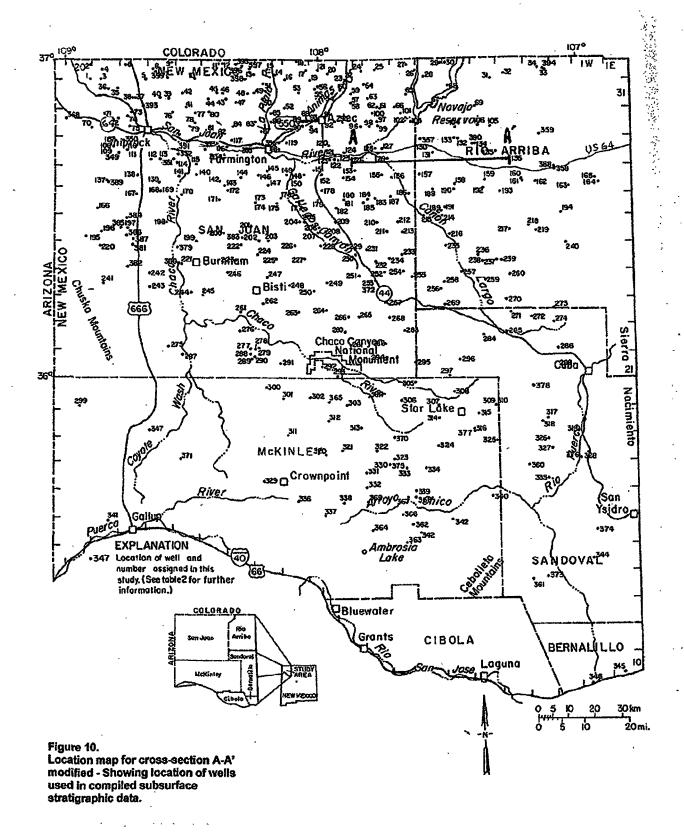


Figure 8. Index map and legend for cross-section A-A', modified.



Location of wells clong section A-A'(position of other sections also shown)



## Hydrogeology

Hydrogeology may be defined as the science that uses geologic principles to interpret hydrologic phenomena (May, 1976); as such, the term "hydrogeology" is <u>not</u> synonymous with ground-water hydrology. Assess the hydrogeology of an area or aquifer involves delineating the geologic controls of the occurrence, movement, and quality of its ground water.

## **Background Information**

In 1978, the United States Geological Survey began a Regional Aquifer-System Analysis (RASA) Program that was completed in 1995. The San Juan Basin was included in this project. As a result, an exceptional publication dealing with the San Juan Basin was completed. This publication, Atlas HA-720A, by Gary W. Loving, and others was released in 1990. Prior to this publication, in 1983, W. J. Stone and others, from the New Mexico Bureau of Mines and Mineral Resources, and the U.S.G.S, released Hydrologic Report 6 dealing with hydrogeology and water resources of the San Juan Basin, New Mexico. The first cited Atlas is concerned more specifically with the hydrogeology of the San Jose, the Nacimiento and the Animas Formations in the San Juan Basin. In the interest of time, I have drawn heavily on the above cited works, using other references as needed.

#### Hydrology and Tertiary Sandstones

The following description is taken from Hydrology and Water Resources of San Juan

Basin, New Mexico, (W. J. Stone, F. P. Lyford, P. F. Frenzel, N. H. Mizell, and E. T. Padgett, 1983):

## Basic Principles of Ground-water Flow Systems.

A major control on the characteristics of a ground-water-flow system is topography; it determines the location of recharge and discharge areas, the direction of groundwater flow, and the hydraulic gradient. Topography is the result of structural and geomorphic processes acting on the local stratigraphic column. Structure provides the elevation and general configuration of the recharge area: cuesta, fault block or plateau, for example. Geomorphic processes acting through time determine the extent to which these structural features have been modified by erosion or deposition. The local stratigraphic sequence is of utmost importance; the topographic expression of a block of crystalline rock is markedly different from that of a sequence of alternating marine sandstones and shales.

In the case of sandstone aquifers, like those that prevail in the San Juan Basin, minor controls may also be exerted by the texture, geometry, and orientation of the aquifers, or permeability zones within them. Texture includes both grain size and sorting. These parameters affect the size and degree of interconnection of pores, which in turn influence hydraulic conductivity. Geometry includes the dimensions of the aquifer (thickness, width, and length) and

their interrelationships. Geometry primarily depends on the depositional origin of the aquifer. Channel sandstone bodies are elongate or shoestring in geometry (thickness and width may be similar, but length is much greater than either of these two dimensions). Regressive, coastal-marine-sandstone bodies are prismatic in geometry (width is greater than thickness, but length is is much greater than width). Thickness of such sandstones may diminish seaward. Zones of relatively higher hydraulic conductivity may serve as conduits for greater flow. The orientation of such zones with respect to hydraulic gradient may exert a supplementary influence on flow direction.

In summary, the geologic framework ultimately controls the occurrence of movement, and quality of ground water. Occurrence is controlled by the presence of porous and permeable media. Where ground water is associated with distinct aquifers, occurrence is controlled by the distribution of the aquifers. Location of recharge areas and effectiveness of the recharge process are determined by the structural and geomorphic setting. Direction of the flow is dictated by hydraulic gradient, which is variously influenced by structure, geomorphology, and orientation of permeability zones in the aquifer; the latter is related to the depositional origin of the aquifer. Flow volume is a product of hydraulic conductivity and hydraulic gradient. Conductivity

depends on texture and degree of fracturing; gradient is determined by structure and geomorphology. Grounds-water quality is controlled by abundance and character of soluble materials in the aquifer, geologic conditions suitable for mixing fresh and saline waters from adjacent aquifers, and resident time.

### Tertiary sandstones.

The Tertiary sandstone aquifers were deposited in alluvial or fluvial environments. The Ojo Alamo Sandstone as well as the Cuba Mesa and Llaves Members of the San Jose Formation accumulated in broad, wet, alluvial aprons. The Nacimiento and Animas Formations also resulted from stream deposition, but apparently under more humid conditions, as evidenced by the presence of lignite and carbonaceous plant debris in these units.

CONTROLS OF OCCURRENCE — The ground water is associated with alluvial- and fluvial-sandstone aquifers. Thus, the occurrence of ground water is mainly controlled by the distribution of sandstone in the Ojo Alamo Sandstone, Nacimiento Formation, Animas Formation, and San Jose Formation. The distribution of such sandstone is the result of original depositional extent plus any post-depositional modifications, namely erosion and structural deformation.

CONTROLS OF MOVEMENT - Ground-water movement consists of recharge, flow, and discharge. Recharge of the Tertiary

sandstone aquifers is facilitated by their exposure on the flank of the Nacimiento uplift and, at the surface, on the broad plateau that characterizes the central basin. Both of these features receive more precipitation than the surrounding areas because of their higher elevation. Flow direction and discharge areas are controlled mainly by the regional topography and geomorphology. At the local and intermediate scales, ground water moves from upland recharge areas toward discharge areas along floors of the major canyons that deeply incise the Tertiary section of the central basin. These canyons also play a role att the regional level in that they convey this water from the Tertiary aquifers to the San Juan River as subflow through their channel fills. At depths substantially beneath the canyon floor, geomorphology has little effect on ground-water movement. This would be the case for the Nacimiento Formation. The orientations of channel-sandstone bodies in this unit are not well known, but locally orientation may control the direction of ground-water flow in such settings. Based on paleocurrent analyses, Powell (1973) concluded that the source of the Ojo Alamo Sandstone was to the northwest. Distribution and size of gravel in this unit supports such an interpretation. Flow direction in this unit may be influenced locally by the orientation of channels radiating from such a source area.

Flow volume is a product of hydraulic conductivity, hydraulic gradient, and flow area, as described by Darcy's Law. Conductivity of the Tertiary sandstones is determined mainly by their texture (grain size and sorting) and cementation. Gradient is determined by the topography, that is, the difference in elevation of the recharge and discharge areas. Structural effects on groundwater movement appear to be minor for these Tertiary deposits. The swarm of dikes intruding the section near Dulce, NM may provide local barriers to flow.

CONTROLS OF WATER QUALITY — Although some mineral material is undoubtedly dissolved by ground water flowing through the Tertiary sandstone aquifers, most of the dissolved solids are probably derived at the interfaces with adjacent confining shale beds. The more complex the sandstone-shale intertonguing, the more opportunity for this uptake of solids. Mixing of fresh ground water with saline waters from other aquifers may occur in areas of intense fracturing or where head differentials permit interaquifer flow, but these are probably minor sources of salinity for Tertiary deposits.

#### Soils

Geomorphically, the area of study may be described as a dune field overlying badland topography. The dune material can be described as eolian deposited clayey silts, fine to very fine sand and even finer grained silty-clay loess. In years of above e average precipitation, these dunes may become "frozen" or stabilized long enough for vegetation to take root. Once this occurs, a thin soil zone can develop and the dune is stable. The substratum becomes a host for caliche depositions that further stabilizes the dune. If sufficient moisture is available periodically, weathering and physical breakdown occurs in the underlying bedrock. Most granular materials are poorly sorted, mechanically emplaced, and are poorly cemented. Should this fragile regolith be breached, the wind will start a "blow-out" or bolson and soon the dune will migrate, often times "piling up" on other dunes or dune material. At best, there is very little stability in the material overlying the bedrock. Proof of this is attempting to transverse this area in a two-wheeled drive vehicle.

Following this introduction is an abstract of soil characteristics as defined in the published Soil Survey of San Juan County, New Mexico — Eastern Part, United States

Department of Agriculture Soil Conservation Service.

Figure 11 indicates four soil types that may be encountered on the project area. Each of these four soil types have been reviewed and the results outlined. Please note that four of the lesser soil types may have adverse effects on construction. As stated, "the adverse <u>Uffens Soil</u> has limited suitability for ponds or other earthen structures because of high content of sodium." Also, "the <u>Haplargids</u> and <u>Torriorthents</u> have variable properties. If these soils are used for urban development, on-site investigation is needed.

The <u>Blackston Soil</u> is poorly suited to urban development. The main limitation is slope excavation. It can also have unstable walls."

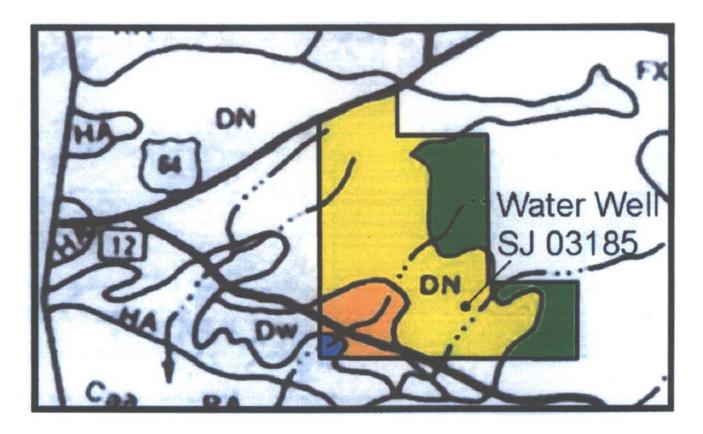


Figure 11. Modified from USDA – SCS Soil Survey of San Juan County, NM – Eastern Part, 1980, Map Sheet Number 10.

DN - Doak-Avalon association, gently sloping.

## Description:

- 1. Unit is on mesas, plateaus, and terraces
- 2. Slope 0 5%
- 3. Native vegetation is mainly grass
- 4. Elevation 5600 6400 ft.
- 5. Annual precipitation approx. 8 inches
- 6. Average annual temperature 53 deg. F.
- 7. Frost free avg. 150 days
- 8. 50% Doak loam on 0 to 3% slopes
- 9. 35% Avalon loam on 3 to 5% slopes

### Doak -

- 1. Soil is deep & well-drained
- 2. Formed in alluvium derived dominantly from sandstone & shale
- Surface layer is brown loam about 5 inches thick
   Subsoil is brown & light brown silty clay loam & clay loam about 38 inches thick
- 4. Substratum to a depth of 69 inches or more is light yellowish brown clay loam

- 5. Permeability is moderately slow
- 6. Available water capacity is very high
- 7. Runoff slow hazard of water erosion is slight
- 8. Where it has native vegetation cover, wetting depth is about 16 inches.
- 9. Shrink-swell is low

#### Avalon-

- Deep & well drained
- 2. Alluvial & eolian materials derived from sandstone & shale
- Surface layer 4 inches brown loam
   Subsoil Brown loam about 10 inches thick
- 4. Upper 22 inches of substratum pink-white loam
- 5. 22-60 inches light-yellowish brown loam
- 6. Moderate permeability
- 7. Available water capacity is high
- 8. Runoff is medium
- 9. Hazard of water erosion is moderate
- 10. Hazard of blowing soil is high
- 11. Soil is slightly saline
- 12. Shrink-swell is moderate

## FX - Fr

## FX - Fruitland-Persayo-Sheppard complex, hilly.

## Description:

- 1. Unit is on hills, mesas, plateaus, fans, and breaks
- 2. Slope 5 to 30%
- 3. Native vegetation is mainly grass, some pinion & juniper
- 4. Elevation 4800 6400 ft.
- 5. Annual precipitation approx. 8 inches
- 6. Average annual temperature 53 deg. F.
- 7. Frost free avg. 150 days
- 8. 40% Fruitland sandy loam
- 9. 30% Persayo clay loam
- 10. 25% Sheppard loamy fine sand
- 11. Unit is intricately intermingled and not possible to map separately at the scale used.
- 12. Includes small areas of Farb soils on hills & breaks with rock outcrops on ridges & hills throughout unit. Roughly 5% of total unit.

## Fruitland Soil -

- 1. Soil is deep and well drained
- 2. Formed in alluvium derived dominately from sandstone and shale
- 3. Surface layer is brown sandy loam about 4 inches thick
- 4. The underlying material to a depth of 60 inches or more is brown fine sandy loam
- 5. Permeability is moderately rapid
- 6. Available water capacity is moderate
- 7. Runoff is medium hazard of water erosion is moderate
- 8. Hazard of soil blowing is severe
- Where soil is covered with native vegetation, the average annual wetting depth is about 24 inches

## 10. Soil is slightly saline

## Persayo Soil -

- 1. Shallow and well drained
- 2. Derived from shale
- 3. Top 2 inches of surface soil is light brownish clay loam
- 4. Depth of 2 inches to 18 inches is light yellowish brown clay loam
- Shale parent at 18 inches
- Permeability is moderately slow
- 7. Available water capacity is very low
- Runoff is rapid
- 9. Water erosion is high
- 10. Soil blowing is severe
- 11. In areas covered with native vegetation, wetting depth is 12 inches
- 12. Soil is slightly saline

## Sheppard Soil -

- 1. Deep and somewhat excessively drained
- Formed in eolian material derived from mixed sources
- 3. Top 4 inches is light yellowish brown loamy fine sand
- Underlying material to a depth of 60 inches or more is light yellowish brown loamy fine sand & fine sand
- 5. Permeability is rapid
- Available water capacity is low
- 7. Runoff is slow
- 8. Hazard of water erosion is slight
- 9. Hazard of soil blowing is very severe
- 10. Native vegetation cover wetting depth is 24 inches

## DW - Doak-Uffens complex, 3 to 8 %

## Description:

- Unit is on mesas and plateaus
- 2. Slope 5 8%
- Native vegetation is mainly grass
- 4. Elevation 5600 6400 ft.
- Annual precipitation approx. 8 inches
- Average annual temperature 53 deg. F.
- Frost free avg. 150 days
- 8. 40% Doak very fine sandy loam
- 35% Uffens fine sandy loam
- 10. Unit is intricately intermingled and not possible to map separately at the scale used.
- Includes small areas of Shiprock, Monierco, Muff, and Huerfano soils depending on topography and is about 25% of total unit.

## Doak --

- 1. Soil is deep & well-drained
- 2. Formed in alluvium derived dominantly from sandstone & shale
- Surface layer is brown very fine sandy loam about 3 inches thick Subsoil is yellowish-red clay loam approximately 12 inches thick

- 4. Substratum to a depth of 60 inches is reddish brown loam
- Permeability is moderately slow
- 6. Available water capacity is very high
- 7. Runoff slow hazard of water erosion is slight
- 8. Hazard of soil blowing is severe
- 9. Where it has native vegetation cover, wetting depth is about 15 inches.
- 10. Estimated content of exchangeable sodium is 15 to 25%

#### Uffens Soil -

- Soil is deep & well-drained
- 2. Formed in alluvium derived dominantly from shale
- Surface layer is pale brown fine sandy loam about 4 inches thick
   Subsoil is reddish brown clay loam and sandy clay loam approximately 18 inches thick
- 4. Substratum to a depth of 60 inches or more is pale yellow sandy clay loam
- Permeability is moderately slow
- 6. Available water capacity is low
- 7. Hazard of water erosion is slight
- Hazard of soil blowing is severe.
- Estimated content of exchangeable sodium is 25 to 75%
- 10. Where it has native vegetation cover, wetting depth is about 14 inches
- 11. Strongly saline
- Soil has limited suitability for ponds or other earthen structures because of the high sodium content

## HA – Haplargids-Blackston-Torriorthents complex, very steep Description:

- 1. Unit is on terraces, mesas and plateaus
- 2. Slope 8 50%
- 3. Native vegetation is mainly grass
- 4. Elevation 4800 7200 ft.
- 5. Annual precipitation approx. 9 inches
- Average annual temperature 52 deg. F.
- 7. Frost free avg. 140 days
- 8. 45% Haplargids, 8 50% slopes
- 30% Blackston gravely loam, 8 to 40% slopes
- 10. 20% Torriorthents, 8 to 50% slopes
- 10. Unit is intricately intermingled and not possible to map separately at the scale used.
- 12. Includes areas of rock outcrop on ledges, shelves and breaks and is about 5% of total unit

## Haplargids --

- 1. Soil is shallow to deep
- 2. Well-drained to excessively drained
- 3. Formed in alluvium derived from mixed sources
- 4. Soil type does not have a typical profile
- One profile commonly observed has a surface layer of light brown cobbly sandy loam about 7 inches thick

- 6. Subsoil is brown to yellowish brown cobbly sandy clay loam approximately 19 inches thick
- 7. Substratum to a depth of 60 inches or more is light brown gray, light gray and pale olive cobbly sandy clay loam and loam
- 8. Permeability is moderately to moderately slow
- 9. Available water capacity is low to high
- 10. Hazard of water erosion is slight to severe
- 11. Hazard of soil blowing is slight
- 12. Where it has native vegetation cover, wetting depth is about 14 inches

#### Torriorthents --

- 1. Soil is deep and well-drained
- 2. Formed in alluvium derived from mixed sources
- 3. No simple profile is typical of Torriorthents soils
- 4. Commonly has a surface layer brown-gray cobbly loam about 3 inches thick
- 5. Substratum down to a depth of about 15 inches is light brownish gray clay loam
- 6. Below substratum is shale
- 7. Permeability is moderately rapid to moderately slow
- 8. Available water capacity is low to high
- 9. Hazard of water erosion is slight to severe
- 10. Hazard of soil blowing is slight
- 11. Where there is native vegetation cover, wetting depth is 10 to 15 inches

#### Note, caution:

Haplargids and Torriorthents have variable properties. If these soils are used for urban development, onsite investigation os needed. The Blackston soil is poorly suited to urban development. The main limitation is slope. Excavation can also have unstable walls.

## Tertiary Aquifer in the Area of Interest

Considerable treatise was given to Tertiary sandstone aquifers in the section entitled "Basin Principles of Groundwater Flow Systems." Information on aquifers in the area of interest is confined to two wells, one water well and one oil and gas well.

Unfortunately, the State of New Mexico engineer does not, or at least has not in the past, require water well drillers and contractors to submit a drillers log or an electric-log for wells drilled. Apparently all that is required is a location tie to the U.S. Land System, depth of the well, and depth to water. Such is the case with water well SJ-03185 located in the project area. Oil and gas well No. 129 (see Figure 9, Cross-section A-A', modified), also in the project area, indicates it was collared in the Tertiary Nacimiento Formation. The gamma ray-neutron log data gives evidence of several "thin" sand aquifer possibilities; however, the warranty on the cross-section between wells 126 and 129 states the following:

Although the Nacimiento Formation is a potential aquifer, it is not stippled because only local sandstone bodies produce significantly (Stone and others, 1983).

Stippling in the underlying Ojo Alamo Sandstone and in the overlying Cuba Mesa Member of the San Jose Formation indicates major aquifers (Figure 9, Crosssection A-A', modified).

### Tertiary Aquifers

T.E. Kelly, 1981, p. 60, in a paper entitled "Hydrology of Strippable Coal Deposits in the San Juan Basin", summarizes the Tertiary aquifers as follows:

The Tertiary-sandstone aquifers are best developed in the Ojo Alamo Sandstone and the San Jose Formation. Water is also produced from the Nacimiento Formation, but this formation is generally considered to be an inferior water-bearing deposit. The Ojo Alamo Sandstone is composed of buff to brown, medium- and coarse-grained sandstone with interbedded green to gray shale. The sandstone frequently is conglomeratic, and it is poorly to moderately indurated in the subsurface. The San Jose Formation consists of alternating beds of hard and soft, locally conglomeratic sandstone. Some shale and siltstone is locally present. The Nacimiento Formation consists primarily of shale interbedded soft, fine- to medium-grained sandstone which generally thickens northward.

It appears, if a good volume of better quality water is needed or desired in the project area, the Ojo Alamo Sandstone at the base of the Nacimiento Formation would be a good source. The depth of the Ojo Alamo, in the project area, is estimated to be around 1450 feet (see Figure 9, Cross-section A-A', modified), based on log data of Well No. 129.

#### **Ground Water**

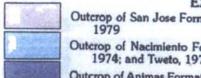
### Potentiometric Surface

Figure 12, Lovings and others, 1990, is a map portraying the altitude of the potentiometric surface, in feet above sea level, at a given well site. The lower number is the year the measurement was taken. One particular well measured in 1986 at 5643 feet altitude is very near the project area and is in the Nacimiento Formation. To reiterate, the project site appears to be underlain by the upper portion of the Nacimiento Formation.

Water well SJ-03185 was drilled within the confines of the project area. Total depth of the well is 220 feet. Water was encountered at 200 feet and the piezometric surface was at 100 feet. Estimated yield was 10 gpm, possibly with a bailer test. Casing was perforated from 80 to 220 feet. This well was re-entered in August 2009 and was sampled for water quality. The piezometric surface remains at 100 feet.

Another water well, SJ-02883, north of U.S. Highway 64 and the project area, probably at the site of a roadside business, now removed, was drilled in 1998. The well depth is 123 feet and the depth to water is 87 feet. The estimated yield is 4 gpm. The well investigated at this site appears to be equipped with a submersible pump. Copies of these reports are to be found in Appendix A for Points of Diversion numbers SJ-03185 and SJ-02883. These two water wells are the only water wells recorded for Section 16, T. 29 N., R. 9 W., NMPM.

#### **EXPLANATION**



Outcrop of San Jose Formation-From Dane and Bachman, 1965; and Tweto,

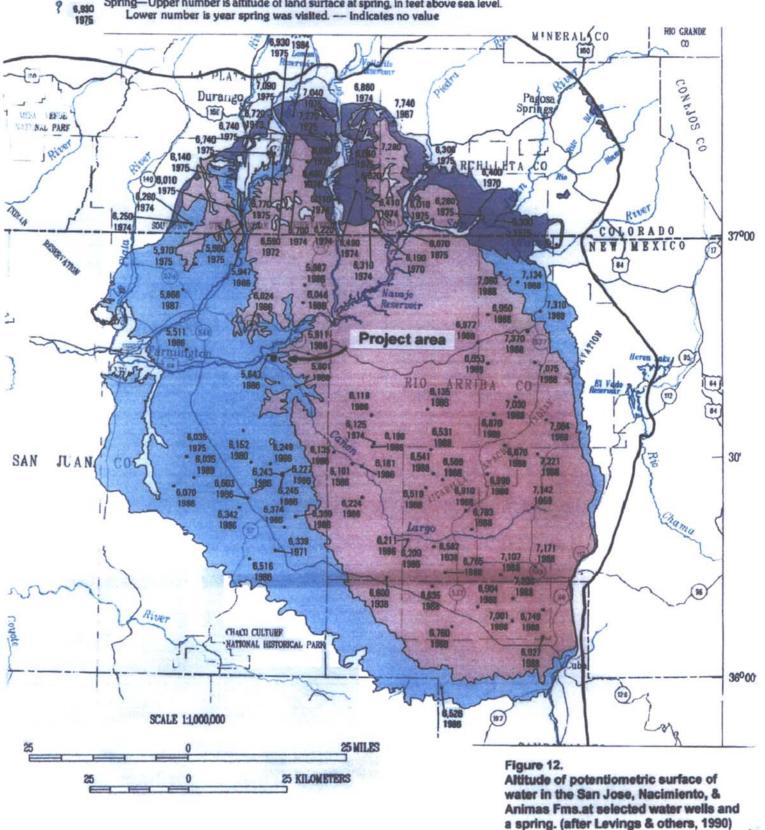
Outcrop of Nacimiento Formation-From Dane and Bachman, 1965; Fassett, 1974; and Tweto, 1979

Outcrop of Animas Formation-From Dane and Bachman, 1965; Fassett, 1974; and Tweto, 1979

Boundary of study area

Water well—Upper number is altitude of potentiometric surface, in feet above sea level. Lower number is year water level was measured or reported. — indicates no value

Spring—Upper number is altitude of land surface at spring, in feet above sea level. Lower number is year spring was visited. -- Indicates no value



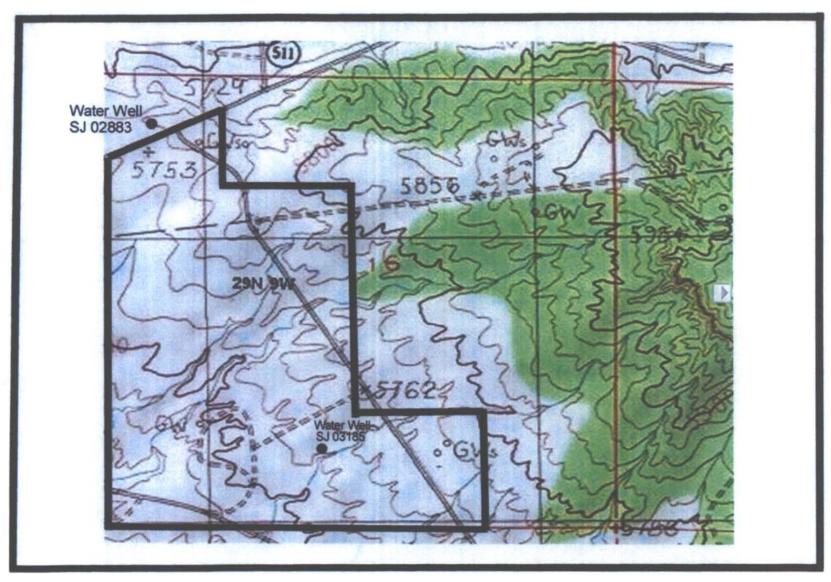


Figure 13.

Area topographic map showing general area of the project and approximate location of water well SJ 03185.

## Water Quality

The only water quality information available for this immediate project area is from the analysis of a recent water sample taken from water well SJ 03185. The water source(s) appears to be from a sandy unit in the underlying Upper Nacimiento Formation. The zone of saturation is at a depth of 200 feet and has a hydrostatic head of 100 feet. The bottom of the well is 220 feet and it is unknown if this is the total thickness of the water-bearing zone. Table 1 showing selected properties of and constituents of water taken from the San Jose, Nacimiento, and Animas Formations, indicates results of water samples tested from these three formations. Table 2 includes U.S. EPA Standards of selected primary drinking water standards with Table 3 showing secondary drinking water standards. When comparing laboratory results from the project well, dissolved solids and sulfates alone would probably place this water in the "saline" class and "not fit for human consumption." Figure 14 shows concentrations of dissolved solids in water from selected water wells and one spring in the San Jose, Nacimiento, and Animas Formations. Figure 15 portrays sulfate concentrations in the above mentioned formations.

In Figure 16 the upper number shows discharge in gallons per minute (gpm), the middle number shows specific capacity in gallons per minute per minute per foot of drawdown. The lower number is the year measurements were made.

Table 1. Selected properties of and constituents in water from the San Jose, Nacimiento, and Animae Formations

[Dissolved constituents are in milligrams per liter]

Property or constituent	Number of samples	Minimum	Maximum	Median	SJ 03185	
Specific conductance (microslemens per centimeter at 25 degrees Celsius)	220	201	12.700	934	j	
pH (standard units)	207	4.6	9.8	7.8	_	
Temperature (degrees Celsius)	159	9.5	23.0	13.0	1	
Calcium	203	1.7	640	46	68.3	
Magnesium	203	0.1	230	7.3	8.7	
Sodium	186	1.6	2,200	140	992	
Potessium	182	0.2	21	1.2	2.0	
Alkalinity, total as calcium carbonate	202	21	1,750	262	190.0 i	
Sulfate	204	2.3	4,300	100	2150	
Chloride ,	209	1.3	4,100	17	19.0	
Fluoride	199	0.1	8.8	0.8	. 1.1	
Dissolved solids, sum of constituents	161	114	6,800	563	3320	
Nitrate, as nitrogen	29	0.02	5.6	0.07	0.32	
Selenium	73	0.001	13	0.02	< 0.20	

Table 2. Selected primary drinking-water standards

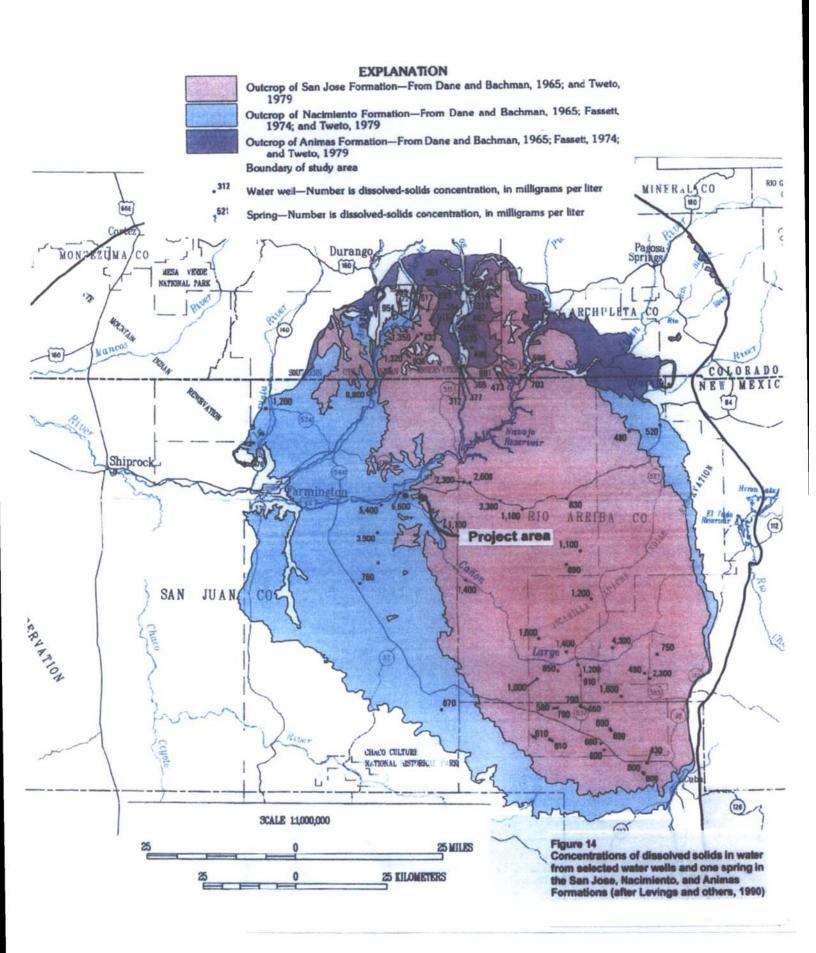
(From U.S. Environmental Protection Agency, (1986a). Constituents are in milligrams per liter)

Constituent	Standard
Fluoride	4
Nitrate (as nitrogen)	10
Selenium	0.01

Table 3. Selected secondary drinking-water standards

[From U.S. Environmental Protection Agency, (1986b). Constituents are in miltigrams per liter)

6.5-6.5
4.0 4.0
250 .
250
2
600



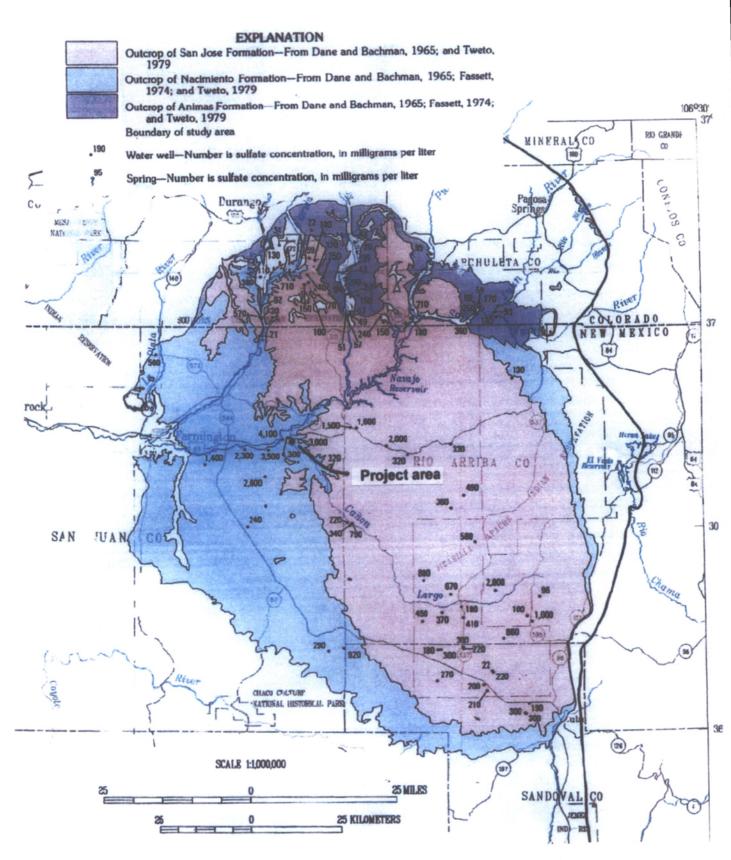


Figure 15.
Concentrations of sulfate in water from selected water wells and one spring in the San Jose, Nacimiento, and Animas Formations. (after Levings & others, 1990)

#### **EXPLANATION**

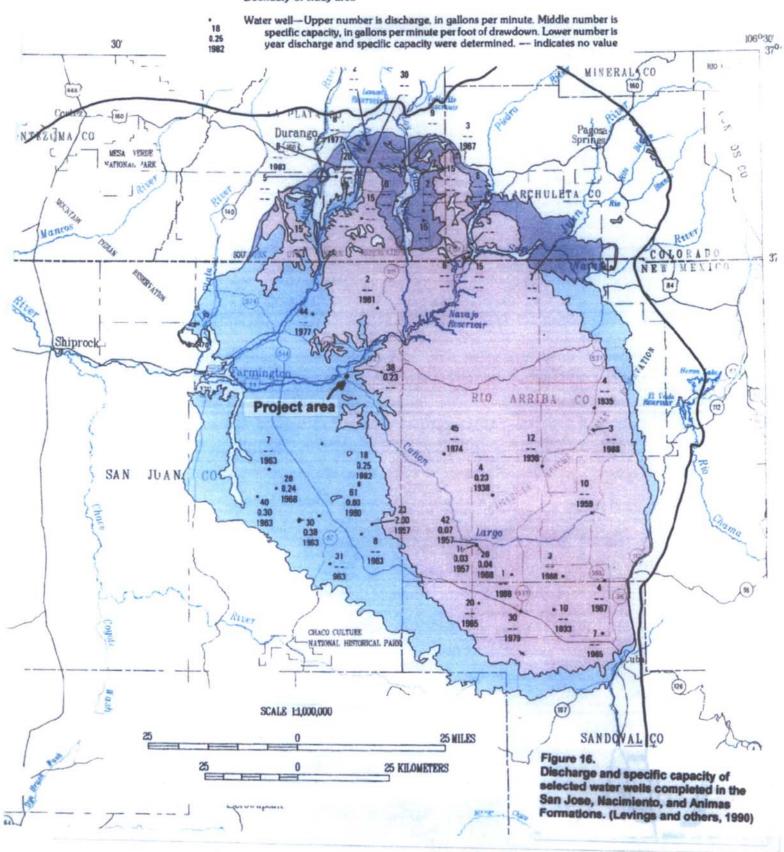


Outcrop of San Jose Formation—From Dane and Bachman, 1965; and Tweto, 1979

Outcrop of Nacimiento Formation-From Dane and Bachman, 1965; Fassett, 1974; and Tweto, 1979

Outcrop of Animas Formation-From Dane and Bachman, 1965; Fassett, 1974; and Tweto, 1979

Boundary of study area



#### Selected References

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  Affairs and Bureau of Reclamation and the New Mexico Agricultural

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## **APPENDIX A**

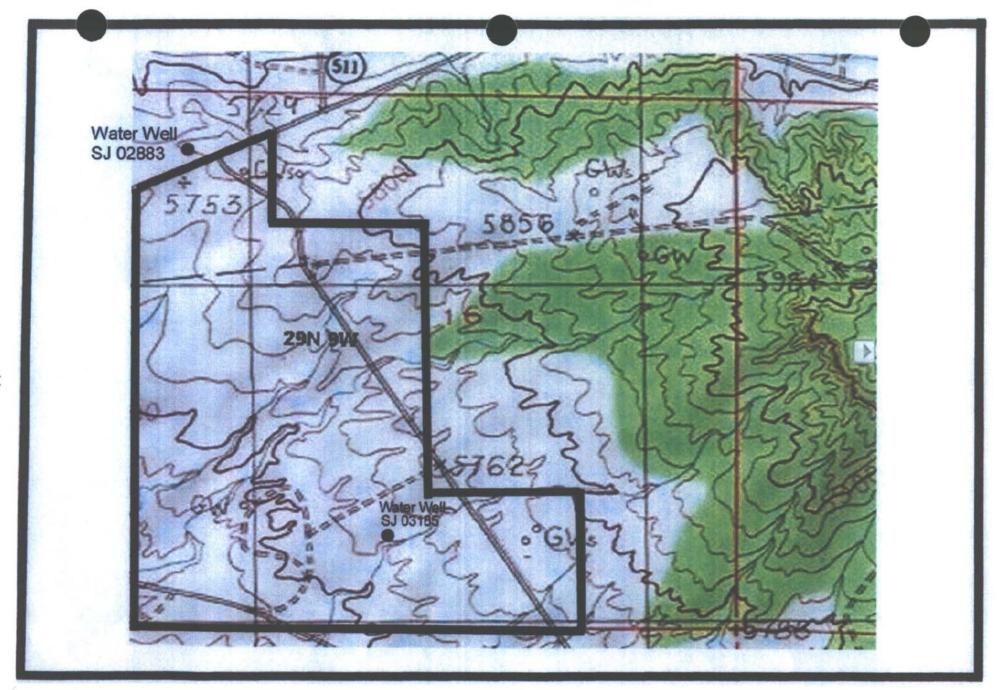


Figure A-1. Location map of water wells in Section 16, T. 29 N., R. 9 W., NMPM.



Figure A-2.
Aerial photographic base map showing general area of the project and approximate location of water well SJ 03185.



## New Mexico Office of the State Engineer Wells with Well Log Information

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest). (NAD83 UTM)in meters) (in feet) Depth Depth Süb p p p Log File POD Number Y Start Date Finish Date Date Well Water basin Use County Source 6416 4 Sec Tws Rng SJ 02883 07/31/1998 08/10/1998 Shallow 3 3 2 16 251496 4068078\* 07/20/1998 123 87 SJ 03185 4067283\* 05/28/2002 06/01/2002 06/05/2002 220 100

**Record Count: 2** 

Basin/County Search:

Basin: San Juan

County: San-Juan

PLSS Search:

Section(s): 16

Township: 29N

Range: 09W

**Usage Filter:** 

Use: All Usages

Table A-1. Wells with well log information SJ 02883 and SJ 03185.

Milocation was derived from PLSS - see Help

data is turnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness ibility, usability, or sultability for any particular purpose of the data. 7/09 10:59 AM



# New Mexico Office of the State Engineer Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

**POD Number** 

Q64 Q16 Q4 Sec Tws Rng

Х

Y

SJ 02883

3 3 2 16 29N 09W

251496 4068078\*

**Driller License: MCDONALD'S WATER WELL DRLG** 

**Driller Name:** 

KENNETH MCDONALD

Dillion Hally

Shallow

Source:

Drill Start Date: 07/20/1998

**Drill Finish Date:** 

07/31/1998

Log File Date:

08/10/1998

**PCW Received Date:** 

**Pump Type:** 

Pipe Discharge Size:

Casing Size: Depth Well:

5.50

Estimated Yield: Depth Water:

87 feet

123 feet

Table A-2. Point of Diversion summary SJ 02883.

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

9/17/09 10:22 AM

Page 1 of 1

**POINT OF DIVERSION SUMMARY** 



# New Mexico Office of the State Engineer Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

POD Number

Q64 Q16 Q4 Sec Twe Rng

X

SJ 03185

4 4 3 16 29N 09W

251290 4067283\*

**Driller License: HARGIS CONSULTING WATER WELL** 

**Driller Name:** 

Source:

Shallow

**Drill Start Date: 05/28/2002** 

002 Drill Finish Date:

06/01/2002

Log File Date:

06/05/2002

**PCW Received Date:** 

----

Pump Type:

Pipe Discharge Size:

Casing Size:

Estimated Yield:

10

Depth Well: 2

220 feet

4.50

Depth Water:

100 feet

Water Bearing Stratifications:

Top Bottom

200

Description

20 Other/Unknown

Casing Perforations: To

**Top Bottom** 

80 220

Table A-3. Point of Diversion summary SJ 03185.

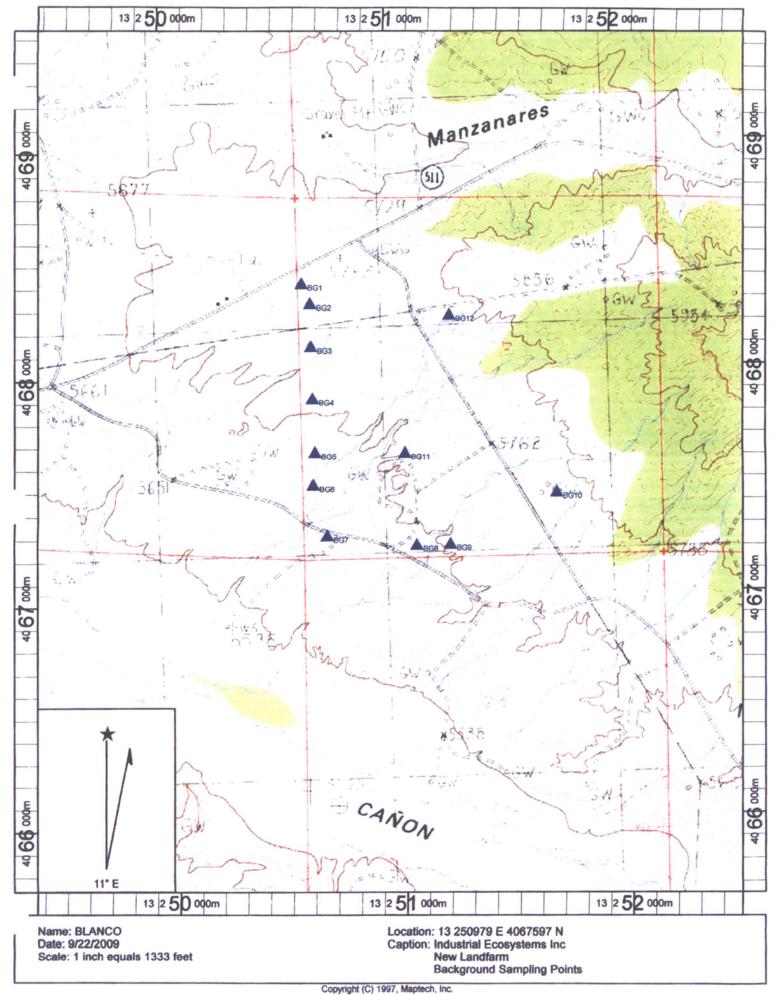
\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

9/17/09 10:16 AM

Page 1 of 1

**POINT OF DIVERSION SUMMARY** 



Markers

Name: BG1

Short Name: BG1

Coordinates: 13 250609 E, 4068397 N

Name: BG2

Short Name: BG2

Coordinates: 13 250647 E, 4068309 N

Name: BG3

Short Name: BG3

Coordinates: 13 250646 E, 4068123 N

Name: BG4

Short Name: BG4

Coordinates: 13 250644 E, 4067892 N

Name: BG5

Short Name: BG5

Coordinates: 13 250648 E, 4067650 N

Name: BG6

Short Name: BG6

Coordinates: 13 250637 E, 4067501 N

Name: BG7

Short Name: BG7

Coordinates: 13 250691 E, 4067280 N

Name: BG8

Short Name: BG8

Coordinates: 13 251091 E, 4067231 N

Name: BG9

Short Name: BG9

Coordinates: 13 251239 E, 4067230 N

Name: BG10

Short Name: BG10

Coordinates: 13 251714 E, 4067442 N

Name: BG11

Short Name: BG11

Coordinates: 13 251049 E, 4067638 N

Name: BG12

Short Name: BG12

Coordinates: 13 251261 E, 4068246 N

LAB ID: PA39-401

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

SEND DATA TO:

NAME: Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS: PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

1 of 39

PO#:

PHONE:

FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB	DATE: 08/20/2009 9:10				Pag	Page 1 of 39	
SAMPLE: #1 SAMPLED BY: Jeff Blagg		ab ID: 09083072-001A Time: 08/17/2009 9:10	Grab		,		
Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *	
✓ Mercury	< 0.169 mg/Kg-dry	EPA 7471A		08/26/09 9:00	08/27/09	KW-CV	
Arsenic	< 5 11 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Barium	123 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
✓Cadmium	< 0.204 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Chromium	10.9 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Copper	9.62 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
/ Iron	14700 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
_ Lead	8.99 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Manganese	301 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/28/09	RMD-CV	
✓ Selenium	< 8.18 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
∠ Silver	< 1 43 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
_ Zinc	34.9 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
SAMPLE: #1	Lab ID: 09083072-001B		Grab				
SAMPLED BY: Jeff Blagg	Sample Time: 08/17/2009 9:10		D				
Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *	
<u>Test</u>	7.22 @ 23.5°C	EPA 9045D		08/25/09 10:30	08/25/09	TLB-CV	
, pH , Fluoride	< 10.2 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/20/09	LNP-CV	
Chloride	27.7 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/20/09	LNP-CV	
Nitrate	< 10.2 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/20/09	LNP-CV	
	< 25.6 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/20/09	LNP-CV	
Sulfate Cyanide, Total	< 0.2 mg/Kg-dry	EPA 9010C		08/28/09 13:15	08/28/09	LNP-CV	
Total Phenols	< 1.0 mg/Kg-dry	EPA 420.4		08/25/09 12:05	08/25/09	SKK-CV	
Percent Moisture	2,4 %	SM2540G		08/21/09 15:35		DMB-CV	
Total Solids	976000 mg/Kg	SM2540G		08/21/09 15:35	08/24/09	DMB-CV	

## REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.

- \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

	4	•			
		A / . AA		DATE.	9/11/2009
		Clim		DATE:	9/11/2009
MANAGER		000,00	dr		

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

PO Box 87

ADDRESS:

Bloomfield, NM 87413

WO#:

09083072

PAGE:

2 of 39

PO#:

PHONE: FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB

DATE: 08/20/2009 9:10

Page 2 of 39

RECEIVED FOR LAB BY: DIMB	EIVED FOR LAB BY: DIMB DATE: 08/20/2009 9:10				Page 2 01 39		
SAMPLE; #1 SAMPLED BY: Jeff Blagg	Lab ID: 09083072-001C Sample Time: 08/17/2009 9:10		Grab				
Test Diesel Range Organics Gasoline Range Organics	Result < 26 mg/Kg-dry < 1.02 mg/Kg-dry	Method API-PHC 8015MOD API-GRO 8015MOD	Reg Limit	Analysis Start 08/27/09 9:00 08/27/09 14:00	Analysis End 08/28/09 08/28/09	Analyst * ASC-CV ASC-CV	
				03/2/703 14:00			
SAMPLE: #1 SAMPLED BY: Jeff Blagg	Lab ID: 09083072-001D Sample Time: 08/17/2009 9:10		Grab Reg				
<u>Test</u>	Result	<u>Method</u>	Limit	Analysis Start	Analysis End	Analyst *	
Aroclor 1016	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Aroclor 1221	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Arodor 1232	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Aroclor 1242	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Aroclor 1248	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Aroclor 1254	< 0.03 mg/Kg-dry	EPA 8082	•	08/27/09 9:00	08/29/09	JJ6-CV	
Aroclor 1260	< 0 03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Aroclor 1262	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Araclor 1268	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
✓Naphthalene	< 0.34 mg/Kg-dry	EPA 8270C	•	08/21/09 9:00	08/25/09	JJ6-CV	
	< 0.34 mg/Kg-dry	' EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV	
✓1-Methylnaphthalene	< 0.34 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV	
Acenaphthylene	< 0.34 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV.	
Acenaphthene	< 0.34 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV	
Fluorene	< 0.34 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV	
Phenanthrene	< 0.34 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV	
Anthracene	< 0.34 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV	
Fluoranthene	< 0.34 mg/Kg-dry	EPA 8270C	1	08/21/09 9:00	08/25/09	JJ6-CV	
Pyrene	< 0.34 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV	

#### **REMARKS:**

The above test procedures meet all the requirements of NELAC and relate only to these samples.

- \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

climet. 9/11/2009 DATE: **MANAGER** 

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME: Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS: PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

3 of 39

PO#:

**TEST REPORT** 

PWS ID#

PHONE: FAX:

(505) 632-1199

Industrial Ecosystems New Land Farm

DATE: (	08/20/2009 9:10		Pa	ge 3 of 39
< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-ÇV
* < 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	· DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	Ó8/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV -
< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
	< 0.34 mg/Kg-dry < 0.041 mg/Kg-dry	< 0.34 mg/Kg-dry	< 0.34 mg/Kg-dry	< 0.34 mg/Kg-dry

### REMARKS:

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- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

	n /	AA /	1		0/11/2000
MANAGER	Clu		•	DATE:	9/11/2009

4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

4 of 39

PO#:

PHONE:

FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

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DATE: 08/20/2009 9:10

Page 4 of 39

RECEIVED FOR TAR BA: DWR	DATE: U	18/20/2009 9:10			Pag	ge 4 of 39
SAMPLE: #1 SAMPLED BY: Jeff Blagg	,	ib ID: 09083072-001E Time: 08/17/2009 9:10	Grab			
Tool	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
<u>Test</u> Uranium	<u>кезин</u> 568.8 µg/Кg	EPA 200.8	<u>=117111</u>	08/31/09 9:00	09/03/09	JRA-CV
Uranium .	381.1 pCi/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV
SAMPLE: #2	La	b ID: 09083072-002A	Grab	· · · · · · · · · · · · · · · · · · ·		
SAMPLED BY: Jeff Blagg	Sample 1	ime: 08/17/2009 9:25	Reg			
<u>Test</u>	Result	Method	Limit	<u>Analysis Start</u>	Analysis End	Analyst *
Mercury	< 0.169 mg/Kg-dry	EPA 7471A		08/26/09 9:00	08/27/09	KW-CV
Arsenic	< 5.07 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Barium	132 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Cadmium	< 0.203 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Chromium	10.2 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Copper	9.42 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Iron	13900 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Lead	7.97 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Manganese	280 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/28/09	RMD-CV
Selenium	< 8.12 mg/Kg-dry	EPA 6010B		08/26/09 10.30	08/27/09	RMD-CV
Silver	< 1.42 mg/Kg-dry	EPA 6010B		08/26/09 10·30	08/27/09	RMD-CV
Zinc	37.2 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
SAMPLE: #2	La	b ID: 09083072-002B	Grab			
SAMPLED BY: Jeff Blagg	Sample 7	ime: 08/17/2009 9:25	_			
Test	Result	<u>Method</u>	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
pH	7.83 @ 23.6°C	EPA 9045D		08/25/09 10:30	08/25/09	TLB-CV
Fluoride	< 10.2 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/20/09	LNP-CV
Chloride	31.6 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/20/09	LNP-CV

### REMARKS:

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- Due to matrix effects, not all quality control parameters met acceptance criteria Q

	0 / . 20 /		
MANAGER	Cli Mel	DATE:	9/11/2009

4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

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PO#:

PHONE:

FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

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DATE: 08/20/2009 9:10

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SAMPLE: #2	La	ab ID: 09083072-002C , (	Grab		
Total Solids	982000 mg/Kg .	SM2540G	08/21/09 15:35	08/24/09	DMB-CV
Percent Moisture	1.8 %	SM2540G	08/21/09 15:35	08/24/09	DMB-CV
Total Phenois	< 1.0 mg/Kg-dry	EPA 420.4	08/25/09 12:05	08/25/09	SKK-CV
Cyanide, Total	< 0.2 mg/Kg-dry	EPA 9010C	08/28/09 13:15	08/28/09	LNP-CV
Sulfate	< 25.5 mg/Kg-dry	EPA 300.0	08/20/09 15:49	08/20/09	LNP-CV
Nitrate	< 10.2 mg/Kg-dry	EPA 300.0	08/20/09 15:49	08/20/09	LNP-CV

SAMPLED BY: Jeff Blagg

Sample Time: 08/17/2009 9:25 Method

Reg Análysis Start Analysis End Analyst \* <u>Limit</u> API-PHC 8015MOD 08/27/09 9:00 08/28/09 ASC-CV 08/27/09 14:00 08/28/09 ASC-CV API-GRO 8015MOD

SAMPLE: #2

<u>Test</u>

SAMPLED BY: Jeff Blagg

Gasoline Range Organics

**Diesel Range Organics** 

Lab ID: 09083072-002D Grab

Sample Time: 08/17/2009 9:25

SAMIFLED DT. Jell blagg	Sample	Title. 00/1//2005 5.25	D				
<u>.</u> Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *	
Aroclor 1016	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Aroclor 1221	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Aroclor 1232	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Aroclor 1242	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Aroclor 1248 .	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Arocior 1254	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Aroclor 1260	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Aroclor 1262	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV	
Araclar 1268	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9 00	08/29/09	JJ6-CV	
Naphthalene	< 0.34 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV	
2-Methylnaphthalene	< 0.34 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV	
1-Methylnaphthalene	< 0.34 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV	
Acenaphthylene	< 0.34 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV	

The above test procedures meet all the requirements of NELAC and relate only to these samples.

Result

< 25 mg/Kg-dry

< 1.02 mg/Kg-dry

- CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
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- Due to matrix effects, not all quality control parameters met acceptance criteria

climet. DATE. **MANAGER** 

4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: I

Blagg Engineering Inc PO Box 87

ADDRESS: PO B

PU BOX 6/

Bloomfield, NM 87413

WO#:

09083072

PAGE:

6 of 39

PO#:

PHONE:

(505) 632-1199

**TEST REPORT** 

PWS ID#

FAX:

Industrial Ecosystems New Land Farm

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DATE: 08/20/2009 9:10

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F	RECEIVED FOR LAB BY: DMB	DATE: 0	8/20/2009 9:10		Pa	ge 6 of 39
=	Acenaphthene	< 0.34 mg/Kg-dry .	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	Fluorene	< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	Phenanthrene	< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	Anthracene	< 0.34 mg/Kg-dry	- EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	Fluoranthene	< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	Pyrene	< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	Benzo[a]anthracene	< 0 34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	Chrysene	< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	Benzo[b]fluoranthene	< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	Benzo[k]fluoranthene	< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	Benzo[a]pyrene	< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	Indeno[1,2,3-cd]pyrene	< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	Dibenz[a,h]anthracene	< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	Benzo[g,h,i]perylene	< 0.34 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
	1,1-Dichloroethylene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
	Methylene chloride	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
	1,1-Dichloroethane	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
	Chloroform	< 0.041 mg/Kg-dry	PA 8260B	08/20/09 9:53	08/20/09	DN-CV
	1,1,1-Trichloroethane	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
	Carbon tetrachloride	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
	Benzene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
	1,2-Dichloroethane	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
	Trichlorgethylene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
	Toluene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
	1,1,2-Trichloroethane	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
	Tetrachloroethylene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
	Ethylene dibromide	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
	Ethylbenzene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV

#### REMARKS:

- \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Q Due to matrix effects, not all quality control parameters met acceptance criteria

MANAGER	cli Meh.	DATE:	9/11/2009
WIN III IO LEI I			

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: ADDRESS:

Blagg Engineering Inc PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

7 of 39

PO#:

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FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

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DATE: 08/20/2009 9:10

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m,p-Xylene	< 0.041 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
o-Xylene	< 0.041 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
1,1,2,2-Tetrachloroethane	< 0.041 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
SAMPLE: #2	La	ab ID: 09083072-002E	Grab			
SAMPLED BY: Jeff Blagg	Sample 1	Time: 08/17/2009 9:25				
<b>~</b>	Down II	4.3 - 111	Reg	A 1 1 - O1 1	A - alamia Paul	A L L *
<u>Test</u>	Result	Method	<u>Limit</u>	Analysis Start	Analysis End	
Uranium	555.4 µg/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV
Uranium	372.1 pCi/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV
SAMPLE: #3	La	ib ID: 09083072-003A	Grab			
SAMPLED BY: Jeff Blagg	Sample 1	Fime: 08/17/2009 9:40				
¥	,		Reg		<b>.</b> .	
<u>Test</u>	Result	<u>Method</u>	<u>Limit</u>	Analysis Start	Analysis End	
Mercury	< 0.173 mg/Kg-dry	EPA 7471A		08/26/09 9:00	08/27/09	KW-CV
Arsenic ·	< 5.05 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Barium	141 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Cadmium	< 0 202 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Chromium .	11.1 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Copper	9.02 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Iron	15200 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Lead	8.62 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Manganese	295 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/28/09	RMD-CV
Selenium	< 8.08 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Silver	< 1.41 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Zinc	35.2 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV

#### REMARKS:

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- Value above calibration range but within annually verified linear range
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MANAGER	Cli Meli	DATE:	9/11/2009	

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

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COMPANY: Blagg Engineering Inc

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Bloomfield, NM 87413

WO#:

09083072

PAGE:

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(505) 632-1199

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FAX:

Industrial Ecosystems New Land Farm

DECEMEN ENDIAR BY: DMD

RECEIVED FOR LAB BY: DMB	DATE:	08/20/2009 9:10		,	Pag	ge 8 of 39
SAMPLE: #3 SAMPLED BY: Jeff Blagg		Lab ID: 09083072-003B e Time: 08/17/2009 9:40	Grab			
<u>Test</u>	Result	Method	<u>Req</u> Limit	Analysis Start	Analysis End	Analyst *
рH	7.80 @ 23.8°C	EPA 9045D		08/25/09 10:30	08/25/09	TLB-CV
Fluoride	< 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Chloride	25.9 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Nitrate	< 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Sulfate	< 25.4 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Cyanide, Total	< 0.2 mg/Kg-dry	EPA 9010C		08/28/09 13:15	08/28/09	LNP-CV
Total Phenois	< 1.0 mg/Kg-dry	EPA 420.4		08/25/09 12:05	08/25/09	SKK-CV
Percent Moisture	1.4 %	SM2540G	,	08/21/09 15:35	08/24/09	DMB-CV
Total Solids	986000 mg/Kg	SM2540G		08/21/09 15:35	08/24/09	DMB-CV
SAMPLE: #3		Lab ID: 09083072-003C	Grab			
SAMPLED BY: Jeff Blagg	Sample	e Time: 08/17/2009 9:40				
Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
Diesel Range Organics	< 25 mg/Kg-dry	API-PHC 8015MOD		08/27/09 9:00	08/28/09	ASC-CV
Gasoline Range Organics	< 1.01 mg/Kg-dry	API-GRO 8015MOD		08/27/09 14:00	08/28/09	ASC-CV
SAMPLE: #3		Lab ID: 09083072-003D	Grab		,	
SAMPLED BY: Jeff Blagg	Sample	e Time: 08/17/2009 9:40				•
Test	Result	<u>Method</u>	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
Aroclor 1016	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1221	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9.00	08/29/09	JJ6-CV
Arodor 1232	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1242	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1248	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1254	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV

### **REMARKS:**

The above test procedures meet all the requirements of NELAC and relate only to these samples.

- \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

Cli Meli DATE: 9/11/2009 **MANAGER** 

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: ADDRESS:

Blagg Engineering Inc

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

9 of 39

PO#:

PHONE:

FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB	DATE: (	08/20/2009 9:10		Pa	ge 9 of 39
Aroclor 1260	< 0.03 mg/Kg-dry	EPA 8082 .	08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1262	< 0.03 mg/Kg-dry	EPA 8082	08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1268	< 0 03 mg/Kg-dry	EPA 8082	08/27/09 9:00	08/29/09	JJ6-CV
Naphthalene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
2-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
1-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Acenaphthylene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Acenaphthene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Fluorene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Phenanthrene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Anthracene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Pyrene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Benzo[a]anthracene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	.08/25/09	JJ6-CV
Chrysene .	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Benzo[b]fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Benzo[k]fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Benzo[a]pyrene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Indeno[1,2,3-cd]pyrene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Dibenz[a,h]anthracene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Benzo[g,h,i]perylene	< 0.33 mg/Kg-dry	EPA 8270C ·	08/21/09 9:00	08/25/09	JJ6-CV
1,1-Dichloroethylene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Methylene chloride	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1-Dichloroethane	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Chloroform	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,1-Trichloroethane	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Carbon tetrachloride	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Benzene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV

### **REMARKS:**

The above test procedures meet all the requirements of NELAC and relate only to these samples. \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

		•	
MANAGER	Cli Mel.	DATE:	9/11/2009

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS: PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

10 of 39

PO#:

PHONE: FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

ECEIVED FOR LAB BY: DMB	DATE: 08/20/2009 9:10
CEIVED FOR LAD DT. DIMB	DATE. 00/20/2009 9.10

RECEIVED FOR LAB BY: DMB	DATE. U	8/20/2009 9:10			Page	10 of 39
1,2-Dichloroethane	< 0.041 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
Trichloroethylene	< 0.041 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
Toluene	< 0.041 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
1,1,2-Trichloroethane	< 0.041 mg/Kg-dry	EPA 8260B	٠.	08/20/09 9:53	08/20/09	DN-CV
Tetrachiorcethylene	< 0.041 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
Ethylene dibromide	< 0.041 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
Ethylbenzene	. < 0 041 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
m,p-Xylene	< 0.041 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
o-Xylene	< 0.041 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
1,1,2,2-Tetrachloroethane	< 0.041 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
SAMPLE: #3	La	ь ID· 09083072-003E	Grab			
SAMPLED BY: Jeff Blagg	Sample T	ime: 08/17/2009 9:40				· •
<u>Test</u>	Result	<u>Method</u>	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
Uranium	635.8 μg/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV
Uranium	426.0 pCi/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV
SAMPLE: #4	La	b ID: 09083072-004A	Grab			
SAMPLED BY: Jeff Blagg	Sample T	lme: 08/17/2009 9:55	-			
Test	Result	Method	<u>Req</u> Limit	Analysis Start	Analysis End	Analyst *
Mercury	< 0.128 mg/Kg-dry	EPA 7471A		08/26/09 9:00	08/27/09	KW-CV
Arsenic	< 5.01 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Barium	169 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/28/09	RMD-CV
Cadmium	< 0.200 mg/Kg-dry	EPA 6010B	•	08/26/09 10:30	08/27/09	RMD-CV
Chromium	9.11 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Copper	8.00 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Iron	12300 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Lead	6,11 mg/Kg-dry.	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Manganese	257 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/28/09	RMD-CV

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		•			
MANAGER	Cli Meli	DAT	TE:	9/11/2009	
141/ 1/4/ 1/O LET 1			· · <del></del> ·		

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY:

Blagg Engineering Inc

ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

11 of 39

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(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecos	ystems New	Land Farm

RECEIVED FOR LAB BY: DMB	DATE:	08/20/2009 9:10			Page	11 of 39
Selenium	< 8.02 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Silver	< 1.40 mg/Kg-dry	EPA 6010B	•	08/26/09 10:30	08/27/09	RMD-CV
Zinc	26.5 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
SAMPLE: #4		Lab ID: 09083072-004B	Grab			
SAMPLED BY: Jeff Blagg	Sampl	e Time: 08/17/2009 9:55	D.			
Test	Result	Method	Reg Limit	Analysis Start	Analysis End	Analyst *
pH	7.63 @ 23.7°C	EPA 9045D	,	08/25/09 10:30	08/25/09	TLB-CV
Fluoride	< 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15.49	08/21/09	LNP-CV
Chloride	27.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Nitrate	< 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Sulfate	< 25.3 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Cyanide, Total	< 0.2 mg/Kg-dry	EPA 9010C		08/28/09 13:15	08/28/09	LNP-CV
Total Phenois	< 0.98 mg/Kg-dry	EPA 420.4		08/25/09 12:05	08/25/09	SKK-CV
Percent Moisture	·1.3 %	" SM2540G		08/21/09 15·35	08/24/09	DMB-CV
Total Solids	987000 mg/Kg	SM2540G		08/21/09 15:35	08/24/09	DMB-CV
SAMPLE: #4		Lab ID: 09083072-004C	Grab			
SAMPLED BY: Jeff Blagg	Sampl	le Time: 08/17/2009 9:55 ·				
Test	Result	Method	Reg Limit	Analysis Start	Analysis End	Analyst *
Diesel Range Organics	< 25 mg/Kg-dry	API-PHC 8015MOD		08/27/09 9:00	08/28/09	ASC-CV
Gasoline Range Organics	< 1.01 mg/Kg-dry	API-GRO 8015MOD	•	08/27/09 14:00	08/28/09	ASC-CV
SAMPLE: #4	,	Lab ID: 09083072-004D	Grab			, <u> </u>
SAMPLED BY: Jeff Blagg	Sampl	le Time: 08/17/2009 9:55	_	•		
Test	' Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Anaivst *
Aroclor 1016	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1221	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1232	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV

#### REMARKS:

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- Due to matrix effects, not all quality control parameters met acceptance criteria

MANAGER	Cli Meli DAT	E: 9//	11/2009

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME: Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS: PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

12 of 39

PO#:

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**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB	DATE: 0	8/20/2009 9:10		Pag	e 12 of 39
Aroclor 1242	< 0.03 mg/Kg-dry	EPA 8082	08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1248	< 0.03 mg/Kg-dry	EPA 8082	08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1254	< 0.03 mg/Kg-dry	EPA 8082 🕟	08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1260	< 0.03 mg/Kg-dry	EPA 8082	08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1262	< 0.03 mg/Kg-dry	EPA 8082	08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1268	< 0.03 mg/Kg-dry	EPA 8082	08/27/09 9:00	08/29/09	JJ6-CV
Naphthalene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
2-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
1-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Acenaphthylene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Acenaphthene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Fluorene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	· JJ6-CV
Phenanthrene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Anthracene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Pyrene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Benzo[a]anthracene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Chrysene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Benzo[b]fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Benzo[k]fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Benzo[a]pyrene	< 0 33 mg/Kg-dry	EPA 8270C	08/21/09 9.00	08/25/09	JJ6-CV
Indeno[1,2,3-cd]pyrene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Dibenz[a,h]anthracene	< 0 33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
Benzo[g,h,i]perylene	< 0.33 mg/Kg-dry	EPA 8270C	08/21/09 9:00	08/25/09	JJ6-CV
1,1-Dichloroethylene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Methylene chloride	< 0 041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1-Dichloroethane	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Chloroform	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV

### REMARKS:

- \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

MANAGER Chi Meh. DATE: 9/11/2	009
-------------------------------	-----

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

13 of 39

PO#:

PHONE:

FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMR

RECEIVED FOR LAB BY: DMB	DATE: C	08/20/2009 9:10		Pag	e 13 of 39
1,1,1-Trichloroethane	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Carbon tetrachloride	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	ĎΝ-CV
Benzene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,2-Dichloroethane	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Trichloroethylene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Toluene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,2-Trichloroethane	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Tetrachloroethylene	<sup>-</sup> < 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Ethylene dibromide	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Ethylbenzene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
m,p-Xylene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
o-Xylene	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,2,2-Tetrachloroethane	< 0.041 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
SAMPLE: #4	La	ab ID: 09083072-004E	Grab ·		
SAMPLED BY: Jeff Blagg	Sample 1	Time: 08/17/2009 9:55	Red	•	

			<u>Reg</u>			
<u>Test</u>	Result	Method	<u>Limit</u>	Analysis Start	Analysis End	Analyst *
Uranium	697.6 µg/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV
Uranium	467.4 pCi/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV

SAMPLE: #5

Lab ID: 09083072-005A

Sample Time: 08/17/2009 10:10 SAMPLED BY: Jeff Blagg

		•	Req			
Test	Result	Method	Limit	Analysis Start	Analysis End	Analyst *
Mercury	< 0.152 mg/Kg-dry	EPA 7471A		08/26/09 9:00	08/27/09	KW-CV
Arsenic	< 4.95 mg/Kg-dry	EPA 6010B		08/26/09 10.30	08/27/09	RMD-CV
Barium	51.4 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV `
Cadmium	< 0.198 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Chromium	3 23 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Copper	2.41 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV

#### REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.

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- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

Cli Meli 9/11/2009 MANAGER

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc.

ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

14 of 39

PO#:

PHONE:

FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

08/27/09 14:00

08/28/09

ASC-CV

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB

DATE: 08/20/2009 9:10

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Iron	4320 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Lead	2.95 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Manganese	131 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Selenium	< 7.91 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Silver .	< 1.38 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Zinc	9.91 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
SAMPLE: #5		Lab ID: 09083072-005B	Grab			
SAMPLED BY: Jeff Blagg	Sample	Time: 08/17/2009 10:10	_			
Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
pH .	7.81 @ 23.9°C	EPA 9045D	,	08/25/09 10:30	08/25/09	TLB-CV
Fluoride	< 10.0 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	·LNP-CV
Chloride	< 25.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	. 08/21/09	LNP-CV
Nitrate	< 10.0 mg/Kg-dry	EPA 300.0	•	08/20/09 15:49	08/21/09	LNP-CV
Sulfate	< 25.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Cyanide, Total	< 0.2 mg/Kg-dry	EPA 9010C		09/10/09 9:15	09/10/09	LNP-CV
Total Phenois	< 0.95 mg/Kg-dry	EPA 420.4		08/25/09 12:05	08/25/09	SKK-CV
Percent Moisture	0.4 %	SM2540G		08/21/09 15:35	08/24/09	DMB-CV
Total Solids	996000 mg/Kg	SM2540G	,	08/21/09 15:35	08/24/09	DMB-CV
SAMPLE: #5		Lab ID: 09083072-005C	Grab			
SAMPLED BY: Jeff Blagg	Sample	Time: 08/17/2009 10.10	Req	•		
<u>Test</u>	Result	Method	Limit	Analysis Start	Analysis End	Analyst *
Diesel Range Organics	< 25 mg/Kg-dry	API-PHC 8015MOD	. •	08/27/09 9:00	08/28/09	ASC-CV

API-GRO 8015MOD

### **REMARKS:**

Gasoline Range Organics

The above test procedures meet all the requirements of NELAC and relate only to these samples.

< 1.00 mg/Kg-dry

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4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

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ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

15 of 39

PO#: '

PHONE:

(505) 632-1199

TEST REPORT

PWS ID#

FAX:

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB

DATE: 08/20/2009 9:10

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AMPLE: #5	· La	ab ID: 09083072-005D	Grab	•		,
SAMPLED BY: Jeff Blagg	Sample <sup>-</sup>	Time: 08/17/2009 10:10				
Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
Arodor 1016	< 0.03 mg/Kg-dry	EPA 8082	<u> </u>	08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1221	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1232	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1242	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV
Aroclor 1248		EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV
	< 0.03 mg/Kg-dry	EPA 8082	-	08/27/09 9:00	08/29/09	
Aroclor 1254	< 0.03 mg/Kg-dry					JJ6-CV
Aroclor 1260	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV
Arodor 1262	< 0.03 mg/Kg-dry	EPA 8082 .		08/27/09 9:00	08/29/09	JJ6-CV
Arodor 1268	< 0.03 mg/Kg-dry	EPA 8082		08/27/09 9:00	08/29/09	JJ6-CV
Naphthalene	< 0.33 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV
2-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV
1-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV
Acenaphthylene	< 0 33 mg/Kg-dry .	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV
Acenaphthene	< 0.33 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV
Fluorene	< 0.33 mg/Kg-dry	EPA 8270C	•	08/21/09 9:00	08/25/09	JJ6-CV
Phenanthrene	< 0.33 mg/Kg-dry	EPA 8270C		08/21/09 9.00	08/25/09	JJ6-CV
Anthracene	< 0.33 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV
Fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C	•	08/21/09 9:00	08/25/09	JJ6-CV
Pyrene	< 0.33 mg/Kg-dry .	. EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV
Benzo[a]anthracene	< 0.33 mg/Kg-dry	EPA 8270C	•	08/21/09 9:00	08/25/09	JJ6-CV
Chrysene	< 0.33 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV
Benzo[b]fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV
Benzo[k]fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV
Benzo[a]pyrene	< 0.33 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV
Indeno[1,2,3-cd]pyrene	< 0.33 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV

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- Due to matrix effects, not all quality control parameters met acceptance criteria

Cli Meli DATE: 9/11/2009 MANAGER

4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

SEND DATA TO:

NAME: Jeff Blagg

COMPANY: Blagg Engineering Inc

PO Box 87 ADDRESS:

Bloomfield, NM 87413

.WO#:

09083072

PAGE:

16 of 39

PO#:

PHONE:

FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

ECEIVED FOR LAB BY: DMB	DATE: (	08/20/2009 9:10		•	Page	e 16 of 3
Dibenz[a,h]anthracene	< 0.33 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-C\
Benzo[g,h,i]perylene	< 0.33 mg/Kg-dry	EPA 8270C		08/21/09 9:00	08/25/09	JJ6-CV
1,1-Dichloroethylene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
Methylene chloride	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
1,1-Dichloroethane	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
Chloroform	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-ÇV
1,1,1-Trichloroethane	< 0.040 mg/Kg-dry	EPA 8260B	•	08/20/09 9:53	08/20/09	DN-CV
Carbon tetrachloride	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	. 08/20/09	DN-C\
Benzene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
1,2-Dichloroethane	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-C\
Trichloroethylene	< 0.040 mg/Kg-dry	EPA 8260B	•	08/20/09 9:53	08/20/09	DN-C\
Toluene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	· DN-C\
1,1,2-Trichloroethane	< 0.040 mg/Kg-dry	EPA 8260B	_	08/20/09 9 53	08/20/09	DN-C\
Tetrachloroethylene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-C\
Ethylene dibromide	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-C\
Ethylbenzene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-C\
m,p-Xylene	< 0.040 mg/Kg-dry	EPA 8260B	•	08/20/09 9:53	08/20/09	DN-C\
o-Xylene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-C\
1,1,2,2-Tetrachloroethane	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-C\
MPLE: #5	La	b ID: 09083072-005E	Grab			
SAMPLED BY: Jeff Blagg	Sample 1	ime: 08/17/2009 10:10	Dag			
<u>Test</u>	Result	<u>Method</u>	Reg Limit	Analysis Start	Analysis End	Analyst
Uranium	< 239.5 µg/Kg	EPA 200.8	30	08/31/09 9:00	09/03/09	JRA-C
Uranium	< 162.8 pCi/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-C\

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				,	
MANAGER	·	Cli Mel.	DATE:	9/11/2009	

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

17 of 39

PO#:

PHONE:

FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB	DATE: (	08/20/2009 9:10			Pag	e 17 of 39
SAMPLE: #6	La	ab ID: 09083072-006A	Grab			
SAMPLED BY: Jeff Blagg	Sample 7	Time: 08/17/2009 10:25				
Test	Result	Method	<u>Req</u> Limit	Analysis Start	Analysis End	Analyst *
Mercury	< 0.182 mg/Kg-dry	EPA 7471A		08/26/09 9:00	08/27/09	KW-CV
Arsenic	< 5.16 mg/Kg-dry	· EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Barium	104 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	-RMD-CV
Cadmium	< 0.207 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Chromium	6.70 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Copper	5.02 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Iron	8960 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Lead	5.14 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Manganese	221 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/28/09	RMD-CV
Selenium	< 8.26 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Silver	< 1.45 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Zinc	20.2 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
SAMPLE: #6	La	b ID: 09083072-006B	Grab	Walter State of the State of th		
\$AMPLED BY: Jeff Blagg	Sample 1	Time: 08/17/2009 10:25				
T4	Danuth	Maked	<u>Reg</u> Limit	Amelyain Chart	Analysis End	Analyst *
<u>Test</u> pH	Result 8.10 @ 23.1°C	Method EPA 9045D	Fillin	Analysis Start '08/25/09 10:30	08/25/09	TLB-CV
Fluoride	< 10.4 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Chloride	31.7 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Nitrate	< 10.4 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Sulfate	< 26.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Cyanide, Total	< 0.2 mg/Kg-dry	EPA 9010C		09/10/09 9:15	09/10/09	LNP-CV
Total Phenois	< 0.96 mg/Kg-dry	EPA 420.4		08/25/09 12:05	08/25/09	SKK-CV
Percent Moisture	4.1 %	SM2540G		08/21/09 15:35	08/24/09	DMB-CV
Total Solids	959000 mg/Kg	SM2540G		08/21/09 15:35	08/24/09	DMB-CV

### **REMARKS:**

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MANAGER	cli meli		DATE:	9/11/2009
IVIMINAULIN	Court Conti	•	DATE.	J/11/200J

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

18 of 39

PO#:

PHONE:

(505) 632-1199

**TEST REPORT** 

PWS ID#

FAX:

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB

DATE: 08/20/2009 9:10

Page 18 of 39

					0.	10 01 5 7
SAMPLE: #6		Lab ID: 09083072-006C	Grab			
SAMPLED BY: Jeff Blagg	Sample	e Time: 08/17/2009 10:25	_			•
Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
Diesel Range Organics	< 26 mg/Kq-dry	API-PHC 8015MOD	<u> </u>	08/27/09 9:00	08/28/09	ASC-CV
Gasoline Range Organics	< 1.04 mg/Kg-dry	API-GRO 8015MOD		08/27/09 14:00	08/28/09	ASC-CV
SAMPLE: #6		Lab ID: 09083072-006D	Grab			-
SAMPLED BY: Jeff Blagg	Sample	e Time: 08/17/2009 10:25		-		
Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
Arodor 1016	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1221	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1232	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1242	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1248	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-ÇV
Aroclor 1254	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Arodor 1260	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1262	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Araclar 1268	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Naphthalene	< 0.34 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
2-Methylnaphthalene	< 0.34 mg/Kg-dry	EPA 8270C		08/28/09 9.00	09/01/09	JJ6-CV
1-Methylnaphthalene	< 0.34 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Acenaphthylene	< 0.34 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Acenaphthene	< 0.34 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
·Fluorene	< 0.34 mg/Kg-dry	Q EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Phenanthrene	< 0.34 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Anthracene	< 0.34 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Fluoranthene	< 0.34 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Pyrene	< 0.34 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
• •	* * -					

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MANAGER	Clim	e di	•	DATE:	9/11/2009

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4777 Saucon Creek Road Center Valley, PA 18034

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09083072

PAGE:

19 of 39

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**TEST REPORT** 

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FAX:

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB	DATE: 0	8/20/2009 9:10		Pag	e 19 of 39
Benzo[a]anthracene	< 0.34 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Сһгуѕепе	< 0.34 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[b]fluoranthene .	< 0.34 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo(k)fluoranthene	< 0.34 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[a]pyrene	< 0.34 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Indeno[1,2,3-cd]pyrene	< 0.34 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Dibenz[a,h]anthracene	< 0.34 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[g,h,i]perylene	< 0.34 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
1,1-Dichloroethylene	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Chloroform	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,1-Trichtoroethane	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Benzene	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Trichloroethylene	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Toluene	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Tetrachloroethylene	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Ethylene dibromide	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
m,p-Xylene	< 0.042 mg/Kg-dry	EPA 8260B 🗼	08/20/09 9:53	08/20/09	DN-CV
o-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
		·			

### REMARKS:

- \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range Ł
- Due to matrix effects, not all quality control parameters met acceptance criteria

MANAGER	climet.	DAT	E: 9/11/2009	

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

. SEND DATA TO:

NAME: Jeff Blagg

COMPANY: Blagg Engineering Inc.

ADDRESS: PO Box 87

Dis---E-14 NA

Bloomfield, NM 87413

WO#:

09083072

PAGE:

20 of 39

PO#:

PHONE:

(505) 632-1199

**TEST REPORT** 

PWS ID#

FAX:

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB	DATE: 08/20/2009 9:10				Page 20 of 39		
SAMPLE: #6 SAMPLED BY: Jeff Blagg		ib ID: 09083072-006E Time: 08/17/2009 10:25	Grab		,	· · · · · ·	
Gravit LED D1. Jen Diagg	, Sample i	Title: 00/1//2009 10.25	Reg				
<u>Test</u>	Result	<u>Method</u>	Limit	Analysis Start	Analysis End	Analyst *	
Uranium	524.0 μg/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV	
Uranium	351.1 pCi/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV	
SAMPLE: #7	La	b ID: 09083072-007A	Grab				
SAMPLED BY: Jeff Blagg	Sample 7	ime: 08/17/2009 10:40					
Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *	
Mercury	< 0.133 mg/Kg-dry	EPA 7471A		08/26/09 9:00	08/27/09	KW-CV	
Arsenic	< 4.74 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Barium	114 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Cadmium	< 0.190 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Chromium	5.95 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Copper	5.11 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Iron	8050 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Lead	4.74 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Manganese	189 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/28/09	RMD-CV	
Selenium	< 7.59 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Silver	< 1.33 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Zinc	20.1 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
SAMPLE: #7	La	ь ID: 09083072-007В	Grab				
SAMPLED BY: Jeff Blagg	Sample T	ime: 08/17/2009 10:40					
Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *	
pH	7.72 @ 23.2°C	EPA 9045D		08/25/09 10:30	08/25/09	TLB-CV	
Fluoride	< 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV	
Chloride	< 25.1 mg/Kg-dry	EPA 300.0		Ó8/20/09 15:49	08/21/09	LNP-CV	

### REMARKS:

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- L Value above calibration range but within annually verified linear range
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MANAGER	cli Meli	г	OATE:	9/11/2009
MANAGER	Contium.		ノハ I に	3/11/2007

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS: PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

21 of 39

PO#:

PHONE:

(505) 632-1199

**TEST REPORT** 

PWS ID#

FAX:

Industrial Ecosystems New Land Fa	arm					<u> </u>	
RECEIVED FOR LAB BY. DMB DATE: 08/20/2009 9:10					Page 21 of 39		
Nitrate	< 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV	
Sulfate	< 25.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV	
Cyanide, Total	< 0:2 mg/Kg-dry	EPA 9010C		09/10/09 9:15	09/10/09	LNP-CV	
Total Phenois	< 0.97 mg/Kg-dry	EPA 420.4		08/25/09 12:05	08/25/09	SKK-CV	
Percent Moisture	0.5 %	SM2540G		08/21/09 15:35	08/24/09	DMB-CV	
Total Solids	995000 mg/Kg	SM2540G		08/21/09 15:35	08/24/09	DMB-CV	
SAMPLE: #7		Lab ID: 09083072-007C	Grab				
SAMPLED BY: Jeff Blagg	Samp	le Time: 08/17/2009 10:40	_				
Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *	
Diesel Range Organics	< 25 mg/Kg-dry	API-PHC 8015MOD	<u> </u>	08/27/09 9:00	08/28/09	ASC-CV	
Gasoline Range Organics	< 1.01 mg/Kg-dry	API-GRO 8015MOD		08/27/09 14:00	08/28/09	ASC-CV	
SAMPLE: #7		Lab ID: 09083072-007D	Grab				
SAMPLED BY: Jeff Blagg	Samp	le Time: 08/17/2009 10:40					
	··· <b>F</b>		Reg		<del></del> .		
<u>Test</u>	Result	<u>Method</u>	Limit	Analysis Start	Arialysis End	Analyst *	
Aroclor 1016	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV	
Aroclor 1221	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV	
Aroclor 1232	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV	
Aroclor 1242	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV	
Aroclor 1248	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV	
Aroclor 1254	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV	
Aroclor 1260	< 0.03 mg/Kg-dry,	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV	
Aroclor 1262	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-ÇV	
Aroclor 1268	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV	
Naphthalene	< 0.33 mg/Kg-dry	· EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV	
2-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV	
1-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV	
Acenaphthylene	.< 0.33 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV	
•	•						

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- Due to matrix effects, not all quality control parameters met acceptance criteria

MANAGER	clamel	DATE:	9/11/2009	•
MUNITORIN	C C C C C C C C C C C C C C C C C C C			

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

22 of 39

PO#:

PHONE: FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB

RECEIVED FOR LAB BY: DMB	DATE:	08/2	0/2009 9:10		Page	e 22 of 39
Acenaphthene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Fluorene	< 0.33 mg/Kg-dry	Q	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Phenanthrene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Anthracene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Fluoranthene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Pyrene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[a]anthracene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Chrysene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[b]fluoranthene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[k]fluoranthene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[a]pyrene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Indeno[1,2,3-cd]pyrene	< 0.33 mg/Kg-dry .		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Dibenz[a,h]anthracene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[g,h,i]perylene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
1,1-Dichloroethylene	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Methylene chloride	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1-Dichloroethane	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Chloroform	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,1-Trichloroethane	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Carbon tetrachloride	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Benzene	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,2-Dichloroethane	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9.53	08/20/09	DN-CV
Trichloroethylene	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Toluene	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,2-Trichloroethane	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Tetrachloroethylene	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Ethylene dibromide	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Ethylbenzene	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
•						

### **REMARKS:**

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- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

		•	
MANAGER	Climel	. DATE:	9/11/2009
1711 11 11 10 1001 1			

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc.

ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

23 of 39

PO#:

PHONE: FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

08/26/09 10:30

08/26/09 10:30

08/26/09 10:30

08/26/09 10:30

08/26/09 10:30

08/26/09 10:30

08/27/09

08/27/09

08/27/09

08/27/09

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08/27/09

RMD-CV

RMD-CV

RMD-CV

RMD-CV

RMD-CV

RMD-CV

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB	DATE:	08/20/2009 9:10			Page 23 of 39		
m,p-Xylene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV	
o-Xylene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV	
1,1,2,2-Tetrachloroethane	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV	
SAMPLE: #7		Lab ID: 09083072-007E	Grab				
SAMPLED BY: Jeff Blagg	Samp	le Time: 08/17/2009 10:40				,	
. Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *	
Uranium	372.5 µg/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV	
Uranium	249.6 pCi/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV	
SAMPLE: #8	~ '	Lab ID: 09083072-008A	Grab	,			
SAMPLED BY: Jeff Blagg	Sampi	le Time: 08/17/2009 10:55					
Test	, Dec. 18	Mathad	Reg	Ah-i- St	Annhain Fad	Ameliant t	
Test	Result	Method	<u>Limit</u>	Analysis Start 08/26/09 9:00	Analysis End 08/27/09	Analyst *	
Mercury	< 0.118 mg/Kg-dry	EPA 7471A				KW-CV	
Arsenic	< 4.78 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Barium	73.8 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Cadmium	< 0.191 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Chromium	4.72 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-C\	
Copper	5.05 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-C\	

**EPA 6010B** 

**EPA 6010B** 

**EPA 6010B** 

**EPA 6010B** 

**EPA 6010B** 

**EPA 6010B** 

### REMARKS.

Iron

Lead

Manganese

Selenium

Silver

Zinc

The above test procedures meet all the requirements of NELAC and relate only to these samples.

6220 mg/Kg-dry

4.68 mg/Kg-dry

152 mg/Kg-dry

< 7.64 mg/Kg-dry

< 1.34 mg/Kg-dry

19.7 mg/Kg-dry

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	* / * * *				
MANAGER	Cli Mel.	<b>.</b>	DATE:	9/11/2009	

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME.

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

24 of 39

PO#:

PHONE:

FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB	DATE:	08/20/2009 9:10			Page	24 of 39
SAMPLE: #8 SAMPLED BY: Jeff Blagg		Lab ID: 09083072-008B Time: 08/17/2009 10:55	Grab			
Test pH Fluoride Chloride Nitrate Sulfate Cyanide, Total Total Phenols Percent Moisture	Result 7.73 @ 23.9°C < 10.1 mg/Kg-dry 27.7 mg/Kg-dry < 10.1 mg/Kg-dry < 25.1 mg/Kg-dry < 0.2 mg/Kg-dry < 0.85 mg/Kg-dry 0.5 %	Method EPA 9045D EPA 300.0 EPA 300.0 EPA 300.0 EPA 9010C EPA 420.4 SM2540G	Reg Limit	Analysis Start 08/25/09 10:30 08/20/09 15:49 08/20/09 15:49 08/20/09 15:49 08/20/09 15:49 09/10/09 9:15 08/25/09 12:05 08/21/09 15:35	Analysis End 08/25/09 08/21/09 08/21/09 08/21/09 08/21/09 09/10/09 08/25/09 08/24/09	TLB-CV LNP-CV LNP-CV LNP-CV LNP-CV LNP-CV SKK-CV DMB-CV
Total Solids	995000 mg/Kg	SM2540G		08/21/09 15:35	08/24/09	DMB-CV
SAMPLE: #8  SAMPLED BY: Jeff Blagg  Test  Diesel Range Organics  Gasoline Range Organics		Lab ID: 09083072-008C e Time: 08/17/2009 10:55	Grab Reg Limit	Analysis Start : 08/27/09 9:00 08/27/09 14.00	Analysis End 08/28/09 08/28/09	Analyst * ASC-CV ASC-CV
SAMPLE: #8 SAMPLED BY: Jeff Blagg		Lab ID: 09083072-008D Time: 08/17/2009 10:55	Grab			
Test Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248 Aroclor 1254	Result < 0.03 mg/Kg-dry	Method EPA 8082 EPA 8082 EPA 8082 EPA 8082 EPA 8082	Reg. Limit	Analysis Start 08/31/09 9:00 08/31/09 9:00 08/31/09 9:00 08/31/09 9:00 08/31/09 9:00	Analysis End 09/01/09 09/01/09 09/01/09 09/01/09 09/01/09	Analyst * JJ6-CV JJ6-CV JJ6-CV JJ6-CV JJ6-CV JJ6-CV JJ6-CV

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	alon 1	•	
MANAGER	Cli Meli	DATE:	9/11/2009

4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

SEND DATA TO:

NAME: Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS: PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

25 of 39

PO#:

PHONE:

FAX:

(505) 632-1199

TEST REPORT

PWS ID#

Industrial Ecosystems New Land Farm

RECEIVED FOR LAR BY DIMB

RECEIVED FOR LAB BY: DMB	DATE	: (	08/20/2009 9:10	-	Pag	e 25 of 39
Arodor 1260	< 0.03 mg/Kg-dry		EPA 8082	08/31/09 9:00	09/01/09	JJ6-CV
Arodor 1262	< 0.03 mg/Kg-dry		EPA 8082	08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1268	< 0.03 mg/Kg-dry		EPA 8082	08/31/09 9:00	09/01/09	JJ6-CV
Naphthalene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
2-Methylnaphthalene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
1-Methylnaphthalene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Acenaphthylene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Acenaphthene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Fluorene	< 0.33 mg/Kg-dry	C	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Phenanthrene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Anthracene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Fluoranthene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Pyrene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[a]anthracene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Chrysene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[b]fluoranthene	< 0.33 mg/Kg-dry		EPA 8270C	- 08/28/09 9:00	09/01/09	JJ6-CV
Benzo[k]fluoranthene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[a]pyrene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Indeno[1,2,3-cd]pyrene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Dibenz[a,h]anthracene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[g,h,i]perylene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
1,1-Dichloroethylene	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Methylene chloride	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1-Dichloroethane	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Chloroform	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,1-Trichloroethane	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Carbon tetrachloride	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Benzene	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV

### **REMARKS:**

- \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

MANAGER		li Meli			DATE:	9/11/2009
---------	--	---------	--	--	-------	-----------

4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY:

Blagg Engineering Inc

ADDRESS: PO Box 87

Pleamfield N

Bloomfield, NM 87413

WO#:

09083072

PAGE:

26 of 39

PO#:

PHONE:

FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

08/26/09 10:30

08/26/09 10:30

08/26/09 10:30

08/26/09 10:30

08/27/09

08/27/09

08/27/09

08/27/09

RMD-CV

RMD-CV

RMD-CV

RMD-CV

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB

DATE: 08/20/2009 9:10

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7.202.722.707.40.207.207.		-0/20/2000 0:10			1 450 20 01 37		
1,2-Dichloroethane	· < 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV	
Trichloroethylene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV	
Toluene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV	
1,1,2-Trichloroethane	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV	
Tetrachloroethylene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV	
Ethylene dibromide	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV	
Ethylbenzene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV	
m,p-Xylene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV	
o-Xylene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV	
1,1,2,2-Tetrachloroethane	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV	
SAMPLE: #8	La	b ID: 09083072-008E	Grab				
SAMPLED BY: Jeff Blagg	Sample 1	ime: 08/17/2009 10:55					
	65 N	, A.G., 41, 1	Reg	Amalonia Otani	Analysis End	A = = b - = 4 *	
<u>Test</u>	Result	<u>Method</u>	<u>Limit</u>	Analysis Start	Analysis End		
Uranium	318.4 µg/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV	
Uranium	213.3 pCi/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV	
SAMPLE: #9	La	b ID: 09083072-009A	Grab,	٠			
SAMPLED BY: Jeff Blagg	Sample 1	ime: 08/17/2009 11:10					
<b>.</b>	<b>9</b>	B4-46 - 4	Reg	Amelicaio Chort	Azabiaia End	Analusi t	
<u>Test</u>	Result	Method	<u>Limit</u>	Analysis Start	Analysis End	Analyst *	
Mercury	< 0.196 mg/Kg-dry	EPA 7471A		08/26/09 9:00	08/27/09	KW-CV	
Arsenic	< 4.87 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Barium .	74.3 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Cadmium	< 0.195 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
Chromium	4.98 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV	
					00/07/00	m) (n o) (	

### REMARKS:

Copper

Iron

Lead

Manganese

The above test procedures meet all the requirements of NELAC and relate only to these samples.

4.92 mg/Kg-dry

7610 mg/Kg-dry

4.95 mg/Kg-dry

143 mg/Kg-dry

- \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Q Due to matrix effects, not all quality control parameters met acceptance criteria \*

MANAGER	Cli Meli	•	DATE:	9/11/2009
MANAGEN				

**EPA 6010B** 

**EPA 6010B** 

**EPA 6010B** 

**EPA 6010B** 

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

Selenium

Silver

Zinc

NAME:

Jeff Blagg

COMPANY:

Blagg Engineering Inc

ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

27 of 39

PO#:

PHONE: FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

08/26/09 10:30

08/26/09 10:30

08/26/09 10:30

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB

DATE: 08/20/2009 9:10

EPA 6010B

**EPA 6010B** 

**EPA 6010B** 

< 7.80 mg/Kg-dry

< 1.36 mg/Kg-dry

17.9 mg/Kg-dry

Page 27 of 39

RMD-CV

RMD-CV

RMD-CV

08/27/09

08/27/09

08/27/09

SAMPLE: #9	La	b ID: 09083072-009B	Grab			
SAMPLED BY: Jeff Blagg	Sample Time: 08/17/2009 11:10				•	
Tool	Dec. 11	12 U 3	Reg	A 1 -1 - 01 - 1	A	A 1 1 A
<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>Limit</u>	Analysis Start	Analysis End	Analyst *
рH	8.21 @ 23.0°C	EPA 9045D	-	08/25/09 10:30	08/25/09	TLB-CV
Fluoride '	< 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Chloride	27.4 mg/Kg-dry	EPA 300.0		08/20709 15:49	08/21/09	LNP-CV
Nitrate	. < 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Sulfate	< 25.2 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Cyanide, Total	< 0.2 mg/Kg-dry	EPA 9010C		09/10/09 9:15	09/10/09	LNP-CV.
Total Phenois	< 0.94 mg/Kg-dry	EPA 420.4		08/25/09 12:05	08/25/09	SKK-CV
Percent Moisture	0.8 %	SM2540G		08/21/09 15:35	08/24/09	DMB-CV
Total Solids	992000 mg/Kg	SM2540G		08/21/09 15:35	08/24/09	DMB-CV

SAMPLE: #9

SAMPLED BY: Jeff Blagg

Lab ID: 09083072-009C

Grab

Grab

Sample Time: 08/17/2009 11:10

	•		Reg :			
<u>Test</u>	Result	Method	Limit	Analysis Start	Analysis End	Analyst *
Diesel Range Organics	< 25 mg/Kg-dry	API-PHC 8015MOD		08/27/09 9.00	08/28/09	ASC-CV
Gasoline Range Organics	< 1.01 mg/Kg-dry	API-GRO 8015MOD		08/27/09 14:00	08/28/09	ASC-CV

SAMPLE: #9

Lab ID: 09083072-009D

SAMPLED BY: Jeff Blagg	٠	Sample Time: 08/17/2009 11:10			:10				
	*					<u>Reg</u>			
<u>Test</u>		<u>Result</u>	*	Method		<u>Limit</u>	Analysis Start	Analysis End	Anaiyst *
Aroclor 1016		< 0.03 mg/Kg-dry		EPA 8082			08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1221	*	< 0.03 mg/Kg-dry		EPA 8082			08/31/09 9:00	09/01/09	JJ6-CV
Araclar 1232	•	< 0 03 mg/Kg-dry	,	EPA 8082			08/31/09 9:00	09/01/09	JJ6-CV

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JANAGER	climet	DATE:	9/11/2009	
MAINAGER	 			

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS:

PO Box 87

Bloomfield, NM 87413

PAGE:

WO#:

28 of 39

09083072

PO#:

PHONE:

FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

EIVED FOR LAB BY: DMB	R LAB BY: DMB DATE: 08/20/2009 9:10			Pag	e 28 of 3
Aroclor 1242	< 0.03 mg/Kg-dry	EPA 8082	08/31/09 9:00	09/01/09	JJ6-C\
Aroclor 1248	< 0.03 mg/Kg-dry	EPA 8082	08/31/09 9:00	09/01/09	JJ6-C\
Aroclor 1254	< 0.03 mg/Kg-dry	EPA 8082	08/31/09 9:00	09/01/09	JJ6-C\
Arocior 1260	< 0.03 mg/Kg-dry	EPA 8082	08/31/09 9:00	09/01/09	JJ6-C\
Aroclor 1262	< 0.03 mg/Kg-dry	EPA 8082	08/31/09 9:00	09/01/09	JJ6-C\
Arodor 1268	< 0.03 mg/Kg-dry	EPA 8082	08/31/09 9:00	09/01/09	JJ6-C\
Naphthalene	< 0 33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-¢\
2-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C\
1-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C\
Acenaphthylene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C\
Acenaphthene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C'
Fluorene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C1
Phenanthrene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C\
Anthracene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C\
Fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	116-C/
Pyrene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C\
Benzo[a]anthracene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C\
Chrysene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C\
Benzo[b]fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C\
Benzo[k]fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CY
Benzo[a]pyrene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9.00	09/01/09	JJ6-C\
Indeno[1,2,3-cd]pyrene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C\
Dibenz[a,h]anthracene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C\
Benzo[g,h,i]perylene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C\
1,1-Dichloroethylene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-C\
Methylene chloride	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-C/
1,1-Dichloroethane	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-Ç\
Chloroform	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-C\

### REMARKS:

- \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

		•	
AANAOED	Cli Meli	DATE:	9/11/2009
MANAGER	Configure		

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc.

ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

29 of 39

PO#:

PHONE:

(505) 632-1199

**TEST REPORT** 

PWS ID#

FAX:

< 0.040 mg/Kg-dry < 0.040 mg/Kg-dry < 0.040 mg/Kg-dry < 0.040 mg/Kg-dry	EPA 8260B EPA 8260B EPA 8260B	<del></del>	08/20/09 9:53	Page 08/20/09	29 of 39
< 0.040 mg/Kg-dry < 0.040 mg/Kg-dry < 0.040 mg/Kg-dry	EPA 8260B			08/20/09	DN CV
< 0.040 mg/Kg-dry < 0.040 mg/Kg-dry			00/20/00 0/52		DN-CV
< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
• • •			08/20/09 9:53	08/20/09	DN-CV
	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
Lab ID: 09083072-009E		Grab			
Sample Til	me: 08/17/2009 11:10	П			
Result	Method		Analysis Start	Analysis End	Analyst *
396.7 µg/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV
265.8 pCi/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV
Lab	ID: 09083072-010A	Grab			
Sample Tir	me: 08/17/2009 11.25				
Result	Method		Analysis Start	Analysis End	Analyst *
	EPA 7471A		08/26/09 9:00	08/27/09	KW-CV
5 5 7	EPA 6010B		08/26/09 10:30	08/27/09	RMD-C\
			08/26/09 10:30	08/27/09	RMD-C\
<b>-</b>	EPA 6010B		08/26/09 10:30	08/27/09	RMD-C\
	EPA 6010B		08/26/09 10:30	08/27/09	RMD-C\
4.46 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-C\
	< 0.040 mg/Kg-dry	< 0.040 mg/Kg-dry < 0.09083072-009E Sample Time: 08/17/2009 11:10 <a href="#">Result</a> <a href="#">Method</a> 396.7 µg/Kg < 265.8 pCi/Kg <a href="#">EPA 200.8</a> <a href="#">Lab ID: 09083072-010A</a> Sample Time: 08/17/2009 11.25 <a href="#">Result</a> < 0.137 mg/Kg-dry < 4.86 mg/Kg-dry < 4.86 mg/Kg-dry < 64.3 mg/Kg-dry < 64.3 mg/Kg-dry < EPA 6010B < 4.48 mg/Kg-dry < EPA 6010B < 4.48 mg/Kg-dry < EPA 6010B < 64.48 mg/Kg-dry < EPA 6010B < 2.0195 mg/Kg-dry < EPA 6010B < 2.0106 < 2.0107 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 < 2.0108 </td <td>&lt; 0.040 mg/Kg-dry</td> <td>&lt; 0.040 mg/Kg-dry</td> EPA 8260B       08/20/09 9:53         < 0.040 mg/Kg-dry	< 0.040 mg/Kg-dry	< 0.040 mg/Kg-dry	<ul> <li>&lt; 0.040 mg/Kg-dry</li> <li>&lt; 0.040 mg/Kg-dry&lt;</li></ul>

### REMARKS:

- The above test procedures meet all the requirements of NELAC and relate only to these samples.

  \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

•				
MANAGER	Chi Meli		DATE:	9/11/2009
INVIANCEIV	V	 	 	

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS: PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

30 of 39

PO#:

PHONE: FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

DECEIVED FOR LAR BY: DMD

RECEIVED FOR LAB BY: DMB	DATE:	08/20/2009 9:10			Page	30 of 39
Iron	6690 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Lead	4.45 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Manganese	144 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Selenium	< 7.78 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Silver	< 1.36 mg/Kg-dry	· EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Zinc	18.2 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
SAMPLE: #10		Lab ID: 09083072-010B	Grab			
SAMPLED BY: Jeff Blagg	Sampl	e Time: 08/17/2009 11:25	_	•		
<u>Test</u>	Result	Method	<u>Req</u> <u>Limit</u>	Analýsis Start	Analysis End	Analyst *
pH	7.05 @ 22.9°C	EPA 9045D		08/25/09 10:30	08/25/09	TLB-CV
Fluoride	< 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Chloride	31.9 mg/Kg-dry	EPA 300.0 ~	•	08/20/09 15:49	08/21/09	LNP-CV
Nitrate	< 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Sulfate	< 25.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Cyanide, Total	< 0.2 mg/Kg-dry	EPA 9010C		09/10/09 9:15	09/10/09	LNP-CV
Total Phenois	1.6 mg/Kg-dry	EPA 420.4		08/25/09 12:05	08/25/09	SKK-CV
Percent Moisture	0.5 %	SM2540G		08/21/09 15:35	08/24/09	DMB-CV
Total Solids	995000 mg/Kg	SM2540G		08/21/09 15:35	08/24/09	DMB-CV
SAMPLE: #10	-	Lab ID: 09083072-010C	Grab			
SAMPLED BY: Jeff Blagg	Sample	e Time: 08/17/2009 11:25	Reg			
<u>Test</u>	Result	Method	Limit	Analysis Start	Analysis End	Analyst *
Diesel Range Organics	< 25 mg/Kg-dry	API-PHC 8015MOD		08/27/09 9:00	08/28/09	ASC-CV
Gasoline Range Organics	< 1.01 mg/Kg-dry	API-GRO 8015MOD		08/27/09 14:00	08/28/09	ASC-CV

### REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.

- \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

		_	•			
MANAGER	Cli	Meh		DATE:	9/11/2009	
		<u>'</u>				

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME: Jeff Blagg

COMPANY: Blagg Engineering Inc.

ADDRESS: PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

31 of 39

PO#:

PHONE: ·

(505) 632-1199

**TEST REPORT** 

PWS ID#

FAX:

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB

DATE: 08/20/2009 9:10

Page 31 of 39

SAMPLE: #10		Lab ID: 0	9083072-010D	Grab			
SAMPLED BY: Jeff Blagg	Samp	ole Time: 0	8/17/2009 11:25	_			
Test	Result		Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
Aroclor 1016	< 0.03 mg/Kg-dry		EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1221	< 0.03 mg/Kg-dry		EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1232	< 0.03 mg/Kg-dry		EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1242	< 0.03 mg/Kg-dry		EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1248	< 0.03 mg/Kg-dry		EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1254	< 0.03 mg/Kg-dry		EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1260	< 0.03 mg/Kg-dry		EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1262	< 0.03 mg/Kg-dry		EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1268	< 0.03 mg/Kg-dry		EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Naphthalene	< 0.33 mg/Kg-dry		EPA 8270C		08/28/09 9:00	09/01/09 .	JJ6-CV
2-Methylnaphthalene	< 0.33 mg/Kg-dry		EPA-8270C		08/28/09 9:00	09/01/09	JJ6-CV
1-Methylnaphthalene	< 0.33 mg/Kg-dry		EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Acenaphthylene	< 0.33 mg/Kg-dry		EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Acenaphthene	< 0.33 mg/Kg-dry		EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Fluorene	< 0.33 mg/Kg-dry	Q	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Phenanthrene	< 0.33 mg/Kg-dry		EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Anthracene `	< 0.33 mg/Kg-dry	•	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Fluoranthene	< 0.33 mg/Kg-dry		EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Pyrene	< 0.33 mg/Kg-dry		EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Benzo(a)anthracene	< 0.33 mg/Kg-dry		EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Chrysene	< 0.33 mg/Kg-dry		EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Benzo[b]fluoranthene	< 0.33 mg/Kg-dry		EPA 8270C	•	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[k]fluoranthene	< 0.33 mg/Kg-dry		EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Benzo[a]pyrene	' < 0.33 mg/Kg-dry		EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Indeno[1,2,3-cd]pyrene	< 0.33 mg/Kg-dry	•	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV

### REMARKS:

- \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

	•		
	at a company of the c		
	Cli Meli	DATE:	9/11/2009
MANAGER		DATE.	3/11/2007

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME: Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS: PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

32 of 39

PO#:

PHONE:

(505) 632-1199

TEST REPORT

PWS ID#

**Analysis Start** 

Ó8/31/09 9:00

08/31/09 9:00

FAX:

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB

DATE: 08/20/2009 9:10

Page 32 of 39

Analysis End Analyst \*

JRA-CV

JRA-CV

09/03/09

09/03/09

RECEIVED FOR LAB BT. DIVID	DATE: C	0/20/2003 3.10		1 45	C 32 Of 33
Dibenz[a,h]anthracene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[g,h,i]perylene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-C,V
1,1-Dichloroethylene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Methylene chloride	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1-Dichloroethane	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Chloroform	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,1-Trichloroethane	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Carbon tetrachloride	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Benzene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,2-Dichloroethane	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Trichloroethylene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Toluene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	. DN-CV
1,1,2-Trichloroethane	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Tetrachloroethylene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Ethylene dibromide	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9.53	08/20/09	DN-CV
Ethylbenzene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
m,p-Xylene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
o-Xylene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,2,2-Tetrachloroethane	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
AMPLE: #10	La	b ID: 09083072-010E Grab			
SAMPLED BY. Jeff Blagg	. Sample 1	īme: 08/17/2009 11:25			
		Reg			

Method

EPA 200.8

**EPA 200.8** 

### REMARKS:

**Test** 

Uranium

Uranium

The above test procedures meet all the requirements of NELAC and relate only to these samples. CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

Result-

381.9 µg/Kg

255.8 pCi/Kg

- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

9/11/2009 DATE:

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

33 of 39

PO#:

PHONE:

(505) 632-1199

**TEST REPORT** 

PWS ID#

FAX:

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB

DATE: 08/20/2009 9:10

Page 33 of 39

SAMPLE: #11	·	ab ID: 09083072-011A	Grab	•		
SAMPLED BY: Jeff Blagg	· Sample	Time: 08/17/2009 11:40	_			
Test	. Result	<u>Method</u>	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
Mercury	< 0.174 mg/Kg-dry	EPA 7471A		08/26/09 9:00	08/27/09	KW-CV
Arsenic	< 4.90 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Barium	104 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Cadmium	:< 0.196 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Chromium	6.97 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Copper	6.97 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
fron	9310 mg/Kg-dry	EPA 6010B	-	08/26/09 10:30	08/27/09	RMD-CV
Lead	5.27 mg/Kg-dry	EPA 6010B	•	08/26/09 10:30	08/27/09	RMD-CV
Manganese	231 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Selenium	< 7.85 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Silver	< 1.37 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Zinc	26.9 mg/Kg-dry	EPA 6010B	_	08/26/09 10:30	08/27/09	RMD-CV
SAMPLE: #11	L	ab ID: 09083072-011B	Grab			
SAMPLED BY: Jeff Blagg	Sample	Time: 08/17/2009 11 40		•		
<u>Test</u>	Result	<u>Method</u>	Reg Limit	Analysis Start	Analysis End	Analyst *
рН	7.71 @ 23.3°C	EPA 9045D		08/25/09 10:30	08/25/09	TLB-CV
Fluoride	< 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Chloride	< 25.3 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Nitrate.	< 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Sulfate	< 25.3 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Cyanide, Total	< 0.2 mg/Kg-dry	EPA 9010C		09/10/09 9:15	09/10/09	LNP-CV
Total Phenois	< 0.98 mg/Kg-dry	EPA 420.4		08/25/09 12:05	08/25/09	SKK-CV
Percent Moisture	1.2 %	SM2540G		08/21/09 15:35	08/24/09	DMB-CV
Total Solids	988000 mg/Kg	SM2540G	,	08/21/09 15:35	08/24/09	DMB-CV

### REMARKS:

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- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

MANAGER	· cl	i Meli	DAT	Ε:	9/11/2009
777 11 77 10 CL. (	<b>—</b> —				

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

SEND DATA TO:

NAME: Jeff Blagg

COMPANY: Blagg Engineering Inc.

ADDRESS: PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

34 of 39

PO#:

PHONE:

(505) 632-1199

**TEST REPORT** 

PWS ID#

08/28/09 9:00

08/28/09 9:00

08/28/09 9:00

08/28/09 9:00

09/01/09

09/01/09

09/01/09

09/01/09

JJ6-CV

JJ6-CV

JJ6-CV

JJ6-CV

FAX:

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB

DATE: 08/20/2009 9:10

Page 34 of 39

RECEIVED FOR LAB BY: DIVIB	DATE.	00/20/2009 9.10			rage	34 01 39
SAMPLE: #11		Lab ID: 09083072-011C	Grab		•	
SAMPLED BY: Jeff Blagg	Sample	e Time: 08/17/2009 11:40	_			
Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
. Diesel Range Organics	< 25 mg/Kg-dry	API-PHC 8015MOD		08/27/09 9:00	08/28/09	ASC-CV
Gasoline Range Organics	< 1.01 mg/Kg-dry	API-GRO 8015MOD		08/27/09 14:00	08/28/09	ASC-CV
SAMPLE: #11	,	Lab ID: 09083072-011D	Grab			
SAMPLED BY: Jeff Blagg	Sample	e Time: 08/17/2009 11:40				
Test	Result	Method	<u>Req</u> Limit	Analysis Start	Analysis End	Analyst *
Aroclor 1016	< 0.03 mg/Kg-drv	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1221	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1232	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Arodor 1242	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1248	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Arodor 1254	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1260	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1262	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1268	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Naphthalene	< 0.33 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
2-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
1-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Acenaphthylene	< 0.33 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Acenaphthene	< 0.33 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Fluorene	< 0.33 mg/Kg-dry	Q EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV

**EPA 8270C** 

**EPA 8270C** 

**EPA 8270C** 

**EPA 8270C** 

### **REMARKS:**

Phenanthrene

Anthracene

Fluoranthene

Pyrene

The above test procedures meet all the requirements of NELAC and relate only to these samples.

< 0.33 mg/Kg-dry

< 0.33 mg/Kg-dry

< 0.33 mg/Kg-dry

< 0.33 mg/Kg-dry

- CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

		•			
MANAGER	Cli Mel.		DATE:	9/11/2009	

. 4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

09083072

35 of 39

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS: PO Box 87

Bloomfield, NM 87413

PAGE:

PO#:

WO#:

PHONE:

FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB	DATE: 0	08/20/2009 9:10	•	Pag	e 35 of 39
Benzo[a]anthracene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Chrysene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[b]fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[k]fluoranthene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[a]pyrene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Indeno[1,2,3-cd]pyrene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Dibenz[a,h]anthracene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
Benzo[g,h,i]perylene	< 0.33 mg/Kg-dry	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV
1,1-Dichloroethylene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Methylene chloride	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1-Dichloroethane	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Chloroform	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,1-Trichloroethane	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Carbon tetrachloride	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Benzene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,2-Dichloroethane	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Trichloroethylene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Toluene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,2-Trichloroethane	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Tetrachloroethylene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Ethylene dibromide	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
Ethylbenzene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
m,p-Xylene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
o-Xylene	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV
1,1,2,2-Tetrachloroethane	< 0.040 mg/Kg-dry	EPA 8260B	08/20/09 9:53	08/20/09	DN-CV

### REMARKS:

- \* CV = Benchmark Analytics, Inc. Center Valley, PA, SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

MANAGER	Cli Meh.	DATE:	9/11/2009

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Phone: (610) 974-8100 Fax: (610) 974-8104 Work Order: 09083072

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

- ADDRESS: PO Box 87

Bloomfield, NM 87413.

WO#:

09083072

PAGE:

36 of 39

PO#:

PHONE: FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB	DATE: 0	8/20/2009 9:10			Page	36 of 39
SAMPLE: #11		b ID: 09083072-011E	Grab			
SAMPLED BY: Jeff Blagg	. Sample I	ime: 08/17/2009 11:40	Reg			
<u>Test</u>	Result	Method	Limit	Analysis Start	Analysis End	Analyst *
Uranium	402.4 µg/Kg	EPA 200.8	•	08/31/09 9:00	09/03/09	JRA-CV
Uranium	269.6 pCi/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV
SAMPLE: #12	La	b ID: 09083072-012A	Grab			
SAMPLED BY: Jeff Blagg	Sample 1	ime: 08/17/2009 11:55	_	•		
Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
Mercury	< 0.149 mg/Kg-dry	EPA 7471A	-	08/26/09 9:00	08/27/09	KW-CV
Arsenic	< 4.90 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Barium	69.5 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
`Cadmium	< 0.196 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Chromium	3.89 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Copper	3.76 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Iron	5770 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Lead	3.68 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Manganese	113 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Selenium	< 7.83 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Silver	< 1.37 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
Zinc	16.3 mg/Kg-dry	EPA 6010B		08/26/09 10:30	08/27/09	RMD-CV
SAMPLE: #12	La	b ID: 09083072-012B	Grab		,	
SAMPLED BY: Jeff Blagg	Sample T	ime: 08/17/2009 11:55	_			
Test	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
<u>Test</u> pH	7.77 @ 23.3°C	EPA 9045D	<u> </u>	08/25/09 10:30	08/25/09	TLB-CV
Fluoride	< 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49		LNP-CV
	* * *					LNP-CV
Chloride	< 25.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	

### **REMARKS:**

- \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

MANAGER	Cli Mel	DATE:	9/11/2009

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

Work Order: 09083072

Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME: Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS: PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

37 of 39

PO#:

PHONE:

(505) 632-1199

**TEST REPORT** 

PWS ID#

FAX:

Industrial Ecosystems New Land F					_	
RECEIVED FOR LAB BY: DMB	DATE:	08/20/2009 9:10			Page	37 of 39
Nitrate	< 10.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Sulfate	< 25.1 mg/Kg-dry	EPA 300.0		08/20/09 15:49	08/21/09	LNP-CV
Cyanide, Total	< 0.2 mg/Kg-dry	EPA 9010C		09/10/09 9:15	09/10/09	LNP-CV
Total Phenols	< 0 89 mg/Kg-dry	EPA 420.4		08/25/09 12:05	08/25/09	SKK-CV
Percent Moisture	0.5 %	SM2540G		08/21/09 15:35	08/24/09	DMB-C\
Total Solids	995000 mg/Kg	SM2540G	•	08/21/09 15:35	08/24/09	DMB-C\
SAMPLE: #12		Lab ID: 09083072-012C	Grab			
SAMPLED BY: Jeff Blagg	Sample	e Time: 08/17/2009 11:55	_			
<u>Test</u>	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
Diesel Range Organics	< 25 mg/Kg-dry	API-PHC 8015MOD	•	08/27/09 9:00	08/28/09	ASC-CV
Gasoline Range Organics	< 1.01 mg/Kg-dry	API-GRO 8015MOD		08/27/09 14:00	08/28/09	ASC-CV
SAMPLE: #12		Lab ID: 09083072-012D	Grab			
SAMPLED BY: Jeff Blagg	Sample	Time: 08/17/2009 11:55				
Test ·	Result	Method	<u>Reg</u> Limit	Analysis Start	Analysis End	Analyst *
Arodor 1016	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Arodor 1221	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1232	< 0.03 mg/Kg-dry	EPA 8082	•	08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1242	< 0.03 mg/Kg-dry .	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Arodor 1248	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Arodor 1254	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1260	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Aroclor 1262	< 0.03 mg/Kg-dry	EPA 8082		08/31/09 9:00	09/01/09	JJ6-CV
Araclar 1268	< 0 03 mg/Kg-dry	EPA 8082	,	08/31/09 9:00	09/01/09	JJ6-CV
Naphthalene	< 0 33 mg/Kg-dry	EPA 8270C	v	08/28/09 9:00	09/01/09	JJ6-CV
2-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
1-Methylnaphthalene	< 0.33 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV
Acenaphthylene	< 0.33 mg/Kg-dry	EPA 8270C		08/28/09 9:00	09/01/09	JJ6-CV

### REMARKS:

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- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

	0/. 00/		
MANAGER	Cli Meli	DATE:	9/11/2009

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(505) 632-1199

Industrial Ecosystems New Land Farm

Work Order: 09083072

09083072

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RECEIVED FOR LAB BY: DMB	ED FOR LAB BY: DMB DATE: 08/20/2009 9:10				Page 38 of 39				
Асепарителе	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV			
Fluorene	< 0.33 mg/Kg-dry	Q	EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV			
Phenanthrene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV			
Anthracene '	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV			
Fluoranthene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV			
Pyrene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV			
Benzo[a]anthracene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV			
Chrysene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV			
Benzo[b]fluoranthene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV			
Benzo[k]fluoranthene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV			
Benzo[a]pyrene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV			
Indeno[1,2,3-cd]pyrene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV			
Dibenz[a,h]anthracene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	JJ6-CV			
Benzo[g,h,i]perylene	< 0.33 mg/Kg-dry		EPA 8270C	08/28/09 9:00	09/01/09	116-CV			
1,1-Dichloroethylene	< 0.040 mg/Kg-dry		EPÅ 8260B	08/20/09 9:53	08/20/09	DN-CV			
Methylene chloride	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV			
1,1-Dichloroethane	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV ·			
Chloroform	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV			
1,1,1-Trichloroethane	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV			
Carbon tetrachloride	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV			
Benzene	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV			
1,2-Dichloroethane	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV			
Trichloroethylene	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV			
Toluene	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV			
1,1,2-Trichloroethane	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV			
Tetrachloroethylene	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV			
Ethylene dibromide	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV			
Ethylbenzene	< 0.040 mg/Kg-dry		EPA 8260B	08/20/09 9:53	08/20/09	DN-CV			

### **REMARKS**:

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- Value above calibration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

			*
MANAGER	Cli Meli	DATE:	9/11/2009

## Benchmark Analytics, Inc.

4777 Saucon Creek Road Center Valley, PA 18034

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Phone: (610) 974-8100 Fax: (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc.

ADDRESS:

PO Box 87

Bloomfield, NM 87413

/ WO#:

09083072

PAGE:

39 of 39

PO#:

PHONE:

FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB	DATE	: 08/20/2009 9:10			Page	39 of 39
m,p-Xylene	< 0:040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
o-Xylene	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
1,1,2,2-Tetrachloroethane	< 0.040 mg/Kg-dry	EPA 8260B		08/20/09 9:53	08/20/09	DN-CV
SAMPLE: #12		Lab ID: 09083072-012E	Grab			
SAMPLED BY: Jeff Blagg	: Samp	le Time: 08/17/2009 11:55		•		ı
,	<i>*</i> .		Reg	,		
<u>Test</u>	Result	Method	<u>Limit</u>	Analysis Start	Analysis End	Analyst *
Uranium	463.9 µg/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV
Uranium	310.8 pCi/Kg	EPA 200.8		08/31/09 9:00	09/03/09	JRA-CV

### **REMARKS:**

- \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above callbration range but within annually verified linear range
- Due to matrix effects, not all quality control parameters met acceptance criteria

MANAGER	Climel	DATE:	9/11/2009
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### BENCHMARK ANALYTICS, INC. 4777 Saucon Creek Road Center Valley, PA 18034-9004

Work Order: 09083072

09083072

1 of 3

PHONE (610) 974-8100 FAX (610) 974-8104

SEND DATA TO:

NAME: Jeff Blagg

COMPANY: Blagg Engineering Inc

PO Box 87 ADDRESS:

Bloomfield, NM 87413

WO#: PAGE:

PO#:

PWS ID#

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(505) 632-1199

TEST REPORT

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB DATE: 08/20/2009 9:10 Page 1 of 3

RECEIVED FOR LAB B1.	סואום			1 E. U0/2	20/2009 9.10		rage 1	013
SAMPLE: #1 SAMPLED BY: Jeff Blagg	]	Sa	ample Tim		DD: 09083072-001E	Grab		
<u>Test</u>	Result	Uncert.	MDA	<u>Units</u>	<u>Method</u>	<u>MCL</u>	Analysis Start Analysis End Analy	/st *
Radium-226	155.2	± 13.65	74.55	pCi/Kg	EPA 903.0		08/22/09 14:25 09/04/09 BH-0	CV
Radium-228	787.9	± 429.7	197.5	pCi/Kg	EPA 904.0		08/28/09 8:30 09/01/09 AVB-	·CV
SAMPLE: #2 SAMPLED BY: Jeff Blagg	l	Sa	ample Tim		ID: 09083072-002E 009 9:25	Grab		
<u>Test</u>	Result	Uncert.	MDA	<u>Units</u>	Method	MCL	Analysis Start Analysis End Analy	st *
Radium-226	150.9	± 12.53	73.16	pCl/Kg	EPA 903.0		08/22/09 14:25 09/04/09 BH-0	CV
Radium-228	724.3	± 397.2	197.6	pCi/Kg	EPA 904.0		08/28/09 8:30 09/01/09 AVB-	٠Ç٧
SAMPLE: #3				Lab	ID: 09083072-003E	Grab		
SAMPLED BY: Jeff Blagg	3	Sa	ample Tim	e 08/17/20	009 9:40			
<u>Test</u>	Result	Uncert.	<u>MDA</u>	<u>Units</u>	Method	<u>MCL</u>	Analysis Start Analysis End Analysis	st *
Radium-226	182.2	± 14.76	74.55	pCi/Kg	EPA 903.0		08/22/09 14:25 09/04/09 BH-0	CV
Radium-228	629.1	± 173.8	197.5	pCi/Kg	EPA 904.0		08/28/09 8:30 09/01/09 AVB-	CV
SAMPLE: #4				Lab	ID: 09083072-004E	Grab		
SAMPLED BY: Jeff Blagg		Sa	ample Time	e 08/17/20	009 9:55			
<u>Test</u>	Result	Uncert.	MDA	<u>Units</u>	Method	MCL	Analysis Start Analysis End Analysis	<u>st *</u>
Radium-226	177.9	± 14.24	76.82	pCi/Kg	EPA 903.0		08/22/09 14:25 09/04/09 BH-0	CV
Radium-228	7.22	± 144.3	276.1	pCi/Kg	EPA 904.0		09/02/09 8:20 09/09/09 AVB-	CV
SAMPLE: #5					ID: 09083072-005E	Grab		
SAMPLED BY: Jeff Blagg		Sa	ample Time	e 08/17/20	009 10:10			
<u>Test</u>	Result	Uncert.	<u>MDA</u>	<u>Units</u>	Method	<u>MCL</u>	Analysis Start Analysis End Analysis	<u>st *</u>
Radium-226	60.48	± 8.18	70.48	pCi/Kg	EPA 903.0		08/22/09 14:25 09/04/09 BH-C	CV
Radium-228	-95.71	± 123.0	278	pCi/Kg	EPA 904.0		09/02/09 8:20 09/09/09 AVB-	CV

### REMARKS:

* C/	/ = Benchmark Analýtics, Inc.	Center Valley, PA;	SA = Benchmark Analytics, Inc.	Sayre, PA
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MANAOED	climet	DATE	9/11/2009	
MANAGER	Complex.	DATE:	9/11/2009	

### BENCHMARK ANALYTICS, INC. 4777 Saucon Creek Road Center Valley, PA 18034-9004

Work Order: 09083072

PHONE (610) 974-8100 FAX (610) 974-8104

SEND DATA TO:

NAME:

Jeff Blagg

COMPANY: Blagg Engineering Inc

ADDRESS:

PO Box 87

Bloomfield, NM 87413

WO#:

09083072

PAGE:

2 of 3

PO#:

NA/0 ID4

PHONE: FAX:

(505) 632-1199

**TEST REPORT** 

PWS ID#

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY: DMB

DATE: 08/20/2009 9:10

Page 2 of 3

RECEIVED FOR LAB BY:	DMB		DA	TE: 08/20/2	2009 9:10			P	age 2 of 3
SAMPLE: #6 SAMPLED BY: Jeff Blagg		S	ample Tim	Lab iD: e 08/17/2009	09083072-006E 10:25	Grab			
<u>Test</u>	Result	Uncert.	MDA	<u>Units</u>	Method	MCL	Analysis Start A	nalysis Enc	1 Analyst *
Radium-226	108.6	± 11.13	71.97	pCi/Kg	EPA 903.0			09/04/09	BH-CV
Radium-228	-67 24	± 141.9	275.9	pCi/Kg	EPA 904.0		09/02/09 8:20	09/09/09	AVB-CV
SAMPLE: #7				Lab ID:	09083072-007E	Grab		~	
SAMPLED BY: Jeff Blagg	3 ,	Sa	ample Tim	e 08/17/2009	10:40				
Test	Result	Uncert.	MDA	<u>Units</u>	<u>Method</u>	MCL	Analysis Start A	nalysis End	Analyst *
Radium-226	103.4	± 10.86	74.11	pCi/Kg	EPA 903.0		08/22/09 14:25	09/04/09	BH-CV
Radium-228	274.8	± 243.0	272.7	pCl/Kg	EPA 904.0	•	09/02/09 8:20	09/09/09	AVB-CV
SAMPLE: #8				Lab ID:	09083072-008E	Grab			
SAMPLED BY: Jeff Blagg	3	Sa	ample Tim	e 08/17/2009 <sup>-</sup>	10:55				
<u>Test</u>	Result	Uncert.	MDA	<u>Units</u>	Method	<u>MCL</u>	Analysis Start A	nalysis End	Analyst *
Radium-226	90.08	± 10.38	76.82	pCi/Kg	EPA 903.0		08/22/09 14:25	09/04/09	BH-CV
Radium-228	623.1	± 2295	276.8	pCi/Kg	EPA 904.0		09/02/09 8:20	09/09/09	AVB-CV
SAMPLE: #9		·		Lab ID:	09083072-009E	Grab			
SAMPLED BY: Jeff Blagg	)	Sa	ample Tim	e 08/17/2009 <sup>-</sup>	11:10				
Test	Result	Uncert.	MDA	<u>Units</u>	Method	MCL.	Analysis Start Ar	nalysis End	Analyst *
Radium-226	100.4	± 10.97	69.95	pCi/Kg	EPA 903.0		08/22/09 14:25	09/04/09	BH-CV
Radium-228	179.6	± 188.1	276.6	pCi/Kg	EPA 904.0		09/02/09 8:20	09/09/09	AVB-CV
SAMPLE: #10				Lab ID:	09083072-010E	Grab			
SAMPLED BY: Jeff Blagg	ŧ	Sa	ımple Timi	9 08/17/2009 1	11:25			•	
<u>Test</u>	Result	Uncert.	MDA	<u>Units</u>	Method	MCL	Analysis Start Ar	nalysis End	Analyst *
Radium-226	89.36	± 10.25	67.49	pCi/Kg	EPA 903.0		08/22/09 14:25	09/04/09	BH-CV
Radium-228	9.03	± 180.4	276.8	pCi/Kg	EPA 904.0		09/02/09 8:20	09/09/09	AVB-CV

### **REMARKS:**

				•
MANAGER	Cli Meli	DATE:	9/11/2009	

<sup>\*</sup> CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

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3 of 3

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**TEST REPORT** 

FAX:

Industrial Ecosystems New Land Farm

RECEIVED FOR LAB BY:	DMB		DA	TE: 08/20/	2009 9:10			r	Page 3 of 3
SAMPLE: #11 SAMPLED BY: Jeff Blag	g	Sa	ample Tim	Lab ID e 08/17/2009		Grab			
<u>Test</u>	Result	Uncert.	<u>MDA</u>	<u>Units</u>	<u>Method</u>	MCL	Analysis Start	Analysis End	d Analyst *
Radium-226	109.2	± 10.88	67.47	pCi/Kg	EPA 903.0		08/22/09 14:25	09/04/09	BH-CV
Radium-228	286.7	± 212.7	277.0	pCi/Kg	EPA 904.0		09/02/09 8:20	09/09/09	AVB-CV
SAMPLE: #12				Lab ID	: 09083072-012E	Grab			
SAMPLED BY: Jeff Blag	g	Sa	ample Tim	e 08/17/2009	11:55				
<u>Test</u>	Result	Uncert.	MDA	<u>Units</u>	Method	MCL	<u>Analysis Start</u>	Analysis En	d Analyst *
Radium-226	59.76	± 8.54	74.22	pCi/Kg	EPA 903.0		08/22/09 14:25	09/04/09	BH-CV
Radium-228	-229.8	± 205.6	276.6	pCi/Kg	EPA 904.0		09/02/09 8:20	09/09/09	AVB-CV

### .REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples. \* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

	•		•*			
	4 / /	•				
MANIAOED	Cli Meli			DATE:	9/11/2009	
MANAGER	Com I Com			D1 (1 C.		



2060 Afton Place Farmington, NM 87401 Tel (505) 327-7928 Fax (505) 326-5721

September 24, 2009

### Richard P. Cheney, P.E.

Cheney-Walters-Echols, Inc. 909 West Apache Farmington, New Mexico 87401

RE: Industrial Ecosystems Landfarm San Juan County, New Mexico GEOMAT Project No. 91-0919

As you requested, we have performed the following field and laboratory testing of the native soils for the above referenced project.

- In-place soil moisture-density
- Soil Index Properties (Sieve Analysis and Plasticity Index)
- Moisture-Density Relationship (Proctor)
- Swell tests on remolded samples
- Permeability tests on remolded samples
- Estimate of Porosity Values

The soils from four different locations were tested. The test locations were labeled in the field (by your office) as Test Holes 1, 2, 5, and 6. The laboratory testing was performed on samples obtained and submitted by C-W-E personnel on September 14, 2009. The field testing was performed by a GEOMAT technician also on September 14, 2009. The test results are presented below.

	In-place Moisture-Density								
Test Hole No.	Wet Density,	Dry Density,	Moisture Content,						
Test Hole No.	pcf	pcf	%						
1	93.7	90.8	3.3						
2 .	100.4	96.2	4.4						
5	100.3	98.6	1.8						
6	99.4	97.9	. 1.6						

Soil Index Properties							
Test Hole No.	Lab No.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing #200 Sieve	Classification	
1	8152	28	18	10	74	CL, Lean Clay w/ Sand	
2 ,	8153	23	18	5	74	CL-ML Silty Clay w/ Sand	
<sup>-</sup> 5	8154	NLL	NPL	NP	21	SM, Silty Sand	
6	8155	NLL	NPL	NP	14	SM, Silty Sand	

## Richard P. Cheney, P.E. Cheney-Walters-Echols, Inc.

Industrial Ecosystems Landfarm GEOMAT Project No. 91-0919 September 24, 2009

M	Moisture-Density Relationship (Proctor)			
Test Hole No.	Lab No.	Maximum Dry Density, pcf	Optimum Moisture Content, %	
1	8152	108.1	16.3	
2	8153	111.5	14.7	
5	8154	114.0	12.0	

111.1

8155

11.9

Swell Tests on Remolded Samples				
Test Hole No.	Lab No.	Remolded Swell Potential, %		
1 & 2 Combined	8179	0.0		
5 & 6 Combined	8178	1.2		

Measured on samples compacted to approximately 90 percent of the ASTM D698 maximum dry density at about 3 percent below optimum water content, confined under 144 psf surcharge and submerged

The soils from test locations 1 and 2 were combined because of the close similarity of the materials. Likewise, the soils from test locations 5 & 6 were also combined for this test because of their close similarity.

Permeability Tests on Remolded Samples				
Test Hole No.	Lab No.	Constant Head Permeability Rate, cm/s		
1 & 2 Combined	8179	6.52E-04		
5 & 6 Combined	8178	3.60E-04		

Measured on samples compacted to approximately 85 percent of the ASTM D698 maximum dry density.

The soils from test locations 1 and 2 were combined because of the close similarity of the materials. Likewise, the soils from test locations 5 & 6 were also combined for this test because of their close similarity.

Richard P. Cheney, P.E. Cheney-Walters-Echols, Inc. Industrial Ecosystems Landfarm GEOMAT Project No. 91-0919 September 24, 2009

Estimate of Porosity <sup>1</sup>				
Test Hole No.	Estimated Porosity, %			
1	. 45			
2	41			
5	40			
6	40			

<sup>&</sup>lt;sup>1</sup> Basic Soils Engineering, B.K. Hough, Second Edition

Thank you for the opportunity to work with you on this project. If have any questions or need additional information, please call.

Respectfully submitted, GEOMAT Inc.

George A. Madrid, P.E.

President, Principal Engineer

Distribution: Addressee (2)



District I
1625 N French Dr., Hobbs, NM 88240
District II
1301 W Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

# State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505



Form C-137 Revised March 1, 2007 Submit 1 Copy to Santa Fe Office

### APPLICATION FOR SURFACE WASTE MANAGEMENT FACILITY

A meeting should be scheduled with the Division's Santa Fe office Environmental Bureau prior to pursuing an application for a surface waste management facility in order to determine if the proposed location is capable of satisfying the siting requirements of Subsections A and B of 19.15.36.13 NMAC for consideration of an application submittal.

1	Application:	⊠ New	Modification	Ren	ewal	•
2.	Type:   Evaporation	Injection	☐ Treating Plant	☐ Landfill	∠ Landfarm	Other
3.	Facility Status:		nmercial	☐ Cer	ntralized	
4.	Operator: Crowe Blanco,	LLC — Operated b	by Industrial Ecosystem	s, Inc.		
	Address: 49 CR 3150 * A	Aztec, NM 87410			antsoly <u>a</u>	
	Contact Person: Marcella	Marquez or Terr	y Lattin	Phone:	(505) 632-1782	
5.	Location: /4		Section 16	Township 29	Range	e <u>09W</u>
6.	Is this an existing facility?	☐ Yes ⊠	No If yes, provid	e permit number		♦} ₹Å
Sp	Attach the names and addr ecify the office held by each ility.		• •		<u> </u>	
sur fac	Attach a plat and topograp veys (quarter-quarter section cility site; watercourses; frestimeter.	on, township and	range); highways or ro	ads giving acces	s to the surface wa	ste management
	Attach the names and addred and surface owners of the				h the surface waste	e management facility is
gua	. Attach a description of that ards, and detailed constructional surface of the s	ion/installation di	agrams of pits, liners,	dikes, piping, sp	rayers, tanks, roads	
11.	. Attach engineering design	ns, certified by a	registered professiona	l engineer, includ	ding technical data	on the design elements

- 11. Attach engineering designs, certified by a registered professional engineer, including technical data on the design elements of each applicable treatment, remediation and disposal method and detailed designs of surface impoundments.
- 12. Attach a plan for management of approved oil field wastes that complies with the applicable requirements contained in 19.15.36.13, 19.15.36.14, 19.15.36.15 and 19.15.36.17 NMAC.
- 13. Attach an inspection and maintenance plan that complies with the requirements contained in Subsection L of 19.15.36.13 NMAC.
- 14. Attach a hydrogen sulfide prevention and contingency plan that complies with those provisions of 19.15.3.118 NMAC that apply to surface waste management facilities.

- 15. Attach a closure and post closure plan, including a responsible third party contractor's cost estimate, sufficient to close the surface waste management facility in a manner that will protect fresh water, public health, safety and the environment (the closure and post closure plan shall comply with the requirements contained in Subsection D of 19.15.36.18 NMAC).
- 16 Attach a contingency plan that complies with the requirements of Subsection N of 19.15.36.13 NMAC and with NMSA 1978, Sections 12-12-1 through 12-12-30, as amended (the Emergency Management Act).
- 17. Attach a plan to control run-on water onto the site and run-off water from the site that complies with the requirements of Subsection M of 19.15.36.13 NMAC.
- 18. In the case of an application to permit a new or expanded landfill, attach a leachate management plan that describes the anticipated amount of leachate that will be generated and the leachate's handling, storage, treatment and disposal, including final post closure options.
- 19. In the case of an application to permit a new or expanded landfill, attach a gas safety management plan that complies with the requirements of Subsection O of 19.15.36.13 NMAC
- 20. Attach a best management practice plan to ensure protection of fresh water, public health, safety and the environment.
- 21. Attach a demonstration of compliance with the siting requirements of Subsections A and B of 19.15.36.13 NMAC.
- 22. Attach geological/hydrological data including:
  - (a) a map showing names and location of streams, springs or other watercourses, and water wells within one mile of the site:
  - (b) laboratory analyses, performed by an independent commercial laboratory, for major cations and anions; benzene, toluene, ethyl benzene and xylenes (BTEX); RCRA metals; and total dissolved solids (TDS) of ground water samples of the shallowest fresh water aquifer beneath the proposed site;
    - (c) depth to, formation name, type and thickness of the shallowest fresh water aquifer;
  - (d) soil types beneath the proposed surface waste management facility, including a lithologic description of soil and rock members from ground surface down to the top of the shallowest fresh water aquifer;
    - (e) geologic cross-sections;
    - (f) potentiometric maps for the shallowest fresh water aquifer; and
  - (g) porosity, permeability, conductivity, compaction ratios and swelling characteristics for the sediments on which the contaminated soils will be placed.
- 23. In the case of an existing surface waste management facility applying for a minor modification, describe the proposed change and identify information that has changed from the last C-137 filing.
- 24. The division may require additional information to demonstrate that the surface waste management facility's operation will not adversely impact fresh water, public health, safety or the environment and that the surface waste management facility will comply with division rules and orders

### 25. CERTIFICATION

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name: 12 Try L. La I I N Title: Mana & Signature: Date: 11-17-09

E-mail Address: 12 Try & Produstrial Ecos 9 stems. Com